CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

1977 PROGRESS REPORT

DRIPPING SPRING PROJECT
Gila County, Arizona

JANUARY 1978

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PROGRESS REPORT

DRIPPING SPRING PROJECT, 1977

INTRODUCTION AND SUMMARY

The purpose of the work performed at Dripping Spring in 1977 was to prove mineral continuity, amenability to leaching and to discover more uranium-bearing material similar to, or better than, the 1 million plus pounds inventoried by 1976 drilling at Red Bluff. The underground drifting at Red Bluff showed reasonable continuity of values, and provided the bulk metallurgical test samples. The metallurgical testing is incomplete as of this writing and will be continued during 1978. The 1977 drilling located approximately 1.3 million additional pounds in the Workman Creek area. The land status picture is much the same as in 1976 with only minor changes occurring. Property evaluation, with the objective of reducing land maintenance costs, has been suggested for 1978. An updated claim map is included herewith as Appendix I.

GENERAL DISCUSSION

Developmental activities consisted of underground drifting at Red Bluff, surface drilling mineralized trends in Workman Creek, metallurgical test work on samples obtained from underground drifting, and/or surface drilling and sufficient geologic work to properly locate drifts, place drill holes, etc. The underground drifting was performed by Koppen Mining and Construction Company of Albuquerque, New Mexico, and the surface drilling was done by Soils Sampling Service of Puyallup, Washington. Staffing for the Mining and Exploration program consisted of two geologists, one of which acted as group leader, a landman/draftsman, a radiometric logger technician, one geologic consultant, and a crew of four to ten casual employes as needed to perform duties ranging from assaying to underground sampling.

The Exploration Department began a regional study to develop workable theories concerning ore genesis and ore controls that could be used to predict the location of more (and hopefully higher grade) mineralization. The staff for the Exploration Department's program consisted of one geologist and two consulting geologists.

GEOLOGY

Geologic work performed by Mining and Engineering personnel concentrated on the Red Bluff and Workman Creek areas, and prospects adjacent to them. The three areas of activity that were pursued are as follows:

1. The surface on both sides of Warm Creek at Red Bluff were mapped and a series of cross sections were prepared. Geologic maps and a chemical assay map of the underground workings were prepared on the same scale. The geologic maps and cross sections comprise Appendix II of this report and the underground assay map is included as Appendix XI.

2. General geologic mapping of Workman Creek was begun. The purpose of this mapping was to locate the mineralized trends for purposes of locating drill holes and also to better understand the ore control mechanisms. There appears to be little doubt that the major fracture zones which are mineralized in one location are likely to be mineralized in other locations along their strikes, and that the higher grade material is often located in the areas of greatest cross fracture intensity. There is also little doubt that fractures per se are not the only, or even the most important factor. The personnel assigned to the Mining and Engineering project currently favor the geologic theory that the uranium is located in carbonaceous paleochannels and basins and that the fractures and water table movements had a role in uranium remobilization and concentration. Discordances in the diabase sill in Workman Creek mark planes of weakness at the time of diabase emplacement. These, which probably can be located geophysically (the density difference is approximately 3.6 to 2.8), may also be used as useful ore finding tools. The maps and cross sections are included herewith as Appendix III.

3. Some regional reconnaissance mapping was begun in the Rainbow area and the claims east and south of Red Bluff. The work is quite preliminary in nature and was discontinued in favor of higher priority work. When time and manpower are again available, this work will be continued as far too little work on structures parallel to Red Bluff have been done to date and the possibility of occurrences similar to Red Bluff require further investigation.

EXPLORATION

WORK PERFORMED

The work conducted by the Exploration Department (Austin, Texas office) consisted of some general mapping, some drilling and geophysical work in connection with assessment. The objective of the work was to develop a framework from which ore controls can be deduced. Some mapping was done on each of the various claim groups, and the geophysical work consisted of radon cup surveys in selected areas. Geochemical sampling was performed as appropriate. Selected samples from the mineralized outcrops were bottle leached. The results of this work is included with the other metallurgical test reports in Appendix VII. Drilling was performed on the Bull Canyon claims located on the mesa above the Sue Mine. Several angle drill holes encountered very broken ground and were lost. Those drill holes that were completed were very low grade or barren. A complete evaluation and report of that work and other facets of the 1977 Exploration program will be issued by the Exploration Department (Austin, Texas office) after January 1, 1978.

FURTHER WORK REQUIRED

Additional long-range exploratory work is needed to locate mineralization that has not been fortuitously exposed in canyons by erosion. The work should consist of ore genesis studies, effects of structure on emplacement and/or concentration and mineralogical work to determine the mineral associations of disseminated uranium and that which is located in open fractures or microfractures. At present, radiographs and heavy-heavy separations are being done to learn more about the mineralogy and the mineral associations. The goal of all of the exploratory work should be twofold. The first is to measure the probable extent of the mineralized trends which have already been identified, and the second is to find a means to predict where other mineral-bearing trends are most likely to occur.

RADON CUP SURVEYS

THE RADON DETECTION SYSTEM

The use of radon detecting cups buried in soil above rock suspected of containing uranium mineralization was first utilized on an experimental basis at Dripping Spring during 1976. Because the contrast between the apparent anomalies and background was quite sharp, the use of similar surveys to locate drill targets was continued in 1977. Between March, 1977 and October, 1977, eighteen radon cup survey lines were placed in the Workman Creek, Red Bluff, and Lone Pine project areas and results were received from three additional cup survey lines previously placed in the Deep Creek area. The lines consisted of Westinghouse F. D. Radon Detectors, buried at 100-foot intervals and at intermediate intervals (50 feet) where further definition was needed. Where possible, they were positioned so that all detectors in a given line would be located along the same horizon within the stratagraphic unit. The line locations are shown on Figure 4.

The radon detection method of uranium prospecting relies on the natural process in which unstable isotopes of radon are produced during radioactive decay of uranium. The radon isotopes, in turn, decay by emission of alpha particles. Radon gas is very unreactive and can be expected to migrate to the surface if the overlying material is sufficiently fractured or porous.

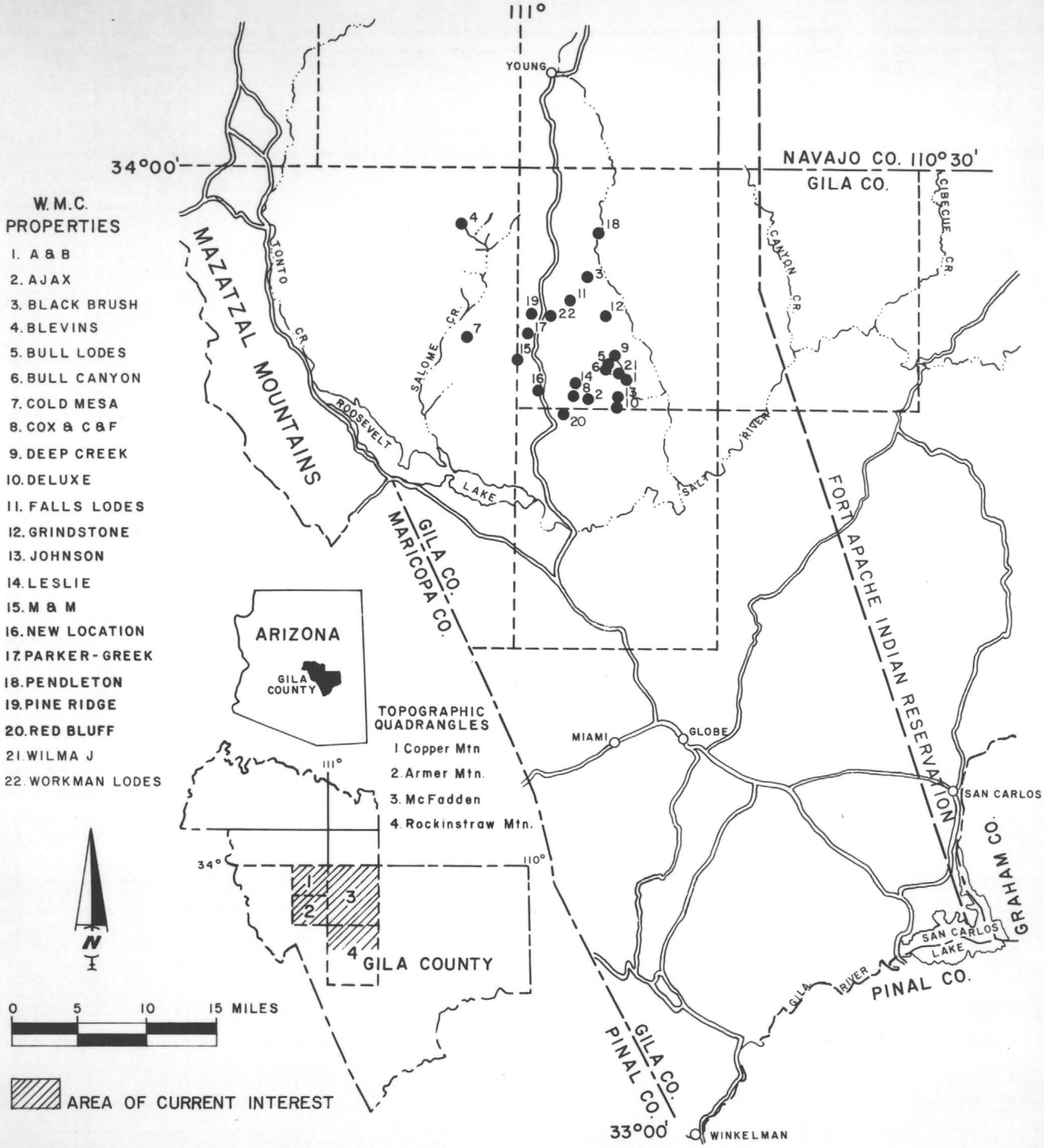
The radon detectors used in this survey were developed by Westinghouse Research Laboratories. They consist of dosimeters which are suspended inside polypropylene beakers and are designed to detect alpha radiation. A beaker is inverted and buried about eight inches below the surface at each survey station. It is recovered after a period of approximately thirty days and the accumulative effect of the alpha radiation is measured by personnel at Westinghouse Research and Development Laboratory in Pittsburgh, Pennsylvania. (See Figure 5.)

For each radon cup survey line, values which were corrected for normal exposure during storage were plotted in profile and a histogram was constructed to distinguish anomalous values from background.

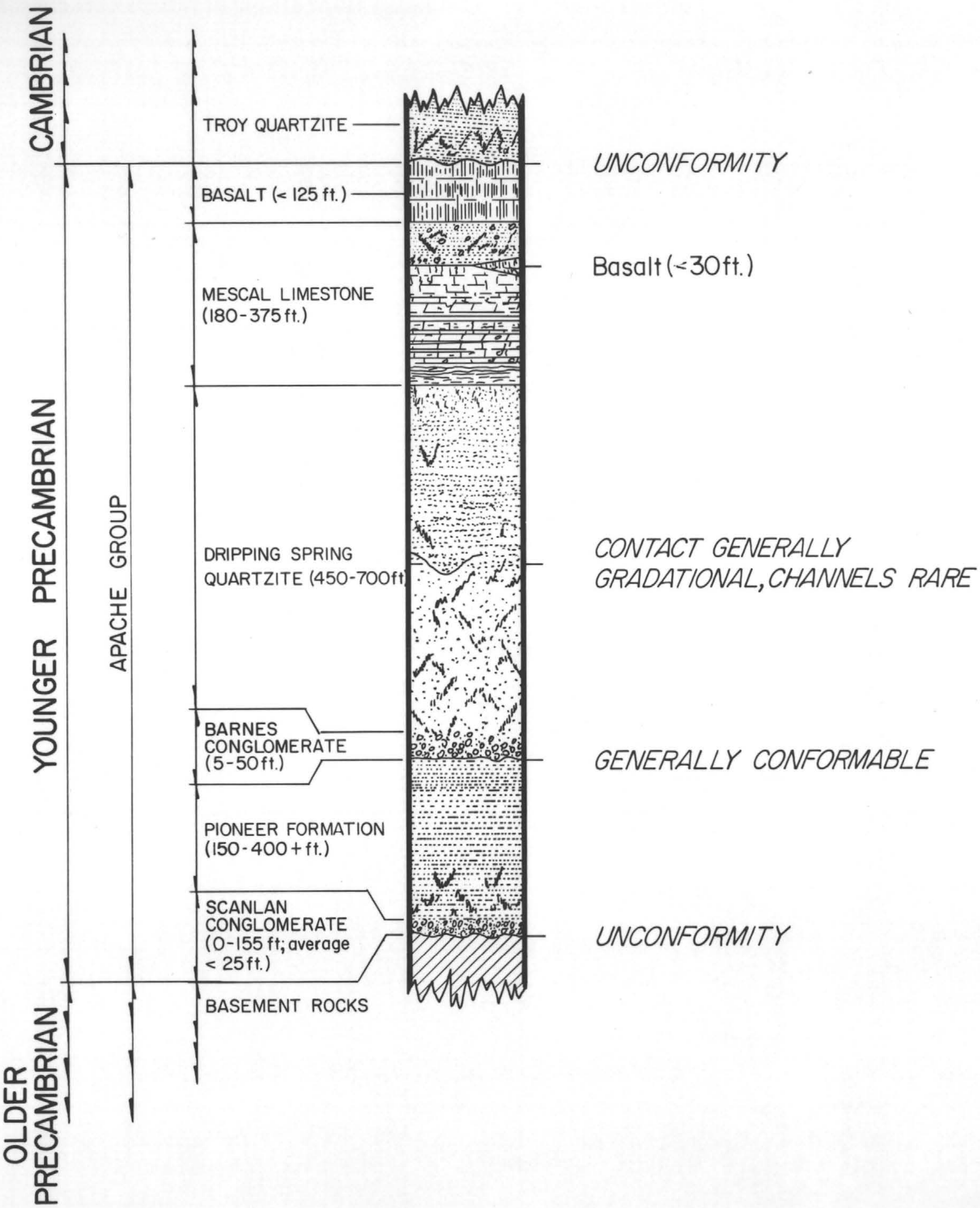
To eliminate spurious values and determine anomalous trends in the data, it was necessary to smooth the profile mathematically. This was accomplished by the five-point moving average method. In this method, the mean of the data contained within a five-point window is determined as the window is moved systematically along the curve. Trends which appear to represent anomalies were then plotted in plan.

INTERPRETATION

In order to reach a proper interpretation of the radon data and to determine the type of response, the most characteristic response of hidden uranium mineralization, it is necessary to consider the geology and topography of the surveyed region. The release of radon is dependent not only on formation

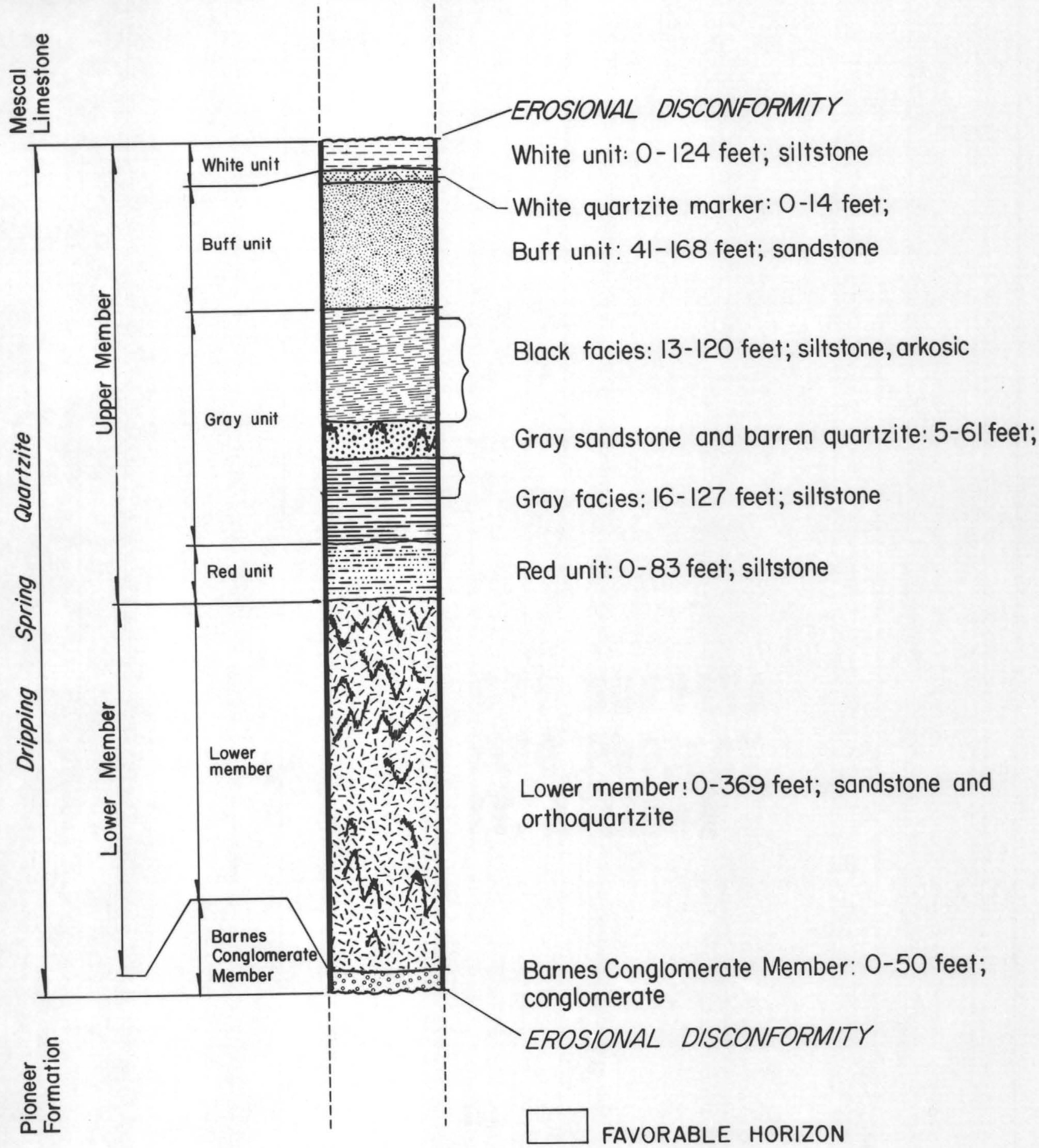


INDEX MAP
DRIPPING SPRING PROJECT
GILA CO., ARIZONA
Figure 1



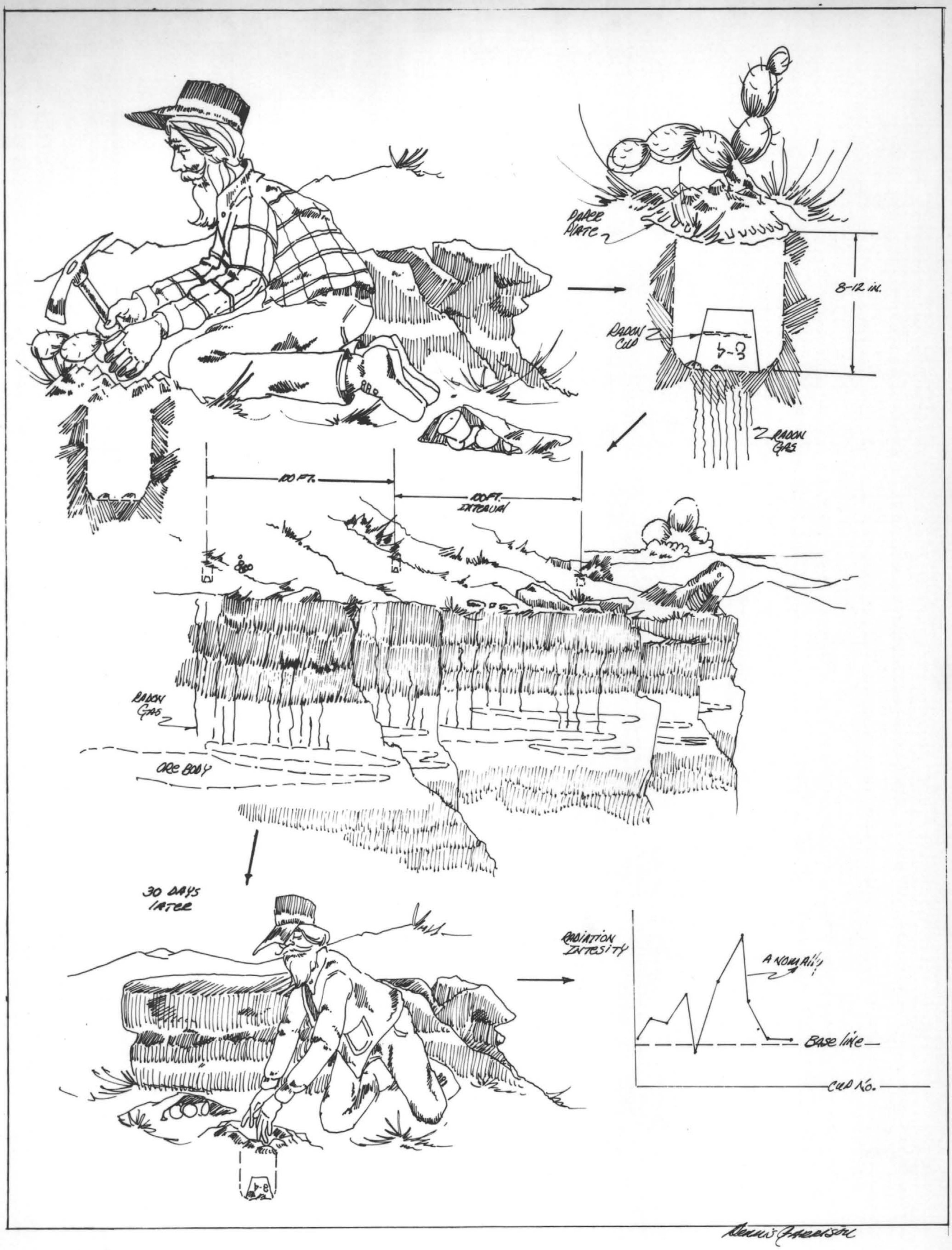
COLUMNAR SECTION OF THE APACHE GROUP

Figure 2



COLUMNAR SECTION OF THE DRIPPING SPRING QUARTZITE

Figure 3



RADON CUP PLACEMENT & RETRIEVAL SYSTEM

Figure 5

thickness but also on the availability of groundwater within the formation. Radon may be transported by groundwater and then released at a location quite distance from its source. Further, water percolating through an aquifer commonly accumulates radon from trace amounts of uranium. This radon may then be released at a single point of discharge to create a false anomaly. The anomalous trends encountered during this investigation and their interpreted sources are discussed below.

RESULTS

Several strong anomalies were detected in the South Workman Creek area. The moderate anomaly shown between cup numbers 1841 and 1884 on the accompanying map (Figure 6) is the most interesting. The trend centers about 800 feet S20W from an outcrop which exhibits both anomalous radiation and geologic characteristics believed to indicate uranium mineralization. The outcrop is exposed in a stream bed about 300 feet lower in elevation than the radon cup survey line. The ore mined from the Hope workings was localized on the north side of Workman Creek along this same trend. Since the radon cup survey line was situated relatively high in the section, the relative strength of the anomaly was given more emphasis than similar anomalies on lines situated closer stratigraphically to the favorable beds.

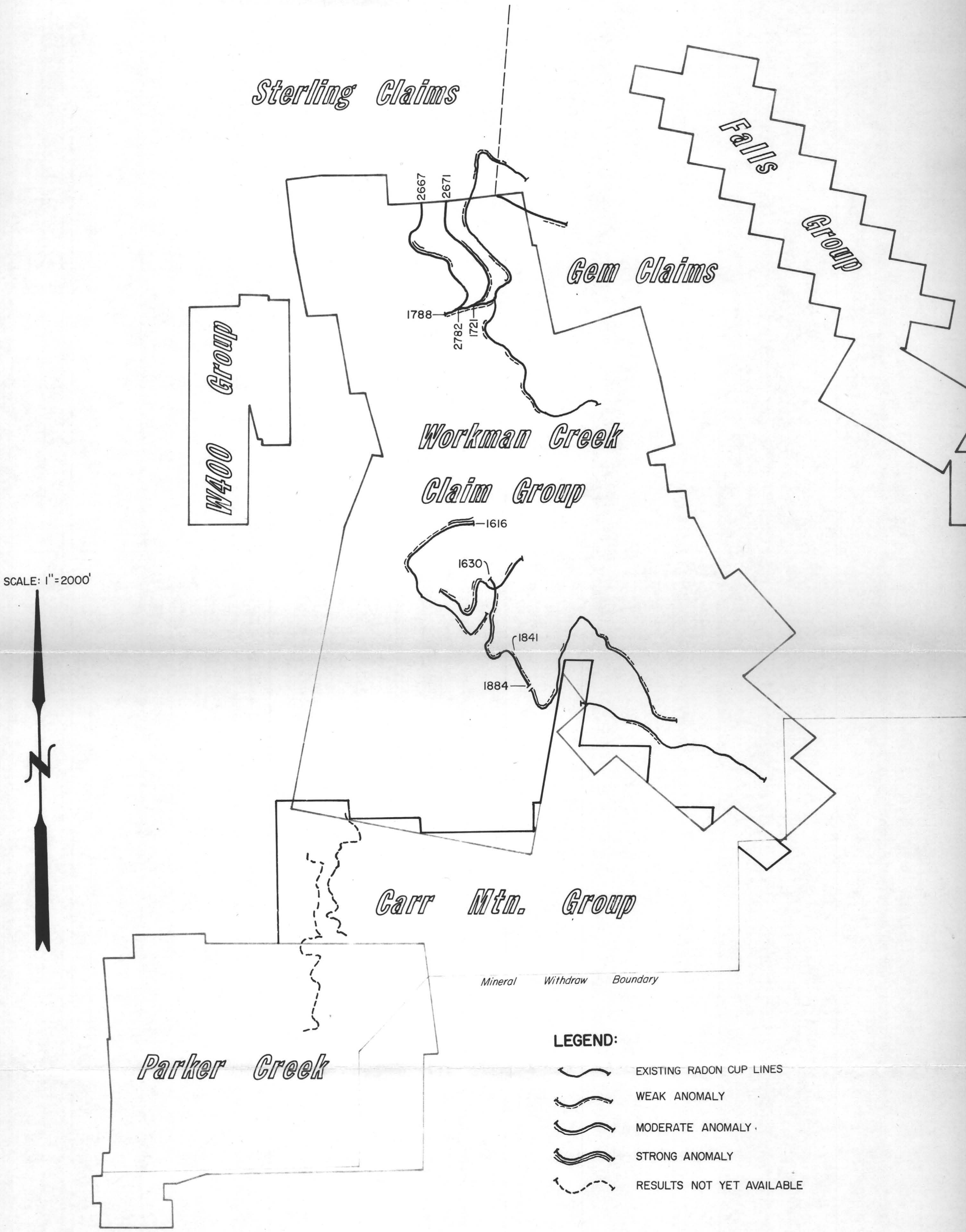
A strong anomaly near cup number 1616 may represent a northern extension of the mineralization encountered by drill holes in the high grade area near the center of section 30. This anomaly, however, is quite low in the stratigraphic section and may have resulted from close proximity to low-grade uranium mineralization in the favorable beds. Further, the black facies is exposed over a broad area here and the mineralization could have been subjected to leaching by meteoric waters. Therefore, the strong radon anomaly detected may have originated largely from insoluble daughter products.

The moderate to strong anomalies between cup numbers 4712 and 4681 and between 1630 and 1841 probably represent small northeast extensions of the previously located high grade mineralization and should be further investigated by surface drilling.

Several moderate anomalies were detected in the eastern portion of this area and some of these appear to represent northeast oriented trends of uranium mineralization. Further correlative interpretation of results as compared to geology are required prior to performing drilling based on these anomalies.

North of Workman Creek, two strong anomalies and two moderate anomalies were indicated. Both anomalies were tested by drilling and ore-grade mineralization was encountered. Significant sporadic mineralization was encountered at considerable depth in areas where moderate anomalies were noted.

The strong anomaly between cup numbers 2782 and 2667 was tested by drill holes W430, W431, and W432 (see accompanying 200 scale map). These holes encountered five feet of .03% U_3O_8, 23 feet of .05% U_3O_8; and 10 feet of .03% U_3O_8 respectively at relatively shallow depths. The probe results were considerably higher than the chemical assays for these holes indicating that the anomaly strength was derived in part from daughter products. The radon detection method does not make that distinction.



RADON SURVEY
LOCATION AND INTERPRETATION PLAN
OF
WORKMAN CREEK AREA

FIGURE 6

MDAZ 77-156

The strong anomaly near cup number 1788 was tested by drill holes W416, W420, W423, and W425b. Hole number W416 intercepted 62.5 feet of .10% (radiometric) U_3O_8. Hole number W420 encountered 21 feet of .11% U_3O_8. Hole number W423 encountered a three-foot intercept of low grade, but hole number 425b encountered a 15-foot interval averaging .092% (radiometric) U_3O_8. The mineralization was located between 35 feet and 100 feet below the surface anomalies.

The moderate anomaly indicated between cup numbers 1721 and 2671 was tested by hole number W429. This hole encountered a ten-foot interval shown by chemical assay to average .03% U_3O_8 about 240 feet below the surface and a ten-foot interval of .05% U_3O_8 about 280 feet below the surface.

In the Red Bluff/Rainbow area, three radon cup survey lines were evaluated. One was along the road at the base of the Mescal limestone above the Rainbow adit, one at the top of the novaculite bed near the top of the Mescal where it is in contact with an overlying diabase sill, and a third at the base of the Mescal, starting at the Red Bluff mineralized area and extending about one mile to the southeast. These anomalies observed show no recognizable pattern. Additional lines and correlation with geology are required before a meaningful interpretation of the results can be made.

The radon cup survey lines at the Lone Pine group are as shown on accompanying Figure 4. Unfortunately, a number of the cups were damaged by muddy water making an interpretation of the results difficult. A repeat of most of the work plus additional lines are needed.

The Deep Creek property includes the old Donna Lee prospect of Miami Copper Company, on which a small block of ore-grade rock was developed. In December of 1976, three radon cup survey lines were placed in the field. The results were interpreted to mean that an east-west mineralized zone is present just west of the old adits.

An application for a permit to drill the anomaly was filed with the Forest Service. The permit was granted, but with very stringent provisions that would seriously restrict Wyoming Mineral Corporation's ability to do the work properly. Assuming that a workable permit can be obtained, the property will be drilled in 1978, but only after several more survey lines of radon cups have been set and read so that the mineralized zone is better delineated and chances for success are maximized.

USEFULNESS OF RADON SURVEYS

The radon anomalies tested in three separate locations located significant mineralization. Although encouraging, these three tests are inadequate to properly evaluate the radon cup survey technique with respect to its usefulness everywhere in the Dripping Spring project area. If the radon cup survey line technique proves as successful elsewhere as it has in the Workman Creek and Red Bluff areas, a regional program can be initiated using radon cup survey lines established at systematic intervals which can be used in conjunction with other prospecting techniques.

COSTS

Westinghouse Research Laboratories estimate their costs which include evaluation at less than \$2.50 per cup. The cost of placing the radon cups in the field and of recovering them is approximately \$1.50 per cup. The total cost for this method, then, is an inexpensive \$4.00 per cup or about \$200.00 for each radon cup survey line mile.

SURFACE DRILLING PROGRAM

WORKMAN CREEK (Appendix IVa)

During 1976, a few holes were drilled in the Little Joe area of Workman Creek. The first holes were drilled horizontally to establish width and grade of the mineralization. Subsequently, a few angle holes were drilled from above to establish thickness. Three holes were drilled in the Lucky Stop area south of Workman Creek, but the results were insufficient to establish mineralized trend boundaries, thickness and/or grade.

In 1977, the drill program concentrated on expansion. Guided by early results, an 800-foot wide zone at Little Joe and a 1000-foot wide zone in the Lucky Stop area were defined by late spring. At first, radon cup survey anomalies were used to spot drill holes. Consequently, the location or expansion of additional mineralized zones continued at a more rapid rate and the ability to obtain road building permits from the Forest Service became the bottleneck to more rapid progress.

The general geology map with its drill hole location overlay constitutes Appendix III and an isopach map of grade thickness in Workman Creek is Appendix Va and Vb. A summary (or inventory) of the mineralized intercepts is shown below. To date, the area of the zone tested in the Little Joe area is about 1500 x 1000 feet and is about 20 feet thick. At Lucky Stop, the area measures about 800 x 800 feet and is perhaps 25 or 30 feet thick.

RED BLUFF (Appendix IVb)

At Red Bluff, 11 new holes were drilled to better define the limits of mineralization discovered in 1976. In addition, several weeks of excavation work was performed in Warm Creek (Warm Creek is agrading and the 1956 holes were covered by 6-10 feet of gravel) in order to locate old drill hole collars and to log them. The data obtained indicated that any large scale improvement (doubling or tripling) of ore inventory figures at Red Bluff is not likely. Although the mineralized zone has not been fully defined, increases which might result from more drilling would be modest. For that reason, no surface drilling is suggested at Red Bluff in 1978. A drill hole location map is included as Appendix IVb.

WORKMAN CREEK ORE INVENTORY

New U_3O_8 inventory estimates have been completed for four different cutoffs for both North and South Workman Creek. Approximate areas tested in 1977 includes an 800 x 800 foot zone in South Workman Creek and portions of a 1500 x 1000 foot zone in North Workman Creek. Based on a minimum cutoff of .025% eU_3O_8 and a GT= .125, a total 1.75 million pounds of U_3O_8 are present in Workman Creek. Pounds for the other cutoffs are summarized on Tables 1, 2, and 3.

The inventory estimates were made using radiometric data that has been adjusted for disequilibrium from chemical analysis of drill hole cuttings. If chemical data was not available, an average disequilibrium coefficient of .77 x radiometric for South and .73 for the North was used to correct the grade. (These are calculated averages of disequilibrium factors experienced.) The averaged intercepts were computed using Wyoming Mineral Corporation's PR-2 routine which incorporates internal waste (up to a continuous 2 feet) in averaging the intercept. The composited intercept is then corrected to true vertical using survey drift data. The corrected intercept is segmented into 10-foot bench levels.

Effective drill hole areas were established using polygons which automatically assume that grade values extend half way to the surrounding holes. Boundaries for exterior holes were extended 200 feet or less depending on geologic interpretation. Tonnage calculations are based on a 12.5 ft^3/ton density factor.

ADDITIONAL WORK REQUIRED

Further 1978 work suggested in the Workman Creek area includes:

1. Further expansion of the trends already drilled including the possible connection between Lucky Stop (South Workman Creek) and Parker Creek. The two claim groups are separated by several miles but it appears that both may lie along the same mineralized trend. (See Figure 1.)

2. Investigation (and drilling if warranted) of the Workman, Hope, and Don/Jon trends which lie parallel to the Little Joe trend.

3. Further investigation to define the extent and tenor of the Pine Ridge (formerly called Suckerite) mineral zone.

DISEQUILIBRIUM

All drill cuttings were radiometrically and chemically analyzed. The disequilibrium factor near the surface is high in favor of radiometric values. Samples from the deeper ores become progressively less out of equilibrium and are essentially 1 to 1 at the water table. Below the water table, the disequilibrium swings slightly in favor of chemical. Statistically, the disequilibrium factor at Red Bluff and at Workman Creek is about .77 to 1.

MINING

INTRODUCTION

The goals of the 1977 Work Plan for the Dripping Spring project included sufficient underground mining to supply bulk samples for metallurgical tests to determine leaching amenability and prove reasonable continuity of the deposit on a bulk basis.

TABLE I

WORKMAN CREEK NORTH ORE INVENTORY

BENCH	CUTOFF .025%eU$_3$O$_8$-GT=.125			CUTOFF .050%eU$_3$O$_8$-GT=.250			CUTOFF .075%eU$_3$O$_8$-GT=.375			CUTOFF .100%eU$_3$O$_8$-GT=.500		
	Corrected Grade	Tons	U$_3$O$_8$ Pounds	Corrected Grade	Tons	U$_3$O$_8$ Pounds	Corrected Grade	Tons	U$_3$O$_8$ Pounds	Corrected Grade	Tons	U$_3$O$_8$ Pounds
6100	-	-	-	-	-	-	-	-	-	-	-	-
6090	.028	12888	7217	-	-	-	-	-	-	-	-	-
6080	.052	2486	2585	-	-	-	-	-	-	-	-	-
6070	.046	38896	35784	.074	8203	12140	.101	4353	8793	-	-	-
6060	.044	29941	26348	.054	6834	7381	-	-	-	-	-	-
6050	.038	04941	49362	.083	16890	28037	.131	5549	14538	.156	1689	5270
6040	.049	58351	57184	.111	28544	63367	.121	26278	63592	.160	18745	59984
6030	.046	65955	60679	.045	30603	27542	.047	7317	6878	-	-	-
6020	.042	70400	59136	.060	46190	55428	.077	33110	50989	.087	25934	45125
6010	.033	181910	120061	.044	88518	77895	.044	29520	25978	.051	23640	24113
6000	.044	117596	103484	.092	34376	63252	.097	5288	10259	.089	2040	3631
5990	.089	38311	68194	.134	20160	54029	.134	20160	54029	.173	14336	49602
5980	.053	109360	115921	.082	54068	88672	.088	46804	82375	.233	7056	32881
5970	.052	53760	55910	.070	38208	53491	.075	31584	47376	-	-	-
5960	.024	39360	18893	-	-	-	-	-	-	-	-	-
5950	.030	16400	9840	-	-	-	-	-	-	-	-	-
5940	.047	37392	35148	.095	13776	26174	.095	13776	26174	-	-	-
5930	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	.044	937947	825746	.072	386370	557408	.087	223739	390981	.118	93440	220606

TABLE 2

WORKMAN CREEK SOUTH ORE INVENTORY

BENCH	CUTOFF .025%eU_3O_8-GT=.125			CUTOFF .050%eU_3O_8-GT=.250			CUTOFF .075%eU_3O_8-GT=.375			CUTOFF .100%eU_3O_8-GT=.500		
	Corrected Grade	Tons	U_3O_8 Pounds	Corrected Grade	Tons	U_3O_8 Pounds	Corrected Grade	Tons	U_3O_8 Pounds	Corrected Grade	Tons	U_3O_8 Pounds
6100	-	-	-	-	-	-	-	-	-	-	-	-
6090	-	-	-	-	-	-	-	-	-	-	-	-
6080	-	-	-	-	-	-	-	-	-	-	-	-
6070	.031	24559	15227	-	-	-	-	-	-	-	-	-
6060	.031	13126	8138	-	-	-	-	-	-	-	-	-
6050	-	-	-	-	-	-	-	-	-	-	-	-
6040	.043	23230	19978	.105	5032	10567	.105	5032	10567	.120	3834	9202
6030	.024	8928	4285	-	-	-	-	-	-	-	-	-
6020	.099	18398	36428	.217	10360	44962	.239	9759	46648	.272	8258	44923
6010	.084	87792	147491	.102	58913	120183	.118	36100	85196	.112	28328	63458
6000	.177	147228	226824	.090	116111	209000	.104	91953	191262	.111	59757	130441
5990	.079	98258	155248	.084	75556	126934	.093	63674	118434	.114	41790	95281
5980	.137	48320	132397	.181	40700	147334	.242	28763	139213	.281	23072	129665
5970	.078	48891	76270	.104	25942	53959	.129	9942	25650	.129	9942	25650
5960	.080	57409	91854	.098	34330	67287	.123	20140	49544	.123	20140	49544
5950	.094	3872	7279	-	-	-	-	-	-	-	-	-
5040	-	-	-	-	-	-	-	-	-	-	-	-
5930	-	-	-	-	-	-	-	-	-	-	-	-
5920	.144	699	2013	-	-	-	-	-	-	-	-	-
TOTAL	.080	580770	923432	.106	366944	780226	.126	265363	666514	.141	194121	548164

TABLE 3

WORKMAN CREEK NORTH & SOUTH ORE INVENTORY - SUMMARY

BENCH	CUTOFF .025%eU_3O_8-GT=.125			CUTOFF .050%eU_3O_8-GT=.250			CUTOFF .075%eU_3O_8-GT=.375			CUTOFF .100%eU_3O_8-GT=.500		
	Corrected Grade	Tons	U_3O_8 Pounds	Corrected Grade	Tons	U_3O_8 Pounds	Corrected Grade	Tons	U_3O_8 Pounds	Corrected Grade	Tons	U_3O_8 Pounds
TOTALS	.058	1518717	1749178	.089	753314	1337634	.108	489102	1057495	.134	287561	768770

SAMPLING PROCEDURE (Figure 8)

The goals, as stated above, were accomplished by driving underground openings at least 7 feet by 7 feet through the orebody. The drifts were inclined or declined to sample several ore-bearing horizons and were driven in a direction which would intersect the major fracture directions at a 45° angle to avoid biasing the samples.

The rock removed was put into storage piles on the basis of grade. The procedure used was as follows:

1. Material was segragated and sampled by blasted-round recording the footage advance and the grade radiometrically. This was done by probing 6 to 9 blast holes with a model E-103M "T" probe counter which was calibrated regularly against barrels of assayed ore.

2. Daily reports included the tons mined and grade. The size, until measured, was assumed to be 8 feet by 8 feet with a density of 12.5 cubic foot per ton to arrive at a tons-mined figure.

3. The material was stored in piles according to grade. Stockpile S-1 contained material that ran from 0 to .02% U_3O_8. S-2 contained .02-.05 material and .05-.08% material was placed in stockpile S-3. Material greater than .08% U_3O_8 was placed in stockpile S-4.

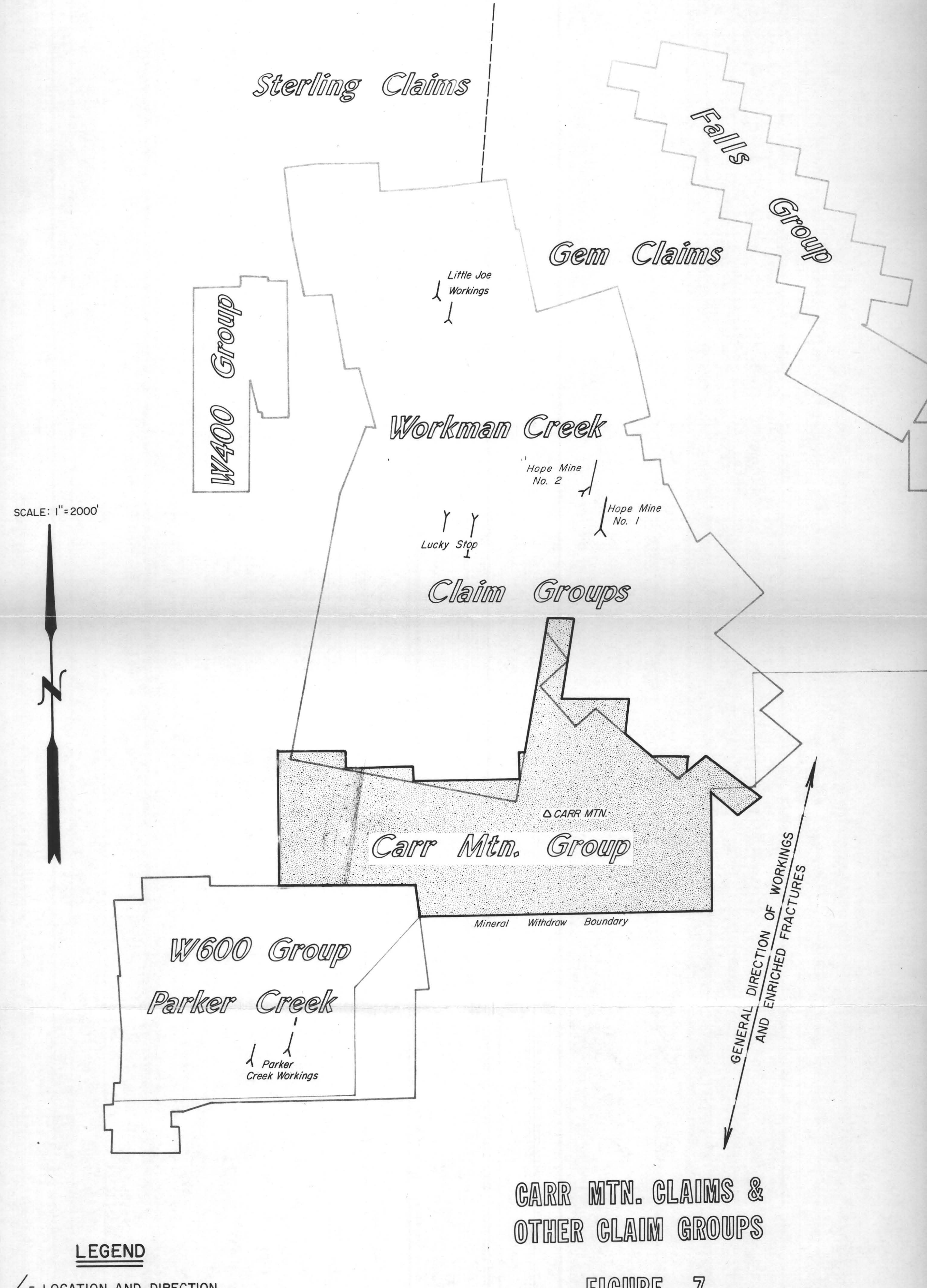
4. A thirty-pound sample from each round was retained for assay.

MINING PROCEDURE

The mining at Red Bluff consisted of drilling the blast holes with Gardner-Denver 1300, jackleg mounted, jack-hammers. The jack-hammers were powered by a Gardner-Denver 750 air compressor. Compressed air was fed to the working faces by a 2" steel pipe. The miners generally drilled 1¼" diameter holes. However, when the ground got hard, it was necessary to reduce the holes to 1-1/8" diameter. The miners also attempted to shoot 8-foot rounds, but in hard ground, they went to 5- to 6-foot rounds. The holes were primed with two sticks of 40% dynamite and loaded with anfo. The holes were tied together with delayed electric blasting caps. An Eimco 912-B LHD loader was used to muck out the blasted material and to transport it outside the mine. The mine was vented with a 40 hp Joy ventilation fan. The mining crews consisted of a mine foreman, one lead mechanic, two miners, one loader operator, and two laborers per shift. Whenever possible, the miners worked two headings simultaneously. Each crew attempted to complete two mining cycles per shift. The mining rate averaged 22 ft. per day, operating generally two shifts per day, six days per week. The total contract cost of the mining was $285,212.35 for 1510 feet of new and rehabilitated drifting. The per-foot-cost of drifting was $188.88. which included the cost of hauling the muck to the stockpiles.

RESULTS

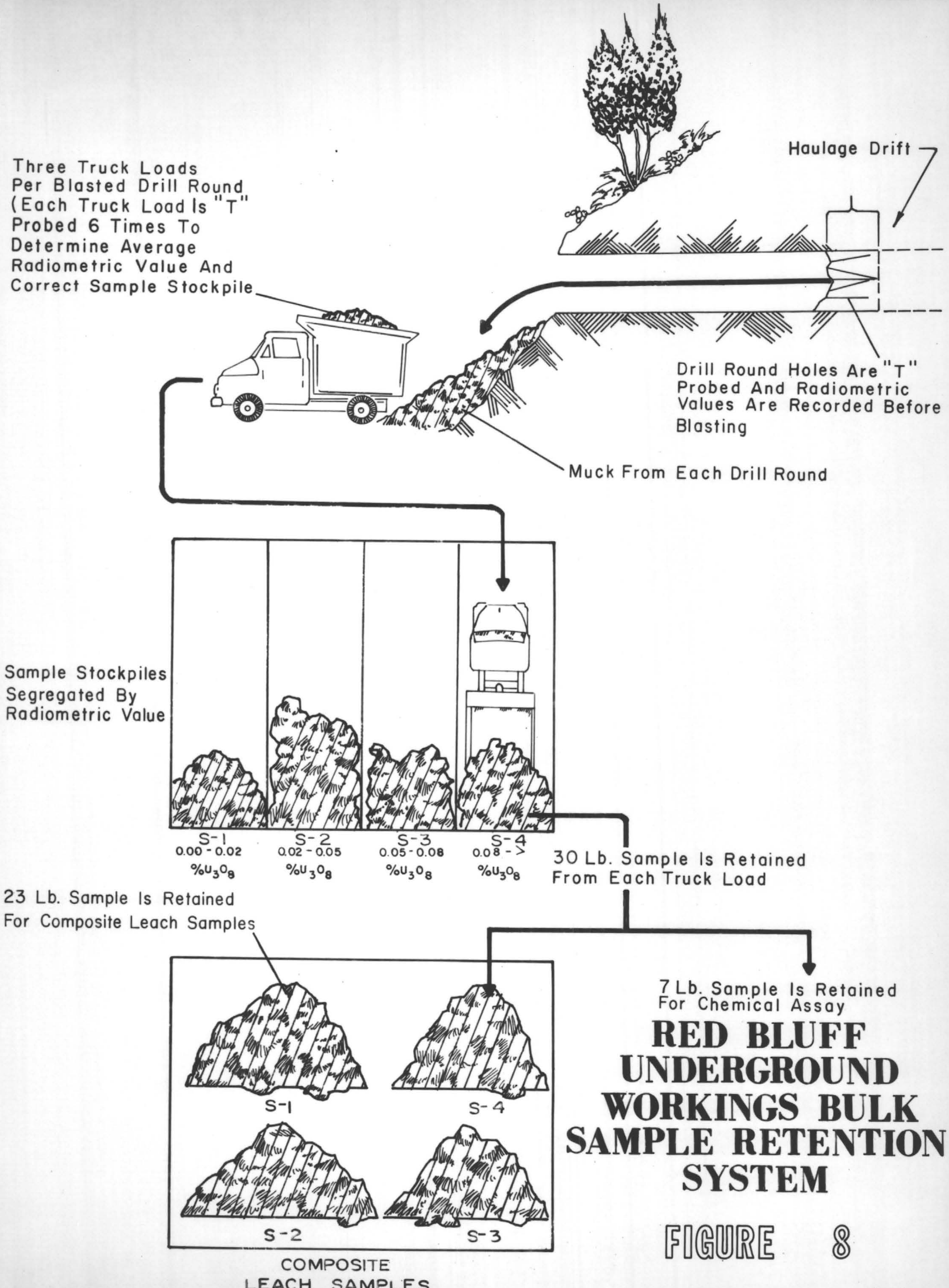
The mining produced more muck than was stipulated in the contract. The contractor was paid for each foot of advance, which was assumed to be 7 feet by 7 feet. Actually, the dimensions were more like 8 feet by 10 feet, and



CARR MTN. CLAIMS & OTHER CLAIM GROUPS

FIGURE 7

MDAZ 77-154



RED BLUFF UNDERGROUND WORKINGS BULK SAMPLE RETENTION SYSTEM

FIGURE 8

11/22/77

even wider in turns. As a result of the dilution, more tons were mined at a lower grade, but pounds of uranium contained therein was greater. This is illustrated in Table 4.

As to continuity of the ore, the round-by-round face probe reports indicate reasonable continuity both horizontally and vertically. Although the individual blast hole values are quite different across a face, the changes from face to face are usually gradual.

METALLURGY

SAMPLE PROCUREMENT

The mined material from Red Bluff was segregated into four stockpiles for the purpose of metallurgical testing. The muck from each round mined was transported to the surface and placed in a separate pile close to the adit portal. On day shift, each pile was loaded into a truck and transported approximately 3,000 feet to one of the four leach stockpiles. The piles from each round generally contained thirty-five tons and were hauled by truck to the storage area. Each truck load was sampled six times with the "T" probe. Each probe reading was recorded on the sampler's report. The average of the six probe readings determined the grade of the truck load, using a calibration factor for the probe. Truck loads with less than 0.020% U_3O_8 went to stockpile S-1, truck loads with greater than 0.020% but less than 0.050% U_3O_8 went to stockpile S-2. Truck loads with greater than 0.050% U_3O_8 but less than 0.080% U_3O_8 went to stockpile S-3, and truck loads with greater than 0.080% U_3O_8 went to stockpile S-4. After the truck load was dumped in its respective stockpile, a 30-pound sample was cut, coned, and quartered. A seven and one-half pound sample was saved for assaying and the remainder, about 22½ pounds was dumped in respective composite stockpiles for metallurgical testing. (Figure 8.) The average grade for all the truck loads of a blast-round was recorded for a comparison with the face probe. The daily tonnage and grade of material hauled to the stockpile was summarized in a daily report, and a total cumulative weighed average was calculated each day.

TESTING PROCEDURE

Mountain States Research and Development, Tucson, Arizona was contracted to conduct the metallurgical testing of the mined material from Red Bluff. The composite leach stockpile samples, composed of the 22½-pound samples for each truck load, were coned and quartered to make 500-pound samples for each of the four leach stockpiles. The four 500-pound samples went to Mountain States for metallurgical testing. Each 500-pound sample was split into size fractions of greater than 2"x 2" to 1", 1" to 3/8" to 10 mesh, and minus 10 mesh. Metallurgical tests were conducted on each size fraction, using a standard leach solution at a Ph of 1 and an EMF of 400 mv.

The metallurgical testing of stockpiles S-1 to S-3 indicated better recovery of higher grade, finely ground material. The best recovery was 54.5% of 0.065% U_3O_8 at minus 10 mesh. It was then decided to alter the testing of the S-4 stockpile in an attempt to achieve maximum recovery. The tests were run at 450 mv and a Ph of 1 and 1.5, and the material was ground to 10 mesh, -10 mesh, -48 mesh, and -200 mesh. This series of tests was conducted on

TABLE 4

MINED MATERIAL INVENTORY

Stockpile:	S-1		S-2		S-3		S-4	
	Tons	Grade	Tons	Grade	Tons	Grade	Tons	Grade
MINED	1,786.55	0.013	6,377.51	0.033	1,744.76	0.063	843.24	0.110
CALCULATED	6,829.22	--	1,619.10	0.035	1,207.44	0.069	1,100.25	0.143
DIFFERENCE	-5,042.67		+4,758.41	-0.002	+ 537.32	-0.006	- 257.01	-0.033

MATERIAL GREATER THAN 0.02% U_3O_8

MINED 8,965.51 tons @ 0.046% U_3O_8, or 8,248 lbs of U_3O_8

CALCULATED 3,928.79 tons @ 0.076% U_3O_8, or 5,971 lbs of U_3O_8

DIFFERENCE +5,036.72 tons @-0.030% U_3O_8, or 2,277 lbs of U_3O_8

material assaying 0.098% U_3O_8. The recovery increased to 63.4% on the minus 10 mesh samples. Tests conducted on finer ground material did not increase the recovery. Mountain States Research and Development's metallurgical reports are included as Appendix VII. Additional tests on mineralized material from other Wyoming Mineral Corporation properties in the district were also run with considerable variation of results. These reports are also included in Appendix VII.

ASSESSMENT PROGRAM

Annual assessment work for the year 1977 required $100.00 worth of work on 505 individual claims in eleven different claim groups. The New Mine Development Department was assigned responsibility for the completion of assessment work on two claim groups for a total of 150 claims. The Exploration Department was assigned responsibility to complete the assessment work on the remaining nine claim groups for a total of 355 claims. (See Assessment Map, Appendix XII.)

The Mine Development group satisfied the assessment requirements on the Red Bluff and Workman Creek groups of claims with the underground mining work and drilling previously described.

The following is a summary of work completed by the Exploration Department to satisfy annual assessment requirements on the other nine groups:

1. Bull Canyon, Bull Canyon extension, and the A & B claim groups, consisting of 82 contiguous claims.

    a. Geologic mapping.
    b. Drilling, four holes for a total of 960 feet.

2. Big Buck, Grindstone, and Cypress claim groups consisting of 12 contiguous claims.

    a. Geochem survey.
    b. Geologic mapping.
    c. Metallurgical testing.

3. Black Brush and Deep Creek claim groups consisting of 16 contiguous claims.

    a. Geochem survey.
    b. Geologic mapping.
    c. Metallurgical testing.

4. Cold Mesa claim group consisting of 86 contiguous claims.

    a. Radon cup survey.
    b. Geochem survey
    c. Geologic mapping

5. Falls claim group consisting of 26 contiguous claims.

   a. Drilling, three holes for a total of 250 feet.
   b. Geologic mapping.

6. Lone Pine and Line Pine extension claim groups consisting of 40 contiguous claims.

   a. Radon cup survey.
   b. Geochem survey.
   c. Geologic mapping.
   d. Metallurgical testing

7. Pine Ridge and Wyminco 400-407 claim groups consisting of 10 contiguous claims.

   a. Geochem survey.
   b. Geologic mapping.
   c. Metallurgical testing.

8. Wilma J. and Wyminco 601A and 612A claim groups consisting of 32 contiguous claims.

   a. Geochem survey.
   b. Drilling, a total of 320 feet.

9. Wyminco 801-881 claim group consisting of 51 contiguous claims.

   a. Geophysical survey.
   b. Geologic mapping.

The land holding costs for the next few years, including assessment are summarized in Table 5.

DRIPPING SPRING - PROPERTY MAINTENANCE TABLE 5

CLAIMS	1978				1979				1980				1981				1978-81 GRAND TOTAL
	Advanced Royalties	Assess-ment	Work Com-mitment	Total	Advanced Royalties	Assess-ment	Work Com-mitment	Total	Advanced Royalties	Assess-ment	Work Com-mitment	Total	Advanced Royalties	Assess-ment	Work Com-mitment	Total	
A & B (Lester Cox)	6,400	3,400		9,800	6,400	3,400		9,800	6,400	3,400		9,800	6,400	3,400		9,800	39,200
Jon, Don (Rusty Moore	28,600	700		29,300		700		700		700		700		700		700	31,400
Big Buck (Ellison)	900	300		1,200	900	300		1,200	900	300		1,200	900	300		1,200	4,800
Black Brush (Ellison)	11,000	800		11,800	12,000	800		12,800	12,000	800		12,800	12,000	800		12,800	50,200
Bull Canyon (Cox)	19,500	4,900		24,400	19,500	4,900		24,400	40,000	4,900		44,900	40,000	4,900		44,900	138,600
Cold Mesa (Marshall)	14,063	8,600		22,663	14,063	8,600		22,663	25,000	8,600		33,600	28,750	8,600		37,350	116,276
Cox Claims	10,000	4,400		14,400	10,000	4,400		14,400	30,000	4,400		34,400	30,000	4,400		34,400	97,600
Cyprus (Ellison)	900	300		1,200	900	300		1,200	900	300		1,200	900	300		1,200	4,800
Deep Creek (Ellison)	2,700	900		3,600	2,700	900		3,600	2,700	900		3,600	2,700	900		3,600	14,400
Gridstone (Ellison)	1 ,800	600		2,400	1,800	600		2,400	1,800	600		2,400	1,800	600		2,400	9,600
Johnson (Blevins, Windy, Buck-aroo, Erma	20,000	19,300		39,300	20,000	19,300		39,300	36,000	19,300		55,300	36,000	19,300		55,300	189,200
Lone Pine (Murphy)	2,000	4,000		6,000	8,000	4,000		12,000	8,000	4,000		12,000	8,000	4,000		12,000	42,000
Nichols (Hope, Joe Workman)	50,000	5,400		55,400	100,000	5,400		105,400	100,000	5,400		105,400	100,000	5,400		105,400	371,600
Parker Creek (Cox)	11,250	4,600		15,850	11,250	4,600		15,850	16,000	4,600		20,600	16,000	4,600		20,600	72,900

DRIPPING SPRING - PROPERTY MAINTENANCE TABLE 5 (Continued)

CLAIMS	1978				1979				1980				1981				1978-81 GRAND TOTAL
	Advanced Royalties	Assess-ment	Work Com-mitment	Total	Advanced Royalties	Assess-ment	Work Com-mitment	Total	Advanced Royalties	Assess-ment	Work Com-mitment	Total	Advanced Royalties	Assess-ment	Work Com-mitment	Total	
Pine Ridge (Cox)	1,250	1,000		2,250	2,000	1,000		3,000	2,000	1,000		3,000	2,000	1,000		3,000	11,250
Falls (Via)	5,000	2,600		7,600	5,000	2,600		7,600	15,000	2,600		17,600	15,000	2,600		17,600	50,400
Noranda (Haught/ Ellison)	21,500	55,900		77,400	17,000	20,000		37,000	12,000	20,000		32,000	12,000	20,000		32,000	178,400
Red Bluff (Host Venture)	75,000E 75,000C	4,500		154,500	125,000	4,500		129,500	125,000	4,500		129,500	150,000	4,500		154,500	568,000
Rhonda & Lucky Stop (L.W.D)	30,000E 24,900C	4,300	37,500	92,400	30,000E 24,500C	4,300	37,500	92,000	30,000E 24,100C	4,300	75,000	129,100	30,000E 23,700C	4,300	75,000	128,700	442,200
Wilma J, C&F, Lesley	18,075	13,100		31,175	50,000	13,100		63,100	50,000	13,100	25,000	75,000	50,000	13,100	25,000	75,000	244,275
EXPENSE	329,938	-	-	-	436,513	-	-	-	513,700	-	-	-	542,450	-	-	-	1,822,601
CAPITAL	99,900	-	-	-	24,500	-	-	-	24,100	-	-	-	23,700	-	-	-	172,200
ASSESSMENT	-	139,600	-	-	-	103,700	-	-	-	103,700	-	-	-	103,700	-	-	450,700
-ASSESSMENT INCLUDED IN WORK COMMIT-MENT	-	(4,300)	-	-	-	(4,300)	-	-	-	(17,400)	-	-	-	(17,400)	-	-	(43,400)
WORK COMMITMENT	-	-	37,500		-	-	37,500	-	-	-	100,000	-	-	-	100,000	-	275,000
SUBTOTAL	429,838	135,300	37,500	602,638	461,013	99,400	37,500	597,913	537,800	86,300	100,000	724,100	566,150	86,300	100,000	752,450	2,677,101
GRAND TOTAL WMC PROPERTY MAINTENANCE EXPENDITURE	429,838	135,300	37,500	602,638	461,013	99,400	37,500	597,913	537,800	86,300	100,000	724,100	566,150	86,300	100,000	752,450	2,677,101

LICENSING

PERMITS

During 1977, numerous permits to drill, build roads, etc. were requested from the U. S. Forest Service. In cases where only the local Forest Service District personnel were involved, the permits were issued in due course with reasonable stipulations except for the road abandonment procedures which are fairly expensive, and, from Wyoming Mineral Corporation's point-of-view, of very little benefit. Obtaining permits for work in the Sierra Ancha Wilderness is extremely frustrating. The Deep Creek area should be drilled during 1978, but the permit received (from the Tonto National Forest office in Phoenix) contains stipulations so onerous that the permit effectively prohibits drilling in the Wilderness. Appeals to modify the permit, both for ease of operation, as well as environmental protection, have been rejected. There are several alternative courses of action which would probably prove effective, but full commitment and support of the corporation will be required for success. Once the ice has been broke, further developmental work within the Wilderness would probably be little more difficult (from a permitting standpoint) than any other work on the Tonto National Forest.

RARE II PROGRAM

At the request of the Secretary of Agriculture, a reinventory of areas within the National Forest System which could be classified as "roadless" was begun. Initially, large portions of Wyoming Mineral Corporation's holdings in Sierra Ancha were inventoried as "roadless". Following Wyoming Mineral Corporation's efforts in conjunction with the Committee For the Protection of Multiple Use Lands, Inc., Wyoming Mineral Corporation's claims were omitted from the inventory. Noranda, Wyoming Mineral Corporation's joint venture partner on the lands in the vicinity of Cherry Creek, is the designated "operator" of those properties and was slow to respond and take affirmative action. Consequently, huge portions of those claims were included within the inventory.(See Appendix VIII.) Since the inventory was made, Noranda has taken a more active role and steps are being taken to have the joint venture claims classified as unsuitable for roadless status because of mineral potential.

The U.S.G.S. has begun an evaluation program in Wyoming Mineral Corporation's area of interest. The initial reaction of the government geologists assigned is that the area has the best long-range uranium potential in Arizona and should be excluded from any wilderness type of classification on that basis. Their program will begin in 1978 and should be concluded in 1979.

MINING LAW CHANGES

Several alternative mining laws are now being considered by Morris Udall's Interior and Insular Affairs Committee. To date, several subcommittee public hearings have been held, including the one held in Phoenix on December 12 & 13, 1977. In general, the industry is backing HR-8531 sponsored by Philip Ruppe of Michigan. Although progress has been made to blunt the environmentalists' efforts to substitute a leasing system for the law of 1872, there is still much to be done to obtain legislation that will allow Wyoming Mineral Corporation and other mining companies easy access to public lands and a right to develop whatever is discovered. The American Mining Congress has been the most effective "voice of industry" but participation by companies and individuals has been fractionated. Because of the depressed conditions of much of the mineral industry, particularly copper, the Congress is prepared to accommodate industry to a greater extent than was expected. But, unless mining companies see fit to develop a strong case against leasing, it remains one of the alternatives receiving strong consideration by the Congress. If a leasing system is adopted, the value of these Dripping Spring properties, as well as all other projects on public lands, will be greatly diminished.

NORANDA JOINT VENTURE

INTRODUCTION

The materials included herewith as Appendix VIII are modified from the maps prepared by B & B Mining Company on behalf of Wyoming Mineral Corporation's joint venture partner, Noranda Exploration, Inc. The text below is abstracted from a comprehensive report prepared by Gerald Weathers (representing B & B Mining Company) which summarizes the work performed on the joint venture claims in 1977, observations concerning geology and mineralization made during the course of the work, and recommendations based on results.

GENERAL

April 14, 1976, Wyoming Mineral Corporation and B & B Mining Company, (a subsidiary of Noranda Exploration, Inc.) entered into a joint venture to acquire, maintain, explore, develop, produce from and market from those properties listed in the agreement as well as those subsequently acquired. In addition to the acquired claims, the area of joint venture participation was expanded to include an "area of interest" defined in the agreement as encompassing an area within one mile of the external boundaries of acquired claims.

The joint venture was proposed as a three-phase exploration, development and land program to be completed in three years, wherein Wyoming Mineral Corporation would contribute $280,000 to earn a 50% interest in the venture and B & B would contribute the accumulated claims and geologic knowledge. Wyoming elected to accelerate its contributions. The three-phase program was completed September, 1977. B & B and Wyoming Mineral each contributed $12,500 additional to continue the 1977 work in progress for a total of $305,000.

SUMMARY OF OPERATIONS

The 1976 land acquisition program was conducted coincident with general geologic mapping and detailed mapping and sampling of old uranium mines within the acquired area. Radiometric surveys were made along uraniferous horizons extending from the northern to the southern extremities of the claims.

The 1976 program was followed in 1977 by continued land acquisition and detailed stratigraphic mapping of the uraniferous zones as well as hand-held scintillometer surveys of significant uraniferous zones.

Topographic and geologic maps (Areal photo interpretation) prepared by Intrasearch were used as base maps (1" = 500').

SUMMARY OF 1977 RESULTS

Field observations indicate the uranium is concentrated in the silty, thin-bedded, iron-rich beds of the upper member of the Precambrian Dripping Spring quartzite which carry a high carbon content and where the strata have been flexed, producing bedding plane movement.

Fifteen areas of major interest have been mapped in detail. Some of these are judged to have a uranium ore potential approximating or greater than Wyoming's Red Bluff property. Uraniferous zones in these areas of major interest vary from 10 to 60 feet in thickness and extend from 500 feet to 2000 feet in outcropping strike length, some with sampled outcrop grades in excess of 0.1% U_3O_8. Based on the above observation of the exposed significant radioactive zones, B & B has selected the following drill targets classified as having a high uranium ore potential, moderate uranium ore poential and low uranium ore potential. These areas are shown on the included in the Noranda Joint Venture Prospect Areas Map in Appendix VIII(d).

High Uranium Ore Potential

1. Deep Creek
2. Andy Gump
3. Upper Oak Creek
4. Cherry Creek Zone #4

Moderate Uranium Ore Potential

5. Horse Camp
6. Andy Gump Extension
7. North Cherry Creek No. 1
8. North Cherry Creek No. 2
9. North Cherry Creek No. 5
10. North Cherry Creek No. 6
11. Sorrel Horse

Low Uranium Ore Potential

12. Major Hopple
13. Bessie Claims 1 - 7
14. Horse Camp East
15. Wilson Creek

On the basis of this year's work, item 3, Upper Oak Creek is considered a new discovery and has excellent potential for becoming one of the better properties in the district. Wilson Creek, item 15 above, is assigned a low priority because of land ownership problems rather than on the basis of geologic potential. The Sorrel Horse is part of the Wyoming Mineral Corporation's Black Brush claims and should be investigated as a single unit.

These results have been reviewed with B & B management, and an appropriate budget to accomplish an exploration-development drilling program designed to locate and expand near-surface uranium ore in target areas, regarded as having a high uranium potential, has been prepared. This budget will be presented to Wyoming Mineral Corporation for approval and inclusion within the 1978 Dripping Spring Work Plan.

1977 MANPOWER

1. Managers - Messrs. A. M. Bell and B. O. Brynelsen of B & B Mining Co.
2. Project Director - Gerald Weathers, Geological Consultant (experienced in this district since 1953).
3. January thru May, 1977
   a. Del Tierra, Contract Surveyors, two crews of two men each.
   b. H. C. Smith, Contract Driller, crew of two.
   c. Atchison, Contract Driller, crew of two.

d. Tom Weathers, Field Assistance, supervised validation drilling, collected validation samples, prepared and filed affidavits.

4. April thru November, 1977- W. C. Berridge, Geologist, Stratigrapher, mapped uraniferous beds in detail.

5. May thru August, 1977 - David Knight, Geological Assistant to Berridge, conducted radiometric surveys.

6. August 26 thru September 15, 1977 - Jack Holstein, Geologist, mapped Hackberry Mountain. Bailey Stauffer, Field Assistant, with Holstein.

7. B & B Prescott Office, provided drafting facilities and personnel as needed.

8. Noranda, Denver office, provided accounting services for project.

9. Jerry Haggard, Attorney, provided legal advice.

FORMER OBSERVATIONS

Investigations of the Dripping Spring quartzite in the 1950's revealed the uranium to be limited to stratigraphic intervals within the thin-bedded, iron-rich silty members of the middle portion of the upper beds of the Precambrian Dripping Spring quartzite. These beds were easily recognized in the field due to their dark gray hues and occurred about 160 to 230 feet below the overlying white Mescal limestone contact. The upper member of the Dripping Spring quartzite upon analysis was found to be a tuff with detrital sandstone lenses wherein much of the abnormally high radioactivity of the formation was determined to be due to K 40 feldspar with lenses of higher grade uranium concentrations. Results of studies made in the 1950's indicated the uranium within these beds in excess of 0.2% U_3O_8 occurred as uraninite along nearly vertical fractures trending N20°E or N70°W; the uranium was believed to be localized by solutions from adjacent diabase sills and dikes.

RESULTS OF B & B'S 1977 FIELD STUDIES

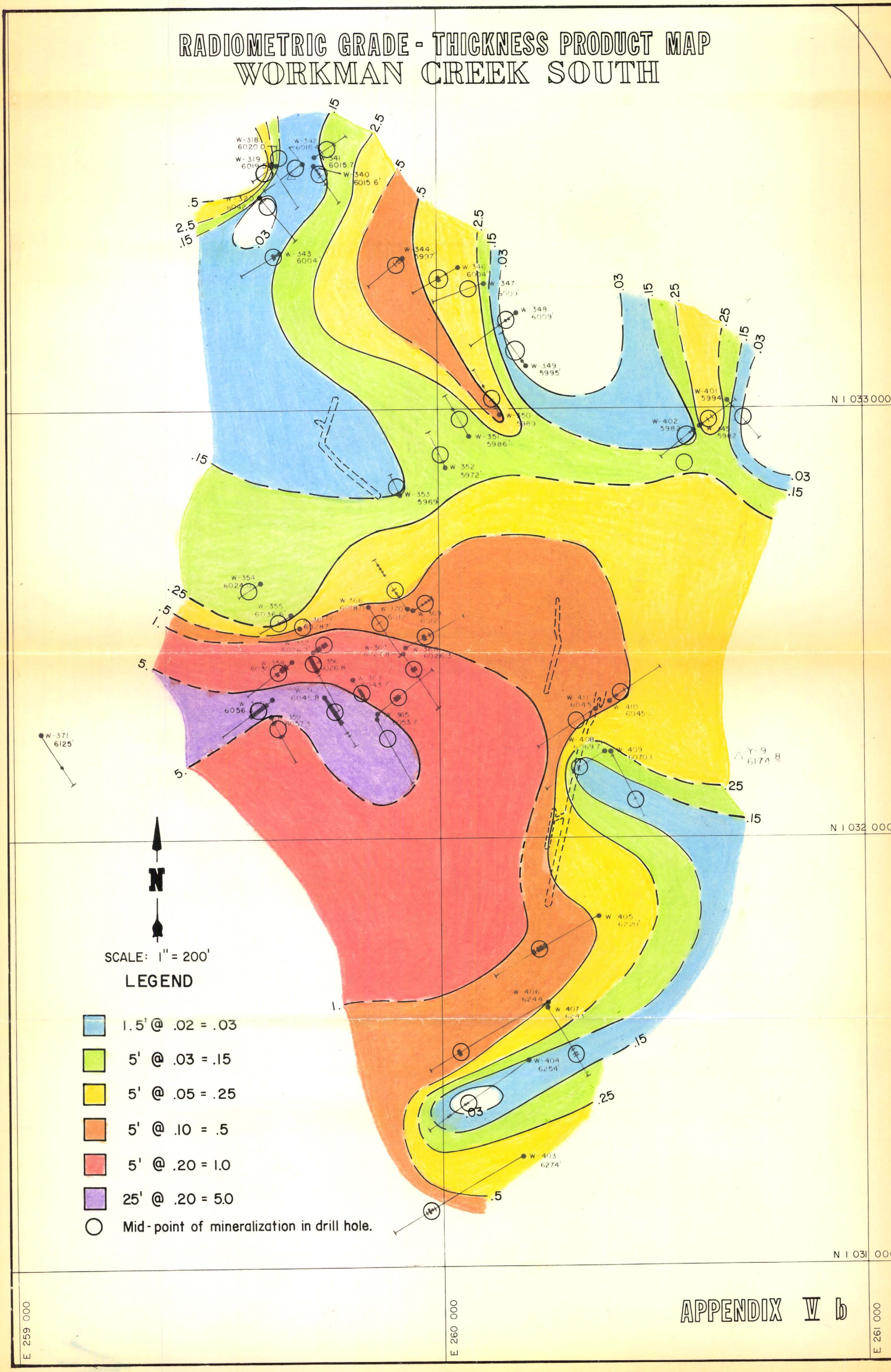
The uranium is found to occur above the base of the upper member of the Dripping Spring quartzite in gray or black horizons exhibiting a lens-like appearance. The conditions necessary for the occurrences of uranium ore are that the beds contain a high carbon (microscopic) and pyrite content often associated with chalcopyrite or their oxidation products in outcrops. In addition, these beds have been made more permeable due to structural flexing of the strata.

The 1977 geologic and geophysical work has served to delineate potential underlying shallow uranium ore deposits and also satisfies the annual work requirements for those claims requiring assessment work. This work is the second year of geologic labor on the individual assessment blocks and complies with Statute U.S.C. 30, Paragraph 28, in which geological and geophysical surveys conducted by qualified experts and verified by a detailed report files in the county office in which the claim is located may not be applied as labor for more than two consecutive years.

On the basis of the described intensity and dimensions of the exposed significant radioactive zones, those areas classified as having a uranium potential and have been selected as exploration targets.

APPENDIX V

RADIOMETRIC GRADE - THICKNESS PRODUCT MAP
WORKMAN CREEK SOUTH

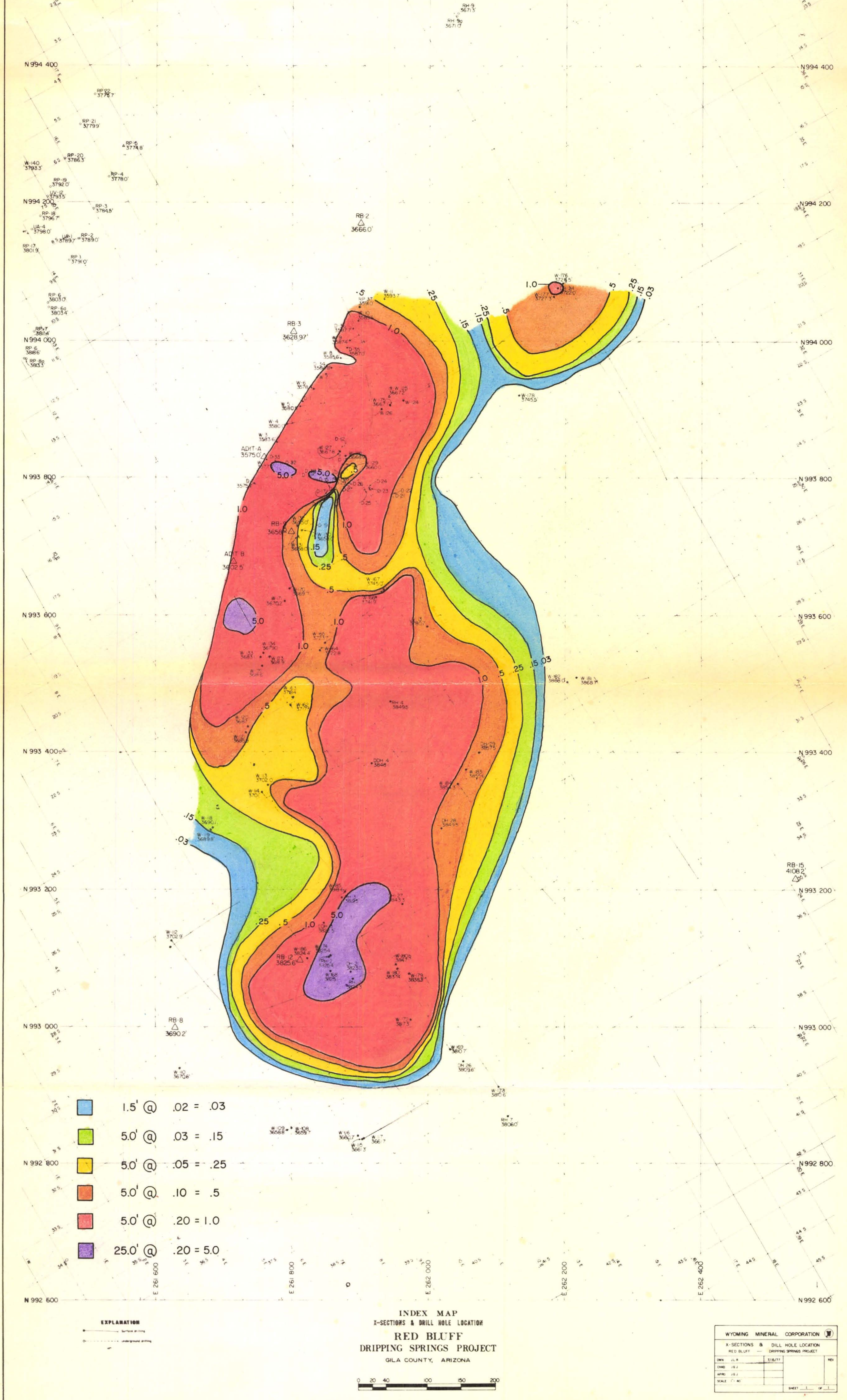


LEGEND

- 1.5' @ .02 = .03
- 5' @ .03 = .15
- 5' @ .05 = .25
- 5' @ .10 = .5
- 5' @ .20 = 1.0
- 25' @ .20 = 5.0
- ○ Mid-point of mineralization in drill hole.

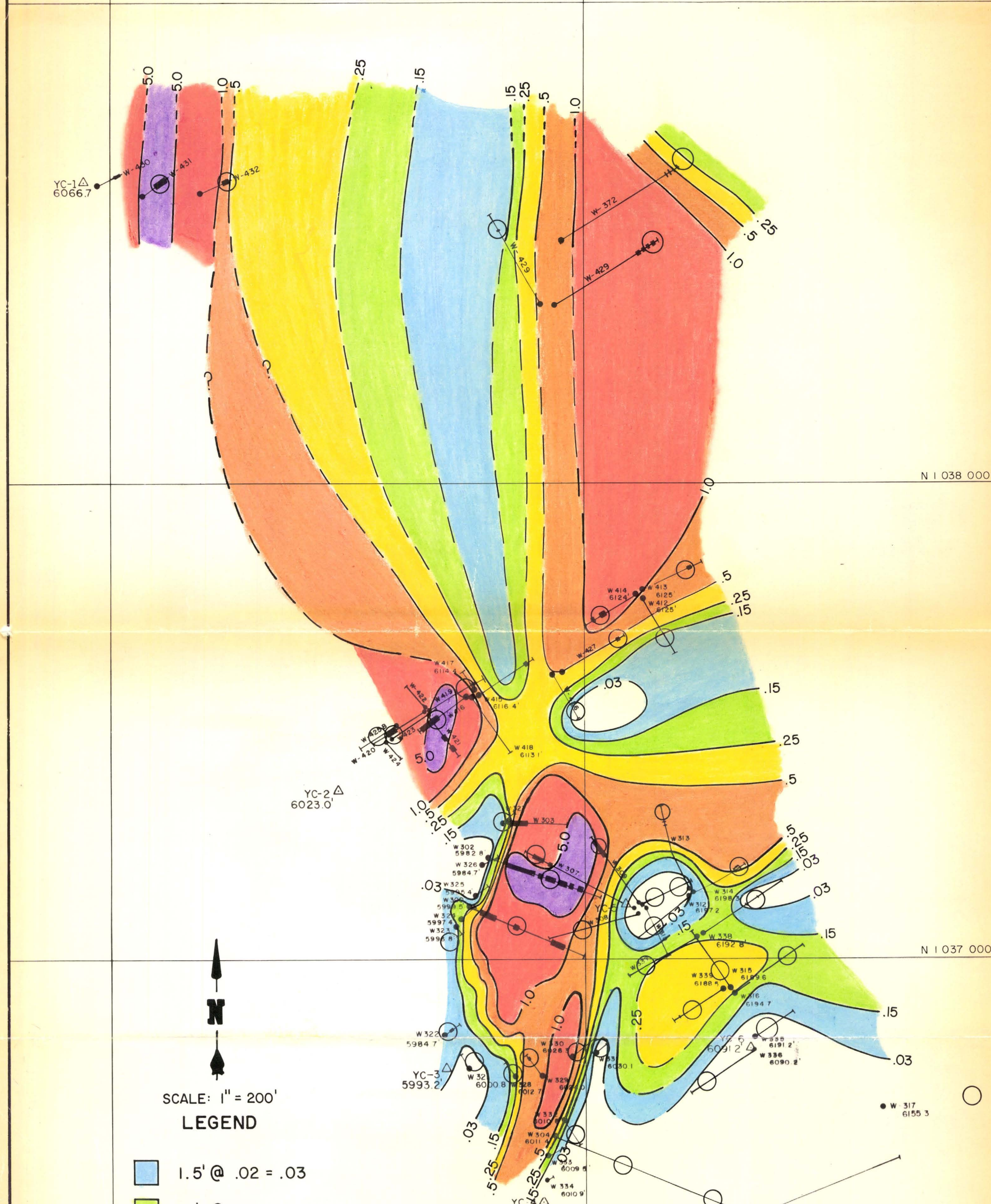
APPENDIX V b

RADIOMETRIC GRADE - THICKNESS PRODUCT MAP
RED BLUFF



APPENDIX V c

RADIOMETRIC GRADE - THICKNESS PRODUCT MAP
WORKMAN CREEK NORTH



SCALE: 1" = 200'

LEGEND

(blue)	1.5' @ .02 = .03
(green)	5' @ .03 = .15
(yellow)	5' @ .05 = .25
(orange)	5' @ .10 = .5
(red)	5' @ .20 = 1.0
(purple)	25' @ .20 = 5.0
○	Mid-point of mineralization in drill hole.

APPENDIX V a

APPENDIX VI

Novembe[illegible], 1977

DRILL HOLE SUMMARY
RED BLUFF PROSPECT

Sec. 31, T5N-R14E, Gila County, Arizona

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
D-1	993,934.38	261,820.4	3584.3	N57°W	-70°	75'	Mineralized			R. J. Schwartz (AEC)
D-7	993,792.86	261,747.28	3578.5	S61E	-40	161+	26.5'	.161	4.255	WMC Radiometric Log
D-12	993,757.73	261,726.46	3579.0	N16E	-50	68	Mineralized			R. J. Schwartz (AEC)
D-13	993,831.0	261,860.0	3578.0	N16E	-50	65	Barren			R. J. Schwartz (AEC)
D-14	993,805.0	261,860.0	3577.0	N16E	-50	40	27.5	.050	1.370	WMC Radiometric Log
D-15	993,790.0	261,856.0	3578.0	N16E	-49	40	23.5	.188	5.175	WMC Radiometric Log
D-15E	993,791	261,859	3584.5	S33E	+45	15	12.5	.053	.662	WMC Radiometric Log
D-16	993,791	261,855	3577.5		Vert.	44	20.5	.076	1.549	WMC Radiometric Log
D-17	993,780	261,873	3578.0	S12W	-50	14	1.5	.036	.054	WMC Radiometric Log
D-18	993,755.0	261,847	3579	S12W	-50	63	Mineralized			R. J. Schwartz (AEC)
D-19	993,737	261,842	3579	S12W	-50	66	Barren			R. J. Schwartz (AEC)
D-20	993,733	261,840	3583	S19W	+10°	36+	4.5	.027	.121	WMC Radiometric Log
D-20E	993,732	261,842	3582	S00E	-15°	8+	5.5	LSA		WMC Radiometric Log
D-20S	993,733	261,840	3580	S15W	-20°	58	3.5	LSA		WMC Radiometric Log
D-20W	993,734	261,839	3582	S30W	+5°	28	18.5	.039	.729	WMC Radiometric Log
D-21	993,771	261,948	3576	S67E	-50	68	7	.099	.695	WMC Radiometric Log
D-22	993,776	261,956	3579	N52E	-62	58	Mineralized			R. J. Schwartz (AEC)
D-23	993,784	261,911	3579	S63E	-57.5	65	Mineralized			R. J. Schwartz (AEC)
D-24	993,784	261,911	3579	N76E	-58	57	Mineralized			R. J. Schwartz (AEC)

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
D-25	993,782	261,906	3577.5	S19W	-45	57	3.5	.100	.349	WMC Radiometric Log
D-26	993,787	261,883	3578	N65E	-52	27	Mineralized			R. J. Schwartz (AEC)
D-27	993,785	261,882	3578	S57E	-50	42	Mineralized			R. J. Schwartz (AEC)
D-28	993,797	261,860	3580	N68E	-40	76	12	.040	0.484	WMC Radiometric Log
D-29	993,793	261,860	3578	S46E	-45	57	7	.101	0.706	WMC Radiometric Log
D-30	993,803	261,833	3578	N84E	-43.5	67	Mineralized			R. J. Schwartz (AEC)
D-31	993,800	261,831	3578	S40E	-47.5	55	Mineralized			R. J. Schwartz (AEC)
D-32	993,816	261,795	3577	S87E	-44	63	27	.114	3.079	WMC Radiometric Log
D-33	993,825	261,776	3577	N72E	-49	66	29	.102	2.961	WMC Radiometric Log
D-34	993,962.4	261,844.6	3586	N70E	-63	92.2	Mineralized			R. J. Schwartz (AEC)
D-35	994,002.7	261,873.0	3584.5	N56E	-61.1	48	Mineralized			R. J. Schwartz (AEC)
D-36	994,030.6	261,890.1	3590	N00E	-90	86	Mineralized			R. J. Schwartz (AEC)
D-38							Mineralized			R. J. Schwartz (AEC)
DDH-1	993,894	262,124	3751	N00E	-90	224	Barren hole			WMC Radiometric Logs
DDH-2	993,663	261,950	3745	N00E	-90	272	11.5	.032	.369	WMC Logs + Assay Data
DDH-3	993,151	261,847	3822.5	N00E	-90	300	18.5	.062	1.153	WMC Logs + Assay Data
DDH-4	993,383	261,917	3803.1	N00E	-90	270	73	.051	3.730	WMC Logs + Assay Data
DH-21	993,080	261,886	3823	N00E	-90	250	72.5	.158	11.470	WMC Logs + Assay Data

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
DH-24	994,076.0	262,188.3	3722	N00E	-90	220	10	.10	1.000	Host Venture X-Sections
DH-26	992,950.1	262,052.0	3809.6	N00E	-90	260	Barren hole			WMC Logs
DH-27	993,178.2	261,962.9	3843.3	N00E	-90		57.5	.085	4.880	Host Ventures X-Sections + WMC Logs
DH-28	993,289.8	262,019.7	3849.5	N00E	-90	256	16.5	.048	0.783	Host Ventures
DH-29	993,399.9	262,074.5	3857.5		-90	Not Deep Enough				
RH-1	993,070.5	261,890.1	3824.3	N00E	-90	270	24	.125	3.008	Host Ventures Assay + WMC Logs
RH-2	993,101.4	261,854.3	3825.4	N30E	-65	260	27	.097	2.625	Host Ventures Assay + WMC Logs
RH-3	993,188.7	261,873.3	3819.5	N27E	-65	241	46	.043	1.962	Host Ventures Assay + WMC Logs
RH-4	993,473.5	261,944.7	3793.6	N28E	-68	298	24	.038	.908	Host Ventures Assay + WMC Logs
RH-7	992,878.4	262,117.9	3806	N45E	-85	240	Barren			Host Ventures Assay + WMC Logs
RH-8	993,974.8	261,327.1	3827.4				Barren			Host Ventures Assay + WMC Logs
RH-9	994,476.9	262,341.6	3671.3				Barren Not Deep Enough			Host Ventures Assay + WMC Logs
RH-9A	994,472.1	262,339.6	3671.0				Barren Not Deep Enough			Host Ventures Assay + WMC Logs
RP-1	994,117.7	261,473.3	3791.0	N44E	-70	100	10	.021	2.10	Host Venture X-Sections
RP-2	994,148.0	261,488.4	3789.0	N41E	-56	100	20	.036	.78	Host Venture X-Sections
RP-2A	994,153.8	261,489.8	3789.0	N40E	-70	100	20	.149	2.980	Host Venture X-Sections
RP-3	994,192.0	261,509.1	3784.5	N34E	-64	100	Barren			Host Venture X-Sections
RP-4	994,238.8	261,531.7	3778	N47E	-63	100	Barren			Host Venture X-Sections
RP-5	994,283.1	261,552.7	3774.8	N48E	-58	100	Barren			Host Venture X-Sections
RP-6	994,054.3	261,442.4	3803	N47E	-65	100	Barren			Host Venture X-Sections

DRILL HOLE SUMMARIES

APPENDIX VI

WORKMAN CREEK DRILL HOLE SUMMARY
(NORTH SIDE - SECTION 19, T6N R14E
LITTLE JOE & WORKMAN CLAIMS)

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
W-300	1,037,111.5	259,752.8	5999.5	S65E	Horiz	340	54.5	.055	3.001	WMC Radiometric
W-301	1,037,058.2	259,726.2	6000.0	S85E	Horiz	50	Barren			WMC Radiometric
W-302	1,037,216.4	259,794.8	5982.8	S58E	Horiz	315	106.5	.066	7.063	WMC Radiometric & Assay
W-303	1,037,288.	259,838	5989.0	S70E	+10°	100	27.0	.020	0.533	WMC Radiometric & Assay
W-304	1,036,629.9	259,930.6	6011.4	S67E	Horiz	480		LSA		WMC Radiometric
W-305	1,036,470.9	260,372.1	6011.7	N66E	Horiz	300	Barren			WMC Radiometric
W-306				S66E	Horiz	310		LSA		WMC Radiometric
W-307	1,037,105.9	260,100.5	6182.6	N57W	-30°	355	19.5	.076	1.486	WMC Radiometric & Assay
W-308	1,037,098.8	260,106.2	6182.6	S58W	-40°	315	9.5	.041	.386	WMC Radiometric & Assay
W-309	1,037,114.4	260,116.7	6184.6	N30W	-45°	250	59.0	.073	4.335	WMC Radiometric & Assay
W-310	1,037,114.7	260,113.6	6184.6	S08W	-55°	225		LSA		WMC Radiometric
W-311	1,037,108.6	260,127.5	6185.6	S84E	-50°	225		LSA		WMC Radiometric
W-312	1,037,135.4	260,214.4	6197.2	S53W	-45°	203	Barren			
W-313	1,037,146.9	260,215.9	6197.0	N31W	-40°	275	17.5	.029	.507	WMC Radiometric & Assay
W-314	1,037,140.3	260,226.5	6198.3	N83E	-50°	265	13.0	.036	.464	WMC Radiometric
W-315	1,036,946.9	260,300.0	6189.7	N34W	-45°	200	10.5	.043	.455	WMC Radiometric & Assay
W-316	1,036,929.8	260,311.4	6194.7	N55E	-45°	255	3.0	.035	.104	WMC Radiometric & Assay
W-317	1,036,715	260,696	6170	N57E	-45°	255	Barren			WMC Radiometric
W-321	1,036,771.5	259,750.2	6000.8	N55E	-45°	75	LSA			WMC Radiometric

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
W-322A	1,036,867.6	259,699.7	5998.8	N57E	-45°					No Log Data
W-322B	1,036,847.7	259,701.9	5998.1	N57E	-45°	55	2.0	.060	.120	WMC Radiometric & Assay
W-323	1,037,069.9	259,723.7	5996.8	S33E	-45°	35		LSA		WMC Radiometric
W-324	1,037,088.6	259,733.8	5997.4	N57E	-45°	55		LSA		WMC Radiometric
W-325	1,037,135.3	259,765.8	5995.4	N57E	-45°	55		LSA		WMC Radiometric
W-326	1,037,199.7	259,781.7	5984.7	N57E	-45°	35		LSA		WMC Radiometric
W-327	1,037,285.5	259,824.9	5983.3	N57E	-45°	40	1.5	.029	.044	WMC Radiometric & Assay
W-328	1,036,756.2	259,848.8	6012.7	N33W	-45°	40	2.5	.037	.093	WMC Radiometric & Assay
W-329	1,036,758.1	259,908.6	6024.0	N33W	-45°	75	5.0	.087	.435	WMC Radiometric & Assay
W-330	1,036,795.1	259,969.9	6026.3	N33W	-45°	95	12.5	.137	1.706	WMC Radiometric & Assay
W-331	1,036,804.4	260,019.7	6030.1	N50E	-45°	40		LSA		WMC Radiometric
W-332	1,036,663.4	259,950.6	6010.8	S34E	-45°	105	Barren			WMC Radiometric
W-333	1,036,589.7	259,918.9	6009.5	N57E	-45°	65	1.0	.063	.063	WMC Radiometric & Assay
W-334A	1,036,535.2	859,914.8	6010.9	N57E	-45°	15				No Log
W-335	1,036,835.9	260,353.1	6192.2	N56E	-45°	275	Barren			WMC Radiometric
W-336	1,036,810.8	260,352.8	6190.2	S57W	-45°	240		LSA		WMC Radiometric
W-337	1,037,048.0	260,232.1	6192.8	S61W	-45°	235	3.5	.045	.157	WMC Radiometric & Assay
W-338	1,037,053.0	260,247.6	6195.0	N57E	-45°	275		LSA		WMC Radiometric
W-339	1,036,939.2	260,291.6	6188.5	S57E	-55°	215	11.5	.030	.345	WMC Radiometric & Assay
W-372	1,038,504.1	259,950.9	6217.9	N66E	-40°	380		LSA		WMC Radiometric

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
W-412	1,037,754.6	260,119.4	6128.3	S31E	-45^{o}	190		LSA		WMC Radiometric
W-413	1,037,773.4	260,119.1	6127.9	N64E	-45^{o}	195	12.5	.034	.423	WMC Radiometric & Assay
W-414	1,037,766.0	260,104.4	6126.3	S57W	-45^{o}	185	15.5	.062	.960	WMC Radiometric
W-415	1,037,554.3	259,773.8	6116.4	N57E	-45^{o}	195		LSA		WMC Radiometric
W-416	1,037,552.3	259,753.6	6112.3	S54W	-45^{o}	190	54.0	.058	3.136	WMC Radiometric
W-417	1,037,561.8	259,765.2	6114.4	N32W	-60^{o}	100		LSA		WMC Radiometric & Assay
W-418	1,037,549.8	259,757.4	6113.1	S34E	-45^{o}	210	3.5	.024	.084	WMC Radiometric
W-419	1,037,519.9	259,668.9	6100.3	N59E	-45^{o}	190	16.0	.029	.461	WMC Radiometric
W-420	1,037,521.3	259,653.7	6099.5	S60W	-45^{o}	180	14.5	.118	1.713	WMC Radiometric
W-421	1,037,515.3	359,660.1	6099.1	S32E	-52^{o}	160	34.5	.052	1.811	WMC Radiometric
W-422	1,037,524.6	259,663.9	6100.2	W25W	-51^{o}	110	Barren			WMC Radiometric
W-423	1,037,473.5	259,578.3	6084.0	N56E	-45^{o}	170	1.0	.091	.091	WMC Radiometric & Assay
W-424	1,037,475.6	259,584.9	6084.1	S33E	-45^{o}	90	Barren			WMC Radiometric
W-425A	1,037,481.3	259,581.3	6084.9	S60W	-45^{o}	80				No Log
W-425B	1,037,494.2	259,602.3	6090.5	S64W	-55^{o}	130	14.5	.080	1.162	WMC Radiometric & Assay
W-426	1,037,603.8	259,930.1	6141.3	S30E	-45^{o}	150	Barren			WMC Radiometric
W-427	1,037,605.0	259,949.6	6142.9	N56E	-45^{o}	200	3.5	.039	.137	WMC Radiometric & Assay
W-428	1,038,377.9	259,910.7	6187.6	N26W	-45^{o}	309	2.0	.035	.070	WMC Radiometric & Assay
W-429	1,038,375.6	259,934.3	6191.2	N60E	-45^{o}	362	29.0	.037	1.063	WMC Radiometric & Assay
W-430	1,038,622.5	258,971.5	6067.7	N65E	-45^{o}	80	40.0	.017	0.676	WMC Radiometric & Assay
W-431	1,038,600.9	259,066.5	6073.8	N56E	-45^{o}	100	94.0	.017	1.615	WMC Radiometric & Assay
W-432	1,038,605.2	259,190.1	6079.9	N50E	-45^{o}	112	11.0	.038	.422	WMC Radiometric & Assay

WORKMAN CREEK DRILL HOLE SUMMARY
(SOUTH SIDE - SECTION 30, T6N, R14E
LUCKY STOP & RHONDA CLAIMS)

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
W-318	1,033,568.5	259,617.0	6019.5	S55W	-45	93	7.0	.025	.172	WMC Radiometric & Assay
W-319	1,033,564.8	259,628.0	6020.0	S33E	-45	165	8.5	.038	.326	WMC Radiometric & Assay
W-320	1,033,493.3	259,590.4	6042.2	S40E	-45	185	31.0	LSA		WMC Radiometric Log
W-340	1,033,565.9	259,717.2	6015.6	S35E	-45	145	4.0	.028	.114	WMC Radiometric & Assay
W-341	1,033,583.7	259,719.3	6015.7	N55E	-45	129	4.5	.027	.121	WMC Radiometric Log
W-342	1,033,569.6	259,690.7	6018.4	S55W	-45	150	2.0	.052	.103	WMC Radiometric Log
W-343	1,033,365	259,633	6004	S60W	-45	145	4.5	.017	.078	WMC Radiometric & Assay
W-344	1,033,349.9	259,921.8	5997.0	S50W	-45	145	11.0	.043	.470	WMC Radiometric & Assay
W-345	1,032,964.2	260,613.0	5981.5	N55E	-45	150	8.0	.065	.517	WMC Radiometric & Assay
W-346	1,033,330.0	260,008.7	6003.1	S60W	-45	170	4.0	.046	.186	WMC Radiometric & Assay
W-347	1,033,293.7	260,112.7	6009.2	S70W	-45	180	8.5	.041	.351	WMC Radiometric & Assay
W-348	1,033,220.8	260,186.0	6008.9	S55W	-45	186	48.0	LSA		WMC Radiometric Log
W-349	1,033,095.5	260,208.0	5995.8	N35W	-45	135	16.5	LSA		WMC Radiometric Log
W-350	1,032,988.7	260,143.3	5988.9	N30W	-45	170	9.0	.037	.311	WMC Radiometric & Assay
W-351	1,032,936.6	260,074.0	5985.3	N30W	-45	156	1.5	.098	.147	WMC Radiometric & Assay
W-352	1,032,861.0	260,016.7	5975.4	N35W	-45	131	2.0	.085	.170	WMC Radiometric Log
W-353	1,032,802.3	259,915.8	5968.8	N35W	-60	107	2.0	.057	.114	WMC Radiometric Log
W-354	1,032,600.1	259,580.3	6024.0	S57W	-65	142	1.0	.179	.179	WMC Radiometric & Assay
W-355	1,032,520.8	259,652.3	6030.6	S62W	-60	162	1.5	.071	.106	WMC Radiometric & Assay

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
W-356	1,032,423.0	259,698.5	6026.8	S28E	-45	195	41.0	.044	1.813	WMC Radiometric & Assay
W-357	1,032,437.3	259,703.5	6026.0	N55E	-45	55	28.5	.061	1.749	WMC Radiometric & Assay
W-358	1,032,412.8	259,653.6	6030.6	S55W	-45	185	27.0	.076	2.048	WMC Radiometric & Assay
W-359	1,032,326.0	259,607.0	6057.6	S28E	-45	222	18.5	.061	1.132	WMC Radiometric & Assay
W-360	1,032,334.8	259,604.5	6056.2	S56W	-45	207	39.0	.061	2.390	WMC Radiometric & Assay
W-361	1,032,492.6	259,672.7	6028.7	Vert	-90	150	6.5	.043	.281	WMC Radiometric & Assay
W-362	1,032,330.2	259,732.6	6046.7	S33E	-45	188	76.5	.176	13.463	WMC Radiometric & Assay
W-363	1,032,370.9	259,797.2	6044.2	S33E	-45	80	15.0	.061	.910	WMC Radiometric & Assay
W-364	1,032,277.3	259,858.3	6053.9	S28E	-45	241	45.0	.098	4.404	WMC Radiometric & Assay
W-365	1,032,287.2	259,858.3	6053.7	N52E	-45	235	26.0	.092	2.383	WMC Radiometric & Assay
W-366	1,032,541.1	259,837.4	6017.8	S33E	-45	196	5.5	.073	.399	WMC Radiometric & Assay
W-367	1,032,430.5	259,917.3	6027.8	S32E	-45	215	14.0	.170	2.386	WMC Radiometric & Assay
W-368	1,032,443.0	259,921.7	6026.3	N62E	-45	220	7.5	.075	0.560	WMC Radiometric & Assay
W-369A	1,032,533.3	259,945.0	6012.5	N57E	-45	75	5.5	.116	0.641	WMC Radiometric & Assay
W-370	1,032,539.9	259,933.6	6012.1	N33W	-45	195	4.0	.033	0.133	WMC Radiometric & Assay
W-371	1,032,226	259,065	6125	S33E	-45	195	3.0	LSA		WMC Radiometric Log
W-401	1,033,019.5	260,676.9	5995.6	S40E	-45	165	25.0	LSA		WMC Radiometric & Assay
W-402	1,032,953.3	260,598.0	5981.4	S50W	-45	140	2.5	0.026	0.066	WMC Radiometric & Assay
W-403	1,031,253.5	260,188.5	6274.3	S60W	-45	500	7.5	.046	0.342	WMC Radiometric Log
W-404	1,031,479.2	260,203.2	6253.7	S55W	-45	405	Hammer Broke off in hole			
W-405	1,031,816.4	260,371.2	6220.1	S60W	-45	395	16.5	.031	0.513	WMC Radiometric & Assay

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
W-406	1,031,615.0	260,239.7	6243.9	S60W	-45	450	8.5	.073	0.622	WMC Radiometric Log
W-407	1,031,607	260,248	6243	S30E	-60	370	2.0	.028	.056	WMC Radiometric Log
W-408	1,032,200.8	260,387.3	6069.7	S57W	-45	230	1.5	.053	.080	WMC Radiometric & Assay
W-409	1,032,199.9	260,400.9	6070.1	S33E	-45	240	2.5	.022	.055	WMC Radiometric & Assay
W-410	1,032,316.4	260,400.9	6045.2	N57E	-45	200	3.0	.131	.392	WMC Radiometric & Assay
W-411	1,032,297.2	260,368.3	6043.2	S55W	-45	225	4.5	.033	.147	WMC Radiometric & Assay
DDH-1	1,032,548.0	260,464.5	6000.4	S70E	Horiz.	75	2.0	.030	.060	WMC Radiometric Log
V-2	1,032,558.0	260,453.4	5996.3	-	Vert.		15.0	.042	.623	WMC Radiometric Log
V-1	1,032,890	260,550	5996				2.0	.031	.062	WMC Radiometric Log
V-4	1,032,776	259,860	5974.5		Vert.		3.0	.070	.209	WMC Radiometric Log
HH-10	1,032,880	259,920	5970	N65W	Horiz	300	3.0	.024	.073	WMC Radiometric Log

TOTAL HOLES DRILLED BY WYOMING MINERAL: 46 Holes - 9,020 Feet

1977 PROGRESS REPORT

DRIPPING SPRING PROJECT
Gila County, Arizona

APPENDICES
VOLUME II

APPENDICES

VOLUME II

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
RP-6A	994,048.2	261,443.7	3803.4	N54E	-74	100	5	.090	.450	Host Ventures X-Sections
RP-7	994,013.31	261,422.6	3811.4	N50E	-60	97	20	.067	1.340	Host Ventures X-Sections
RP-8	993,973.8	261,407.9	3818.6	N44E	-57	82	30	.024	.720	Host Ventures X-Sections
RP-8A	993,973.8	261,410.4	3818.3	N34E	-66	92	15	.093	1.390	Host Ventures X-Sections
RP-9	993,920.3	261,377.3	3827.6	N42E	-54	70	Barren			Host Ventures X-Sections
RP-10	993,874.4	261,355.0	3831.8	N52E	-56	92	Barren			Host Ventures X-Sections
RP-10A	993,877.5	261,355.4	3831.9	N59E	-66	92	Barren			Host Ventures X-Sections
RP-11	993,831.0	261,333.6	3835	N50E	-56	87	Barren			Host Ventures X-Sections
RP-12	993,785.8	261,311.3	3837.5	N60E	-54	83	Barren			Host Ventures X-Sections
RP-12A	993,786.7	261,309.2	3838.2							Host Ventures X-Sections
RP-13	993,951.7	261,313.8	3833.8	N50E	-56	21	Barren			Host Ventures X-Sections
RP-14	993,993.7	261,335.2	3824.6	N45E	-57	33	Barren			Host Ventures X-Sections
RP-15	994,043.8	261,358.0	3816.0	N45E	-57	100	5	.030	.150	Host Ventures X-Sections
RP-16	994,088.4	261,380.2	3809.6	N41E	-56	24	10	.029	.295	Host Ventures X-Sections
RP-17	994,134.7	261,403.4	3801.9	N49E	-63	87	Barren			Host Ventures X-Sections
RP-18	994,180.1	261,425.7	3796.7	N48E	-65	100	5	.024	.120	Host Ventures X-Sections
RP-19	994,223.3	261,445.8	3792.0	N48E	-66	86	Barren			Host Ventures X-Sections
RP-20	994,265.1	261,466.0	3786.3	N63E	-67	100	Barren			Host Ventures X-Sections
RP-21	994,314.3	261,488.9	3779.9	N46E	-63	103	Barren			Host Ventures X-Sections

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
RP-22	994,358.3	261,510.9	3773.7	N45E	-64	86	Barren			Host Ventures X-Sections
RP-23	994,402.4	261,421.9	3783.7	N43E	-70	100	Barren			Host Ventures X-Sections
RP-24	994,356.2	261,399.2	3788.6	N47E	-67	100	Barren			Host Ventures X-Sections
RP-25	994,042.6	261,246.9	3826.2	N42E	-70	98	22	.046	1.015	WMC Logs & Host Venture X-Sections
RP-26	993,840	261,763	3580.0	S57E	-77	95	52	.1077	5.6015	WMC Logs & Host Venture X-Sections
RP-27	993,780	261,746	3576.0	S59E	-70	93	14.5	.094	1.368	WMC Logs & Host Venture X-Sections
RP-28	993,740.1	261,702.8	3569	S57E	-70	93	6	.100	.598	WMC Logs & Host Venture X-Sections
RP-29	993,886.3	261,791.2	3579.1	S59E	-65	90	30.5	.034	1.029	WMC Logs & Host Venture X-Sections
RP-30	993,924.2	261,802.8	3588.0	S60E	-70	100	62	.048	2.972	Host Venture X-Sections
RP-31	993,746.5	261,684.3	3571.0	N58W	-70	60	Barren			Host Venture X-Sections
RP-32	994,423.4	260,918.4	3822.0	N57W	-70	45	Barren			Host Venture X-Sections
RP-33	993,837.7	261,735.0	3585.0	N00E	-90	55	20	.089	1.755	Host Venture X-Sections
RP-34	993,974.5	261,846.3	3583.0	N00E	-90	85	59.5	.0401	2.384	WMC Logs & Host Venture X-Sections
RP-35	993,974.5	261,846.3	3583.0	S65E	-75	50	20	.027	.530	Host Venture X-Sections
RP-36	994,005.1	261,873.7	3587.2	N90E	-77	90	58	.050	2.879	WMC Log & Host Venture X-Sections

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
RP-37	994,047.0	261,898.8	3591.0	N90E	-70	90	20.5	.040	.820	WMC Log & Host Venture X-Sections
RP-38	994,226.0	261,336.7	3803.1	N45E	-68	80	Barren			Host Ventures X-Sections
RP-39	994,236.4	261,252.9	3806	N42E	-68	80	Barren			Host Ventures X-Sections
RP-40	994,311.0	261,150.7	3813.0	N46E	-70	77	Barren			Host Ventures X-Sections
RP-41	994,355.7	261,058.8	3816.0	N64E	-67	69	Barren			WMC Log & Host Venture X-Sections
RP-42							Barren			Host Ventures X-Sections
UV-3	993,896.0	262,270.5	3845.2	N00E	-90	7	2' LSA			WMC Log
UV-4	994,160.9	261,418.2	3798.0							
UV-5	994,343.9	261,096.5	3815.0	N00E	-90	30	Barren			WMC Log
UV-6	994,390.7	261,078.5	3815	N00E	-90	36	1	.036	.036	WMC Log
UV-7	994,381.5	261,096.8	3813.0							
UV-10	994,967.8	261,378.3	3757							
UV-11	996,445.2	259,385.8	3940.0							
UV-12	994,210.0	261,441.1	3793.5							
UV-13	993,585.6	261,999.0	3780.7							
UV-14				N00E	-90	294	Barren			WMC Log
W-1	993,831.75	261,762.6	3577.4	S50E	-67	92	22.5	.239	5.377	WMC Log
W-3	993,859.0	261,772.8	3577.6	N87E	-65	60	39.5	.089	3.523	WMC Log

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
W-4	993,886.3	261,791.2	3579.1	N65E	-62	70	Mineralized			Schwartz, 1957, AEC
W-5	993,910.2	261,807.8	3580.1	N65E	-60	60	20.5	.065	1.339	WMC Radiometric Data
W-6	993,937.1	261,822.4	3582.8	N76E	-61.4	76	Mineralized			Schwartz, 1957, AEC
W-7	993,957.2	261,838.0	3583.8	N80E	-66.4	73	18	.071	1.270	WMC Radiometric Data
W-8	993,976.9	261,857.6	3584.9	N78E	-53.6	42	27	.035	0.933	WMC Radiometric Log
W-9	994,011.9	261,872.5	3587.0	N44E	-72.2	48	20.5	.051	0.948	WMC Radiometric Log
W-10	994,041.6	261,883.9	3589.2	N76E	-76.2	80	Mineralized			Schwartz, 1957, AEC
W-11	994,076.72	261,924.3	3593.5	S89E	-70	80	Mineralized			Schwartz, 1957, AEC
W-12	993,757.7	261,726.5	3578.8				Barren			WMC Radiometric Log
W-101	993,974	261,357	3825.0	N60E	-45	86	10	.026	.260	WMC Radiometric Log
W-102	993,984.2	261,352.1	3825.2	N43W	-45	91	Barren			WMC Radiometric & Assay Data
W-103	994,027.3	261,358.8	3817.4	N62E	-45	91	11	.187	2.060	WMC Radiometric & Assay Data
W-104	994,034.6	261,361.6	3816.3	N45W	-45	91	3.5	LSA		WMC Radiometric & Assay Data
W-105	996,412.8	259,645.1	3936.0	N33W	-40	300	7	LSA		WMC Radiometric & Assay Data
W-106	996,408.0	259,646.4	3936.0	S57W	-40	151	Barren			WMC Radiometric Data
W-107	996,208.8	259,580.5	3948.0	S57W	-40	66	Barren			WMC Radiometric Data
W-108	992,851.2	261,801.5	3659.7	N28W	-45	200	Barren			WMC Radiometric Data
W-109	992,849.0	261,794.1	3658.8	N60E	-45	150	1.5	LSA		WMC Radiometric Data
W-110	992,939.0	261,637.4	3670.6	N49E	-45	170	Barren			WMC Radiometric Data
W-111	993,115.9	261,623.5	3687.7	N55E	-45	200	2	LSA		WMC Radiometric Data
W-112	993,125.0	261,625.2	3687.9	S39E	-45	200	1	LSA		WMC Radiometric Data

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
W-113	993,353.7	261,765.9	3702.0	N62E	-45	280	60.5	.072	4.356	WMC Radiometric & Assay Data
W-114	993,342.0	261,757.3	3701.0	S38E	-45	280	5.5	.029	.160	WMC Radiometric & Assay Data
W-115	992,834.7	261,905.0	3661.3	N61E	-45	150	2	LSA		WMC Radiometric & Assay Data
W-116	992,839.8	261,898.4	3660.7	N25W	-45	146	1	LSA		WMC Radiometric & Assay Data
W-117	992,836.9	261,907.1	3661.7	N60E	-20	350	Barren			WMC Radiometric Data
W-118	993,290.7	261,685.1	3690.1	N66E	-45	315	8.5	.034	.287	WMC Radiometric & Assay Data
W-119	993,287.7	261,682.9	3689.8	S38E	-45	301	5	.041	.205	WMC Radiometric & Assay Data
W-120	993,437.8	261,735.8	3687.1	N63E	-45	320	24	.030	.720	WMC Radiometric & Assay Data
W-121	993,429.9	261,732.5	3685.9	S42E	-45	277	28	.052	1.458	WMC Radiometric & Assay Data
W-122	993,527.9	261,756.3	3681.6	S33E	-45	145	14	.025	.352	WMC Radiometric & Assay Data
W-123	993,540.8	261,767.3	3681.9	N57E	-45	345	13.5	.034	.465	WMC Radiometric & Assay Data
W-124	993,917.0	261,967.1	3668.0	N63E	-50	400	3	.020	.060	WMC Radiometric & Assay Data
W-125	993,918.3	261,942.1	3667.2	N27W	-60	281	44	.066	2.918	WMC Radiometric & Assay Data
W-126	993,905.4	261,936.2	3667.0	S46W	-40	230	24	.059	1.418	WMC Radiometric & Assay Data
W-127	993,838.3	261,870.1	3667.8	N41W	-64	182	28	.040	1.105	WMC Radiometric & Assay Data
W-128	993,831.5	261,879.0	3668.9	N57E	-50	270	40.5	.032	1.297	WMC Radiometric & Assay Data
W-129	993,822.7	261,873.2	3669.0	S43E	-40	280	9	.029	.258	WMC Radiometric & Assay Data
W-130	993,715.9	261,809.7	3658.0	N55E	-50	255	41.5	.051	2.100	WMC Radiometric & Assay Data
W-131	993,723.2	261,814.0	3657.0	S43E	-40	265	16	.1175	1.880	WMC Radiometric & Assay Data
W-132	993,732.0	261,807.5	3655.0	S26W	-60	215	35	.034	1.186	WMC Radiometric & Assay Data

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
W-133	993,499.4	261,737.4	3683.1	S52W	-50	200	56	.401	2.279	WMC Radiometric & Assay Data
W-134	993,546.9	261,758.5	3679.0	N32W	-60	200	58	.087	5.067	WMC Radiometric & Assay Data
W-135	994,116.6	261,361.5	3808.5	N37W	-45	105	19	.083	1.57	WMC Radiometric & Assay Data
W-136	994,112.8	261,386.4	3805.7	N60E	-45	100	4.5	.039	.177	WMC Radiometric & Assay Data
W-137	994,197.9	261,373.4	3801.0	N38W	-45	100	3	.053	.158	WMC Radiometric & Assay Data
W-138	994,194.9	261,395.8	3799.2	N58E	-45	100	6.5	.058	.377	WMC Radiometric & Assay Data
W-139	994,253.4	261,379.7	3795.9	N36W	-45	100	Barren			WMC Radiometric Data
W-140	994,253.9	261,405.0	3793.3	N60E	-45	60	Several LSA			WMC Radiometric Data
W-141	994,232.4	261,243.8	3810.9	N63E	-45	85	7	.021	.150	Radiometric & Assay Data
W-142	994,238.8	261,236.8	3815.4	N33W	-45	85	3	.022	.067	Radiometric & Assay Data
W-143	994,142.9	261,215.7	3819.3	N33W	-45	85	1.5	0.35	0.52	Radiometric & Assay Data
W-144	994,141.1	261,234.4	3818.8	N56E	-45	85	5	.039	.154	Radiometric & Assay Data
W-145	994,010.1	261,219.1	3830.3	N55E	-45	90	Barren			WMC Radiometric Data
W-146	994,010.0	261,208.9	3830.3	N33W	-45	90	Barren			WMC Radiometric Data
W-147	993,860.2	261,200.3	3845.4	N58E	-45	100	1	LSA		WMC Radiometric Data
W-148	993,857.3	261,189.5	3845.0	N33W	-45	100	Barren			WMC Radiometric Data
W-149	993,868.3	261,333.9	3835.8	N38W	-45	80	Barren			WMC Radiometric Data
W-150	993,862.9	261,339.0	3834.8	N60E	-45	80	3.5	.036	.126	Radiometric & Assay Data
W-151	993,809.4	261,334.1	3850.3	N52E	-45	80	2.5	.022	.055	WMC Assay & Radiometric Data
W-152	993,811.8	261,322.5	3840.8	N42W	-45	85	1	LSA		WMC Radiometric Data

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
W-153	993,754.9	261,312.4	3831.4	N43W	-45	90	6	.050	.301	WMC Assay & Radiometric Data
W-154	993,747.7	261,317.2	3829.2	N49E	-45	80	2.5	.055	.138	WMC Assay & Radiometric Data
W-155	994,060.2	261,224.9	3825.9	N58E	-45	100	2	LSA		WMC Radiometric Data
W-156	994,066.7	261,218.7	3825.3	N34W	-45	85	1	LSA		WMC Radiometric Data
W-157	994,008.8	261,351.8	3820.5	N57E	-45	90	1	.021	.021	WMC Radiometric Data
W-158	994,085.6	261,351.4	3813.0	N34W	-45	100	4.5	.032	.145	WMC Assay & Radiometric Data
W-159	994,031.5	261,294.5	3823.2	N63E	-45	90	8.5	.029	.247	WMC Assay & Radiometric Data
W-160	993,777.8	261,257.2	3847.9	N52E	-45	58	4	.025	.100	WMC Assay & Radiometric Data
W-161	993,775.7	261,255.0	3848.5	N42W	-45	76	Barren			WMC Radiometric Data
W-162	993,468.2	261,798.6	3717.5	S36E	-40	265	70	.047	3.300	WMC Radiometric & Assay Data
W-163	993,481.0	261,802.5	3718.4	N57E	-50	250	58.5	.052	3.035	WMC Radiometric & Assay Data
W-164	993,550.6	261,841.9	3722.8	S38E	-40	290	60	.047	2.835	WMC Radiometric & Assay Data
W-165	993,561.1	261,848.6	3723.6	N55E	-50	290	21.5	.069	1.487	WMC Radiometric & Assay Data
W-166	993,626.3	261,923.7	3741.9	S34E	-40	300	45.5	.039	1.794	WMC Radiometric & Assay Data
W-167	993,637.1	261,934.9	3745.0	N60E	-50	300	5	.022	.111	WMC Radiometric & Assay Data
W-168	993,082.0	261,857.0	3825.1	N53E	-50	400	50	.038	1.909	WMC Radiometric & Assay Data
W-169	992,967.9	262,033.6	3810.7	N35W	-50	325	59	.084	4.927	WMC Radiometric & Assay Data
W-170	993,638.9	261,796.7	3669.0	N62E	-50	265	25	.047	1.1704	WMC Radiometric & Assay Data
W-171	993,621.9	261,789.9	3670.2	S30E	-40	200	27.5	.028	.784	WMC Radiometric & Assay Data
W-172	993,010.3	261,975.9	3817.3	N31W	-50	330	51.5	.086	4.436	WMC Radiometric Data

Hole	Latitude	Departure	Collar Elev.	Bearing	Incl.	Depth	Thickness	Grade	T x G	Reference
W-173	992,912.2	262,104.4	3810.6	N34W	-50	301.5	3.5	LSA		WMC Radiometric Data
W-174	993,103.2	261,857.1	3825.4	N58E	-50	320				
	(Hole Bridged--Will reopen next year)									
W-175	993,905.3	261,943.4	3667.1	S34E	-43	230	1	.025	.025	WMC Radiometric Data
W-176	994,083.1	262,196.2	3726.5	N65E	-50	380	Barren			WMC Radiometric Data
W-177	994,063.0	262,183.1	3727.3	S37E	-40	405	Barren			WMC Radiometric Data
W-178	993,920.1	262,132.9	3745.5	N60E	-50	375	Barren			WMC Radiometric Data
W-179	993,077.3	261,972.3	3838.3	N57E	-50	400	Barren			WMC Radiometric Data
W-180	993,084.1	261,955.9	3837.4	S57W	-50	220	Barren			WMC Radiometric Data
W-180B	993,090.9	261,953.4	3837.1	S73W	-50	350	65	.069	4.473	WMC Radiometric & Assay Data
W-181	993,509.6	262,217.8	3868.7	N58E	-50	425	Barren			WMC Radiometric Log
W-182	993,502.2	262,204.7	3868.0	S33E	-40	450	Barren			WMC Radiometric Log
W-183	993,374	262,076	3855.6	N61E	-50	480				WMC Radiometric Log
W-184A	993,358	262,046	3854.6	S57E	-40	365				WMC Radiometric Log
W-184B	993,354	262,044	3854.3	S74E	-50	480	1	LSA		WMC Radiometric Log
W-185	993,197.4	261,878.2	3818.6	S58W	-40	380	1.5	.031	.046	WMC Radiometric Log
W-186	993,099.1	261,823.3	3824.4	S30E	-40	375	58	LSA		WMC Radiometric Log

APPENDIX VII

METALLURGICAL TEST WORK

1977

APPENDIX VII

SUMMARY

During 1976, two series of tests were run on ore samples from the Dripping Spring Project area. The test data was included in the 1976 Progress Report, and can be summarized as follows:

1. The initial tests were bottle leach tests run on surface (largely oxidized) samples for about 40.5 hours. The calculated-heads assay was .054% U_3O_8 and the extraction was 89% on the -48 mesh fraction.

2. The second group of tests were run on drill hole cutting samples (largely unoxidized) with no attempt to optimize recovery, but to obtain probable heap leach recoveries under natural conditions. The tests were run for 48 hours. The extraction was 52 to 70% with the best extractions on the highest grade material.

These tests suggested that there could be considerable differences between the weathered rock and fresh rock samples.

In 1977, tests were run on the rock removed during the course of mining underground at Red Bluff. These tests (Appendix VII (a)) were run to: (a) simulate heap type conditions, and (b) maximize extraction. These series of tests showed recoveries of 49-63%. The variations in recovery are further highlighted by the report included herewith as Appendix VII(b). These samples were gathered from a variety of locations and show recoveries ranging from 40 to 75%. The amount of natural oxidation again appears to be a factor.

The following is a list of locations where samples were taken by Wyoming Mineral Corporation Exploration Department as part of the 1977 Assessment work:

SAMPLE	% EXTRACTION IN 48 HOURS	GRADE	LOCATION
BBMS #1	47	.03	At the adit on Big Buck claim
BBMS #2	55	.07	About 20' in the adit on Big Buck claim
BBMS #3	52	.05	About 40' in the adit on Big Buck claim
BBCM #1	46	.04	A composit of BBMS Nos. 1, 2, & 3
BRMS #1-5	75,69,47	.01 .02	From Black Brush locations.
GSMS #1	40	.02	From about a 20'x10' open cup on the Gridstone claim
LPMS #1	44	.01	From the Lone Pine at the portal of the incline.
PRMS #1	69	.11	Sample taken from the ribs of the adit portal at Pine Ridge

In order to get a better handle on just what factors control extraction, yet another series of tests were devised. These tests were specifically intended to further define mineral association and mineralogy to see if the variation throughout the district is significant and to examine accessibility of the mineral grains to the leach solutions.

The R & D group in Pittsburgh performed tests on polished sections of ore. The results were inconclusive and the procedure was found to be faulty. At this writing, the procedures are being revised so that this portion of the metallurgical work can proceed.

In addition to these tests, additional leach tests were performed on ore samples from several different WMC properties in the Sierra Ancha district. These samples were high grade (up to .6% U_3O_8) and showed recoveries ranging from 85 to 95%. Because these grades are not typical of mine run rock, the same areas have been resampled and similar tests will be run on samples that contain 1 to 3 lbs (.05 to .15) of U_3O_8 per ton. It is interesting to note, however, that some of the samples which leached best were not oxidized. This would tend to suggest that some of the Dripping Spring ores contain a high percentage of readily soluable minerals such as uraninite. This conclusion was also reached by USGS writers in the 1950's.

METALLURGICAL TEST REPORTS

Underground Samples

APPENDIX VII(a)

LABORATORY LEACHING TESTS

ON

URANIUM ORE

For

Wyoming Minerals Corporation
3900 South Wadsworth Blvd.
Lakewood, Colorado 80235

By

MOUNTAIN STATES RESEARCH & DEVELOPMENT
Post OFfice Box 17960
Tucson, Arizona 85731

Job No. 567

Prepared by: Herman M. Maass
Herman M. Maass
Project Engineer

Registered Professional Engineer (Metallurgical)
CERTIFICATE EXPIRES
ROSHAN B. BHAPPU
DEC. 31, 19
ARIZONA, U.S.A.

November 8, 1977

Approved by: Roshan B. Bhappu
Roshan B. Bhappu
Vice President and
General Manager

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INTRODUCTION

At the request of Mr. Howard Urband of Wyoming Minerals Corporation, a preliminary leaching test program was undertaken to determine the amenability of heap leaching of uranium ores from their property in the Dripping Springs area of Arizona.

This investigation was to include acid leaching tests on four different grades of ore as follows:

1. Minus 0.02 percent U_3O_8
2. Plus 0.02/minus 0.05 percent U_3O_8
3. Plus 0.05/minus 0.08 percent U_3O_8
4. Plus 0.08 percent U_3O_8

The ore samples were to be screened and the screen fractions leached by various methods as follows:

1. Plus 2-inch; Vat leach (submerged)
2. Minus 2-inch/plus 1-inch; Column leach (simulated heap)
3. Minus 1-inch/plus 3/8-inch; Column leach (simulated heap)
4. Minus 3/8-inch/plus 10-mesh; Bottle leach (simulated Marconaflo system)
5. Minus 10-mesh; Bottle leach

Ore samples of 600 to 700 pounds each representing four stockpiles were received in July 1977. Stockpiles 2 and 4 were later resampled and these were designated as Stockpile 2B and Stockpile 4B.

Stockpile 4B sample, representing ore of 0.10 percent U_3O_8, was to be crushed to minus 3/8-inch before leach charges were split out. Leach tests at pH 1.0 and 0.4 were to be run on samples crushed and ground to the following sizes:

Minus 3/8-inch

Minus 10-mesh

Minus 48-mesh

Minus 200-mesh

RESULTS AND CONCLUSIONS

1. The stockpile samples were screened and the screen fractions prepared for assay following the flowsheet shown in Figure 1. Results are shown in Table I. The weights of the screen fractions were small considering the size of the particles, especially in the coarser sizes and therefore, it was uncertain that many of the assay samples were truly representative of the various fractions. Most of the screen fractions were later resampled by splitting out 10 to 20 percent of the original weight and the non-representative nature of the assay samples is shown by the differences in the assays of the two sets of samples. Also, the relative weights of the screen fractions of the two Stockpile 2 samples were quite different. Reference to the chart shown in Figure 2 indicates that the samples should have been much larger to be considered representative.

   In general, the screen analyses indicated that the uranium was fairly well distributed among the various size fractions.

2. Because of the difficulties in trying to take representative small samples of coarse ores, the original leaching plans were altered to permit blending of the same rock sizes from different stockpiles to make more adequate sized test charges of the desired grades.

   On the basis of the original set of assays of the stockpile screen fractions, test charges were made up insofar as possible for each

FIGURE 1

Sample Preparation Flowsheet

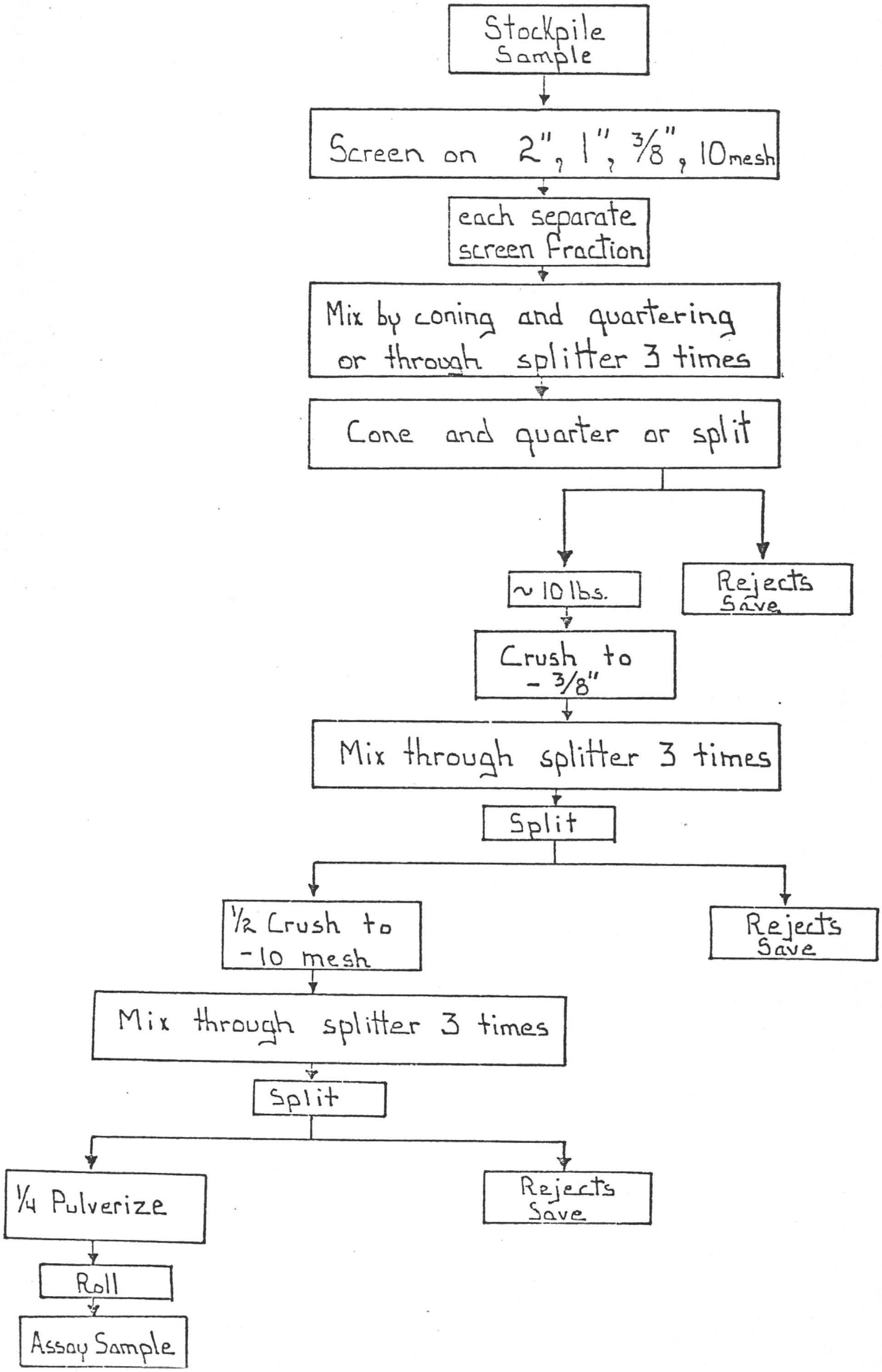
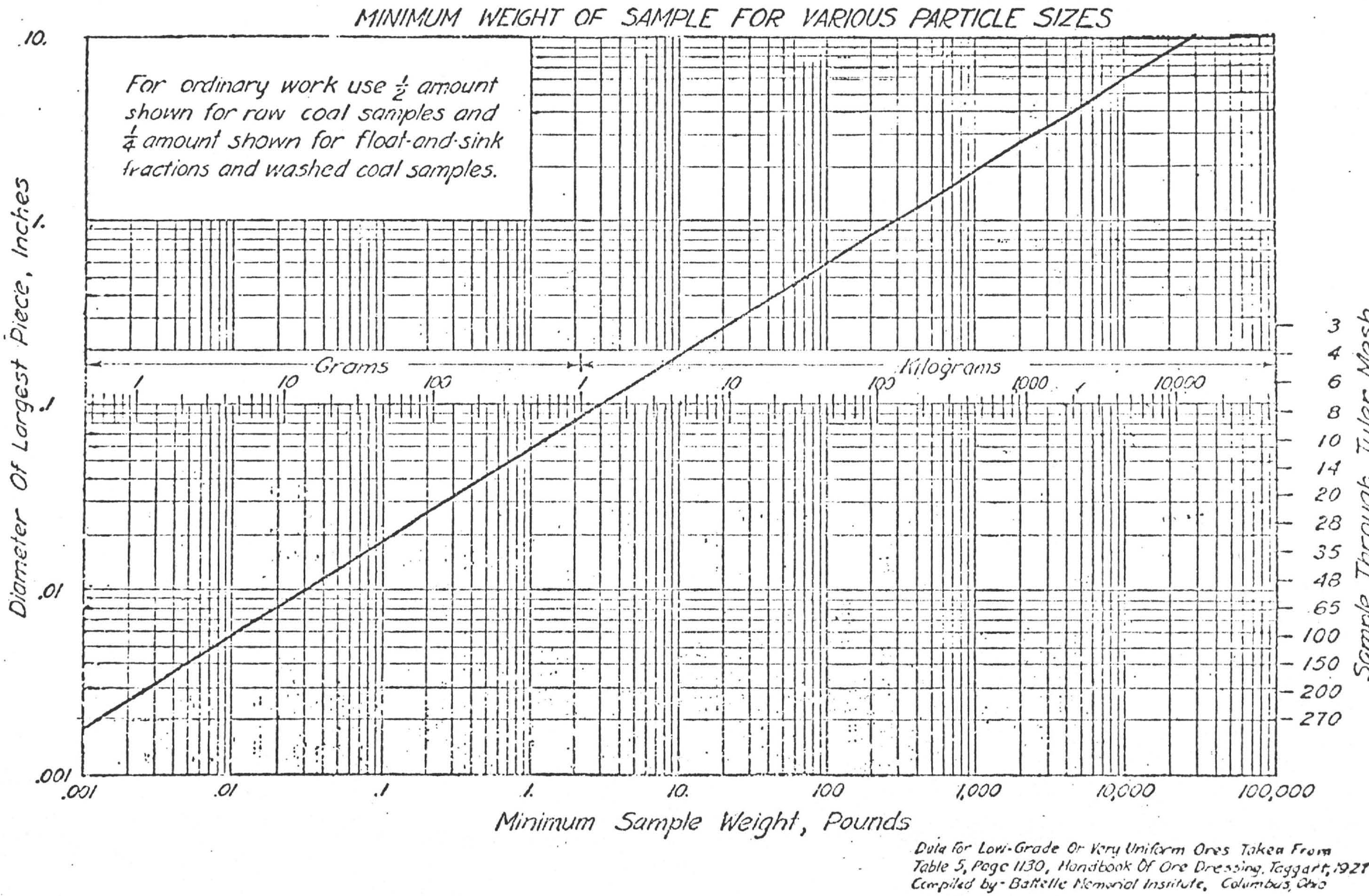


TABLE I

STOCKPILE SCREEN ANALYSIS

	Weight (%)	U_3O_8 (%)	Distribution U_3O_8 (%)	Resample U_3O_8 (%)
Stockpile 1:				
+2"	20.1	0.012	23.8	0.020
-2" +1"	24.0	0.009	20.9	0.010
-1" +3/8"	30.5	0.010	30.4	0.012
-3/8" +10M	16.5	0.010	15.6	0.012
-10M	8.9	0.011	9.3	-
	100.0	0.010	100.0	0.013
Stockpile 2:				
+2"	24.2	0.017	29.3	0.015
-2" +1"	48.4	0.013	43.9	0.021
-1" +3/8"	22.0	0.013	20.2	0.023
-3/8" +10M	3.9	0.016	4.4	-
-10M	1.5	0.021	2.2	-
	100.0	0.014	100.0	0.020
Stockpile 2B:				
+2"	6.5	0.024	6.4	-
-2" +1"	24.1	0.023	22.8	0.022
-1" +3/8"	38.2	0.023	36.1	0.023
-3/8" +10M	19.7	0.025	20.2	0.023
-10M	11.4	0.031	14.5	-
	100.0	0.024	100.0	0.024
Stockpile 3:				
+2"	6.0	0.057	7.0	-
-2" +1"	43.6	0.058	52.0	0.032
-1" +3/8"	34.0	0.035	24.5	0.038
-3/8" +10M	11.7	0.047	11.3	0.043
-10M	4.7	0.054	5.2	-
	100.0	0.049	100.0	0.038
Stockpile 4:				
+2"	24.2	0.046	24.8	0.065
-2" +1"	49.3	0.041	45.1	0.091
-1" +3/8"	18.7	0.040	16.7	0.093
-3/8" +10M	5.4	0.077	9.4	0.062
-10M	2.4	0.075	4.0	-
	100.0	0.045	100.0	0.083

FIGURE 2



SAMPLE WEIGHT VS. PARTICLE SIZE

size for average U_3O_8 contents of 0.015 percent, 0.035 percent and 0.065 percent. These charges had the following weights:

Plus 2-inch	100 lbs.
Minus 2-inch/plus 1-inch	100 lbs.
Minus 1-inch/plus 3/8-inch	25 lbs.
Minus 3/8-inch/plus 10-mesh	1,000 gms.
Minus 10-mesh	500 gms.

3. The coarsest size was vat leached (submerged); the next two finer sizes were leached in columns (8-inch and 4-inch diameter) simulating heap leaching; and, the two finest sizes were leached in rolling bottles. Results of these tests are shown graphically in Figure 3. It can be seen that:

   (a) Only the highest grade of the finest size had uranium extraction of at least 50 percent.

   (b) After over two weeks of leaching the three coarsest sizes, only one showed extractions exceeding 15 percent and this one was less than 30 percent.

   (c) Leaching the two finest sizes for three days did not give consistently better extractions than for one day.

   (d) Because of dependence on non-representative assays for the coarser sizes in making up the test charges, the calculated head assays for some of the ore blends were quite different from the intended grades.

4. Analysis of the results of the initial bottle leaching tests (Table II) showed there was a definite relation between ore grade and uranium

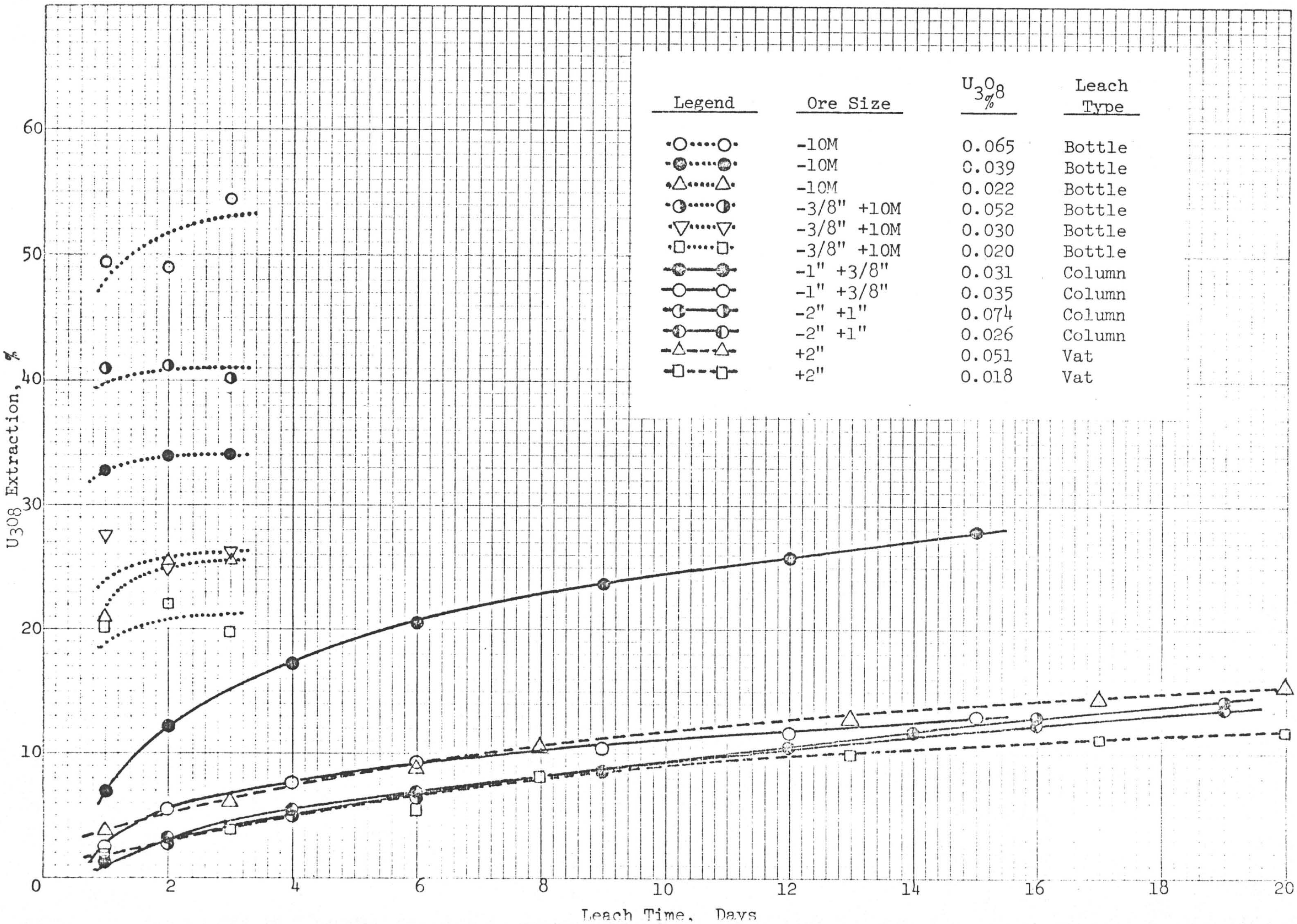

Legend
Ore Size
U_3O_8 %
Leach Type
-10M 0.065 Bottle
-10M 0.039 Bottle
-10M 0.022 Bottle
-3/8" +10M 0.052 Bottle
-3/8" +10M 0.030 Bottle
-3/8" +10M 0.020 Bottle
-1" +3/8" 0.031 Column
-1" +3/8" 0.035 Column
-2" +1" 0.074 Column
-2" +1" 0.026 Column
+2" 0.051 Vat
+2" 0.018 Vat
U308 Extraction, %
Leach Time, Days
0
10
20
30
40
50
60
2
4
6
8
10
12
14
16
18
20

FIGURE 3

TABLE II

BOTTLE LEACH TEST
SUMMARY

Composite Grade (U_3O_8 %)	Leach Time (Hrs.)	H_2SO_4 (Lb./Ton)	U_3O_8 Extraction (%)	Calc. Head (U_3O_8 %)	Test No.
Minus 10-Mesh Screen Fractions:					
0.015	24	163	20.9	0.025	HM-1
(SP-1: 60%	48	192	25.5	0.020	HM-2
SP-2: 40%)	72	220	25.6	0.021	HM-3
0.035	24	128	32.8	0.040	HM-4
(SP-2: 58%	48	192	34.0	0.039	HM-5
SP-3: 42%)	72	220	34.1	0.038	HM-6
0.065	24	128	49.4	0.066	HM-7
(SP-3: 48%	48	192	49.0	0.065	HM-8
SP-4: 52%)	72	192	54.5	0.066	HM-9
Minus 3/8-Inch Plus 10-Mesh Screen Fractions:					
0.015	24	107	20.1	0.019	HM-10
(SP-1: 20%	48	117	22.1	0.020	HM-11
SP-2: 80%)	72	128	19.7	0.021	HM-12
0.035	24	107	27.7	0.032	HM-13
(SP-2: 39%	48	117	25.2	0.030	HM-14
SP-3: 61%)	72	131	26.3	0.028	HM-15
0.065	24	107	41.0	0.057	HM-16
(SP-3: 40%	48	107	41.2	0.049	HM-17
SP-4: 60%)	72	117	40.2	0.049	HM-18

extraction in the finer sizes. This increased extraction with increased grade is shown graphically in Figure 4. How far this apparent straight line relationship might continue beyond the grade shown is difficult to predict. This might indicate a constant unleachable residue grade, but actually the grade of the residue of the highest grade ore leached was twice that of the lowest.

5. The resample of Stockpile (Sample SP-4B) assayed 0.097 percent U_3O_8. It was crushed and ground to sizes from minus 3/8-inch to minus 200-mesh and then leached at pH 1.0 and 0.4. Sufficient $NaClO_3$ was added to maintain the EMF at over +450 mV. Results are shown in Table III. It can be seen that not much more than 60 percent of the uranium was extracted even at the finest grind and lower pH. There appeared to be no improvement in uranium extraction by grinding to finer than 10-mesh. Leaching at pH 0.4 gave slightly better extractions than at pH 1.0, but acid requirements nearly tripled.

6. Even though the simulated heap leach tests did not show high extractions of uranium, such a process might still be profitable at current yellow cake prices for treatment of ores of 0.10 percent U_3O_8 grade. Probably an even better system would involve crushing the ore to about minus 1/4-inch and using an agitated vat (Marconaflo) type leach. Such a treatment avoids the high cost of grinding and would probably result in extractions of around 50 percent of the uranium in a relatively short leach time. After leaching, the coarse residue could be rapidly settled out in classifiers and the fine slime pulp easily treated by resin-in-pulp to recover the dissolved uranium.

FIGURE 4

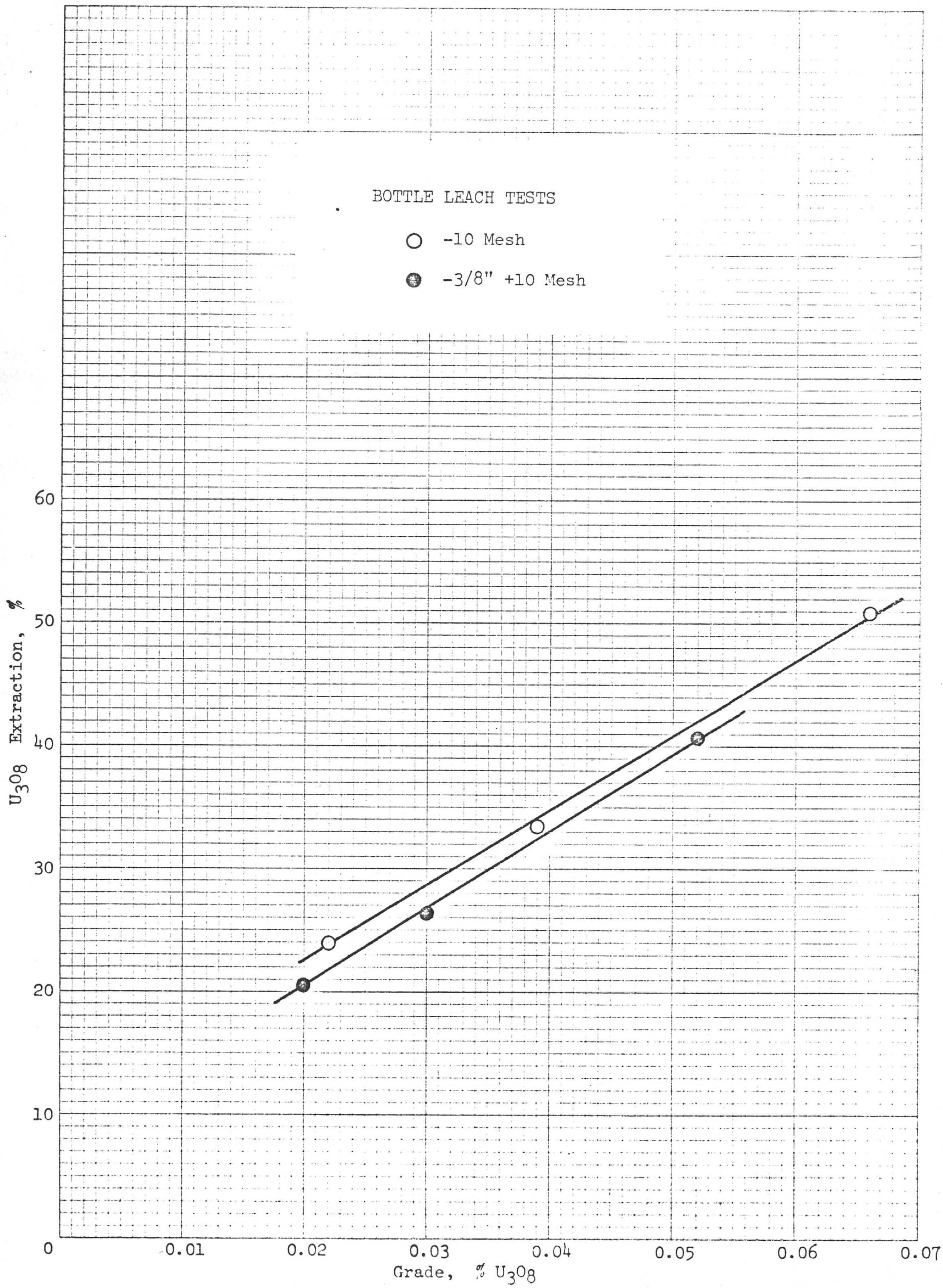

BOTTLE LEACH TESTS
-10 Mesh
-3/8" +10 Mesh
U_3O_8 Extraction, %
0
10
20
30
40
50
60
0.01
0.02
0.03
0.04
0.05
0.06
0.07
Grade, % U_3O_8

TABLE III

BOTTLE LEACH TEST SUMMARY

Stockpile 4B

Head Assay: 0.097% U_3O_8

Leach Time: 24 Hours

Oxidant: $NaClO_3$: 6-12 Lbs/T

Ore Size	Leach (pH)	H_2SO_4 (Lb./Ton)	U_3O_8 Extraction (%)	Calc. Head (U_3O_8, %)	Test No.
-3/8 Inch	1.0	89	49.0	0.086	HM-25
-3/8 Inch	0.4	242	48.9	0.086	HM-26
-10 Mesh	1.0	99	59.3	0.096	HM-27
-10 Mesh	0.4	305	63.4	0.092	HM-28
-48 Mesh	1.0	135	57.4	0.096	HM-29
-48 Mesh	0.4	313	63.2	0.100	HM-30
-200 Mesh	1.0	121	55.6	0.094	HM-31
-200 Mesh	0.4	313	59.2	0.090	HM-32

7. Included in this report are descriptions of the various test procedures used and data sheets for the individual tests.

RECOMMENDATIONS

1. Further tests should be made of the agitated vat leach system to determine more exactly what results could be obtained.

2. Hot leaching should be tried on finely ground ore to see if this will make more amenable to dissolution the refractory mineral that seems to constitute about 40 percent of the uranium present in the ore.

3. Heat treatment of the ore prior to leaching should also be tried. Accelerated weathering with procedures such as acid pugging or acid curing and acid pugging followed by roasting have been found to be quite effective in treating refractory uranium ores in the past.

METALLURGICAL TEST REPORTS

Samples from other Properties

APPENDIX VII(b)

PROGRESS REPORT
METALLURGICAL TESTS
ON
URANIUM ORE SAMPLES

FOR

Wyoming Minerals Corporation
3301 Northland Drive
Suite 408
Austin, Texas 78731

BY

Mountain States Research and Development
Post Office Box 17960
Tucson, Arizona 85731

Job No. 551

Prepared By: John A. Plaisted
John A. Plaisted
Senior Laboratory Technician

Wayne A. Millsap
Wayne A. Millsap
Project Engineer

September 20, 1977

Approved By: Roshan B. Bhappu
Roshan B. Bhappu
Vice President and
General Manager

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INTRODUCTION

At the request of Mr. Ken Ragland of Wyoming Minerals Corporation, a series of bottle acid leach tests were conducted by Mountain States Research and Development (MSRD) on a lot of samples furnished by Wyoming Minerals Corporation.

On August 16, 1977, twelve samples at approximately two inch top size were received. As requested, each sample was crushed and processed for assay analysis, moisture content analysis, and leachability studies.

An acid agitation bottle leach test was performed on each of the twelve samples in an effort to determine the leachability of uranium from the ore under chosen conditions.

SUMMARY AND CONCLUSIONS

With two pounds of sodium chlorate per ton added as an oxidant and with 48 hours of leaching, uranium leach extraction varied from 46 to 75 percent on each ground sample. Acid additions were from 220 to 394 pounds per ton. Head assays of the samples varied between 0.006 to 0.118 percent U_3O_8 with 10 of the 12 samples assaying less than 0.05 percent U_3O_8.

Some improvement in extraction might be expected with finer grinding and more aggressive leaching conditions.

SAMPLES PREPARATION

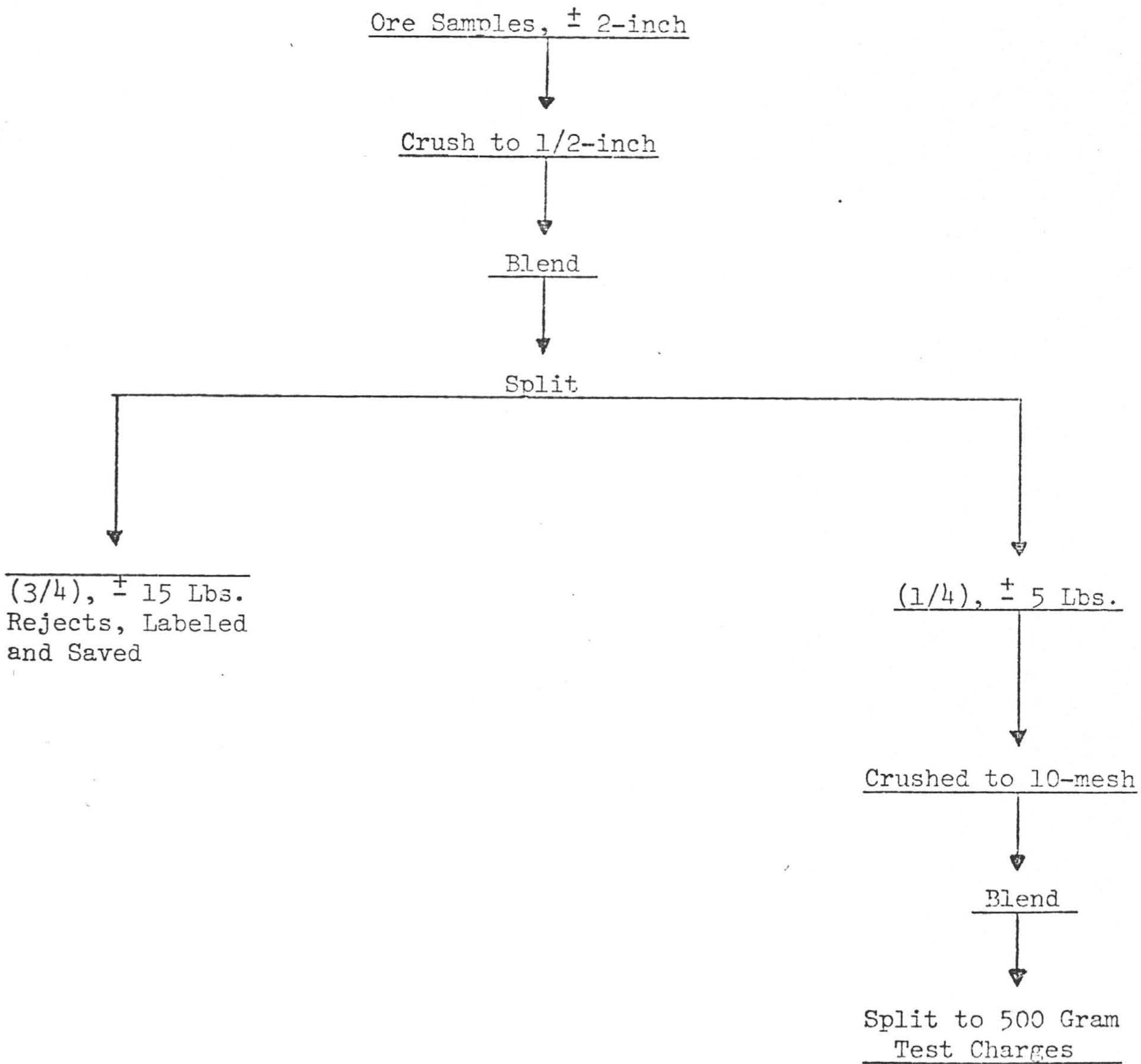
Samples received were labeled as shown below and were of unknown origin to MSRD.

Samples Received	
BBMS	No. 1
BBMS	No. 2
BBMS	No. 3
BBCM	No. 1
BRMS	No. 1
BRMS	No. 2
BRMS	No. 3
BRMS	No. 4
BRMS	No. 5
GSMS	No. 1
LPMS	No. 1
PRMS	No. 1

Each sample was subjected to preparation for head analyses and test charges as shown in Figure 1. Each sample weighed approximately 20 pounds.

FIGURE 1

SAMPLE PREPARATION FLOWSHEET



HEAD ANALYSES

Each sample was assayed for U_3O_8 and H_2O and results are presented below:

Sample No.		% H_2O	% U_3O_8
BBMS	No. 1	0.6	0.032
BBMS	No. 2	0.8	0.070
BBMS	No. 3	0.6	0.045
BBCM	No. 1	0.4	0.042
BRMS	No. 1	0.5	0.017
BRMS	No. 2	0.5	0.014
BRMS	No. 3	0.3	0.014
BRMS	No. 4	0.7	0.006
BRMS	No. 5	0.8	0.006
GSMS	No. 1	0.5	0.023
LPMS	No. 1	0.6	0.008
PRMS	No. 1	0.6	0.118

ACID LEACHING TESTS

Each 500 gram test charge was ground in a laboratory rod mill with water at 62.5 percent solids. A nominal 48-mesh grind was obtained. The ground pulp was diluted with water to 40 percent solids and then leached with sulfuric acid in bottles for 48 hours at ambient temperature. Sodium chlorate was added to each test (two pounds per ton) as an oxidant.

Sulfuric acid was added to maintain a pH of approximately 0.5 throughout the test. The chosen conditions for leaching were only for the purpose of determining uranium extraction and should not be considered optimum.

The results, presented in Table 1, show leaching extractions from a low of 45.9 percent to a high of 74.5 percent. Cursory examinations during the tests showed sufficient sodium chlorate had been added initially for oxidation as is common in current uranium leaching practices.

Four leach residues, selected at random, were subjected to screen analysis to indicate if in fact grinding did produce a nominal 48-mesh grind. The analyses, shown in Table 2, indicate that the expected grind had been obtained.

TABLE I

Sulfuric Acid Bottle Leaches

Conditions: 500 grams ore, 2.0 pounds $NaClO_3$ per ton, 48 hours, ambient temperature at 40 percent solids with sulfuric acid.

Results:

	Sample Identification											
	BBMS#1	BBMS#2	BBMS#3	BBCM#1	BRMS#1	BRMS#2	BRMS#3	BRMS#4	BRMS#5	GSMS#1	LPMS#1	PRMS#1
Head,(%)U_3O_8	0.032	0.070	0.045	0.042	0.017	0.014	0.014	0.006	0.006	0.023	0.008	0.118
Solution, mls.	1213.0	1156.0	1190.0	1112.0	1068.0	1050.0	1126.0	1168.0	1009.0	1023.0	1122.0	1190.0
gram U_3O_8 per liter	0.059	0.145	0.112	0.084	0.067	0.053	0.057	0.011	0.011	0.044	0.020	0.310
Residue, gram	482.6	471.9	481.2	478.7	490.8	496.0	483.0	475.0	469.0	479.4	485.4	474.2
(%) U_3O_8	0.017	0.029	0.026	0.023	0.005	0.005	0.006	0.003	0.004	0.014	0.006	0.035
U_3O_8 Distribution(%)												
Solution	46.6	55.1	51.6	45.9	74.5	69.2	68.9	47.2	37.1	40.1	43.5	69.0
Residue	53.4	44.9	48.4	54.1	25.5	30.8	31.1	52.8	62.9	59.9	56.5	31.0
Calc.Head (%) U_3O_8	0.031	0.061	0.052	0.041	0.019	0.016	0.019	0.005	0.006	0.022	0.010	0.107
Terminal pH	0.7	0.5	0.4	0.6	0.7	0.4	0.7	0.3	0.6	0.7	0.7	0.7
H_2SO_4 Addition (pounds/ton)	298.0	394.0	274.0	330.0	264.0	220.0	287.0	305.0	298.0	284.0	229.0	259.0

TABLE II

LEACH RESIDUE SCREEN ANALYSES

Samples Mesh Size	Screen Analysis, Weight % BBMS No.1	BBCM No.1	BRMS No.4	PRMS No.1
+35	0.4	0.1	0.4	0.1
+48	2.0	1.5	4.5	2.7
+65	5.0	3.6	18.0	1.9
+100	16.3	14.4	18.6	7.8
+150	17.7	18.6	13.6	18.2
+200	15.1	15.0	10.1	17.0
-200	43.5	46.8	34.8	52.3
	100.0	100.0	100.0	100.0

APPENDIX VIII

Geologic Legend

Upper Pre-cambrian		Diabase Intrusions			db	m-c.g.; green-grey; plagioclase and amphibole-rich groundmass w/local, black, deuteric veinlets. Occurs as sills that weather to round, bouldery outcrops, locally in friable, altered zones.
					dba	aplite facies, f.g.; light grey to pink, quartz orthoclase, plagioclase, groundmass. Occurs as dikes rich in albite when intruding diabase and k-spar when in seds.
					dbs	syenite facies, c.g.; reddish-brown to buff, hornblende, magnetite, plagioclase, groundmass. Occurs as dikes.
	Apache Group	Mescal Limestone			Mu	The mescal can be sub-divided into three members: the lower consisting of intbd. dolomite, limestone, and calcareous shale; the middle consists of mass. dolomite or limestone characterized by stromatolite colonies; and the upper, consists of chert and feld spar-rich siltstones and shales w/ thin intbd. limestone.
		Dripping Springs Quartzite	Upper Member	Upper Sub-Member	DSu	f.-m.g.; buff; feldspathic to arkosic sandstones w/ intbd. siltstones, quartzites, and feldspathic orthoquartzites. Alternating thin and thick bedding, local cross-bedding, abundant pseudochannels near base. Quartzite and orthoquartzite intbds. are more common towards the top. Forms massive cliffs.
				Middle Sub-Member (ore horizon)	fe slts	f.g.; ferruginous, siltstones w/ hmt staining, local bleaching, local solutional cavities, abnt. pseudochannels. Interbeds and grades laterally w/carbonaceous siltstones, at the base of DSu.
					c. slts	v.f.g.-f.g.; dk. grey to black; carbonaceous, arkosic, siltstones. Very thin bedded and flaggy w/ v.f.g. diss. pyrite, mudcracks, stylolites, and pseudochannels common.
				Lower Sub-Member	g slts/ss	f-m.g.; grey; micaceous, arkosic, siltstones and feldspathic sandstones w/ local quartzite interbeds, ripple marks, hematite staining. Forms intermediate cliffs and steep slopes; capped by a thin, feldspathic orthoquartzite; underlain by a reddish, hematitic, siltstones w/ripples.
			Lower Member	Upper Sub-Member	qtz	f.g.; lt. green to buff; feldspathic quartzite w/hmt-lmn staining; local diss. pyrite?; forms massive, rounded, narrow ledges.
				Middle Sub-Member	oqtz	v.f.g.-f.g.; white to grey, feldspathic orthoquartzite w/abundant orthoclase in a siliceous matrix. Locally pock-marked; forms massive, rounded ledges and cliffs. A distinctive marker horizon.
				Lower Sub-Member	DSl	f-m.g.; red-brown siltstones and sandstone w/ripple marks and cross-bedding. Basal member is the Barnes Conglomerate, f.g. red-brown to black, arkosic matrix w/rounded quartz pebbles. forms mass, cliffs.
		Pioneer Formation			P	f-m.g.; reddish-brown to brown; finely stratified; sandstone and shale w/ local greenish spots (in proximity to db) weathers purple-red.
		Scanlan Conglomerate			S	m-c.g.; red-brown; chlorite, sericite, feldspar, quartz matrix w/ rounded-sub-rounded, pebbles and boulders of quartzite.
Lower Pre-cambrian		Basement Rocks			gr	Undifferentiated meta-volcanics and sediments intruded by granite.
					mv	
					ms	

Explanation

- Roads
- Shaft
- Prospect
- Adit
- XXXXXXX Fence
- Rotary drill hole - vertical
- - inclined
- Diamond drill hole - vertical
- - inclined

Contact (dashed where approx., dotted where inferred)

Bedding - showing strike and dip.

- 20 Inclined
- Vertical
- Horizontal

Fault - showing strike and dip. u = upthrown side, d = downthrown side. (dashed where aprox., dotted where inferred)

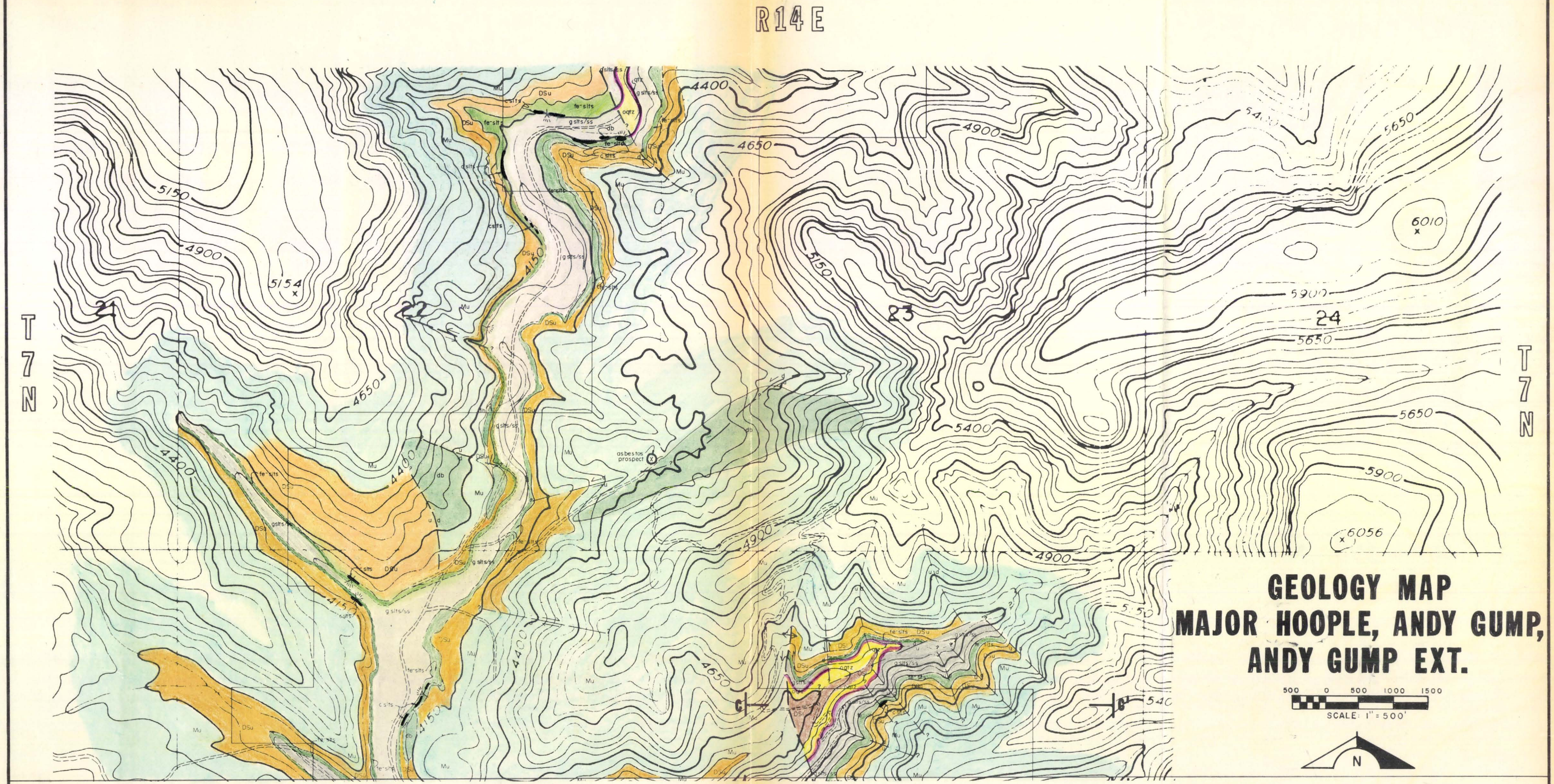
- u d Normal
- u d Left lateral oblique slip
- u d Right lateral oblique slip

Fractures - showing strike and dip.

- inclined
- vertical

Folds - showing plunge direction

- anticline
- syncline



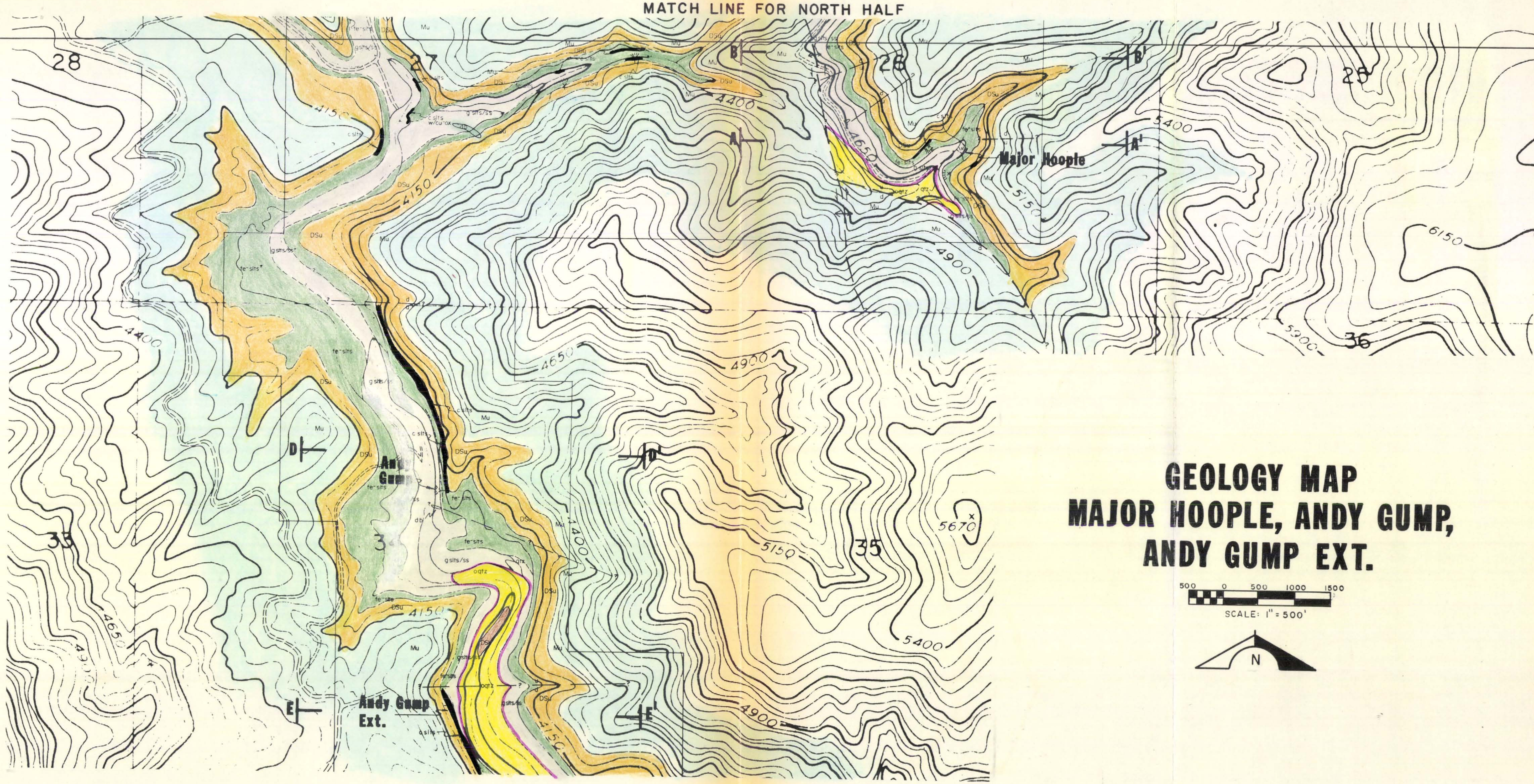
GEOLOGY MAP
MAJOR HOOPLE, ANDY GUMP, ANDY GUMP EXT.

MATCH LINE FOR SOUTH HALF

APPENDIX VIII b

Sheet 1 of 3

MATCH LINE FOR NORTH HALF



GEOLOGY MAP
MAJOR HOOPLE, ANDY GUMP, ANDY GUMP EXT.

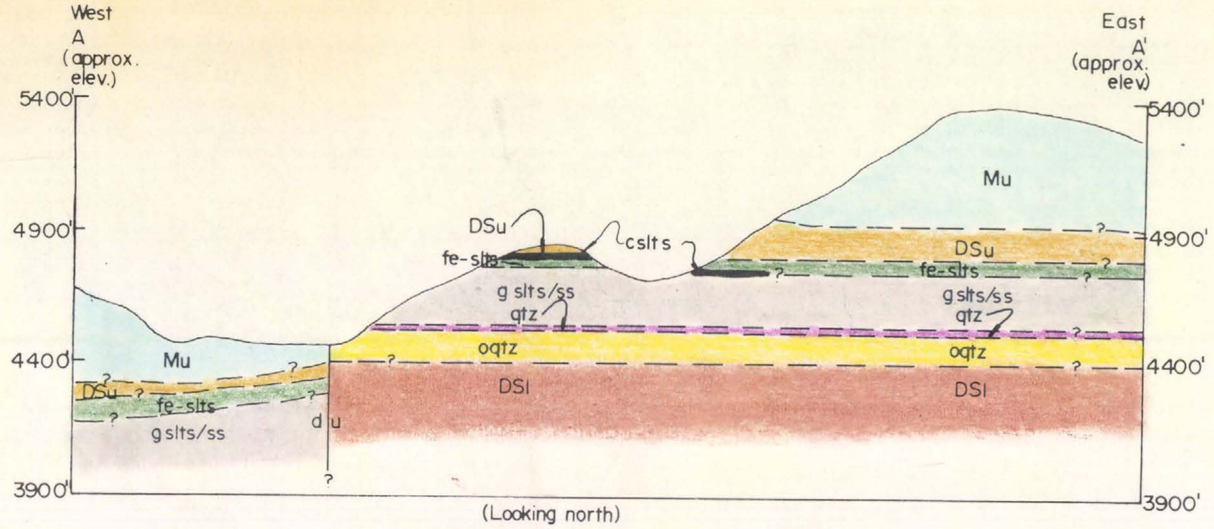
500 0 500 1000 1500

SCALE: 1" = 500'

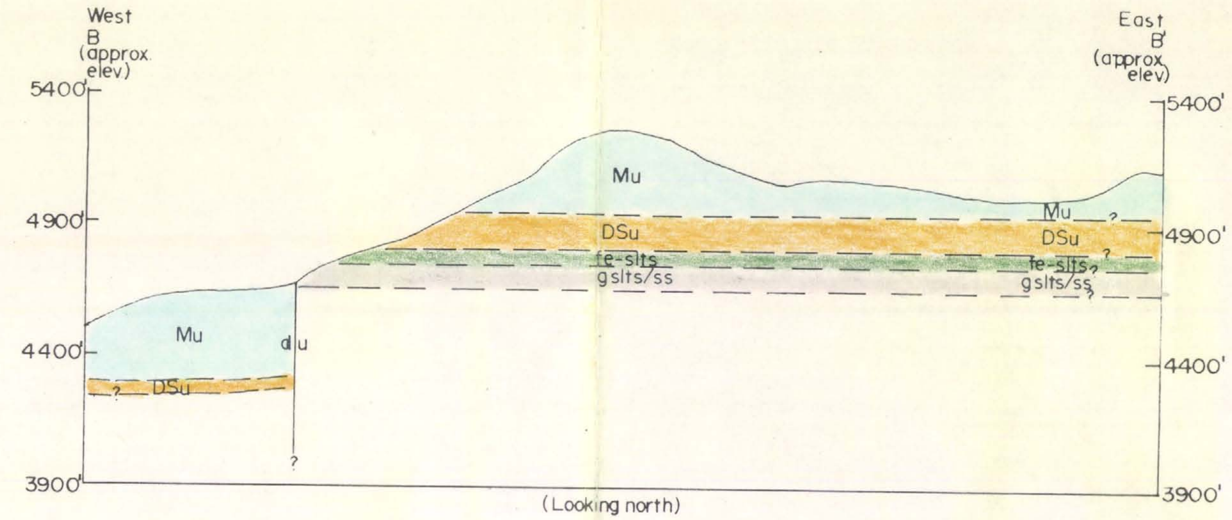
N

APPENDIX VIII b

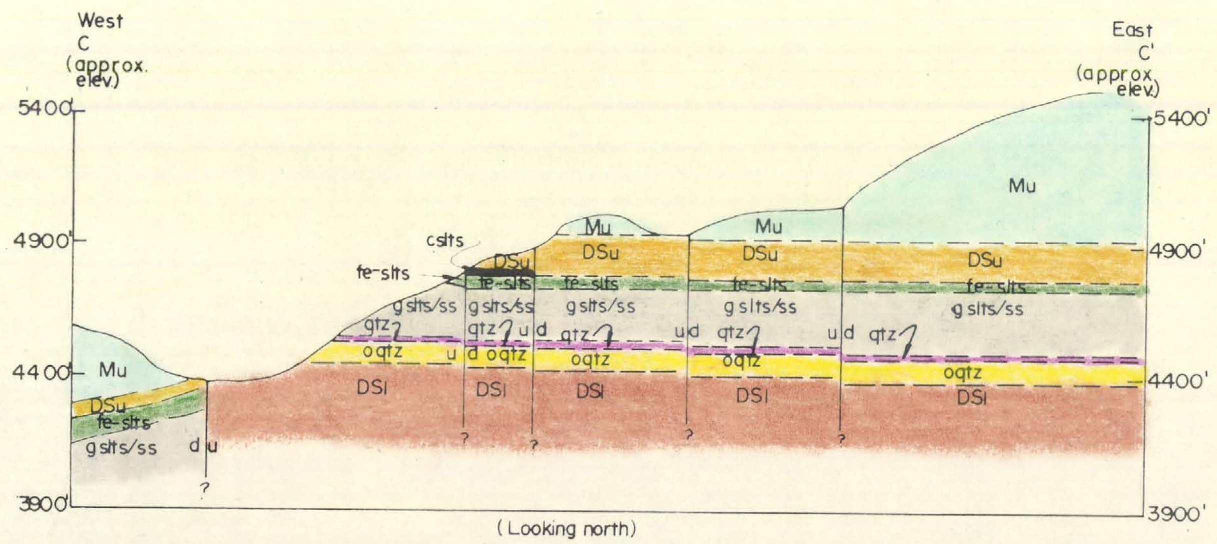
Sheet 2 of 3



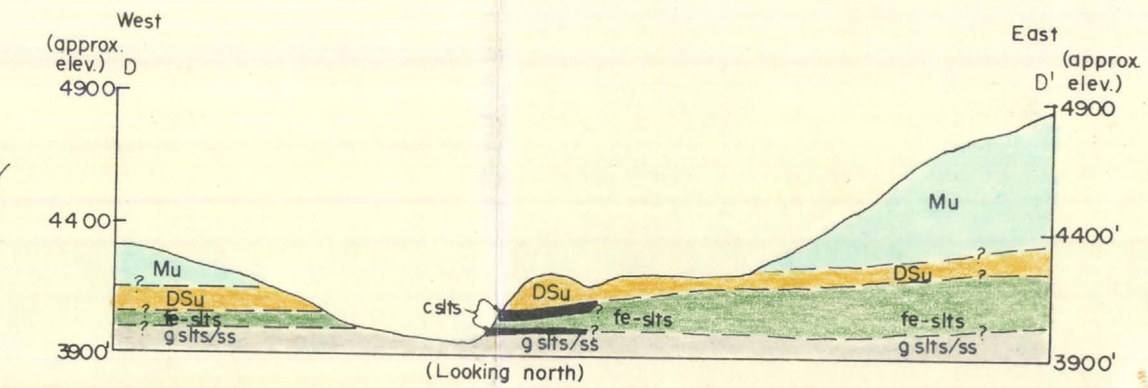
Major Hoople
Geology-cross section (A-A')

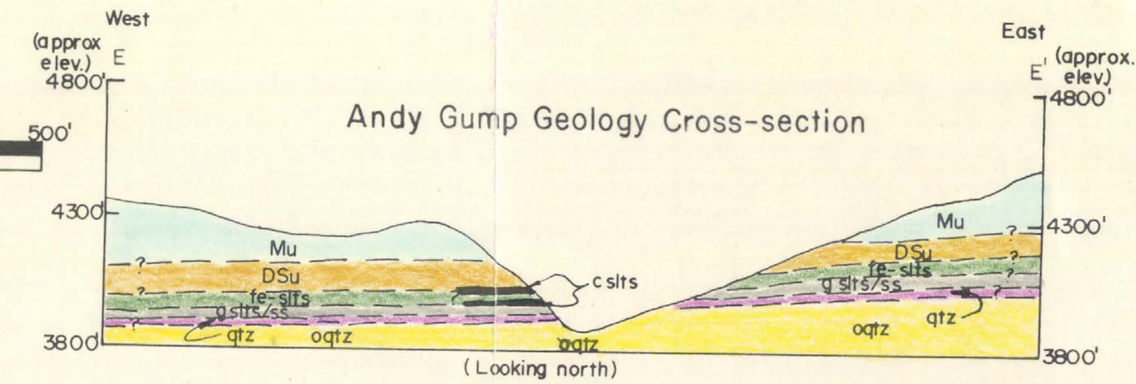


Major Hoople
Geology-cross section (B-B')



Major Hoople
Geology-cross section (C-C')





Andy Gump Geology Cross-section

GEOLOGY CROSS-SECTIONS

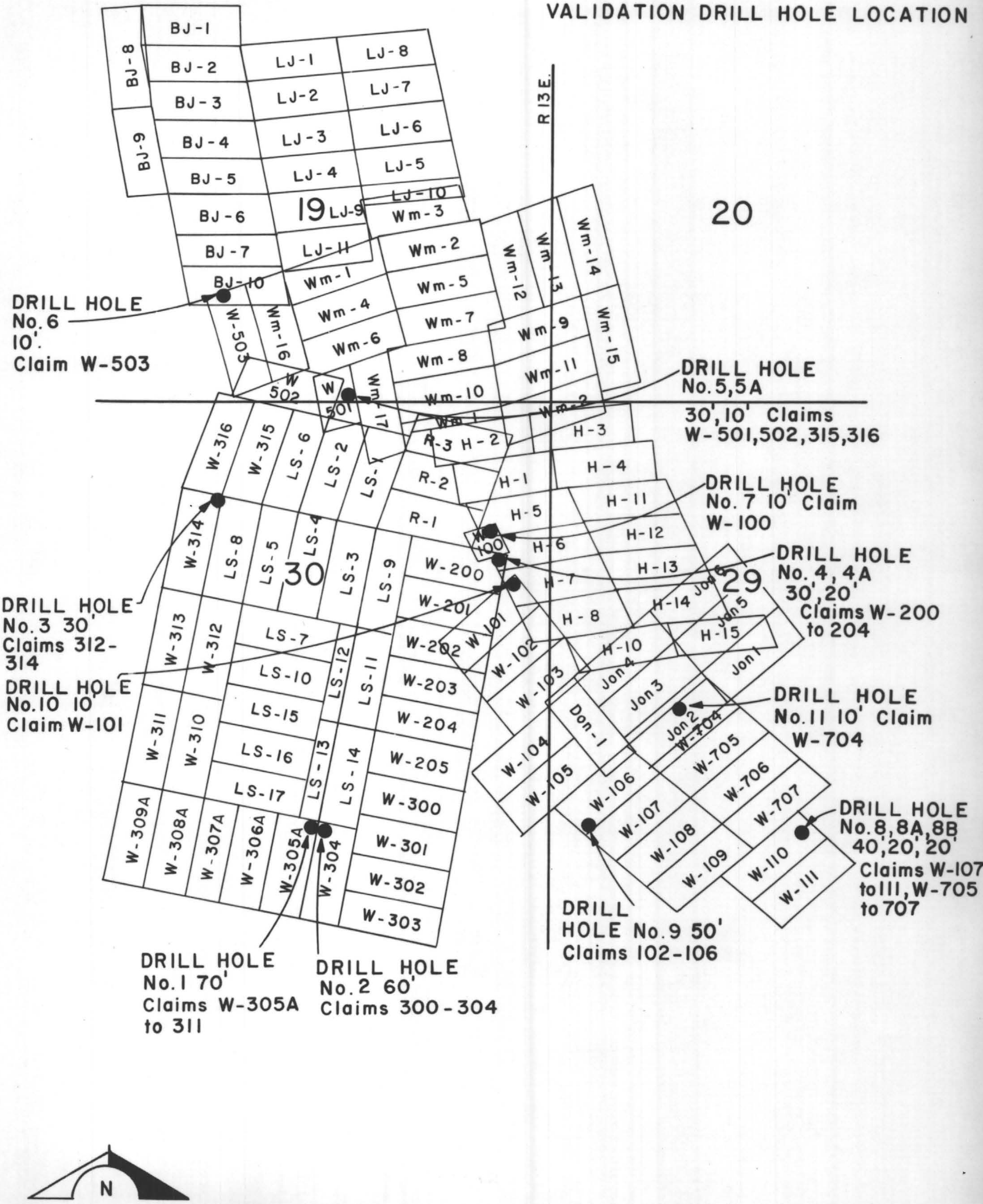
APPENDIX VIII b

Sheet 3 of 3

APPENDIX IX

LUCKY STOP, WORKMAN, BIG JOE, LITTLE JOE, HOPE, DON & JON LODES

VALIDATION DRILL HOLE LOCATION



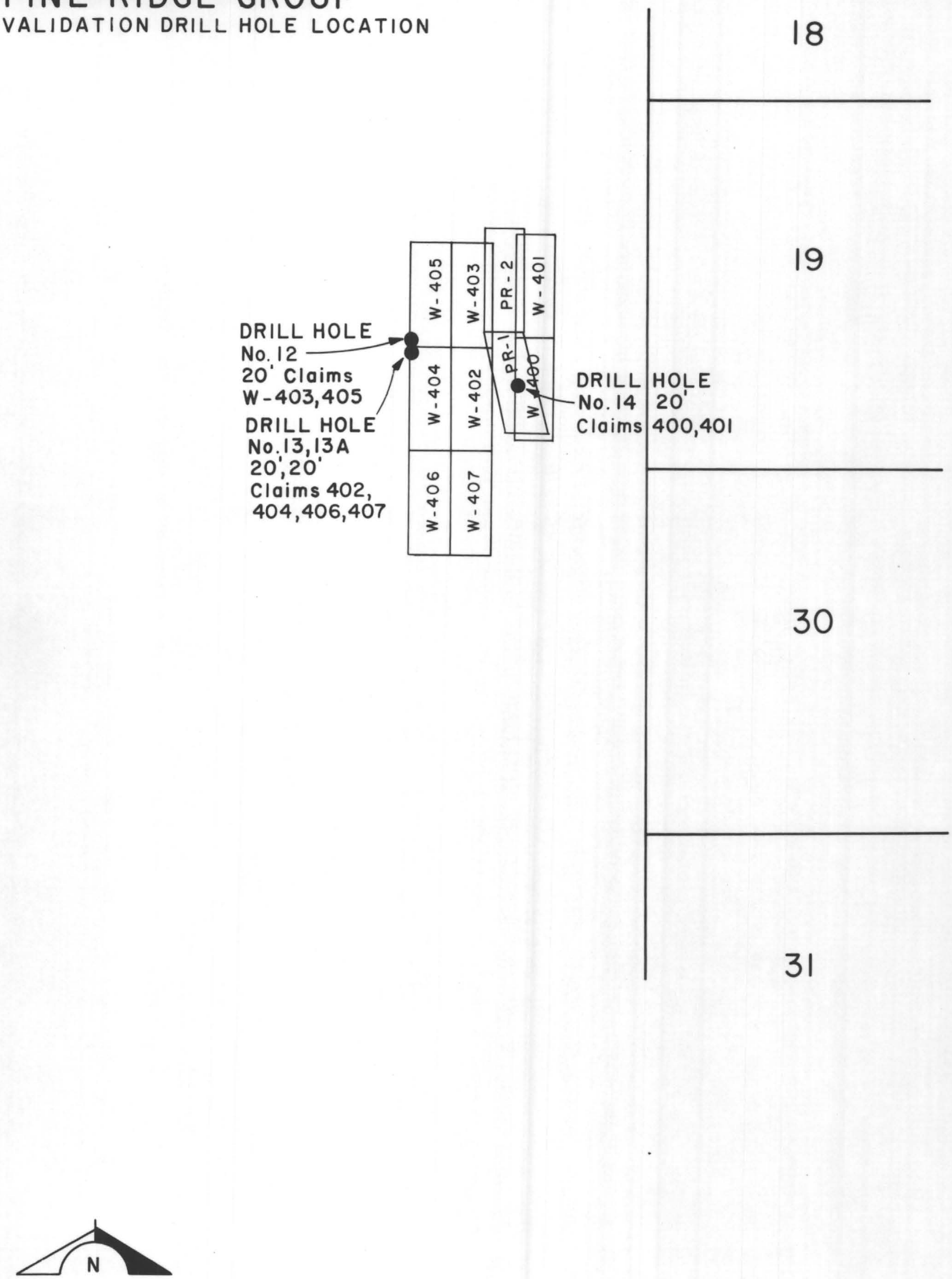
SCALE: 1" = 2000'

APPENDIX IX (a)

MDAZ

PINE RIDGE GROUP

VALIDATION DRILL HOLE LOCATION



SCALE: 1" = 2000'

APPENDIX IX (b)

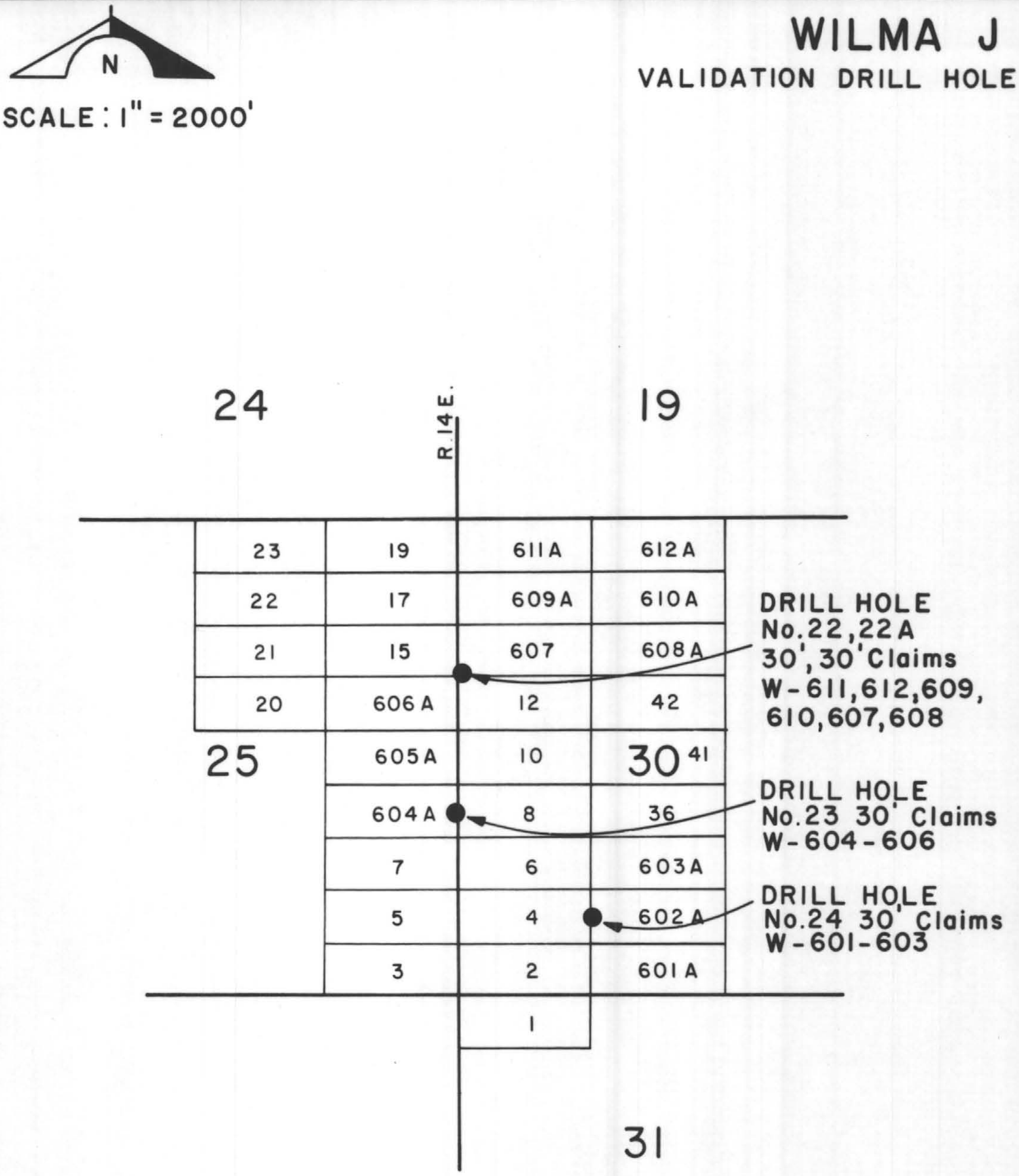
MDAZ-

WILMA J LODES

VALIDATION DRILL HOLE LOCATION

12/6/76

SCALE: 1" = 2000'

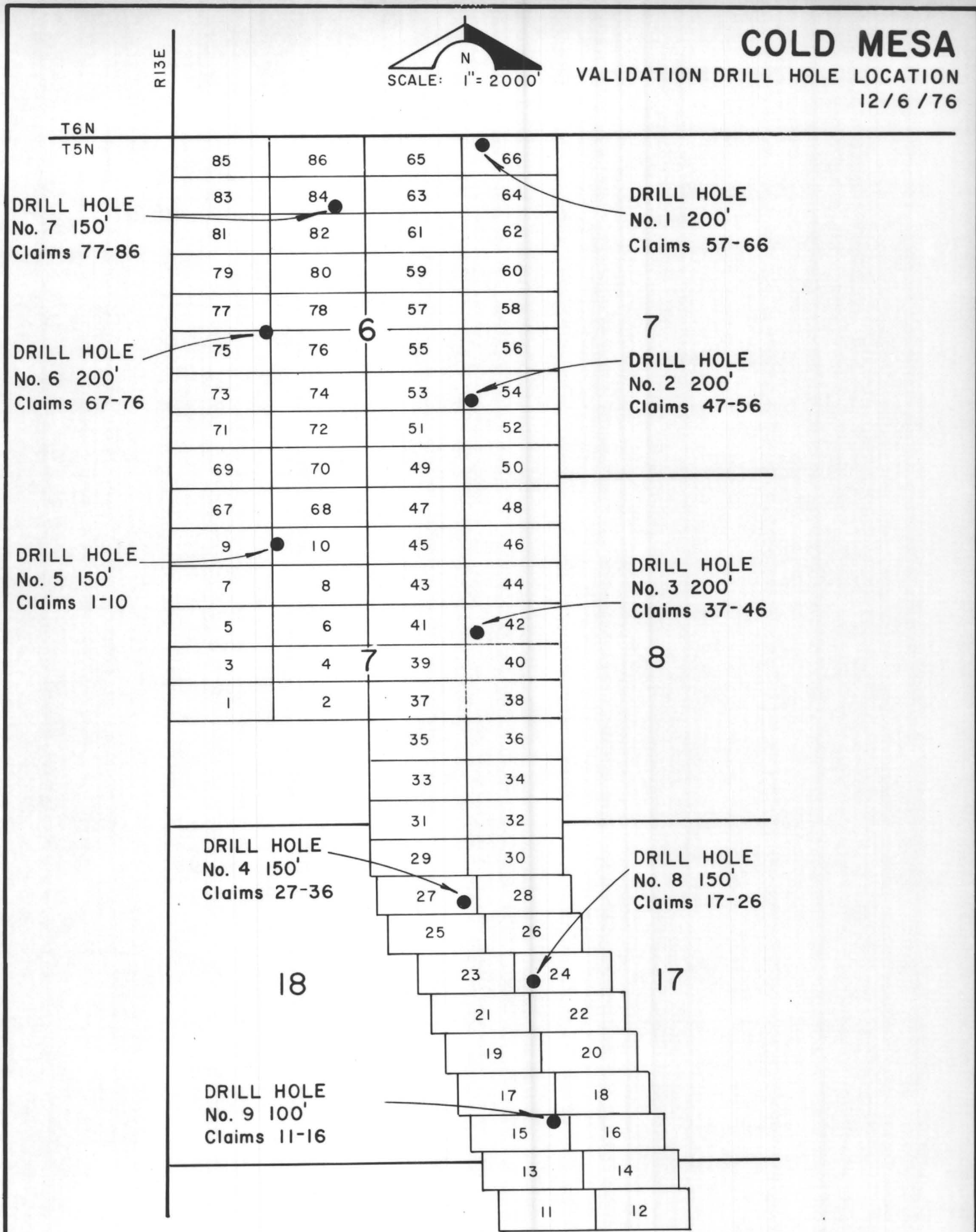


APPENDIX IX (c)

MDAZ-

COLD MESA

VALIDATION DRILL HOLE LOCATION
12/6/76

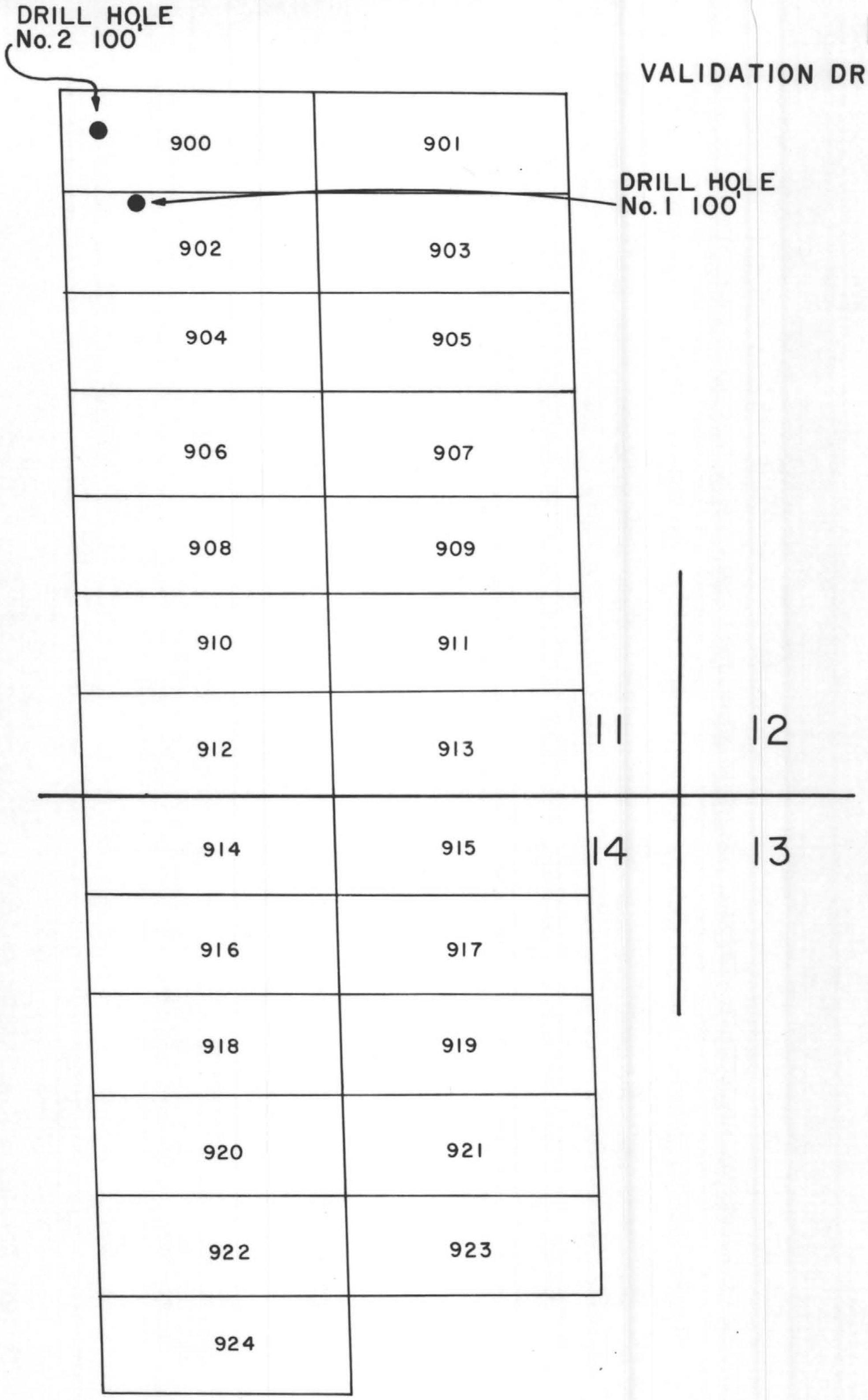


APPENDIX IX (d)

MDAZ

M & M GROUP

VALIDATION DRILL HOLE LOCATION

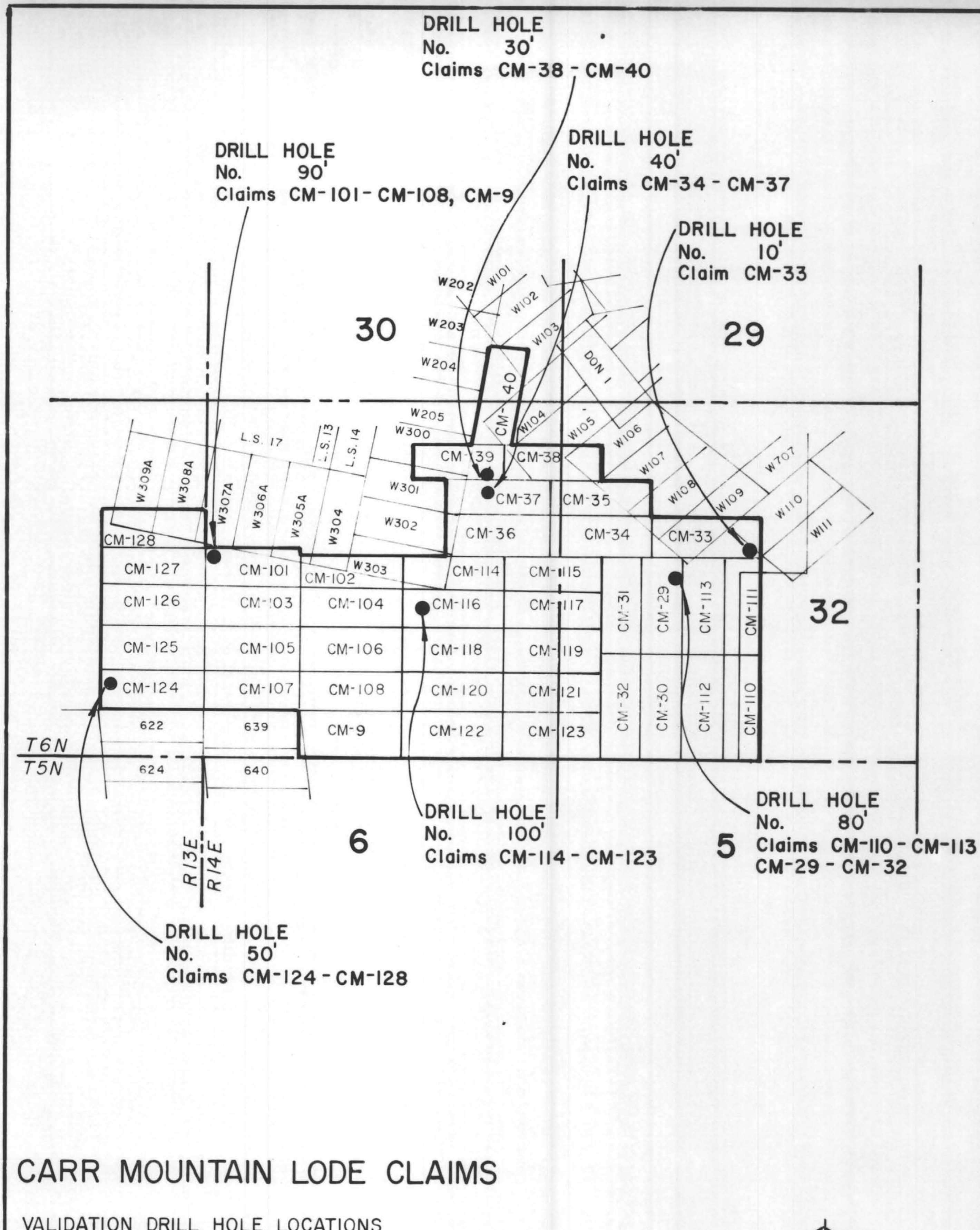


N

SCALE: 1" = 500'

APPENDIX IX (e)

MDAZ



CARR MOUNTAIN LODE CLAIMS

VALIDATION DRILL HOLE LOCATIONS

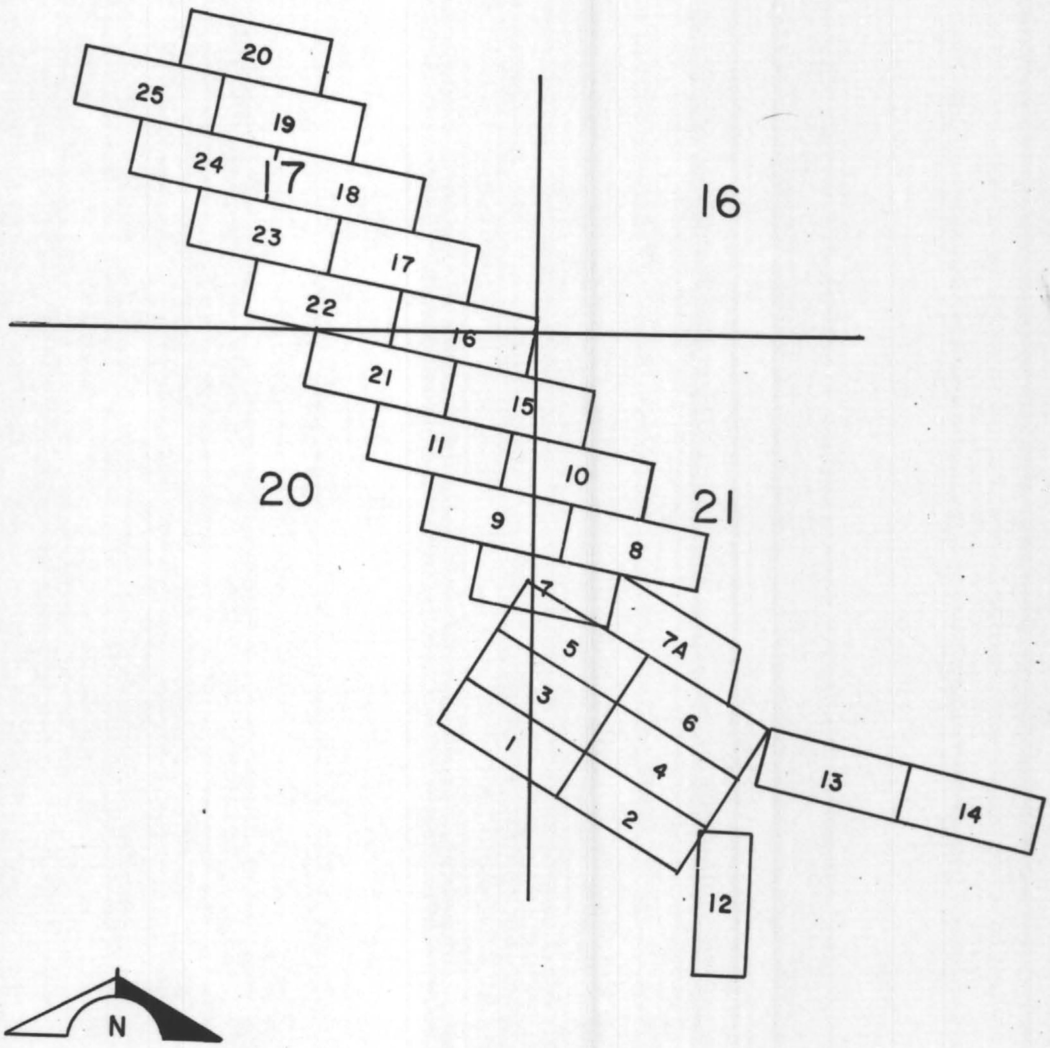
10/27/77

APPENDIX IX (f)

FALLS LODES

VALIDATION DRILL HOLE LOCATIONS

12/6/76



SCALE: 1" = 2000'

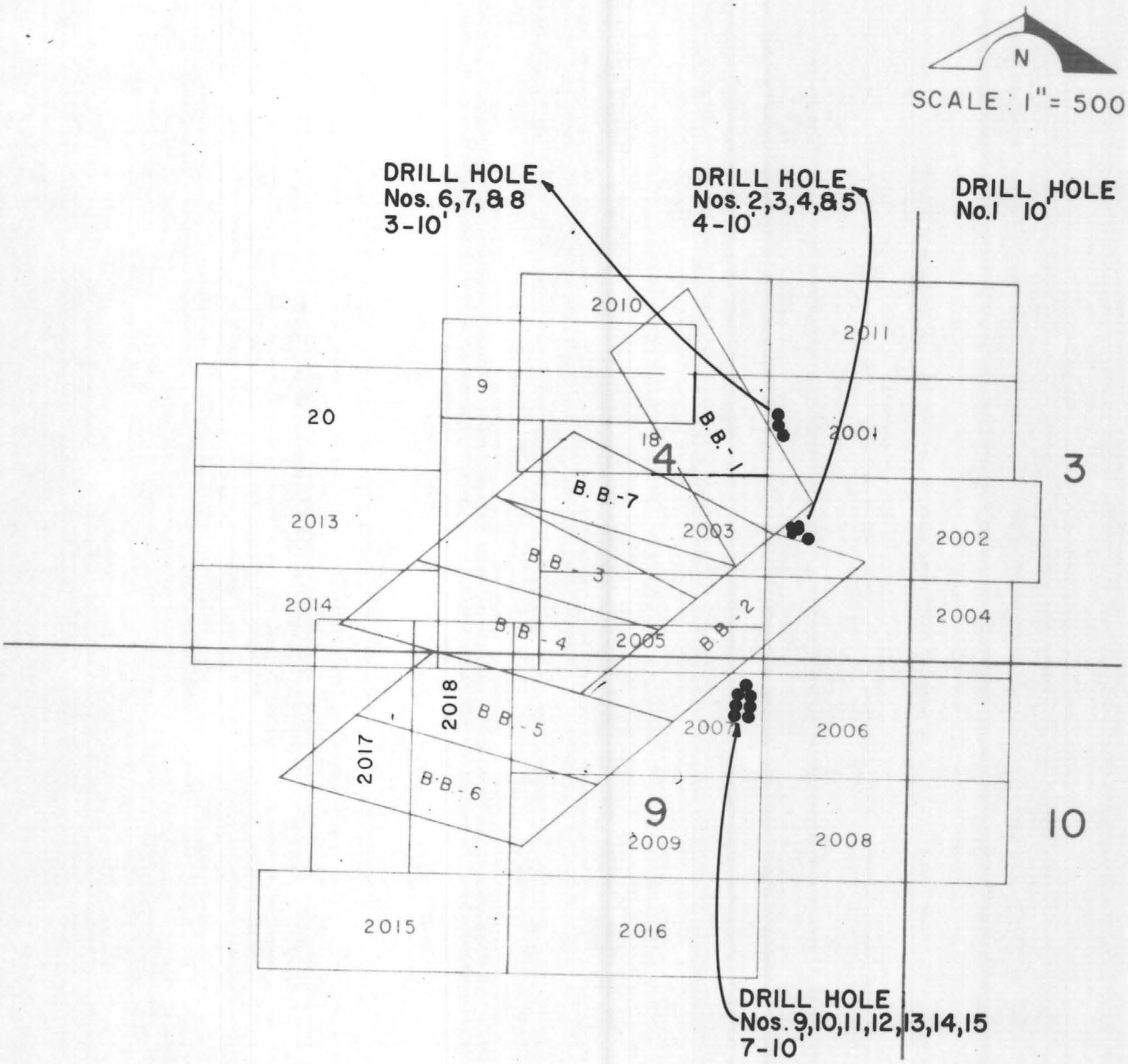
APPENDIX IX (g)

MDAZ

WYMINCO LODES
(Black Brush)

VALIDATION DRILL HOLE LOCATION

12/6/76

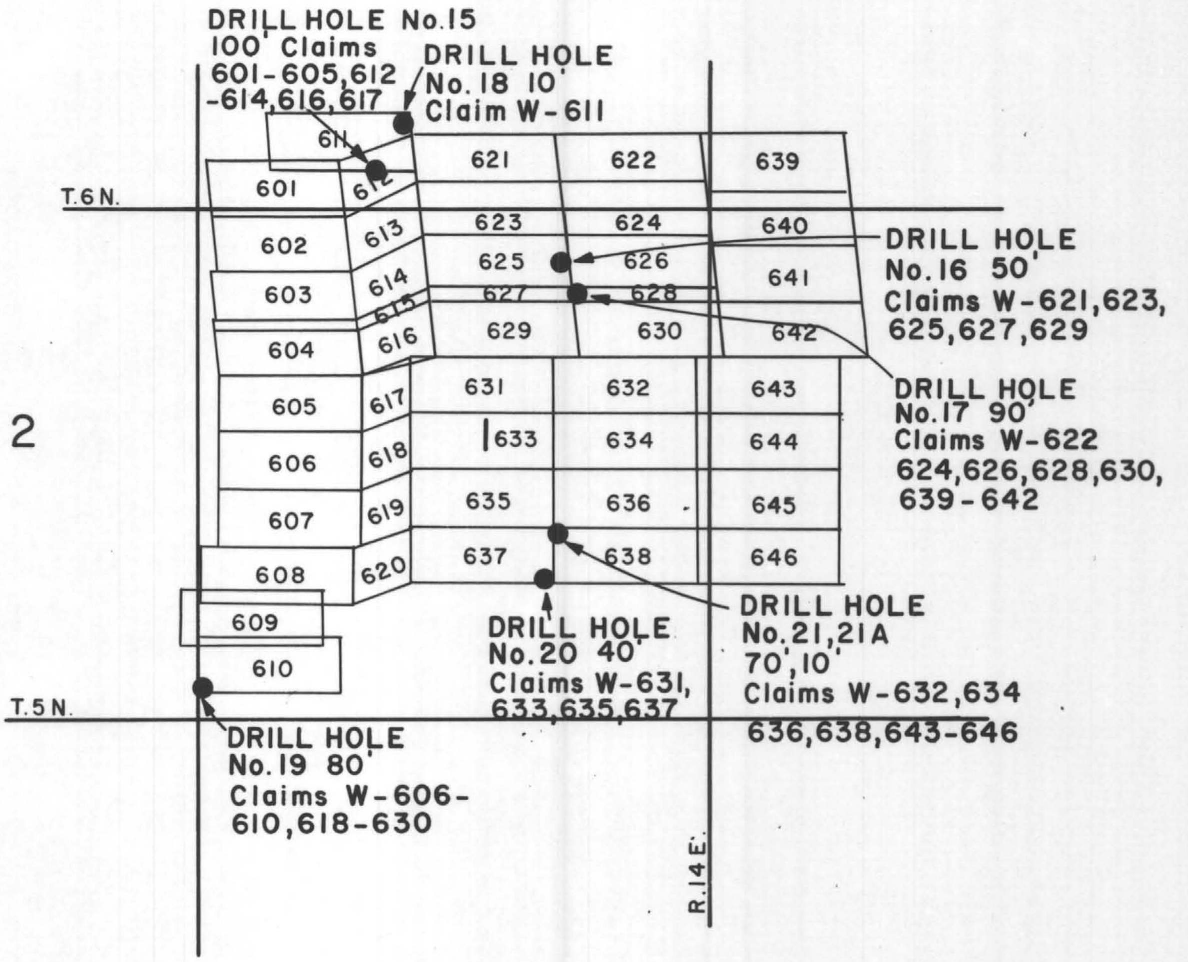


APPENDIX IX (h)

MDAZ

WYMINCO LODES
(Parker Creek Group)
VALIDATION DRILL HOLE LOCATION
12/6/76

SCALE: 1" = 2000'

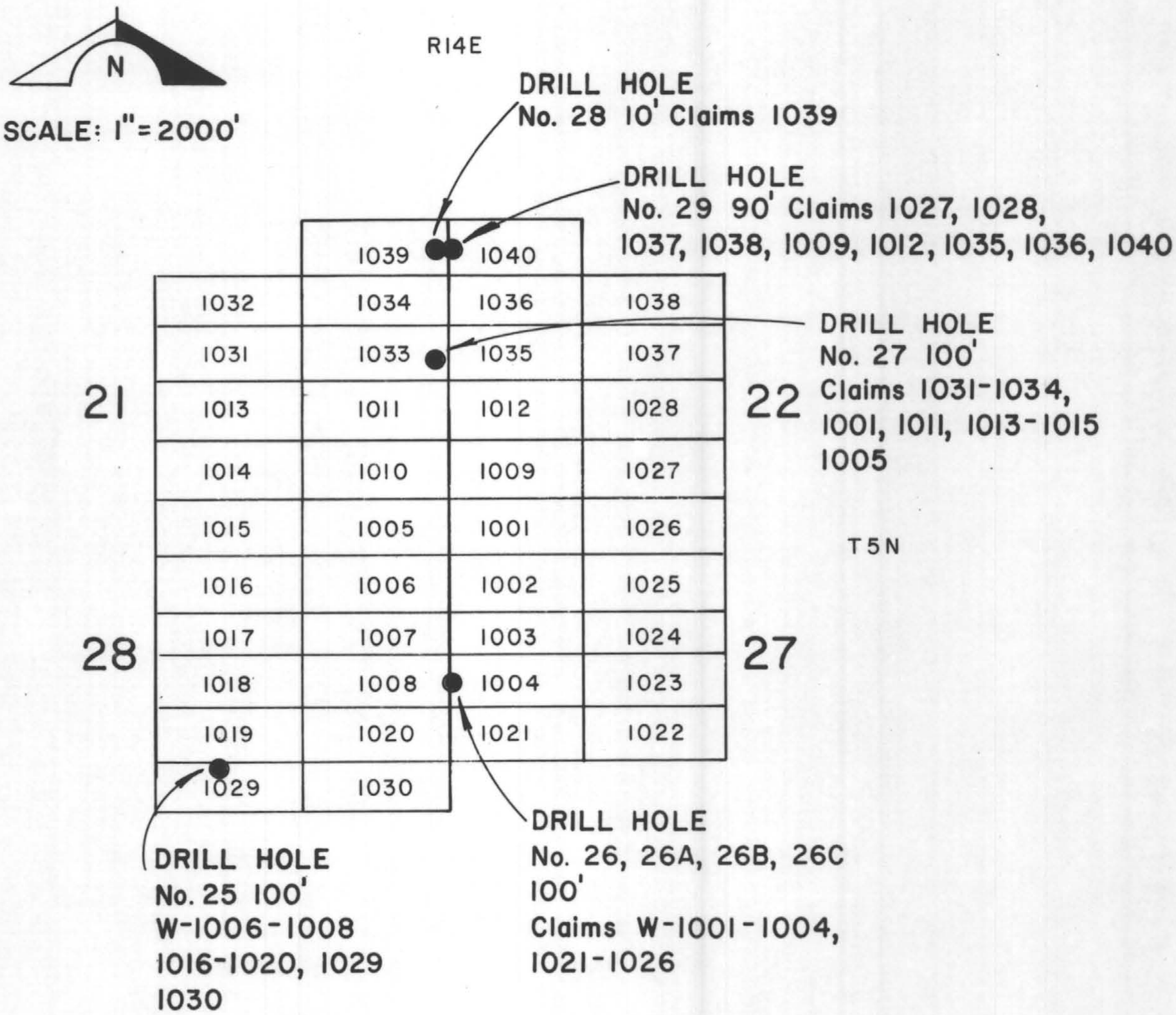


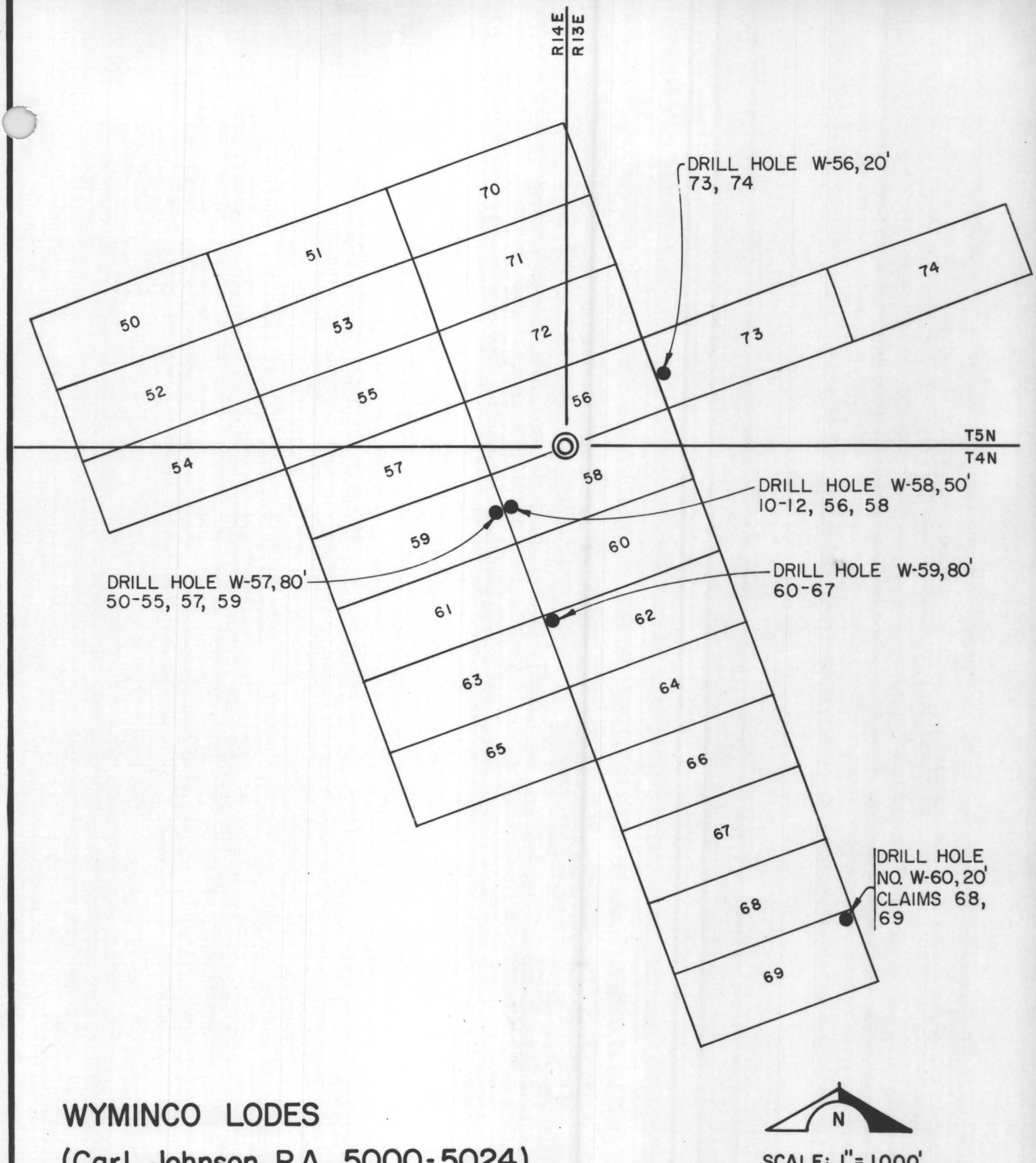
APPENDIX IX (i)

MDAZ

WYMINCO LODES
(Leslie Group)
VALIDATION DRILL HOLE LOCATION

12/6/76





WYMINCO LODES

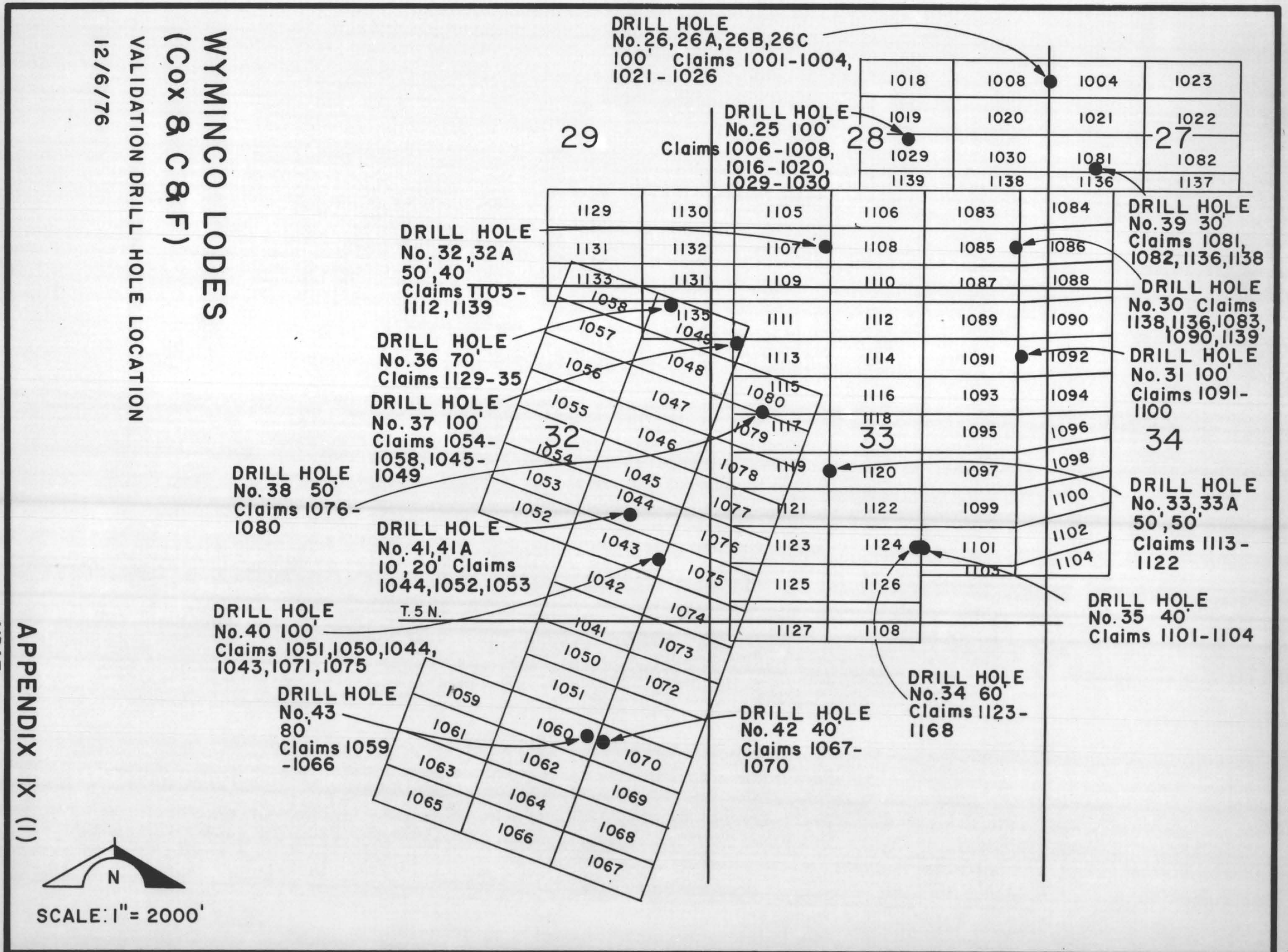
(Carl Johnson P.A. 5000-5024)

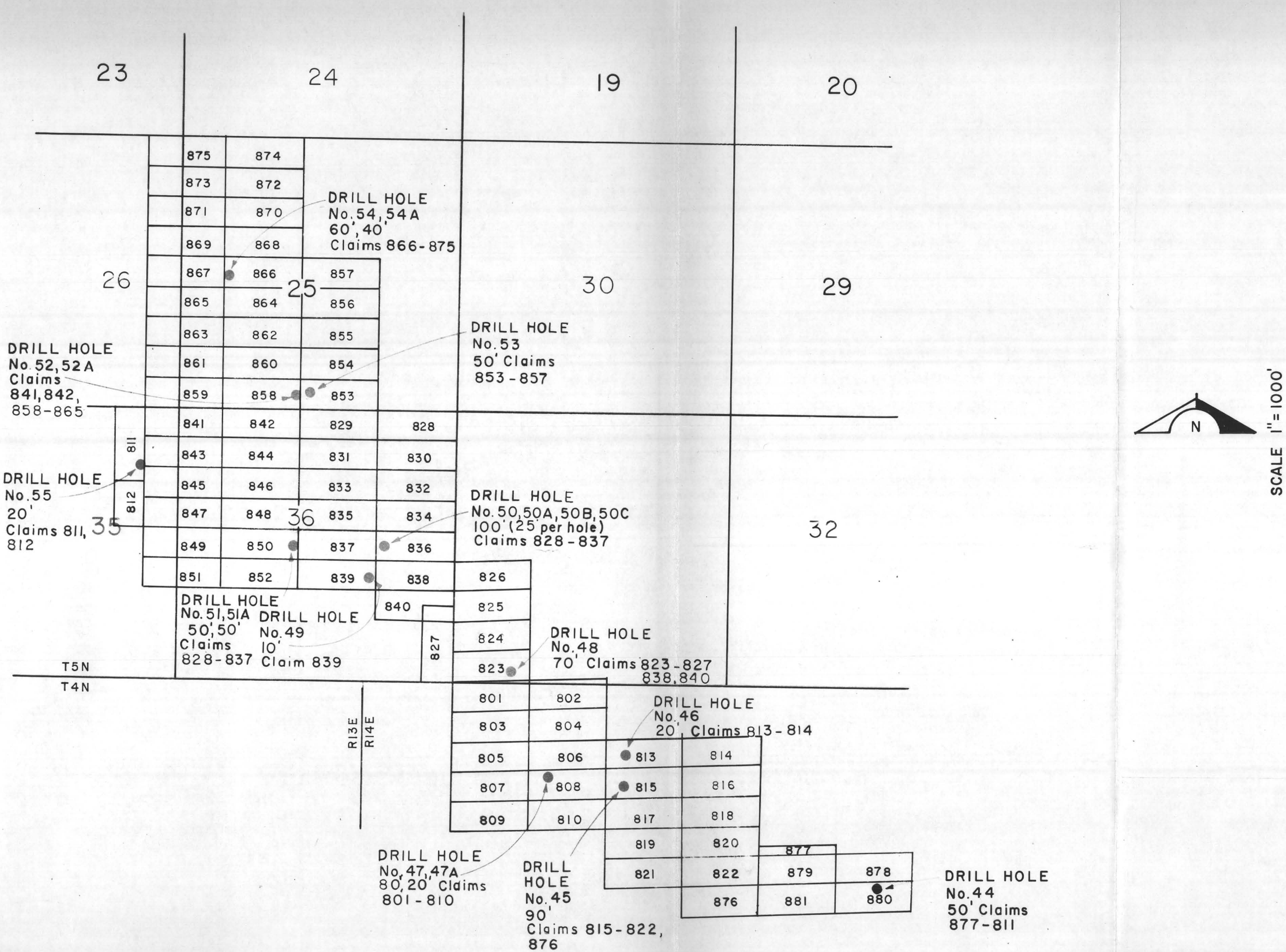
VALIDATION DRILL HOLE LOCATION

3/25/77

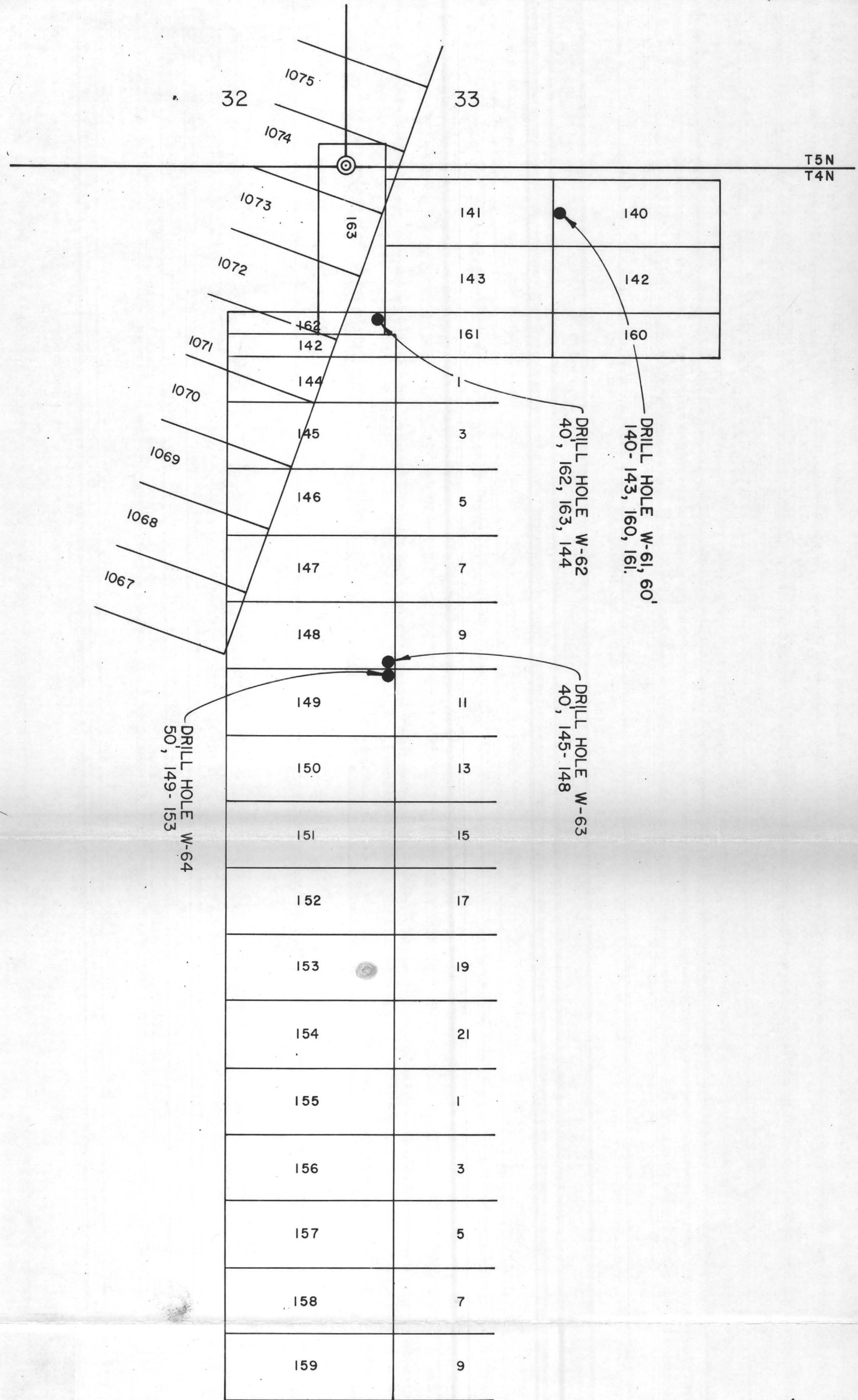
APPENDIX IX (k)

MDAZ-


WYMINCO LODES
(Cox & C & F)
VALIDATION DRILL HOLE LOCATION
12/6/76
APPENDIX IX (1)
MDAZ
SCALE: 1" = 2000'
N
T. 5 N.
29
28
27
32
33
34
DRILL HOLE No. 26, 26 A, 26 B, 26 C 100' Claims 1001-1004, 1021-1026
DRILL HOLE No. 25 100' Claims 1006-1008, 1016-1020, 1029-1030
DRILL HOLE No. 32, 32 A 50', 40' Claims 1105-1112, 1139
DRILL HOLE No. 36 70' Claims 1129-35
DRILL HOLE No. 37 100' Claims 1054-1058, 1045-1049
DRILL HOLE No. 38 50' Claims 1076-1080
DRILL HOLE No. 41, 41 A 10', 20' Claims 1044, 1052, 1053
DRILL HOLE No. 40 100' Claims 1051, 1050, 1044, 1043, 1071, 1075
DRILL HOLE No. 43 80' Claims 1059-1066
DRILL HOLE No. 42 40' Claims 1067-1070
DRILL HOLE No. 34 60' Claims 1123-1168
DRILL HOLE No. 35 40' Claims 1101-1104
DRILL HOLE No. 33, 33 A 50', 50' Claims 1113-1122
DRILL HOLE No. 31 100' Claims 1091-1100
DRILL HOLE No. 30 Claims 1138, 1136, 1083, 1090, 1139
DRILL HOLE No. 39 30' Claims 1081, 1082, 1136, 1138



WYMINCO LODES
(New Locations)
VALIDATION DRILL HOLE LOCATION
11/17/77



WYMINCO LODES (1140-1163)

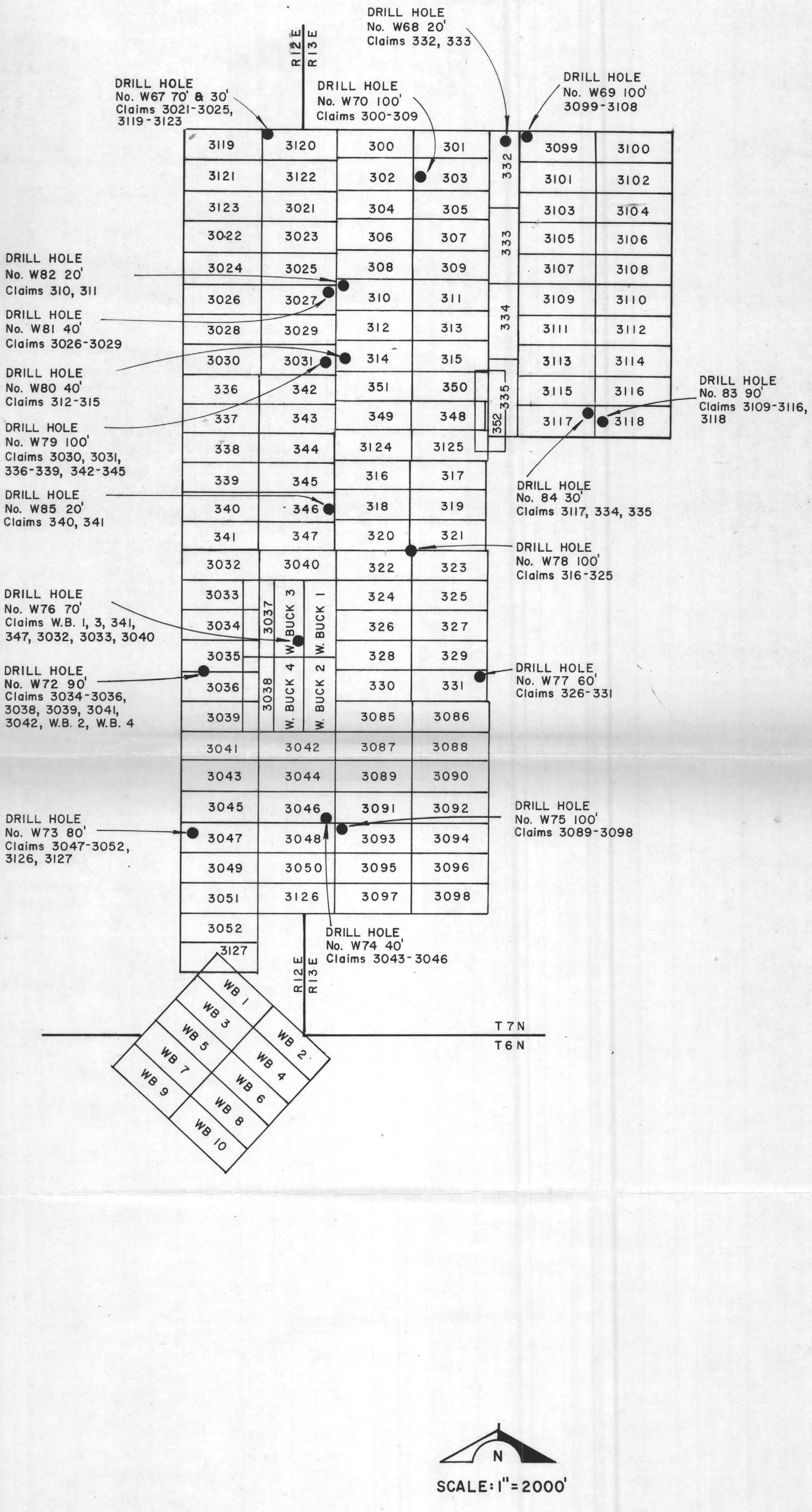
Unsurveyed Sections 4 & 9, T4N, R14E

VALIDATION DRILL HOLE LOCATIONS

11/17/77

APPENDIX IX (n)

MDAZ-



APPENDIX IX (o)

BLEVINS, WINDY, BUCKAROO

VALIDATION DRILL HOLE LOCATION

11/8/77

MDAZ

APPENDIX X

APPENDIX XI

APPENDIX XII

APPENDIX XIII