(283) item 10

UNIVERSITY OF NEVADA
NEVADA BUREAU OF MINES AND GEOLOGY
RENO, NEVADA 89507

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THE PIUTE IRON DEPOSIT, PERSHING COUNTY, NEVADA.
by E. L. Stephenson (March 1959, revised July 1962)

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Item 10

THE PIUTE IRON DEPOSIT
PERSHING COUNTY, NEVADA

By

E. L. Stephenson
Consulting Geophysicist

Reno, Nevada
March 1959
Revised July 1962

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Illustrations

THE PIUTE IRON DEPOSIT
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INTRODUCTION

The Piute iron property, Pershing County, Nevada, covers two closely related major magnetic anomalies, each of which has been tested by a deep diamond drill hole. Both holes show thick sections of good magnetite iron ore in older rocks lying beneath Tertiary volcanic rocks. The magnetite was not bottomed in either hole, but the drilled thicknesses considered in relation to the magnetic anomalies indicate probable amounts of ore considerably in excess of 200 million tons. Thus the Piute deposit is one of the major deposits of magnetite ore in the western United States.

This report presents certain factual information about the property. In addition to brief written statements it includes (1) the Lovelock topographic quadrangle showing the general location, (2) a location map of the Buena Vista iron area showing the various deposits, (3) a magnetic nap on a scale of 500 feet to the inch and magnetic profiles on a scale of 1,000 feet to the inch, and (4) diagrammatic logs of the core from the drill holes, including sample and assay records. Also included are tonnage estimates based on the magnetic and geologic data now at hand.

LOCATION AND ACCESS

The Piute magnetic map (in pocket), which is outlined on the Lovelock quadrangle map, shows the chief features of the immediate area on a scale of 500 feet to the inch. The magnetic anomalies are mainly in Sections 24 and 26, T. 25 N., R. 32 E., M.D.M., but they also extend into adjoining sections as shown on the map. Most of the property is in Pershing County, but the southernmost tier of claims extends a few hundred feet into Churchill County. The claims which are in two groups, of 18 each, are also shown on the location map (in pocket) in relation to the properties in the Buena Vista iron area across the valley.

The terrain is a nearly flat to gently sloping outwash plain at the foot of gravel and volcanic benches that lie between the West Humboldt Range on the northwest and Carson Sink on the southeast. The property is just southeast of the old Lake mining district and south of the old Wildhorse district, and is about 10 miles due west of the Buena Vista Hills, which are in the Mineral Basin and Copper Kettle mining districts. The distance from Lovelock is 19 miles by the paved South Meridian road and the graded county road over Wildhorse Pass (see quadrangle map). The county road continues northeastward across the head of Carson Sink to a junction with the Mineral Materials mine haulage road near the Iron Horse mine.

HISTORY AND OWNERSHIP

The Piute deposit was discovered in 1952 by C. Wm. Hunley, of Lovelock, who detected a magnetic disturbance with a dip needle. Early in 1953, at Mr. Hunley's request, E. L. Stephenson ran a series of magnetometer traverses and determined the approximate nature and extent of two large magnetic anomalies. At that time six claims were staked in Section 26 and two claims in Section 24, but later these claims were allowed to lapse.

In 1957 Mr. Hunley relocated the original eight claims Sections 26 and 24. Early in 1958 The Standard Slag Company drilled a test hole on the south anomaly, and at this time six additional claims were staked in Section 26 and eleven claims were staked in Section 24, all in Mr. Hunley's name. Plane table mapping and additional magnetometer work also were done by E. L. Stephenson. Late in 1961 W. S. Moore Co. drilled a second test hole, on the north anomaly, and at this time eleven additional claims were staked to form the two blocks of 18 claims each, as shown on the map.

The Piute claims now are owned 70% by C. Wm. Hunley under original location, and 20% by E. L. Stephenson and 10% by R. W. Belanger under terms of assignments from Mr. Hunley. As the area is well within the railway land grant boundary, shown on the location map, the odd-numbered sections are held by the Southern Pacific Land Company.

GEOLOGY

The surface materials in the Piute area comprise outwash sand, gravel, and boulders; low sand and gravel bars and fine sediments deposited in ancient Lake Lahontan; wind-formed sand dunes; and scattered outcrops of volcanic rocks. Just to the north the gravels and volcanic rocks occur in a series of well-defined benches, the steep fronts of which probably are fault scarps. In the immediate area of the anomalies the volcanic rocks form a rock pediment beneath a shallow cover of the more recent deposits.

The nearest exposures of pre-volcanic rocks are in the West Humboldt Range, but they have not been studied in any detail. The oldest formations are sedimentary, metavolcanic, and metamorphic rocks, most of which probably belong in the Triassic Star Peak formation, although some may be part of the Koipato formation of probable Permian age. The older rocks are cut by Jurassic or younger intrusions, and the entire complex is widely capped by Tertiary volcanic flows and pyroclastic rocks.

Diamond drill hole No. 1, on the Piute claim near the east edge of Section 26, showed volcanic flows and pyroclastic rocks to a depth of 744 feet. Underlying these Tertiary rocks are altered and metamorphosed limestones and metavolcanic rocks to a depth of 986 feet, but core recovery was so poor in much of this interval that the exact nature of the rocks is in doubt. The first certain iron ore was encountered at 986 feet, and it continues to the bottom of the hole at 1261 feet.

didn't reach bottom of Fe body, though.

Diamond drilling was difficult in the lower part of the volcanic sequence, particularly in the soft zones between successive formations, and in the Mesozoic (?) rocks above the iron ore. Core recovery was fair to very poor. In the iron ore, drilling was fairly easy and core recovery was very good to fair, averaging about 63% for the full 275 feet.

The findings in D.D.H. No 1, as logged and sampled by the writer, are shown on the accompanying core log (in pocket). The rocks in the interval logged as Mesozoic (?) contain scattered to abundant fine sulphide minerals, chiefly pyrite. Eleven samples taken from this part of the core were assayed for gold, silver, and copper, with the results shown in the assay record on the core log. One sample, deep in the hole, P-20, of high-grade iron ore containing disseminated pyrite also was checked for gold, silver, and copper. As shown in the assay record, this sample contained no gold or silver and only a trace amount of copper. The iron assays also are tabulated on the core log.

In D.D.H. No. 2 rotary tools were used through the volcanic sequence, and the drilling was accomplished quickly and easily. The bottom of the volcanic rocks was found at 785 feet, casing was landed at 801 feet, and diamond coring was started in magnetite ore at this depth and was continued to bottom at 1,728 feet. Core recovery was excellent, averaging better than 98% for the entire 927 feet.

The findings in D.D.H. No. 2, as logged and sampled by W. S. Moore Co., are shown on the diagrammatic core log (in pocket). In general the rock is logged as diorite, except for relatively thin sections of metasedimentary or metavolcanic rocks. Most of the rock is rather strongly altered, and much of it is highly brecciated.

All of the core from D.D.H. No. 2 was split but only the 335 feet between depths 958 and 1,293 has been assayed to date. Iron content shown elsewhere on the core log is estimated. Assays and estimates both were made mainly at 10-foot intervals, but these have been consolidated roughly by grade in the diagrammatic log. Ninety feet of high-grade magnetite occurs between depths 1,115 and 1,205, corresponding roughly in elevation to the much thinner high-grade bands in D.D.H. No. 1.

The magnetite in the Piute deposit occurs in disseminated crystals or grains, and in blebs and irregular veinlets or stringers, as well as in solid massive bands. Much of it is in the form of fracture fillings in the highly brecciated rock, which it completely recements. In general the ore seems similar to the magnetite ores of the Buena Vista Hills to the east, which were formed chiefly as fillings and replacements in breccia zones, particularly at fault intersections. Although the exact nature and form of the Piute ore bodies cannot be determined from the limited geologic data now at hand, the brecciation, the magnetic findings, and the great depth extent suggest that the deposits have the general form of elongated, steeply pitching large shoots, which probably were localized in fracture zones along faults or at fault intersections. They probably can best be considered as large breccia pipes.

MAGNETIC ANOMALIES

The magnetic anomalies are shown in red on the accompanying magnetic map, on a scale of 500 feet to the inch and a contour interval of 1,000 gammas. This sheet also displays five typical magnetic profiles, on a scale of 1,000 feet to the inch, which show the exact magnetic readings as obtained in the field.

The anomalies are sharp and well-defined, since the surrounding country is magnetically neutral, as illustrated by the south part of profile D-D'. The effects of outcropping or near-surface volcanic rocks appear as minor sharp irregularities on the curves, particularly profiles A-A' and B-B'. Allowing for orientation of lines and the effects of the volcanic rocks, the peaks are somewhat asymmetrical, showing a tendency toward slightly sharper magnetic gradients on the west or north. There also is a suggestion of slight increases in magnetic gradients near the 2,500-gamma level, which might be related to the edges of the ore shoots.

The south Piute anomaly centers in Section 26 near the 26-25 quarter corner, with about a third of the anomalous area lying in Section 25. The extreme south end extends into Sections 35 and 36. The anomaly is elliptical in plan and trends slightly east of north. On the basis of the 1,000-gamma closure it has a length of 5,500 feet and a width of 4,200 feet. It reaches peak values of about 4,300 gammas and has a rather large area above 3,000 gammas.

The north anomaly, likewide elliptical in plan, has a northeasterly trend. The 2,000-gamma closures lie entirely in the southeast part of Section 24, although the 1,000-gamma closure

extends northeastward well into Section 19 and southward into Section 25. The anomaly has a length of 6,000 feet and a maximum width of 3,500 feet. Just below the 2,000-gamma level the anomaly divides into a smaller northeast center and a larger southwest center. Peak values in the southwest center are about 3,700 gammas.

Prior to drilling the first hole, depth calculations were made on the south anomaly, and a prediction was made of 1,000-1,100 feet to the magnetic body, which agrees very well with the findings in the drill hole. Later, on the basis of these drill findings and depth calculations on the north anomaly, the writer predicted that the top of the north ore body should be found at a depth of about 800 feet and that it might lie directly beneath the Tertiary volcanic rocks, or in other words that it once may have cropped at the old pre-volcanic surface. The second drill hole confirms these conclusions.

SIZE AND GRADE OF THE DEPOSITS

The two drill holes in the Piute property prove that iron ore is present beneath each anomaly and give a general idea of the nature of the mineralization. More subsurface information is needed before the exact size of the bodies can be determined, but if shoot-like bodies are assumed a first approximation can be reached by calculations based on the areas of the magnetic anomalies and the thickness of ore in the drill holes.

On the basis of the area within the 2,000-gamma closure, the total thickness of 275 feet of assayed material, and a factor of 10 cubic feet per ton, the south deposit would contain 210,000,000 tons of ore averaging about 32% iron, 0.11% sulphur, and 0.14% phosphorus. On the basis of the 3,000-gamma closure, the deposit would contain 75,000,000 tons. The magnetic curves suggest that the boundaries are somewhere between the 2,000-gamma and 3,000-gamma contours, and that the true figures therefore lie between the above limits. Any thickness greater than that now proven by the first drill hole would increase these figures. The results in the second hole strongly suggest that the magnetite may extend very considerably below the bottom of D.D.H. No. 1.

The areas within any given closure are smaller in the north anomaly, but the greater thicknesses of magnetite in D.D.H. No. 2 result in a similar range of tonnage figures. On the basis of only the 335-foot section of assayed core, the 2,000-gamma closure

would indicate 150,000,000 tons, and the 3,000-gamma closure would indicate 25,000,000 tons, of ore averaging 38.8% iron. On the basis of the total 800 feet shown in the core log, the 2,000-gamma closure would indicate 350,000,000 tons, and the 3,000-gamma closure 60,000,000 tons, of ore averaging about 31% iron.

While the above figures can be considered only reasonably accurate, the magnetic and geologic data now at hand indicate that the Piute iron ore bodies are of major size, and the second drill hole also indicates that important tonnages of high-grade ore occur. The figure of 200,000,000 for the entire deposit, mentioned on page 1, is believed to be very conservative, especially in view of the estimate of 300,000,000 tons made by the U. S. Bureau of Mines.

Davis tube tests and other determinations show that any of the ore can be readily beneficiated without extremely fine grinding, and that the resulting product will be low in sulphur and phosphorus. Further exploration and development of the Piute magnetite deposit is well warranted.

E. L. Stephenson

Reno, Nevada
July 25, 1962

Revised Sept. 14, 1968

E. L. Stephenson
Consulting Geophysicist
Registered Professional Engineer
Nevada No. 501

Project No. 580722
Piute No. 1 - Drill Core Samples
Davis Tube Tests

U.S. Steel sampling & tests
Date Received: June 24, 1959
Shipped From: San Francisco, California
Shipped By: Mr. K. W. Mote

Purpose:

1. To determine the concentrate analyses and iron recovery attainable by magnetic concentration of individual footage samples at a nominal minus-200-mesh grind.

2. To prepare composites from selected mineralized zones and determine the effect of mesh size of grind on grade of concentrate and iron recovery.

Sample:

1. Davis tube feed for individual footage tests consisted of a 30-gram cut from the nominal minus-200-mesh head sample except that the test feed was reduced to 10 grams for samples assaying over 55 percent iron and increased to 50 grams for samples assaying under 15 percent iron.

2. Davis tube feed for composite tests consisted of a 30-gram cut from portions of the composite sample reduced to selected mesh sizes listed in the tabulated data.

Procedure:

1. Individual footage samples reduced to minus-20-mesh size by standard crushing and splitting procedures. Samples were small and it was necessary to crush the entire sample to this size. Minimum size cuts, approximately 75 grams, reduced to nominal minus-200-mesh by standard procedure of stage reduction in a screen and disc pulverizer closed circuit to avoid over-grinding.

   Standard Davis tube tests on all individual footage sample assaying over 10 percent iron.

2. Composites prepared from individual footage samples in the zones of higher mineralization were based upon proportionate volumes of individual footage. This was accomplished by estimating the specific gravity of individual footage samples from their iron content, and compiling the composite by weighed portions of individual samples computed from specific gravity and core footage. The size of composite obtainable was, in some cases, limited to as little as 275 grams.

   Two cuts of approximately 75 grams each were taken from each minus-20-mesh composite and ground to nominal minus-100-mesh and minus-48-mesh sizes by standard procedure of stage reduction in a screen and disc pulverizer closed circuit. Undersize was screened from the sample before the first stage of grinding. A uniform procedure for stage reduction of the oversize was emphasized.

   The SiO_2 content of the magnetic concentrate from these tests was the basis upon which a mesh of grind was selected for a third test on each composite which would result in a concentrate containing about 6.0 percent SiO_2.

1

Project No. 580722
Piute No. 1 - Drill Core Samples
Davis Tube Tests
(continued)

Test Data and Results:

Sponsor's Identification Prefix	Footage	Test Feed Size Nominal[1] (Tyler) mesh	Heads: Computed Analysis Fe %	Heads: Computed Analysis Magnetic Fe %	Heads: Chemical Analysis Fe %	Heads: Chemical Analysis V_2O_5 %	Concentrate: Weight %	Concentrate: Chemical Analysis Fe %	SiO_2 %	Al_2O_3 %	CaO %	MgO %	P %	S %	V_2O_5 %	TiO_2 %	Tailing: Weight %	Tailing: Chemical Analysis Fe %	Percent Recovery Fe
P-12	986-1,006	200	37.8	31.3	38.0	0.054	46.0	67.9	1.38	1.64	0.09	0.23	0.009	0.011	0.05	--	54.0	12.1	82.7
P-13	1,006-1,010	200	32.6	24.8	32.4	0.071	36.5	68.1	2.54	0.70	0.12	0.24	0.007	0.009	0.08	--	63.5	12.2	76.2
P-14	1,010-1,024	200	41.3	37.4	41.2	0.107	53.7	69.6	1.08	1.48	0.07	0.24	0.006	0.012	0.07	--	46.3	8.4	90.6
P-15	1,024-1,027	200	65.7	63.8	65.7	0.089	90.8	70.3	0.22	1.30	0.09	0.29	0.028	0.007	0.05	--	9.2	20.7	97.1
P-16	1,027-1,040	200	42.7	35.8	42.5	0.071	53.2	67.2	2.78	0.16	0.10	0.27	0.012	0.007	0.08	--	46.8	14.8	83.8
Composite[2]	986-1,040	200	41.5	35.8	40.8	0.073	52.3	68.5	1.56	1.15	0.09	0.25	0.011	0.010	0.06	--	47.7	11.9	86.3
Composite	986-1,040	100	41.1	36.2	40.8	0.073	54.3	66.7	1.81	--	--	--	--	--	--	--	45.7	10.7	88.2
Composite	986-1,040	48	41.5	37.1	40.8	0.073	59.2	62.7	4.12	--	--	--	--	--	--	--	40.8	10.6	89.6
Composite	986-1,040	35	42.0	38.0	40.8	0.073	63.1	60.2	5.78	2.85	1.41	1.62	0.027	0.041	0.02	1.08	36.9	10.8	90.5
--	1,040-1,075	200	21.9	13.5	21.9	0.057	20.7	65.4	2.56	3.78	0.19	0.28	0.012	0.014	0.07	--	79.3	10.6	61.7
--	1,075-1,085	200	32.2	18.4	31.9	0.089	27.1	68.0	1.70	1.48	0.09	0.28	0.014	0.009	0.07	--	72.9	18.9	57.2
Zone of low mineralization; 1,040 to 1,085; not included in composite tests.																			
P-17	1,085-1,089	200	58.6	57.0	57.9	0.134	84.8	67.2	1.34	1.34	0.30	0.47	0.132	0.011	0.12	--	15.2	10.3	97.3
P-18	1,089-1,106	200	43.9	39.9	43.6	0.040	60.2	66.2	2.08	1.74	0.23	0.44	0.034	0.011	0.09	--	39.8	10.1	90.8
Composite[2]	1,085-1,106	200	47.2	43.7	46.4	0.068	65.5	66.7	1.88	1.64	0.25	0.45	0.061	0.011	0.10	--	34.5	10.1	92.6
Composite	1,085-1,106	100	47.0	44.4	46.4	0.068	64.9	68.4	1.74	--	--	--	--	--	--	--	35.1	7.4	94.4
Composite	1,085-1,106	48	46.9	44.7	46.4	0.068	68.8	65.0	2.82	--	--	--	--	--	--	--	31.2	7.0	95.4
Composite	1,085-1,106	28	47.5	45.6	46.4	0.068	73.0	62.5	4.61	2.60	2.12	1.63	0.063	0.035	0.03	0.91	27.0	7.2	95.9
--	1,106-1,116	--	--	--	8.7	--	No test on this barren zone.												
P-19	1,116-1,158	200	28.8	23.2	28.8	0.052	35.1	66.1	2.50	2.04	0.17	0.35	0.027	0.013	0.05	--	64.9	8.6	80.6
P-19	1,116-1,158	100	28.6	24.1	28.8	0.052	37.3	64.5	2.30	--	--	--	--	--	--	--	62.7	7.2	84.2
P-19	1,116-1,158	48	28.9	24.9	28.8	0.052	44.0	56.5	6.20	3.83	1.76	1.68	0.053	0.028	0.05	1.04	56.0	7.2	86.0
--	1,158-1,168	200	12.1	5.5	12.1	0.036	8.1	68.3	3.23	0.66	0.17	0.39	0.019	0.019	0.04	--	91.9	7.2	45.5
Zone of low mineralization; 1,158 to 1,168; not included in composite tests.																			
P-20	1,168-1,172	200	35.2	29.4	35.0	0.071	46.3	63.4	4.22	2.14	0.30	0.48	0.023	0.024	0.05	--	53.7	10.8	83.5
P-21	1,172-1,178	200	62.0	59.6	61.7	0.142	85.2	69.9	0.38	0.86	0.14	0.28	0.061	0.009	0.04	--	14.8	16.5	96.1
Composite[2]	1,168-1,178	200	53.0	49.4	52.4	0.099	72.1	68.5	1.21	1.14	0.18	0.32	0.053	0.012	0.04	--	27.9	12.8	93.3
Composite	1,168-1,178	100	53.2	50.8	52.4	0.099	75.8	67.0	1.46	--	--	--	--	--	--	--	24.2	10.1	95.4
Composite	1,168-1,178	28	53.7	52.0	52.4	0.099	81.4	63.9	3.03	2.11	2.34	1.52	0.213	0.037	0.01	0.65	18.6	9.3	96.8

3100 0010

Project No. 580722
Piute No. 1 - Drill Core Samples
Davis Tube Tests
(continued)

Test Data and Results: (continued)

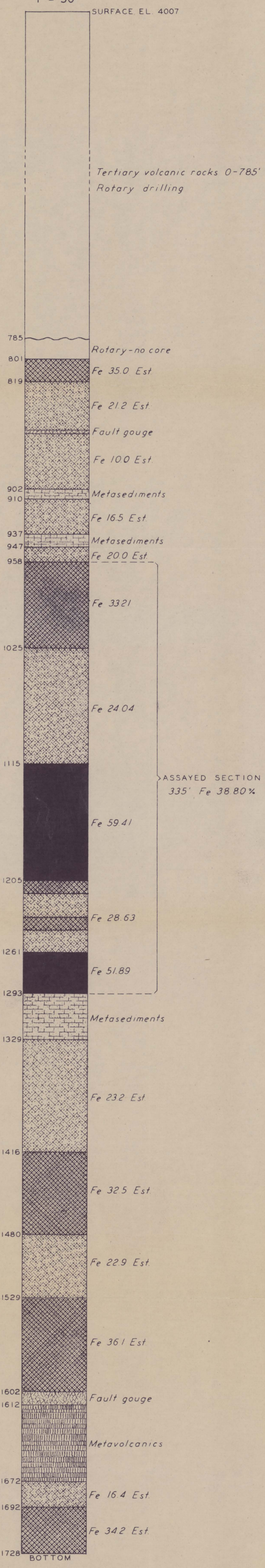
Sponsor's Identification Prefix	Sponsor's Identification Footage	Test Feed Size Nominal[1] (Tyler) mesh	Heads Computed Analysis Fe %	Heads Computed Analysis Magnetic Fe %	Heads Chemical Analysis Fe %	Heads Chemical Analysis V_2O_5 %	Concentrate Weight %	Concentrate Chemical Analysis Fe %	SiO_2 %	Al_2O_3 %	CaO %	MgO %	P %	S %	V_2O_5 %	TiO_2 %	Tailing Weight %	Tailing Chemical Analysis Fe %	Percent Recovery Fe
--	1,178-1,238	200	22.9	18.0	23.1	0.043	26.9	67.0	2.50	2.00	0.14	0.54	0.037	0.011	0.05	--	73.1	6.7	78.6
--	1,178-1,238	100	22.6	18.6	23.1	0.043	28.9	64.3	3.33	2.10	0.70	1.30	0.023	0.022	0.04	1.06	71.1	5.7	82.0
--	1,178-1,238	65	23.1	19.4	23.1	0.043	33.6	57.7	7.71	4.21	1.36	1.77	0.043	0.030	0.01	1.09	66.4	5.6	83.9
--	1,178-1,238	48	23.5	20.0	23.1	0.043	36.2	55.2	9.54	--	--	--	--	--	--	--	63.8	5.5	85.0
P-22	1,238-1,261	200	31.7	26.0	31.5	0.071	39.4	66.0	2.18	2.20	0.16	0.30	0.028	0.010	0.06	--	60.6	9.4	82.0
P-22	1,238-1,261	100	31.5	26.8	31.5	0.071	42.9	62.4	3.75	--	--	--	--	--	--	--	57.1	8.4	84.9
P-22	1,238-1,261	65	32.3	28.3	31.5	0.071	48.6	58.3	6.11	3.60	1.72	1.85	0.051	0.030	0.03	1.08	51.4	7.8	87.7
P-22	1,238-1,261	48	32.3	28.5	31.5	0.071	50.7	56.3	6.77	--	--	--	--	--	--	--	49.3	7.7	88.3

1/ Stage reduction in disc pulverizer and screen circuit yielded 95 to 99 percent passing mesh of grind.
2/ Computed from individual footages except for chemical analysis of composite head sample.

3100.0010

PIUTE IRON DEPOSIT
PERSHING COUNTY, NEVADA
D.D.H. NO. 2 CORE LOG

1" = 50'



All rock logged as diorite except as noted.

Fe above 50%

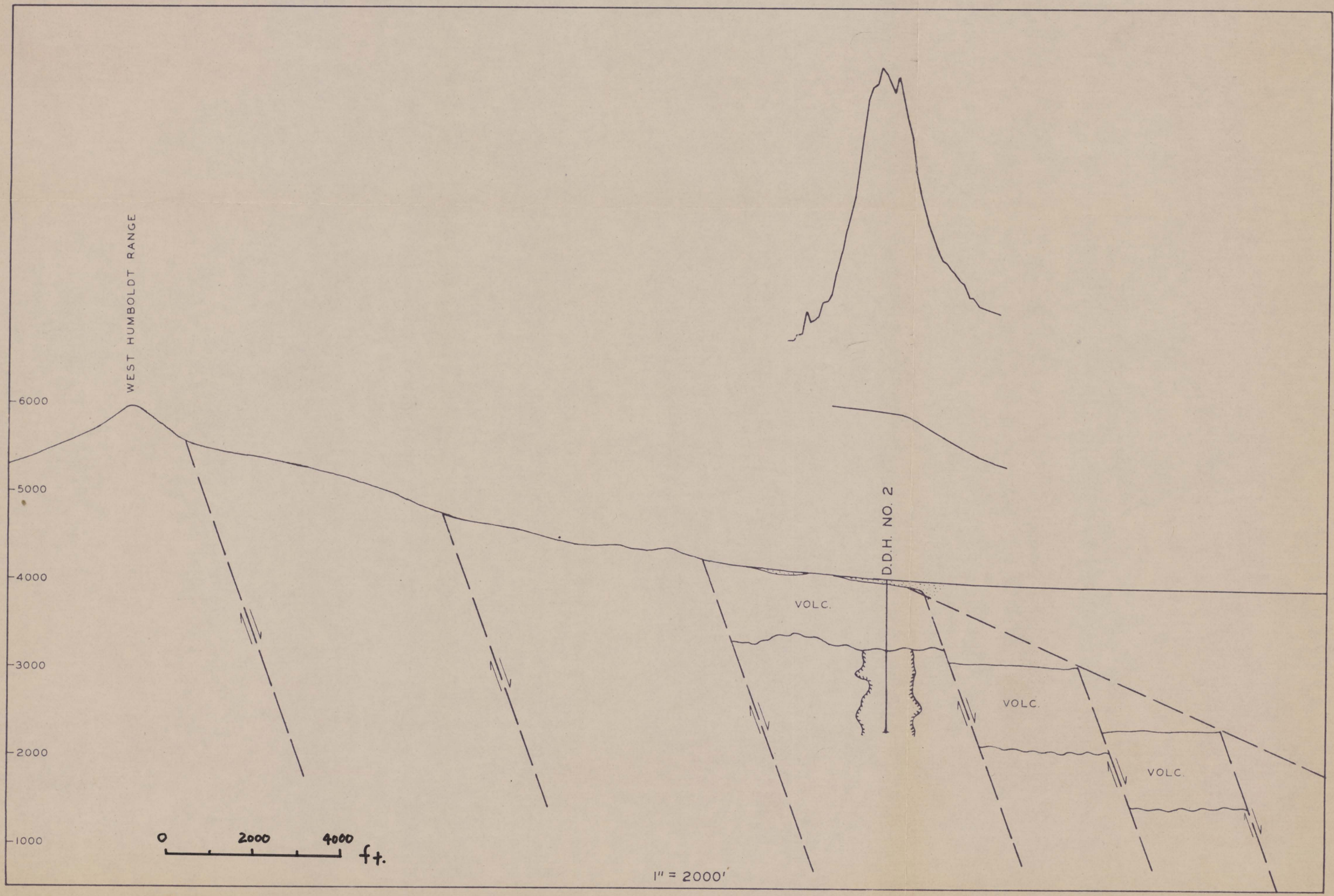
Fe 30%-50%

Fe below 30%

LOGGED. SAMPLED AND ASSAYED BY W. S. MOORE CO. 1962

E.L.S. 7-62

0 50 100 ft.



032-001-0043

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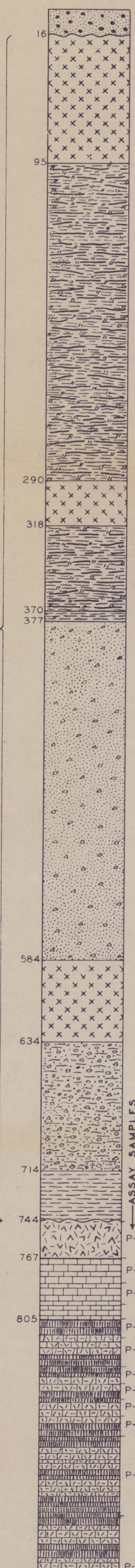
Item 10

PIUTE IRON DEPOSIT

PERSHING COUNTY, NEVADA

D.D.H NO. 1 CORE LOG

1" = 50'



ASSAY RECORD

Sample	Width	Au oz.	Ag oz.	Cu %
P-1	23'	TR.	NIL	
P-2	16'	0.02	NIL	
P-3	13'	TR.	NIL	
P-4	12'	TR.	0.2	0.031
P-5	17'	TR.	0.1	0.025
P-6	10'	TR.	0.2	0.018
P-7	10'	0.015	0.3	0.037
P-8	10'	TR.	0.3	0.025
P-9	12'	TR.	0.3	0.056
P-10	49'	TR.	0.1	0.037
P-11	61'	TR	0.1	0.018
P-20	4'	NIL	NIL	0.006

Sample	Width	Fe %	S %	P %
P-12	20'	37.6	0.10	0.13
P-13	4'	28.4	0.24	0.03
P-14	14'	41.7	0.04	0.05
P-15	3'	60.2	0.05	0.11
P-16	13'	39.4	0.22	0.02
P-17	4'	57.4	0.06	0.57
P-18	17'	40.1	0.06	0.09
P-19	42'	31.7	0.10	0.14
P-20	4'	59.8	0.21	
P-21	6'	62.2	0.06	0.44
P-22	23'	24.6	0.08	0.20
P-23	10'	20.2	0.10	
P-24	15'	27.5	0.11	
P-25	10'	30.5	0.13	
P-26	10'	40.8	0.11	
P-27	10'	13.9	0.04	
P-28	10'	11.6	0.17	
P-29	15'	18.6	0.01	
P-30	15'	28.9	0.01	
P-31	11'	46.1	0.10	
P-32	19'	25.4	0.28	
GEN. AV.	275'	32.17	0.11	0.14

Fe above 50%

Fe 30%-50%

Fe below 30%

0 50 100 ft.

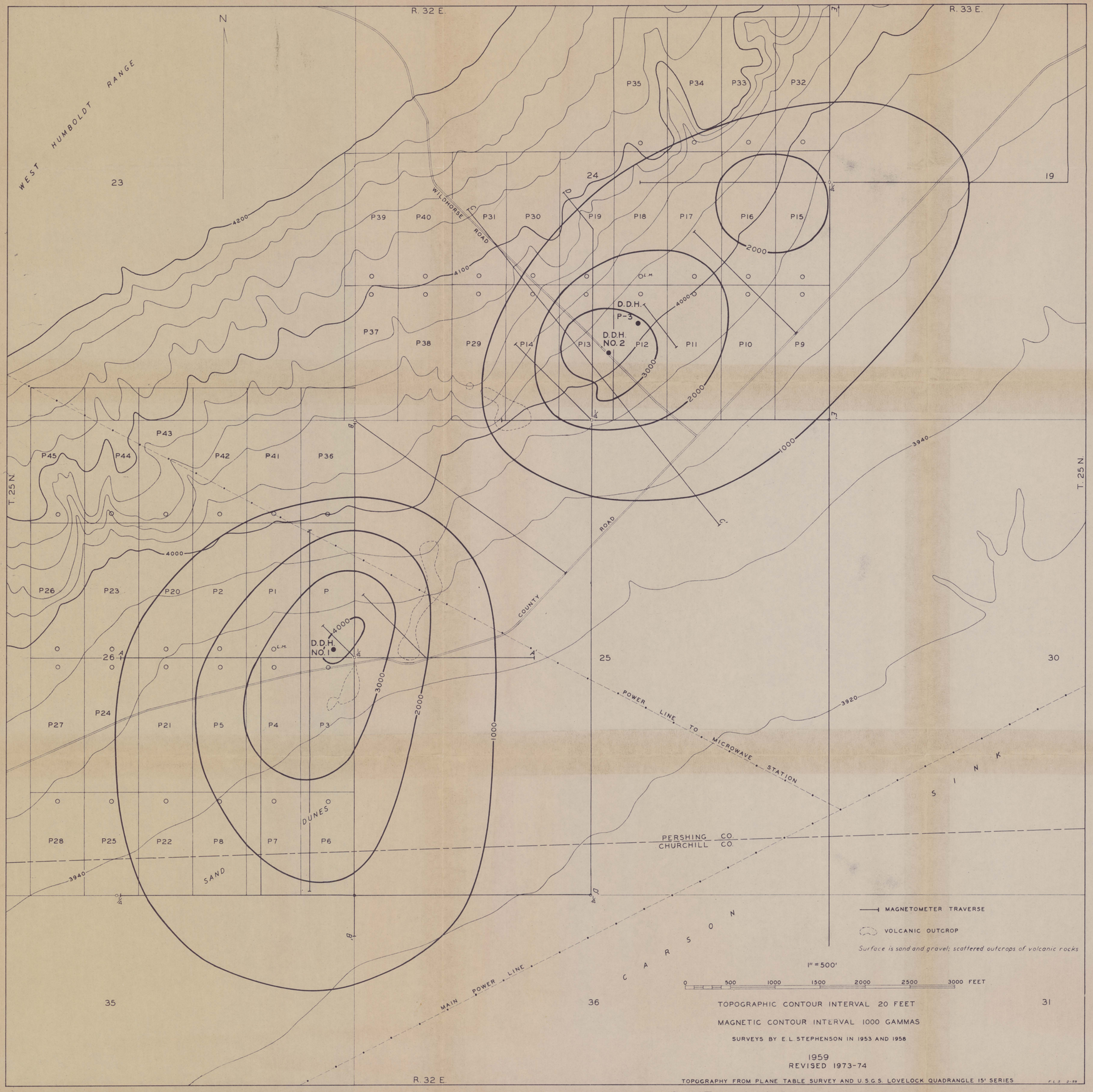
LOGGED AND SAMPLED BY E.L. STEPHENSON 1958 & 1961

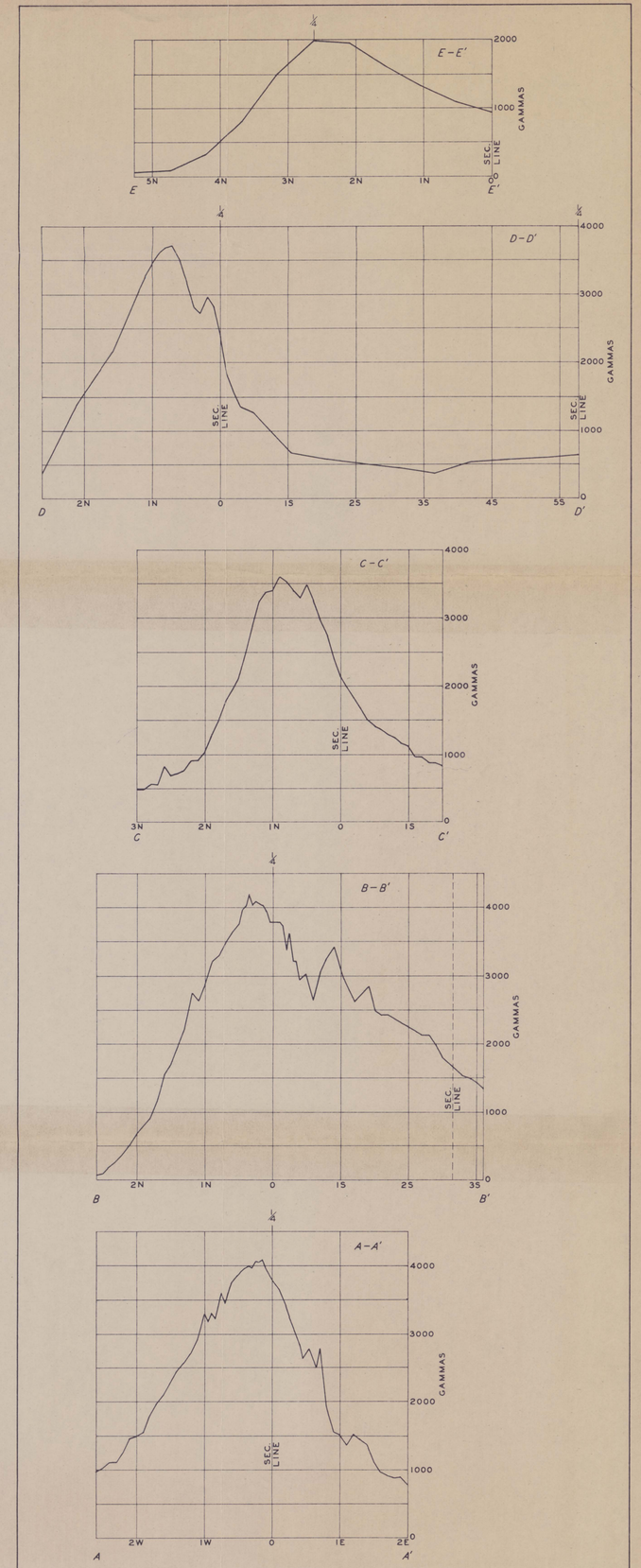
E.L.S. 5-61

283

032-027-0382

Item 10





MAGNETIC PROFILES
1" = 1000'

MAGNETIC MAP AND PROFILES OF THE PIUTE IRON DEPOSIT, PERSHING COUNTY, NEVADA

Winnemucca 67 miles

Colado

Coal Canyon

RANGE

PACKARD FLAT

Buffalo Mtn.

RANGE

HUMBOLDT

U.S. 40

SOUTHERN PACIFIC

LOVELOCK

Reno 93 miles

SOUTH MERIDIAN ROAD

HUMBOLDT RIVER

HUMBOLDT

IRON

HAULAGE ROAD

OLD WAGON ROAD

BUENA VISTA VALLEY

To McKinney Pass

BOUNDARY

SOO CLAIMS

BOUNDARY OF SOO MAGNETIC MAP

THOMAS-PARKER (S.P.R.R.)

BUENA

Old Emigrant Road

ANTELOPE

GRANT

LAND

IRON HORSE

DODGE-HEIZER (S.P.R.R.)

VALLEY

BUENA VISTA

PACIFIC

Wildhorse Pass

PIUTE DEPOSIT

PERSHING CO.
CHURCHILL CO.

PROPOSED RAIL ROUTE

To Anderson Ranch Stillwater Range

CARSON SINK

MINERAL MATERIALS (U.S. STEEL)

SOUTHERN HILLS

FISK DEPOSIT

UTE DEPOSIT (STANDARD SLAG)

To Parran and U.S. 40

To Stillwater and Fallon

To Copper Kettle mine

Note: The iron mines and prospects shown on this map, except Piute and Soo, are in the Mineral Basin (Pershing Co.) and Copper Kettle (Churchill Co.) mining districts, as defined by Lincoln.

SCALE 1:62500

0 1 2 3 4 5 MILES

COMPILED BY E.L. STEPHENSON

1961

FROM U.S.G.S. LOVELOCK AND BUFFALO MTN. QUADRANGLES AND PRIVATE SURVEY NOTES

LOCATION MAP OF THE BUENA VISTA IRON AREA, PERSHING & CHURCHILL CO., NEVADA

E.L.S. 261

032-027-0071 283

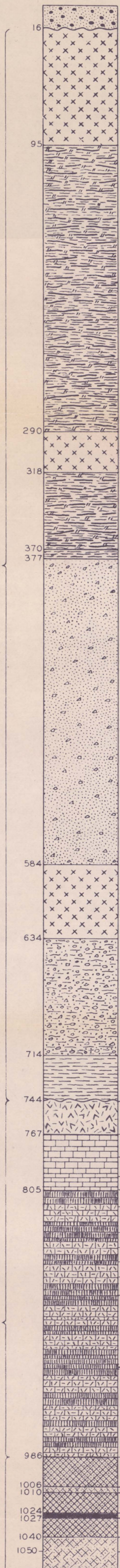
Item 10

PIUTE IRON DEPOSIT

PERSHING COUNTY, NEVADA

D.D.H NO. 1 CORE LOG

1" = 50'



Ovb.

Quartz latite ?

Welded tuff

Quartz latite ?

Welded tuff

Soft clay

White tuff

Quartz latite ?
or rhyodacite ?

Soft "pebble" tuff

Very soft clay
No core

Altered diorite ?

Siliceous limestone

Altered limestone
and metavolcanics ?

Fe above 50%

Fe 30%-50%

Fe below 30%

ASSAY RECORD

Sample	Width	Au oz.	Ag oz.	Cu %
P-1	23'	TR.	NIL	
P-2	16'	0.02	NIL	
P-3	13'	TR.	NIL	
P-4	12'	TR.	0.2	0.031
P-5	17'	TR.	0.1	0.025
P-6	10'	TR.	0.2	0.018
P-7	10'	0.015	0.3	0.037
P-8	10'	TR.	0.3	0.025
P-9	12'	TR.	0.3	0.056
P-10	49'	TR.	0.1	0.037
P-11	61'	TR	0.1	0.018
P-20	4'	NIL	NIL	0.006

Sample	Width	Fe %	S %	P %
P-12	20'	37.6	0.10	0.13
P-13	4'	28.4	0.24	0.03
P-14	14'	41.7	0.04	0.05
P-15	3'	60.2	0.05	0.11
P-16	13'	39.4	0.22	0.02
P-17	4'	57.4	0.06	0.57
P-18	17'	40.1	0.06	0.09
P-19	42'	31.7	0.10	0.14
P-20	4'	59.8	0.21	
P-21	6'	62.2	0.06	0.44
P-22	23'	24.6	0.08	0.20
P-23	10'	20.2	0.10	
P-24	15'	27.5	0.11	
P-25	10'	30.5	0.13	
P-26	10'	40.8	0.11	
P-27	10'	13.9	0.04	
P-28	10'	11.6	0.17	
P-29	15'	18.6	0.01	
P-30	15'	28.9	0.01	
P-31	11'	46.1	0.10	
P-32	19'	25.4	0.28	
GEN. AV.	275'	32.17	0.11	0.14

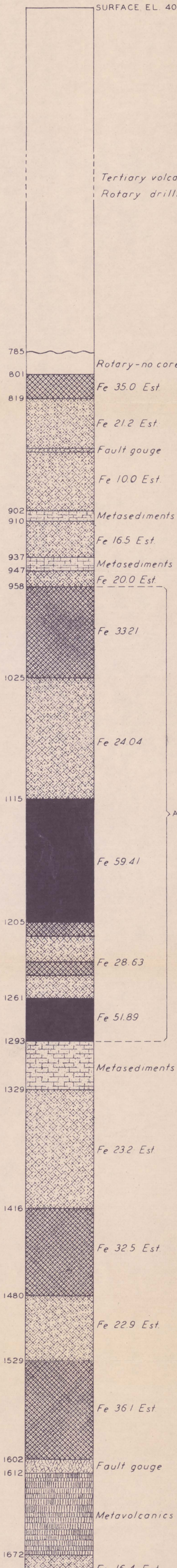
LOGGED AND SAMPLED BY E.L. STEPHENSON 1958 & 1961

E.L.S. 5-61

0 50 100 ft.

PIUTE IRON DEPOSIT
PERSHING COUNTY, NEVADA
D.D.H. NO. 2 CORE LOG

1" = 50'



All rock logged as diorite except as noted.

Fe above 50%

Fe 30% - 50%

Fe below 30%

LOGGED, SAMPLED AND ASSAYED BY W. S. MOORE CO. 1962

E.L.S. 7-62

0 50 100 ft.

3100 0010d

032-027-0382

283
Item 10

Winnemucca 67 miles

Colado

Coal Canyon

U.S. 40

SOUTHERN PACIFIC

LOVELOCK

Reno 93 miles

MERIDIAN ROAD

SOUTH

HUMBOLDT RIVER

HUMBOLDT RANGE

WEST

PACKARD FLAT

Buffalo Mtn. ×

HUMBOLDT RANGE

IRON HAULAGE ROAD

OLD WAGON ROAD

BUENA VISTA VALLEY

To McKinney Pass

BOUNDARY

SOO CLAIMS

BOUNDARY OF SOO MAGNETIC MAP

THOMAS-PARKER (S.P.R.R.)

BUENA VISTA

Old Emigrant Road

ANTELOPE VALLEY

GRANT LAND

IRON HORSE

DODGE-HEIZER (S.P.R.R.)

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PIUTE DEPOSIT

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Note: The iron mines and prospects shown on this map, except Piute and Soo, are in the Mineral Basin (Pershing Co.) and Copper Kettle (Churchill Co.) mining districts, as defined by Lincoln.

SCALE 1:62500

0 1 2 3 4 5 MILES

COMPILED BY E. L. STEPHENSON

1961

FROM U.S.G.S. LOVELOCK AND BUFFALO MTN. QUADRANGLES AND PRIVATE SURVEY NOTES

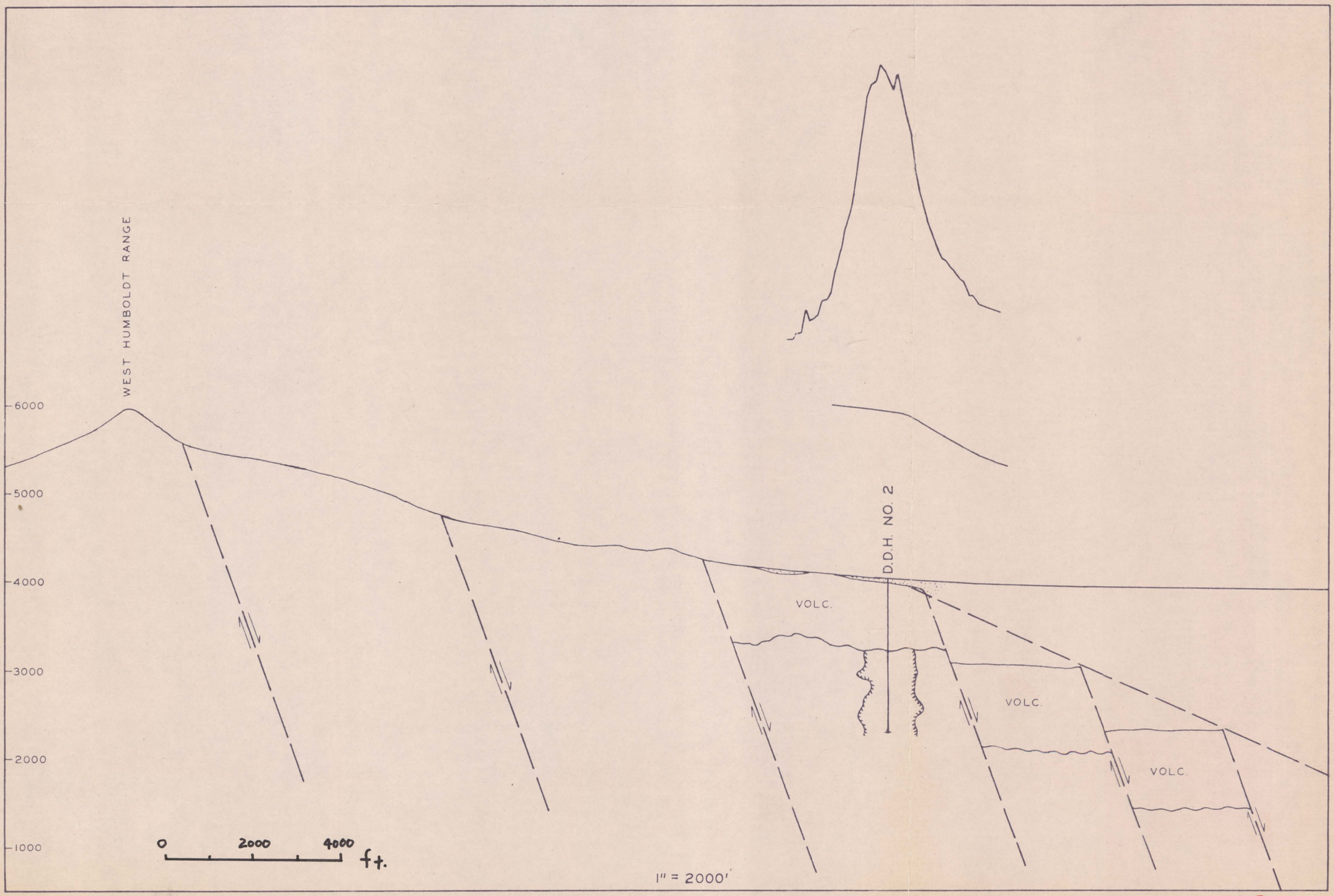
LOCATION MAP OF THE BUENA VISTA IRON AREA, PERSHING & CHURCHILL CO., NEVADA

032-027-007 1

283

Item 10

3100 0010e



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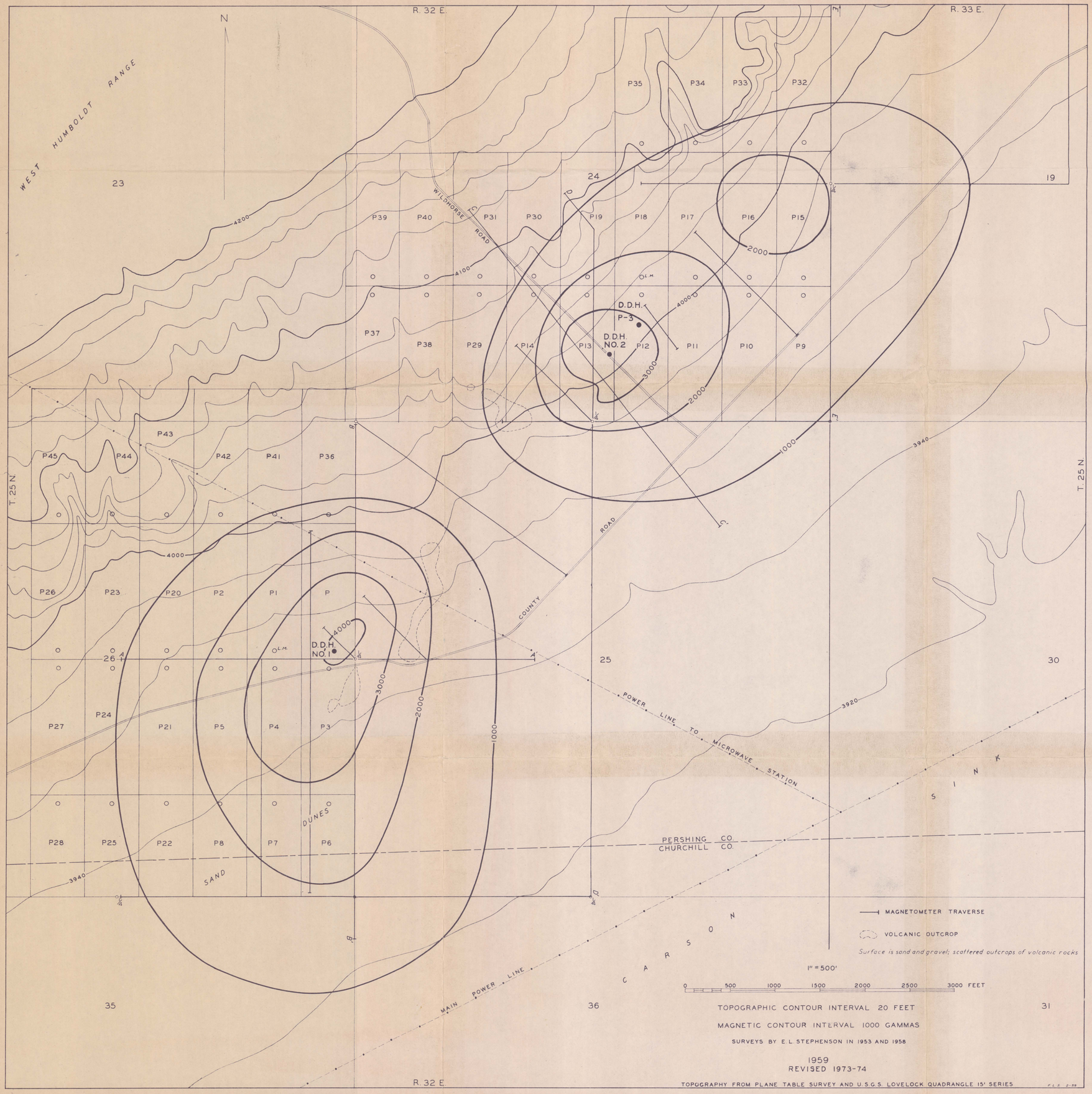
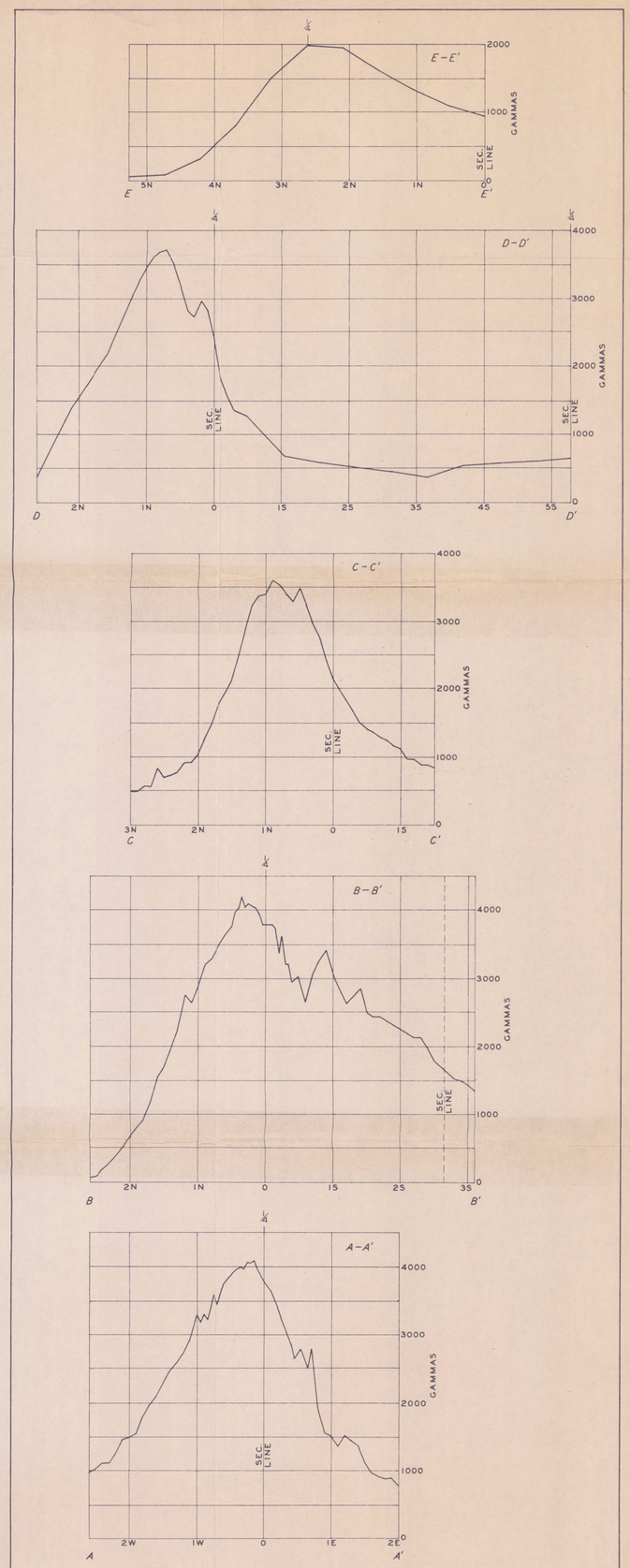
032-001-0043

283
Item 10





MAGNETIC PROFILES

1" = 1000'

MAGNETIC MAP AND PROFILES OF THE PIUTE IRON DEPOSIT, PERSHING COUNTY, NEVADA