DMEA Form 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

DMEA NO. 4540

Application (Denied)
(Withdrawn
(After disposition, delete items not applicable)

Contract (Terminated - not Certified
(Cancelled
(Terminated - Certified
(Royalty Agreement

This is the official contract file containing all official records of the project. The records contained in the files are checked and are arranged in this order:

Left Side

Interim Royalty Audits
Reports of Royalty Review
Certification of Discovery
Certificate of Audit (Final)
Interim Audit(s)
Report of Review
Termination Notice or Agreement
Recision Notice
Assignment of Contract
Contract Amendments (latest on top)
Contract with all exhibits and annexes
Owner's Consent to Lien
Subordination Agreement
✓Leases and assignments of leases and bids
✓Application and attachments
(3) Envelope for maps

Right Side

✓Project summary
Work completed analysis
All other material is filed in chronological order with correspondence including the following reports as checked:

Final Field Team Report (Tab)
Operator's Final Report
(2R) Interim Reports
(2R) Operator's monthly reports and all attachments (latest on top)
✓On-site Exam Report(s) (Tab)
(4) Settlement Sheets

When the volume of records is expected to warrant additional folders, or when convenience of reference warrants separate folders for certain records, they should be set up in this order:

Left Side

Folder No. 2: (In chron. order) Interim Summary Reports by W. O. Engineers

Right Side

Operator's Semi-Annual Report for Certified Project, Field Team Interim Reports, Operator's Monthly Report with transmittal, narrative, maps, and Field Team review.

Folder No. 3: Maps (Use pocket folder or envelope. Fold maps with title block out and show reference to related document or correspondence.)

Folder No. 4: Settlement Sheets

Folder No. 5: Drill Logs

11-15-56

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

November 13, 1956

RECEIVED
NOV 15 1956
DMEA

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA Aid (Uranium) Byden Mines, Inc. (Navajo Tribal Council Tracts Nos. 9, 12, and 15) San Juan County, Utah

DMEA 4540

Enclosed are two copies of drilling proposals by three different drilling contractors which have been submitted by the Applicant. Will you please combine these drilling bids with the two copies of the application which were forwarded you on November 9, 1956.

W. M. Traver

W. M. Traver

(C O P Y)

MARTIN E. BUELL, INC.
Drilling Contractors
P.O.Box 925-Phone Chapel 2-5892
Grand Junction, Colorado

Nov. 8, 1956

DMEA 4540

Byden Mines, Inc.
P. O. Box 86
Colorado Springs, Colorado

Dear Sirs,

Thank you for the opportunity of bidding on your drilling in Monument Valley.

This bid is submitted with the understanding that there will be approximately 40,000 feet of drilling.

Access roads and drill sites will be built by the company.
Core size will be BX or larger.
Contractor will furnish a performance bond if it is required by the company.
The amount of core taken will not exceed 20% of the total footage drilled. In the event the amount of core taken exceeds 20% of the total footage drilled then the coring price will be increased fifty cents per foot for the amount cored in excess of 20% of the total footage drilled.

Non-core drilling

0 to 100 ft.	$1.10 per ft.
100 to 200 ft.	1.15
200 to 300 ft.	1.20
300 to 400 ft.	1.25

Coring

0 to 400 ft.	$3.50 per ft.

Stand-by or delays caused by the company--$12.50 per hr.

Respectfully submitted

MARTIN & BUELL INC.

By /S/ Glen Martin

(COPY)

AMERICAN DRILLING COMPANY
"ADCO"
615 North First St
Phone 1434
Grand Junction, Colo

October 26, 1956

Byden Mines, Inc.
P O Box 86
Colorado Springs, Colo.

Dear Sirs:

Thank you for giving American Drilling Company the opportunity to bid on your proposed exploration work in Monument Valley.

Our bid price on non-core drilling from 0' to 400' is $1.05/ft

Our price for coring with BX or larger core is $4.50/ft. for coring to 10% of the total drilling program. If the coring program runs in excess of 10%, then the coring price will be $5.50/ft.

Very truly yours,

Richard Travis

cc. Mr. T. J. Ballard
Golden Cycle Corp

We will core at cost, if you so desire
RT

(COPY)

220 Whiteside Bldg
Phone PO 3-5131
Lubbock, Texas

SCOTT BROS.
drilling company
"Exploration Drilling Services"

Branch:
641 Glenwood Ave
Phone 45
Grand Junction, Colo

October 25, 1956

Bydon Mines, Inc.
P. O. Box 86
Colorado Springs, Colorado

Gentlemen:

We would like to quote the following prices for drilling requested in the area of Monument Valley:

Plug-Bit drilling

0-100 ft	$ .75 per ft
100-200 ft	1.00 per ft
200-300 ft	1.25 per ft
300-400 ft	1.50 per ft

Core drilling

0-100 ft	$ 3.25 per ft
100-200 ft	3.50 per ft
200-300 ft	3.75 per ft
300-400 ft	4.00 per ft

Stand-by time ..... 10.00 per hr.

Thank you.

Sincerely,

L. W. Scott Partner

Scott Bros. Drilling Co.

LWS:lan

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

November 12, 1954

RECEIVED
NOV 13 1954
D.M.E.A.

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA Aid (Uranium) Byden Mines, Inc
(Navajo Tribal Council Tracts Nos. 9, 12, and 15)
San Juan County, Utah

Enclosed are two copies of the subject application in the amount of $212,417.19. One copy of the application is being forwarded the Grand Junction Office, DMEA for their review and recommendations concerning the advisability of a field examination, and one copy of the application is being retained in our files.

The Applicant's representative stated that he would submit three drilling bids to this office in a few days, and we will forward copies for your use. He also stated that a road into the Little Mesa tract will be completed soon, at which time a survey of the tract will be made and a map prepared similar to the ones on the other two tracts. When these maps are received in this office, copies will be forwarded you.

W. M. Traver

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED
NOV 13 1956
D.M.E.A.

224 New Customhouse
Denver 2, Colorado

November 9, 1956

Memorandum

To: J. W. Hasler

From: DMEA Field Team, Region III

Subject: Application for DMEA Aid (Uranium) Byden Mines, Inc. (Navajo Tribal Council Tracts Nos. 9, 12, and 15) San Juan County, Utah

Enclosed is the subject application in the amount of $212,417.19. Will you please discuss this application with the Bureau of Mines Representative in the Grand Junction Office and the AEC, and forward this office nine copies of your joint recommendations concerning the advisability of a field examination.

DMEA Field Team, Region III

Original signed by
W. M. TRAVER

By W. M. Traver
Executive Officer

Enclosures

HMC:ytl

cc: Sec. Op. Comm. (2)
Harshman
Shaw (2)
Docket
Chron.

OFFICE OF
THE PRESIDENT

THE GOLDEN CYCLE CORPORATION

COLORADO SPRINGS, COLORADO

DMEA
DEPARTMENT OF THE INTERIOR
NOV 9 1956
REGION III
DENVER, COLORADO

November 8, 1956

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

Dear Mr. Traver:

Attached is our DMEA Loan Application to cover the exploration work on the three tracts in the Navajo Indian Reservation presently being explored by the Byden Mines, Inc. As stated in the application, Byden Mines, Inc., is controlled and managed by The Golden Cycle Corporation. The maps on the Hoskinnini and Nokai Mesa tracts are on a 300' to the inch scale, while the one on the Little Mesa tract is on a 1:24,000 scale or 1" = 2,000'. The reason, as I explained on the phone yesterday, for the difference in the scales is that we had to build a road into the Little Mesa tract and this road is not completed, consequently we cannot survey the tract and make a map on the other scale to conform to the other two tracts. We expect to have this road completed within the next week or so, after which we will then survey the tract and make a map similar to the ones on the other two tracts and submit same to you at that time.

We have requested quotations from several drilling contractors and as soon as these are all in, we will submit them to your office. If our loan goes through, we propose to purchase a drill and do the drilling ourselves, as we feel that we can do this cheaper than a contractor, thereby saving money both for the Government and ourselves. However, this will all be worked out satisfactorily in the contract, if and when, this application is approved. As I intend to present this application to your office, if there are any further points to be discussed, we can do it at that time.

Yours very truly,

Max W. Bowen

Max W. Bowen
Executive Vice-President

MWB:hr

Encls.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2

RECEIVED NOV 1 1956 D.M.E.A.

DEPARTMENT OF THE INTERIOR DMEA NOV 9 1956 REGION III DENVER, COLORADO

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. 4540
Metal or Mineral Uranium
Date Received 11-13-56
Estimated Cost $212,417.19
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: BYDEN MINES, INC., P. O. BOX 86, COLORADO SPRINGS, COLORADO
Thomas A. Denny, President, P.O.Box 781, Durango, Colorado
Max W. Bowen, Exec.Vice-Pres., P.O.Box 86, Colo.Spgs., Colo.
John Jacobs, Jr., Secretary, " " " " " " "

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract See Attached

(*b*) State any mine name by which the property is known. No name other than Tracts Nos.9,12&15

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Applicant was high bidder for prospecting permits from Navajo Tribal Council on the three tracts entered in this application, Tracts Nos. 9,12 & 15

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property. Copies of the prospecting permits are enclosed

(*e*) If you own the land, describe any liens or encumbrances on it Not applicable

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Not Applicable

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

5. *The exploration project*—(*a*) State the mineral or minerals for which you wish to explore Uranium

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. See attached

(*c*) The work will start within ..... days and be completed within ..... months from the date of an exploration project contract. See attached

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See attached

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.). See Attached

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants. See attached

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. See attached

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be. See attached

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project. See attached

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project. See attached

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes. See attached

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above. See attached

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)? Yes

(*b*) How do you propose to furnish your share of the costs?

[X] Money [X] Use of equipment owned by you [X] Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated November 8, 1956

BYDEN MINES, INC.
(Applicant)

By Max W. Bowen
Max W. Bowen, Exec. Vice-President

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

3. Applicant's property rights.-(a) Prospecting Permits.

Tract No. 9. Beginning at the corner of Sections 19, 20, 29 and 30, Tp. 43 South, R. 14 East; thence West 3,630 feet to the east line of Tract No. 8; thence S. 1° 40' W. 280 feet to the Shinarump rim; thence meandering with the Shinarump rim in a general southerly direction to the line between Sections 30 and 31, Tp. 43 South, R. 14 East; thence East 1,365 feet to the corner of Sections 29, 30, 31 and 32, Tp. 43 South, R. 14 East; thence East 3,575 feet to the upper Shinarump rim; thence meandering with the Shinarump rim in a general northwesterly direction to the Section line between Sections 20 and 29, Tp. 43 South, R. 14 East; and thence West 1,590 feet to the point of beginning at the corner of Sections 19, 20, 29 and 30, Tp. 43 South, R. 14 East. Said tract contains 752 acres on Hoskinnini Mesa, Navajo Reservation, Utah.

Tract No. 12. All of that tract of land included within the Shinarump rim, known as Little Mesa and containing 240 acres more or less. Said tract extends from the western part of Section 27, through Section 34 and the southwest corner of Section 35, Tp. 43 South, R. 13 East, Utah; a narrow peninsular extends southeasterly across the state line about 3,000 feet into Arizona and in unsurveyed ground.

Tract No. 15. Beginning at the corner of Sections 20, 21, 28 and 29, Tp. 43 South, R. 13 East; thence West 4,043 feet; thence South 5,260 feet; thence East 4,043 feet to the corner of Sections 28, 29, 32 and 33, Tp. 43 South, R. 13 East; thence East 870 feet to the Shinarump rim; thence meandering in a northerly direction with the Shinarump rim to the section line between Sections 21 and 28, Tp. 43 South, R. 13 East; and thence West 2,080 feet to the point of beginning at the corner of Sections 20, 21, 28 and 29, Tp. 43 South, R. 13 East. Said tract contains 661 acres on Nokai Mesa, Navajo Reservation, Utah.

4. Physical description.-(a) - There are no mining or exploration activities underway on the properties. Applicant is constructing a road to Tract No. 12 known as Little Mesa. This road construction is over rough precipitous terrain and has been going on since July 4, 1956. It is about 4-1/2 miles and will cost some $20,000.00.

Surveying and minor road construction has been done on Tracts Nos. 9 and 15 by applicant.

(b) There has been no production and no ore reserves have been developed.

(c) The uranium deposits occur in paleo-stream channels of the Shinarump conglomerate incised in the Moenkopi Shales. The Shinarump is a gray to yellow coarse grained conglomerate. It varies widely in thickness in this area, ranging from about ten feet to a hundred feet, except in the channels where it may attain a thickness of over three hundred feet.

The Shinarump forms the capping over most of the Hoskinnini and Nokai Mesas. The Chinle Shales above the Shinarump have been eroded, except for an occasional remnant.

Channels on the three tracts range from eight hundred to eighteen hundred feet wide. Small stream scours occur within the Shinarump formation and usually show an above normal radioactivity.

Tract No. 9 contains a channel about 700 feet to 800 feet wide. This channel enters the tract at the northwest end of the narrow peninsula and appears to extend southeastward or east across the mesa to the east rim. The Atomic Energy Commission drilled several holes about four years ago just behind the outcrop on the west end of this channel and found nothing of value in the core. The Indian Service has located an anomaly of high radioactivity over the channel further to the east and in the main body of the mesa. This may indicate an ore body.

Tract No. 12 contains a channel about 1,800 feet wide which cuts northeasterly through Little Mesa. Other channel indications near the north end of the mesa may be the confluence of the Little Mesa Channel with the Tract No. 15 Channel or a bend in the Little Mesa Channel. Copper mineralization shows in many places on the channel and a ten-foot sample cut from one outcrop on the west side of the mesa assayed 0.09 percent U_3O_8 chemical. (See attached Assay Certificate). Several small channels or scours are indicated in the southern part of the mesa.

(d) The Company is building about 4-1/2 miles of road to Little Mesa, which is Tract No. 12. This will be completed within two or three weeks. The other tracts are accessible by existing roads.
Distances to uranium mills are: Texas-New Jersey Zinc Mill at Mexican Hat, Utah, under construction - 70 miles; Kermac Mill at Shiprock, New Mexico - 120 miles; A.E.C. Mill, Monticello, Utah, - 150 miles and the Metals Reduction Company Mill, Moab, Utah, - 210 miles. Mexican Hat, Blanding, Monticello and Moab, Utah are all shipping and supply points. There are no nearby residence points closer than Blanding, Utah, about 120 miles.

(e) Indian labor is available on the Reservation. Supplies, equipment and power have to be brought in or furnished. Water is scarce and must be hauled from Kayenta, Arizona, about 40 miles or obtained from wells.

5. The Exploration project.-(b)-The general drilling plan proposes drill sections on 500-foot centers with holes 200-foot centers on each section, except on the flanks of the channel where they would be 50 to 100 feet apart. The closer spacing on the sides of the channel is necessary in order to adequately explore this more favorable area of the channel and to locate the channel boundary.
It is assumed for estimating purposes that sufficient mineralization or ore holes will be found in the first stage of drilling to justify a second stage of offset drilling amounting to 25 percent of the first stage.
Tract No. 9. The west end of the long peninsula was drilled by the Atomic Energy Commission with indefinite results. The balance of this peninsula should be drilled on the foregoing system of sectional drilling. As the channel is about 700 feet wide this would require four sections with nine holes per section on this part of the tract. Based upon the assumption the channel continues east on this tract to the outcrop on the east side of Hoskinnini Mesa, then seventeen sections with nine holes each will be necessary for the first stage of drilling on Tract No. 9. As drilling depths will approximate 175 feet the following drilling is indicated:

	Holes	Depth Feet	Total Feet
First Stage	153	175	26,775
Second Stage	38	175	6,650
Total	191	175	33,425

Tract No. 12. The Little Mesa Channel is about 1,800 feet wide and cuts northeasterly through the mesa. An average of six sections of fourteen holes each or eighty-four holes will be necessary to drill the channel. Drilling depths will approximate 250 feet.

	Holes	Depth Feet	Total Feet
First Stage	84	250	21,000
Second Stage	21	250	5,250
Total	105	250	26,250

Tract No. 15. The only known channel on this tract is 1,400 feet wide as inferred from its outcrop. It will require ten drilling sections of eleven holes each or one hundred and ten holes for the first stage of drilling. Depths will approximate 225 feet.

	Holes	Depth Feet	Total Feet
First Stage	110	225	24,750
Second Stage	28	225	6,300
Total	138	225	31,050

TOTAL PROPOSED DRILLING

	Holes	Feet
First Stage	347	72,525
Second Stage	87	18,200
Total	434	90,725

(c) Twenty-one days----completed within 7 months.

(d) The applicant Company is managed by The Golden Cycle Corporation, P. O. Box 86, Colorado Springs, Colorado. (See attached Agreement between Byden Mines, Inc., and The Golden Cycle Corporation.) Golden Cycle has been in mining for some sixty years, owns and operates gold mines in Cripple Creek, Colorado, operates a shaft uranium mine on a Government Lease near Uravan, Colorado, and has other mining and commercial investments. The project will be directly supervised by T. J. Ballard, a mining engineer with four years experience in uranium exploration and twenty years in other mining activities.

6. Estimate of costs.-(a) - Independent Contracts.

Drilling First Stage

	Holes	Depth Feet	Total Feet	Cost per Foot	Total Direct Cost
Tract No. 9	153	175	26,775	$1.25 1/	$ 33,468.75
Tract No. 12	84	250	21,000	1.50 1/	31,500.00
Tract No. 15	110	225	24,750	1.25 1/	30,937.50
Total	347	209	72,525	$1.31	$ 95,906.25

BYDEN [redacted], INC.
P.O.Box 86, Colorado Springs, Colo.

Drilling, Second Stage

	Holes	Depth Feet	Total Feet	Cost Per Foot		Total Direct Cost
Tract No. 9	38	155	5,890	$1.25	1/	$ 7,362.50
	-	20	760	4.00	2/	3,040.00
Total	38	175	6,650	$1.56		$ 10,402.50
Tract No. 12	21	230	4,830	$1.50	1/	$ 7,245.00
	-	20	420	4.25	2/	1,785.00
Total	21	250	5,250	$1.72		$ 9,030.00
Tract No. 15	28	205	5,740	$1.25	1/	$ 7,175.00
	-	20	560	4.00	2/	2,240.00
Total	28	225	6,300	$1.49		$ 9,415.00
GRAND TOTAL	87	209	18,200	$1.58		$ 28,847.50

	Holes	Feet	Total Direct Cost
TOTAL DRILLING	434	90,725	$124,753.75

1/ Non-core drilling

2/ Core drilling

(b) Labor

2-Indians drilling and blasting on drill road construction 7 Mo. @ $345.00	$ 4,830.00
1-Indian engineer's helper and sampler 7 Mo. @ $345.00	2,415.00
1-Cook 7 Mo. @ $280.00	1,960.00
1-Foreman and cat operator 7 Mo. @ $505.00	3,535.00

Supervision

1-Mining engineer 7 Mo. @ $750.00	5,250.00
1-Geologist 7 Mo. @ $600.00	4,200.00
	$ 22,190.00

(c) Operating materials and supplies

Camp groceries 7 Mo. @ $200.00	1,400.00
Camp fuel & gas 7 Mo. @ $30.00	210.00
Gas, oil & supplies-2 pickup @ $120.00 1-to service cat and 1-engineers	840.00
Powder-2 tons @ $0.22 per pound	880.00
Caps, fuse and detonating fuse	100.00
Drill steel, bits, hose, etc.	200.00
Jackhammer oil-50 gal.	63.00
Cat, diesel fuel 5,000 gal. @ $0.18	900.00
Oil and lubrication	100.00
Compressor, 100 c.f. Jagaer-Gasoline 2,000 gal.@ $0.31	620.00
Oil and lubrication	75.00

Water truck, 700 gal. gas @ $0.31	217.00
Oil and lubrication	25.00
	$ 5,630.00

(d) Operating equipment

1-3/4 ton International pickup (owned) use allowance $40.00 per Mo.	$ 280.00
1-1/2 ton Ford pickup (owned) use allowance $40.00 per Mo.	280.00
1-International TD-14 bulldozer (owned) use allowance $8.00 per hr. for 210 hrs. per Mo. 7 Mo.	11,760.00
1-Compressor 110 c.f. Jagaer portable (owned) use allowance $125.00 per Mo.	875.00
1-Ingersoll-Rand light jackhammer (owned) use allowance $30.00 per month	210.00
1-International 1954 2-ton truck (owned) use allowance $75.00 per month	525.00
Total	$13,930.00

(e) Rehabilitation and repairs - None

(f) New buildings

2 storage and camp shacks, 1 at Tract 12 and 1 at Tract 15. 3,000 B.F. @ $150.00	$ 450.00

(g) Cost of maintenance and repairs are included in the proposed use allowance.

Analytical work 200 samples @ $2.00	$ 400.00
Core boxes, 120 @ $1.50	180.00
Accounting $50.00 per month	350.00
Compensation, liability insurance	2,000.00
Engineering supplies, drafting, survey stakes	50.00
Total Cost	$ 2,980.00

(h) Contingencies 25% of $169,933.75 $42,483.44

7. (b) Total cost of the entire project is $212,417.19. We propose to pay $39,174.30 cash and the balance of $13,930.00 in a use allowance on the equipment listed under 6-(d). This would equal our 25 percent share of $53,104.30.

(C O P Y)

Phone 1441

MINERALS ASSAY LABORATORY

Date 2/3/56

549 Noland Avenue -:- Grand Junction, Colorado

L#2980

Name Golden Cycle Corp. Address Colo.Springs, Colo.

Lab. No.	Sample Received	Percent Uranium	Percent Vanadium	Percent Lime AS.$CaCO_3$	Percent Tungsten Oxide	Percent Moly as Mo.
	2/2/56					
989		0.09				

BYDEN MINES
Sample from Block 12# L-1 Channel
sent by B. H. Slothower

RECEIVED NOV 12 1956 DMEA

Total
Charges $ $3.50

R. E. Morris

[redacted]

RECEIVED
NOV 13 1956
B.M.E.A.

THE NAVAJO TRIBE

DRILLING AND EXPLORATION PERMIT

TO: Byron Hinze, Inc.

PO Box 728

Cortez, Colorado

1. Pursuant to approval of your bid at the sale held at Window Rock, Arizona, on January 24, 1956, you are hereby granted an exclusive drilling and exploration permit for a period of eighteen (18) months from date of approval hereof upon Navajo Tribal Lands described as follows: [redacted]

Idee within Section 29 and 30, T. 43 S., R. 24 East, S. L. B. M., and contains approximately 752 acres in San Juan County, Utah.

2. You are not permitted under this permit to sell ore, but you may remove small quantities for assay or experimental purposes.

3. You are required to pay individual Navajo Indians who may have customary, established, allocated, or assigned use rights for all damage caused by you which affects the surface of the lands involved or any improvement of said Navajo Indians, as determined by the Secretary of the Interior, or his authorized representative.

4. No renewal or extension of this permit may be granted; nor may the permit be sold, assigned, sublet, or transferred in any manner without the consent of the Advisory Committee of the Navajo Tribal Council and the Secretary of the Interior or his authorized representative. No overriding royalty on account of production under any lease may be created as an incident of such transfer or otherwise, and the payment of any overriding royalty on account of production under any lease will constitute cause for cancellation and forfeiture. "Overriding royalty" for the purpose of this paragraph is defined as any payment of any kind whatever, other

than payment of a tax or the Tribal royalty, measured by a percentage of the production or of the gross or net value thereof. Payment of a percentage of the net profit of a mining venture shall not be included in the definition of overriding royalty.

5. During the term of this permit you are granted the exclusive right to apply for and be granted a mining lease upon the lands above described, subject to acreage limitations and other lawful regulations.

6. You are required to furnish the Navajo Tribe, at the office of the Tribal Mining Engineer, Window Rock, Arizona, complete drill records and all information obtained from drilling and exploration each thirty (30) days during the term of this permit.

7. You shall have the privilege of constructing and maintaining, at your own expense, any additional roads across Permitter's lands that are necessary in carrying on the actual drilling and exploration work. Water and power lines may also be installed.

8. You shall have the right to drill and equip water wells on the land. At the termination of the permit or any leases taken all wells will be left intact and properly cased.

9. Permittee agrees to employ Indians, giving priority to the members of the Navajo Tribe, in all positions for which they are qualified and available and shall pay the prevailing wage rate for similar services in the area. The Permittee shall do everything practicable to employ qualified Indians, giving priority to the members of the Navajo Tribe, and their equipment in all hauling of materials under the permit and any leases taken and any work done thereunder, insofar as Permittee does not use its own equipment for that purpose. Permittee agrees to make special effort to work Indians, giving priority to the members of the Navajo Tribe, into skilled, technical, and other higher jobs in connection with the Permittee's operations under the permit and leases taken thereunder.

10. Upon termination of operations, Permittee will leave all of the areas on which it has worked in a condition that will not be hazardous to life or limb, and will take reasonable precautions for the conservation and protection of the property involved.

The above permit is accepted and permittee hereby agrees to be bound by all the terms and conditions thereof.

THE NAVAJO TRIBE

BY Scott Preston
Chairman, Navajo Tribal Council
(Permitter)

BYDEN MINES, INC.

By: Max W. Bowen
(Permittee)

APPROVED, DATE: March 16, 1956

G. Warren Spaulding
General Superintendent

~~EXHIBIT A~~

THE NAVAJO TRIBE

DRILLING AND EXPLORATION PERMIT

RECEIVED NOV 13 1956 D.M.E.A.

TO: Byron Mines, Inc.

PO Box 728

Cortez, Colorado

1. Pursuant to approval of your bid at the sale held at Window Rock, Arizona, on January 24, 1956, you are hereby granted an exclusive drilling and exploration permit for a period of eighteen (18) months from date of approval hereof upon Navajo Tribal Lands described as follows: Tract #22

Lies within Section 33 and 34, T. 43 S., R. 23 E., S. L. B. M., and contains approximately 240 acres in San Juan County, Utah.

2. You are not permitted under this permit to sell ore, but you may remove small quantities for assay or experimental purposes.

3. You are required to pay individual Navajo Indians who may have customary, established, allocated, or assigned use rights for all damage caused by you which affects the surface of the lands involved or any improvement of said Navajo Indians, as determined by the Secretary of the Interior, or his authorized representative.

4. No renewal or extension of this permit may be granted; nor may the permit be sold, assigned, sublet, or transferred in any manner without the consent of the Advisory Committee of the Navajo Tribal Council and the Secretary of the Interior or his authorized representative. No overriding royalty on account of production under any lease may be created as an incident of such transfer or otherwise, and the payment of any overriding royalty on account of production under any lease will constitute cause for concellation and forfeiture. "Overriding royalty" for the purpose of this paragraph is defined as any payment of any kind whatever, other

than payment of a tax or the Tribal royalty, measured by a percentage of the production or of the gross or net value thereof. Payment of a percentage of the net profit of a mining venture shall not be included in the definition of overriding royalty.

5. During the term of this permit you are granted the exclusive right to apply for and be granted a mining lease upon the lands above described, subject to acreage limitations and other lawful regulations.

6. You are required to furnish the Navajo Tribe, at the office of the Tribal Mining Engineer, Window Rock, Arizona, complete drill records and all information obtained from drilling and exploration each thirty (30) days during the term of this permit.

7. You shall have the privilege of constructing and maintaining, at your own expense, any additional roads across Permitter's lands that are necessary in carrying on the actual drilling and exploration work. Water and power lines may also be installed.

8. You shall have the right to drill and equip water wells on the land. At the termination of the permit or any leases taken all wells will be left intact and properly cased.

9. Permittee agrees to employ Indians, giving priority to the members of the Navajo Tribe, in all positions for which they are qualified and available and shall pay the prevailing wage rate for similar services in the area. The Permittee shall do everything practicable to employ qualified Indians, giving priority to the members of the Navajo Tribe, and their equipment in all hauling of materials under the permit and any leases taken and any work done thereunder, insofar as Permittee does not use its own equipment for that purpose. Permittee agrees to make special effort to work Indians, giving priority to the members of the Navajo Tribe, into skilled, technical, and other higher jobs in connection with the Permittee's operations under the permit and leases taken thereunder.

10. Upon termination of operations, Permittee will leave all of the areas on which it has worked in a condition that will not be hazardous to life or limb, and will take reasonable precautions for the conservation and protection of the property involved.

The above permit is accepted and permittee hereby agrees to be bound by all the terms and conditions thereof.

THE NAVAJO TRIBE

BY Scott Preston
Chairman, Navajo Tribal Council
(Permitter)

[redacted], INC.

By Max W. Bowen
(Permittee)

APPROVED, DATE: March 16, 1956

G. Warren Spaulding
General Superintendent

[redacted]

THE NAVAJO TRIBE

DRILLING AND EXPLORATION PERMIT

TO Byden Mines, Inc.

PO Box 728

Cortez, Colorado

1. Pursuant to approval of your bid at the sale held at Window Rock, Arizona, on January 24, 1956, you are hereby granted an exclusive drilling and exploration permit for a period of eighteen (18) months from date of approval hereof upon Navajo Tribal Lands described as follows. Tract #25

Lies within Section 29 and the S/2 of Section 28, T. 43 S., R. 13 E., S. L. B. M., and contains approximately 661 acres in San Juan County, Utah.

2. You are not permitted under this permit to sell ore, but you may remove small quantities for assay or experimental purposes.

3. You are required to pay individual Navajo Indians who may have customary, established, allocated, or assigned use rights for all damage caused by you which affects the surface of the lands involved or any improvement of said Navajo Indians, as determined by the Secretary of the Interior or his authorized representative.

4. No renewal or extension of this permit may be granted; nor may the permit be sold, assigned, sublet, or transferred in any manner without the consent of the Advisory Committee of the Navajo Tribal Council and the Secretary of the Interior or his authorized representative. No overriding royalty on account of production under any lease may be created as an incident of such transfer or otherwise, and the payment of any overriding royalty on account of production under any lease will constitute cause for cancellation and forfeiture. "Overriding royalty" for the purpose of this paragraph is defined as any payment of any kind whatever, other

than payment of a tax or the Tribal royalty, measured by a percentage of the production or of the gross or net value thereof. Payment of a percentage of the net profit of a mining venture shall not be included in the definition of overriding royalty.

5. During the term of this permit you are granted the exclusive right to apply for and be granted a mining lease upon the lands above described, subject to acreage limitations and other lawful regulations.

6. You are required to furnish the Navajo Tribe, at the office of the Tribal Mining Engineer, Window Rock, Arizona, complete drill records and all information obtained from drilling and exploration each thirty (30) days during the term of this permit.

7. You shall have the privilege of constructing and maintaining, at your own expense, any additional roads across Permitter's lands that are necessary in carrying on the actual drilling and exploration work. Water and power lines may also be installed

8. You shall have the right to drill and equip water wells on the land. At the termination of the permit or any leases taken all wells will be left intact and properly cased.

9. Permittee agrees to employ Indians, giving priority to the members of the Navajo Tribe, in all positions for which they are qualified and available and shall pay the prevailing wage rate for similar services in the area. The Permittee shall do everything practicable to employ qualified Indians, giving priority to the members of the Navajo Tribe, and their equipment in all hauling of materials under the permit and any leases taken and any work done thereunder, insofar as Permittee does not use its own equipment for that purpose. Permittee agrees to make special effort to work Indians, giving priority to the members of the Navajo Tribe, into skilled, technical, and other higher jobs in connection with the Permittee's operations under the permit and leases taken thereunder

10. Upon termination of operations, Permittee will leave all of the areas on which it has worked in a condition that will not be hazardous to life or limb, and will take reasonable precautions for the conservation and protection of the property involved.

The above permit is accepted and permittee hereby agrees to be bound by all the terms and conditions thereof

THE NAVAJO TRIBE

BY Scott Preston
Chairman, Navajo Tribal Council
(Permitter)

BYDEN MINES, INC.

By: Max W. Bowen
(Permittee)

APPROVED, DATE March 16, 1956

G. Warren Spaulding
General Superintendent

(C O P Y)

RECEIVED NOV 1 1956 D.M.E.A.

THIS AGREEMENT Made and entered into this 9th day of February, A.D. 1956, by and between HYDEN MINES, INC., a corporation, party of the first part, and THE GOLDEN CICLE CORPORATION, a corporation, party of the second part,

WITNESSETH:

That WHEREAS the first party is the holder of certain uranium mining leases granted by the Navajo Tribal Council covering approximately 480 acres in the Saytah group in the North and South Saytah Canyons West of Shiprock, New Mex.,and approximately 76 acres in the Silent Man group located in the Martin Mesa area, and

WHEREAS the first party desires to bid for certain drilling and exploration permits on additional blocks of ground in the Navajo Indian Reservation, and

WHEREAS the first party is desirous of obtaining additional capital for exploration, development and operation of its present leases and to bid for the drilling and exploration permits in exchange for a portion of its capital stock, and

WHEREAS the second party is willing to provide funds and explore, develop, operate and manage the properties, all as herein more fully set forth,

NOW, THEREFORE, in consideration of the premises and the mutual covenants and agreements herein contained, IT IS AGREED as follows:

1. IT IS UNDERSTOOD AND AGREED that the second party will during the period of two years from this date furnish not less than THIRTY THOUSAND DOLLARS ($30,000.00) for exploration and development of the present properties and for acquiring the additional drilling and exploration permits from the Navajo Tribal Council.

2. IT IS UNDERSTOOD AND AGREED that the second party will immediately advance the funds required to accompany the bids on drilling and exploration permits and will within the time required supply the funds for the additional payment on the drilling and exploration permits on such of the blocks of ground as may be considered worthy of prospecting and exploration.

3. IT IS FURTHER UNDERSTOOD AND AGREED that for the THIRTY THOUSAND DOLLARS ($30,000.00) in cash to be advanced by the second party, it shall receive twenty percent (20%) of the authorized stock of the first party, being forty thousand (40,000) shares in full satisfaction for the money so advanced

and for a period of (2) years from the date hereof, the second party shall have the privilege and option at its election, to advance additional sums not to exceed FORTY-FIVE THOUSAND DOLLARS ($45,000.00) if required for exploration and development work and to place the property in production and if the total additional sum is not required to place the property in production, the second party may at its election, pay into the treasury of the first party an additional amount sufficient to make a total additional paid in or expended in the amount of FORTY-FIVE THOUSAND DOLLARS ($45,000.00) and in the event that a total of SEVENTY-FIVE THOUSAND DOLLARS ($75,000.00) is expended or paid in, the second party shall be entitled to and shall receive fifty-one percent (51%) of the authorized stock of the first party, being one hundred two thousand (102,000) shares in full satisfaction for the moneys so expended or paid in and the first party agrees that it will immediately set aside one hundred two thousand (102,000) shares of its authorized capital stock to be held for issuance and delivery to the second party in accordance with the terms hereof, AND PROVIDED FURTHER that as the moneys are advanced by the second party, it shall be entitled from time to time to take down a pro-rata number of shares of stock to which it is entitled until the full amount has been received according to the sums of money advanced.

4. IT IS FURTHER UNDERSTOOD AND AGREED that should more than SEVENTY-FIVE THOUSAND DOLLARS ($75,000.00) be required for exploration work and development and for drilling and exploration permits to place the properties in production, then the second party may at its election make additional advances as a loan to the first party and take promissory notes payable on demand and secured by such assets of the first party and/or future ore payments as the second party may require.

5. IT IS FURTHER UNDERSTOOD AND AGREED that the second party shall immediately take over the management and conduct of the business of the first party and shall, through its authorized agents and employees, direct the exploration and development of the properties in such manner as in its discretion will place the properties in production and on a paying basis at the earliest possible date with the smallest expenditure of funds and shall open

a bank account in a Colorado Springs, Colorado, Bank in the name of the first party and all funds advanced by the second party shall be placed in said account and withdrawn on the signature or signatures of representatives of the second party for payment of necessary expenses as herein contemplated and all books, records and accounts of the operation shall be kept and maintained at the Colorado Springs, Colorado, office of the second party with accurate and detailed statements to be furnished to representatives of the first party at the end of each thirty (30) day period, IT BEING FURTHER UNDERSTOOD that all business shall be conducted in the name of and on behalf of the first party hereto.

6. IT IS FURTHER UNDERSTOOD that if it is considered desirable, a more detailed management contract will be entered into between the parties covering the specific rights, duties and authority of the second party in the management of said properties and the conduct of the affairs of the first party, IT BEING SPECIFICALLY UNDERSTOOD, HOWEVER, that the second party shall have the full right of management and conduct of affairs of the first party for a minimum period of two (2) years from the date hereof. PROVIDED, HOWEVER, that after the second party has advanced the sum of THIRTY THOUSAND DOLLARS ($30,000.00) and the properties are not in production and the second party shall decide that said properties are not worthy of further exploration and development, then it may and shall immediately return the management to the first party.

7. IT IS FURTHER UNDERSTOOD AND AGREED that the present Board of Directors of the first party consists of three (3) members and that in accordance with the provisions of the Articles of Incorporation, the Board of Directors will immediately increase the authorized membership to five (5) and will promptly elect two (2) additional members to the Board of Directors, consisting of MERRILL E. SHOUP and WAI W. BOWEN as representatives of the second party, and the second party shall at all times thereafter be entitled to two (2) members on the Board of Directors, PROVIDED, HOWEVER, that should the second party elect to expend or advance the total sum of SEVENTY-FIVE THOUSAND DOLLARS ($75,000.00) within the two (2) year period as herein provided, then immediately

upon such total sum having been advanced, one member of the Board representing the first party will resign and shall be replaced by a representative of the second party and thereafter the second party shall at all times be entitled to three (3) members on the Board of Directors or a majority of the Board in the event that the total membership on the Board should be increased.

8. IT IS FURTHER UNDERSTOOD that no stock of the first party has as yet been issued and that if after the same is issued, the original holders shall at any time have the opportunity to and desire to sell any of their stock to others than among themselves, then and in that event the second party shall have the first right to purchase said stock at the best offer which may be satisfactory to the original holders, which right of refusal may be exercised by the second party at any time within fifteen (15) days after it has received notice in writing of the desire to sell, containing the bid price. PROVIDED, HOWEVER, that the rights of the second party shall be subject to the provisions of the Articles of Incorporation of the first party covering reacquisition of stock by the corporation but PROVIDED FURTHER, HOWEVER, that no stock shall at any time be reacquired by the first party or its officers without the unanimous consent of the Board of Directors.

9. IT IS UNDERSTOOD that none of the money to be advanced by the second party will be required to pay or discharge obligations of the first party heretofore incurred.

10. The terms of this agreement shall extend to and be binding upon the successors and assigns of the respective parties hereto.

IN WITNESS WHEREOF the parties hereto have caused these presents to be duly executed by their respective Presidents and attested by their respective Secretaries by authority of their Boards of Directors, all in duplicate on the day and year first above written.

ATTEST:

/S/ Melvin Brugger
Secretary

BYDEN MINES, INC.

By /S/ Thomas A. Denny
President

First Party

ATTEST:

/S/ H. Bates
Secretary

THE GOLDEN CYCLE CORPORATION

By /S/ Merrill E. Shoup
President

Second Party

NAME OF

	RUN		RUN
	STOP		STOP
R Kerohes Interior	RUN	~~Branch of Ferrous Metals and Ferro Alloys~~	RUN
	STOP		STOP
~~Jean Seybert 1317 Interior~~	RUN	~~Harris 3526~~	RUN
	STOP		STOP
~~Marcia C. Hanks 4238 Int'g~~	RUN	~~Wendele~~ Rm 3516	RUN
	STOP		STOP
~~Jean Seybert 1314 Interior~~	RUN	~~Types Rm 3617~~	RUN
	STOP		STOP
Walter J. White 4210 Int'g	RUN	~~Mr. Ryan Room 3543~~	RUN
	STOP		STOP
~~Ben Philip Gould 5227 Interior~~	RUN	~~Mr. Kilgard Rm 5224~~	RUN
	STOP		STOP
~~Mrs. T. J. Carverryan 3534 Interior~~	RUN	W R Grunwald Rm 4444	RUN
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~~H. S. Kerr Rm 3647~~	RUN		RUN
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~~Robt. J. Minerals~~	RUN		RUN
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	RUN	~~MRS. HARRIS~~	RUN
	STOP	~~GSA Bldg.~~	STOP
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Murphy

February 11, 1957

Summary of Proposed Project

Object:	Denial of application for exploration aid.
Docket No.:	DMEA-4540
Commodity:	Uranium
Amount of application:	$212,417.19
Applicant:	Byden Mines, Inc. P. O. Box 86 Colorado Springs, Colorado
Property:	Lease on three Navajo Tribal Council Tracts in San Juan County, Utah. No. 9 lies in secs. 29 and 30, T. 43 S., R. 14 E; No. 12 lies in secs. 27 and 34; and No. 15 lies in secs. 29 and 28, T. 43 S., R. 13 E.
Date of application:	November 8, 1956.
Grand Junction memo recd.:	December 3, 1956
Referred to Region III:	December 14, 1956.
Field Team examination made:	December 19, 1956
Field Team report recd.:	January 25, 1957.
Work proposed:	434 holes requiring 88,985 feet of non-core and 1,740 feet of core drilling in two stages. The second stage would require 25 percent of the holes. The project to be completed in 7 months.
Estimated Costs:	(See page 2)

Estimated Costs:

88,985 feet non-core drilling @ $1.323	$117,688.75
1,740 feet core drilling @ $4.06	7,065.00
Labor and supervision	22,190.00
Materials and supplies	5,630.00
Equipment (rental)	13,930.00
2 storage and camp shacks	450.00
Miscellaneous	2,980.00
Contingencies - 25%	42,483.44
Estimated cost of project	$212,417.19
Government participation @ 75%	$159,312.89

Excerpts from Field Team report:

The property consists of 1,653 acres in the Monument Valley area covering part of Hoskinnini Mesa, part of Nokai Mesa, and all of Little Mesa. The altitude of the Mesas is about 6,000 feet.

All known uranium deposits in the Monument Valley area occur in the Shinarump sediments that fill channels cut into the surface of the underlying Moenkopi formation. Known channels in the area range in length from a few hundred feet to as much as 4 miles, range in width from 5 feet to 2,000 or more feet, and are a few feet to 160 feet in depth. Significant uranium deposits occur in the shorter discontinuous channels and thus far have not been found in the long, deep continuous channels that occur on the subject tracts of land.

The significant uranium deposits in Monument Valley fall in an arcuate belt with a fairly well defined boundary on the west and south. The applicant's property lies about 2 to 7 miles outside the western edge of this favorable belt.

Recent exploration drilling on an intensive scale has verified the unfavorableness of some of the large channels in the vicinity of the applicant's property (see page 11 and Fig. 2 of Field Team report). In summary, 875 holes, totaling 130,085 feet, were drilled with only 2 holes showing ore-grade material. A few of these holes were drilled by AEC on two of the tracts now leased by the applicant. The others were drilled on near-by tracts with private capital.

The field examiners conclude that in view of the proved unfavorable location of the applicant's tracts that its request for exploration aid should be denied. The Field Team concurred in this recommendation.

Commodity Members' comments (excerpts):

U. S. Bureau of Mines, J. E. Crawford, January 31, 1957.

Mr. Crawford concurred in the Field Team's denial recommendation.

U. S. Geological Survey, W. P. Williams, February 7, 1957.

Mr. Williams notes that the large amount of drilling performed by private interests and the AEC has proven that long, continuous type channels in the subject area are not favorable for significant uranium ore deposition; and, therefore, he concurs in the Field Team's recommendation for denial.

Rare and Miscellaneous Metals Division, F. M. Murphy, February 11, 1957

The report of examination adequately supports the Field Team's recommendation that the application should be denied.

Conclusion and Recommendation:

The recent drilling done by both AEC and private capital in the subject area certainly indicates little possibility exists that further exploration of the wide and deep Shinarump channels would result in finding significant ore deposits. Therefore, this Division concurs in the Field Team's recommendation to deny the subject application.

Ernest Wm Ellis

Ernest Wm. Ellis

DMEA Form 7
(12-56)

700

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Date	Surname	Code
2/11	Murphy	700
"	[illegible]	700
2/13	Selfridge	130
"	Johnson	110
"	Mittendorf	100
		220

FEB 13 1957

Mr. Max W. Bowen
Executive Vice-President
Byden Mines, Inc.
P. O. Box 86
Colorado Springs, Colorado

Re: Docket No. DMEA-4540 (Uranium)
Navajo Tribal Tracts Nos. 9, 12, and ~~13~~ Nelson Lamb
San Juan County, Utah

Dear Mr. Bowen:

Your application for aid in an exploration project and other information available to us in Washington concerning your above-named property have been reviewed.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our information indicates that the probability of disclosing significant ore reserves is not sufficiently promising to justify Government participation. We regret to advise you that, under these circumstances, your application for exploration assistance is denied.

We wish to thank you for your interest in the Defense Minerals Exploration Program and for bringing your property to our attention.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FMMurphy/gla
2-11-57
cc to: Admr.'s Reading File
Operating Committee
T. H. Kiilsgaard, 5224
Jack Kratchman - AEC
DMEA Field Team, Region III (2)
Code 700
Mr. Murphy

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

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"	Murphy	700

February 7, 1957

Memorandum

To: E. W. Ellis, Defense Minerals Exploration ~~Administration~~

From: W. P. Williams, U. S. Geological Survey

Subject: Review of field examination report, DMEA 4540, Byden Mines, Inc., Navajo tracts nos. 9, 12, and 15, San Juan County, Utah (uranium).

The examining team report that the subject property is located outside a well-defined zone of known ore deposits. No deposits are known in the vicinity of the property.

A large amount of drilling (875 holes) by private interests and the AEC resulted in only two holes that could be classified as ore holes.

Geologic structure on the property is poor in that the Shinarump channels present are the unfavorable, long, continuous type rather than the favorable, short discontinuous type.

There does not seem to be hardly a single criterion offering a favorable recommendation for the property.

I therefore agree with the Field Team's recommendation for denial of the application.

W. P. Williams

W. P. Williams

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DATE	INITIALS	CODE
1-31	cw	220
1-31	Murphy	700

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
Washington 25, D. C.

Date January 31, 1957

DMEA Project No. 4540
DMEA Contract No.
Commodity Uranium
Name of Applicant Byden Mines, Inc.
Name of Property Navajo Tribal Council Tracts
Location of Property San Juan Co., Utah
Estimated cost of project $212,417.19

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee
John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of Field Team Report
(Application, Byden Mines, Inc.)

1. Date Contacted: 1/57. 2. Date received by authors: 1/28/57.
3. Is there a claim on this property known to authors: Yes [ ] No [ ]
4. Is there a conflict of priority with other claims known to authors: Yes [ ] No [ ]
5. Is information available on prior production: Yes [ ] No [ ]
6. Other pertinent factors known to authors: Yes [ ] No [ ]
7. Explain items marked yes above:

8. Refer to attached consideration:
a. Location [ ]
b. Commodity [ ]
c. Existence of mineral deposition [ ]
d. Cost [ ]
e. Proposed exploration method [ ]
f. Alternate exploration method [ ]
g. Costs [ ]
h. _____ [ ]

9. Action desired:
a. Obtain information from applicant [ ]
b. Refer to Field Team [ ]
c. Defer [x]
d. Agree with Field Team [x]
e. Concur with Mr. _____ of _____ AEC office.
f. Disagree with Field Team [ ]
g. Support alternate plan [ ]
h. Support another consideration [ ]
i. Approval [ ]

10. Remarks: (Use back of page if necessary)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

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January 22, 1957

Memorandum

To: Secretary to the Operating Committee

From: DMEA Field Team, Region III

Subject: Joint Report of Examination Docket DMEA 4540 (Uranium) Byden Mines, Inc. (Navajo Tribal Council Tracts Nos. 9, 12, and 15) San Juan County, Utah.

Enclosed are four copies of a joint engineering and geologic Report of Examination on the subject property.

The field examiners find that recent exploratory drilling by private companies in this vicinity has verified the unfavorability of large channels like those found on the Applicant's property. They believe that the Applicant's property lies from two to seven miles outside the western edge of a belt of favorability. They therefore conclude that the chances of finding a significant amount of uranium are poor, and they recommend that the application be denied. We concur in this recommendation.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
1-28-57
(date)

ON-SITE EXAM. REPORT

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMEA
DEPARTMENT OF THE INTERIOR
JAN 22 1957
REGION III
DENVER, COLORADO

P. O. Box 360
Grand Junction, Colorado

MINERAL RESOURCES
DMEA
RECEIVED
JAN 18 1957
GEOLOGICAL SURVEY
DENVER, COLORADO

January 17, 1957

Memorandum

TRANSMITTED
JAN 22 1957

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DATE	INITIALS	CODE
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To: Executive Officer, DMEA Field Team, Region III

Through: E. N. Harshman
J. F. Shaw

From: J. William Hasler

Subject: Transmittal of joint geologic-engineering report. DMEA 4540 (Uranium), Byden Mines, Inc., (Navajo Tribal Council Tracts Nos. 9, 12, and 15), San Juan County, Utah.

Byden Mines, Inc., P. O. Box 86, Colorado Springs, Colorado, applied for DMEA assistance to explore their Navajo Tribal Tracts Nos. 9, 12, and 15, San Juan County, Utah. The proposed project consists of 88,985 feet of noncore drilling and 1,740 feet of core drilling at a total estimated cost of $212,417.19, with Government participation at $159,312.89.

The property was examined on December 19, 1956, by W. B. Gazdik, U. S. Geological Survey, and H. F. Robertson, U. S. Bureau of Mines. The Shinarump sandstone member, the potential ore-bearing unit, caps mesas on tracts 9, 12, and 15. Uranium ore is generally found in the shorter discontinuous channels and is notably lacking in the long, deep continuous channels. Recent exploratory drilling by private companies in the vicinity has verified the unfavorability of large channels like those found in the vicinity of the applicant's property. Furthermore, the applicant's property lies from 2 to 7 miles outside the western edge of a belt of favorability that contains the Monument No. 2 mines. Therefore, the examining team concludes that the chances of finding a significant uranium deposit is poor and recommends that the application of Byden Mines, Inc., under docket 4540 be denied. I concur with the recommendations of the examining team.

The Atomic Energy Commission was consulted for production figures of mines in the Monument Valley area.

Enclosed are 12 copies of the report complete with two illustrations and the applicant's brochure.

J. M. Byers, Jr.
For J. William Hasler,
Geologist

Reviewed by
DMEA OPERATING COMMITTEE
1-28-57
(date)

FMB/mlr
Enclosures

FOR UNITED STATES GOVERNMENT USE ONLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

TRANSMITTED

JAN 22 1957

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

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RECEIVED JAN 25 1957

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DMEA 4540

Byden Mines, Inc.

Navajo Tribal Council Tracts Nos. 9, 12 and 15

San Juan County, Utah

Uranium

Joint Engineering and Geological Report

By

W. B. Gazdik,
Geological Survey

H. F. Robertson,
Bureau of Mines

January 1957

Reviewed by
DMEA OPERATING COMMITTEE
1-28-57
(date)

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ILLUSTRATIONS

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2. Geologic map of part of Monument Valley showing Navajo Tribal Tracts 9, 12, and 15, Byden Mines, Inc., San Juan County, Utah, and Navajo County, Arizona	14

DMEA 4540

INTRODUCTION AND SUMMARY

Byden Mines, Inc., P. O. Box 86, Colorado Springs, Colorado, submitted an application to the Defense Minerals Exploration Administration for aid in an exploration project on Navajo Tribal Council Tracts Nos. 9, 12, and 15, San Juan County, Utah. The project would consist of a two-stage drilling program comprising 88,985 feet of non-core drilling and 1,740 feet of core drilling at a total estimated cost of $212,417.19. Government participation at 75 percent would be $159,312.89.

The property was examined on December 19, 1956, by a DMEA examining team consisting of W. B. Gazdik, Geological Survey and H. F. Robertson, Bureau of Mines.

The property consists of 1,653 acres of Navajo tribal land, located near the Arizona-Utah state line in the Monument Valley area. The three tracts cover part of Hoskinnini Mesa, part of Nokai Mesa, and all of Little Mesa at altitudes of about 6,000 feet.

The rocks exposed in the vicinity of the subject property are sedimentary formations ranging in age from Permian to Jurassic.

All known uranium ore deposits in the Monument Valley area occur in the basal Shinarump member of the Triassic Chinle formation. The Shinarump member caps all of tracts Nos. 9, 12, and 15. The contact with the underlying Moenkopi formation is a widespread uncomformity marked by deep channels and scours. Uranium ore is generally localized in deposits in the shorter, discontinuous channels and is notably lacking in the long, deep, continuous channels.

Significant uranium deposits in Monument Valley fall in an arcuate belt, with a well-defined boundary on the south and west, trending from the Monument No. 2 mine on the east to the Whirlwind mine near the San Juan River on the north. The applicant's property lies from 2 to 7 miles outside of the western edge of this favorable belt.

Recent exploratory drilling on a rather extensive scale by private industry has verified the unfavorableness of some of the large channels in the vicinity of the applicant's property.

A DMEA application by the Texas-Zinc Minerals Corporation, DMEA docket 4379, was examined in the field and was denied on the grounds that the chances of finding significant uranium deposits were not good.

Examination of the property of Byden Mines, Inc., led to the conclusion that it also lies in an area where the chances of finding significant uranium deposits are poor, and the examining team recommends that the application for Government assistance be denied.

ACKNOWLEDGMENTS

The examining team was accompanied by T. J. Ballard, mining engineer and project supervisor for the applicant. Memoranda by W. P. Williams and John E. Crawford were noted and the A.E.C. was consulted for data pertinent to the Monument Valley area.

Valuable information concerning the occurrence of uranium in Monument Valley was obtained from a Geological Survey Bulletin 1030-C, by I. J. Witkind, entitled, "Uranium Deposits at Base of the Shinarump Conglomerate Monument Valley, Arizona."

LOCATION, TOPOGRAPHY, AND CLIMATE

The three tracts of ground leased by the applicant are located on Hoskinnini Mesa, Nokai Mesa, and Little Mesa near the Utah-Arizona border (fig. 1). Tract No. 9 lies in secs. 29 and 30, T. 43 S., R. 14 E., SLBM; tract No. 12 lies in secs. 27 and 34, T. 43 S., R. 13 E., SLBM; and tract No. 15 lies in secs. 29 and 28, T. 43 S., R. 13 E., SLBM. All the tracts are in San Juan County, Utah, with the exception of Tract No. 12, which extends about half a mile south into Arizona.

The area covers high, relatively flat-topped mesas separated by deep, steep-walled canyons. Altitudes of tribal tracts Nos. 9, 12, and 15 average about 6,000 feet. The Byden Mines, Inc., camp is reached from Mexican Hat, Utah by traveling 35 miles southwest on Utah State Highway No. 47, thence 27 miles northwest over a fairly good access road. The camp is located at the north end of Hoskinnini Mesa near the north boundary of tract No. 9. From the camp, tracts Nos. 12 and 15 are about 16 miles southwesterly by road. There are no unusual problems of supply, labor, or power to be met. Domestic and mining water supplies are limited, and water has to be hauled as much as 40 miles in certain seasons. Transportation costs in this remote area are high, and housing accomodations for personnel must be brought in. Most operators utilize Indian labor where possible in accordance with a clause in the standard lease for leasing the Tribal property.

The climate of the area is arid, with occasional violent dust and rain storms in any season. Temperatures are moderate during the winter months and extremely high during summer. Late fall and winter are the preferred times for surface exploration.

HISTORY AND PRODUCTION

The history of the subject tribal tracts as potential uranium producing areas begins with the exploration permits issued on the tracts on January 24, 1956. No uranium ore has been found on or near the subject tracts. However, significant amounts of uranium ore has been found in the Shinarump member, 7 to 12 miles to the northeast, east, and southeast in the Monument No. 1, Mitten Nos. 1, 2, and 3, Radium Hill, Taylor-Reid, and Industrial Uranium's Daylight, Starlight, and Moonlight claims. There has been a total of 43,500 tons of uranium ore produced from these mines and others in the area that averaged 0.33 percent U_3O_8 and 0.93 percent ~~U_3O_8 and 0.93 percent~~ V_2O_5. These mines are within a belt of favorable ground located about 2 to 7 miles east of the applicant's property.

OWNERSHIP AND EXTENT

The property included in the application consists of Navajo Tribal Tracts No. 9, containing approximately 752 acres, No. 12, containing approximately 240 acres, and No. 15, containing approximately 661 acres.

Drilling and prospecting permits were issued by the Navajo Tribe to Byden Mines, Inc., on tracts Nos. 9, 12, and 15 on January 24, 1956. The permits are for a period of 18 months and may be extended or transferred only with the consent of the Navajo Tribal Council and the Secretary of the Interior.

In order to obtain additional capital for exploration, development, and other purposes, Byden Mines, Inc., entered into an agreement with the Golden Cycle Corporation whereby management of Byden Mines, Inc., is taken over by Golden Cycle for a period of two years or until February 9, 1958. However, since there is no change in lease assignment, the applicant's right to explore the property appears to be valid.

PRESENT STATUS

Exploration and development

No exploration, other than locating and correlating channels where exposed on the rims, has been done on the subject property. No development work had been done as of the date of the examination.

Mining equipment and other facilities

Equipment on the property at the present time is for road building rather than mining and consists of two pickup trucks, one TD-14 bulldozer, one 110 c.f.m. compressor, and one jackhammer with accessories.

The applicant has established a comfortable camp consisting of two well-constructed frame buildings on Tract No. 9 and has constructed access roads to the other two tracts. A 4,000 foot airstrip, built by the A.E.C., is located about five miles south of the camp.

GEOLOGY

The rocks exposed in the vicinity of the applicant's property are sedimentary formations ranging in age from Permian to Jurassic. Volcanic necks and lamprophyric dikes, probably of Tertiary age, intrude the sedimentary rocks about 12 miles to the southeast. Quaternary alluvium, dune sand and landslide debris are present locally but rock exposures on the sides of mesas are generally excellent.

The principal structural feature in the region is a broad asymmetrical, north-trending fold known as the Monument Upwarp. It extends from the junction of the Green and Colorado Rivers in Utah south into Monument Valley where it plunges southward and disappears near Kayenta, Arizona. The gently dipping west flank of this major fold is interrupted by north-trending subsidiary folds that are also asymmetrical with steeply dipping eastern flanks and gently dipping western flanks. The axis of one of these subsidiary structures, the Organ Rock anticline, crosses Tract No. 9 included in this report. The beds on Tract 9 consequently dip about 2° east and west away from the crest of this anticline. The dip of the beds on tracts Nos. 12 and 15 is about 2° to 3° west. A well developed joint set in the area trends about N. 70° W.

In ascending order the strata that crop out in the general area, are the Cedar Mesa sandstone, the Organ Rock tongue, the DeChelly sandstone and the Hoskinnini tongue members of the Cutler formation of Permian age, the Moenkopi and Chinle formations of Triassic age and the Wingate, Kayenta, and Navajo formations of Jurassic age.

All known uranium ore deposits in Monument Valley occur in the basal Shinarump member of the Triassic Chinle formation. In the vicinity of the applicant's property the Shinarump member ranges in thickness from 30 to 230 feet and averages about 100 feet thick. It caps all of tract Nos. 9 and 12 and most of tract No. 15 except where erosional remnants of the Chinle mudstone beds cover it. In the western part of Monument Valley, the Shinarump member forms a resistant sandstone ledge that tends to crop out as a steep cliff-like feature as much as 100 feet high which is unscalable for considerable distances. Where the member forms a widespread erosional surface as it does on the applicant's property, it is extremely irregular and pitted with depressions and hummocks as much as 20 feet high.

The Shinarump member consists predominantly of medium to coarse-grained fluvial sandstone which locally grades into a coarse conglomerate at the base. Light-brown, gray, and green lenses of claystone and siltstone a few inches to as much as six feet thick and 100 feet long are commonly present in the upper part. The sandstone and siltstone beds are crossbedded and lenticular. Most of the foreset beds dip generally northward, indicating a southern source. Most of the pebbles consist of

quartz, quartzite, and chertz with lesser amounts of limestone, clay and sandstone. Sand grains are mostly quartz, feldspar and mica. Considerable reworked Moenkopi in the form of blocks and particles is found along the bottom and sides of channels. Silicified and carbonized wood is scattered throughout the member as fragments and logs.

The upper contact of the Shinarump is gradational and locally the member intertongues with overlying Chinle beds. The lower contact with the underlying Moenkopi formation is a widespread unconformity marked by deep channels and broad scours. The sediments filling the channels are similar to Shinarump sediments outside the channels except for a greater amount of calcite and carbonaceous material included in channel sediments.

ORE DEPOSITS

All known uranium ore deposits in Monument Valley are localized in Shinarump sediments that fill channels cut into the upper surface of the underlying Moenkopi formation. The channels are symmetrical or asymmetrical scours that may be exposed along mesa sides as U-shaped troughs filled with Shinarump sediments bounded by Moenkopi beds and buried beneath Shinarump non-channel sediments. Where erosion has removed the overlying Shinarump beds and the softer Moenkopi siltstone, the more resistant channel fills crop out as long, narrow ridges. Although the detailed origin of these channels is in doubt, it appears likely that they were formed by stream erosion of one form or other. Known channels

in the Monument Valley area range in length from a few hundred feet to as much as 4 miles, range in width from 5 feet to 2,000 or more feet, and are a few feet to 160 feet deep. Significant uranium deposits occur in the shorter discontinuous channels and thus far have not been found in the long, deep continuous channels.

Mineralized rock occurs chiefly as sandstone or conglomerate impregnated with uranium-vanadium minerals. Smaller amounts of these minerals are contained in mudstone pebbles and seams or replace carbonaceous material. Copper minerals, mostly carbonates and sulfates, are commonly associated with uranium-vanadium minerals, but small amounts of chalcocite, bornite, and chalcopyrite have also been found. However, in the vicinity of the applicant's property many channel outcrops are characteristically colored by copper mineralization but contain no uranium.

Uranium ore deposits in the Monument Valley are localized in tabular, lenticular masses in the channels near the Shinarump-Moenkopi contact, but in some places mineralized rock is as much as 10 feet above the contact. The origin of the ore and factors that controlled its localization are not clear. Apparently carbonaceous material and clay are closely related to localization of uranium in some complex physical and chemical way. However the spatial relationship between channels and ore deposits is well established. No significant ore deposits have been found outside of channel sediments in the Monument Valley area; consequently,

prospecting and exploratory drilling have been restricted to known channel outcrops.

Significant uranium deposits in Monument Valley fall in an arcuate belt with a fairly well defined boundary on the west and south, trending from the Monument No. 2 mine on the east to the Whirlwind mine near the San Juan River on the north. The applicant's property lies about 2 to 7 miles outside the western edge of this favorable belt, in an area where Shinarump channels are long, deep and continuous. These channels are notably barren except for slight showings of uranium and copper mineralization as an efflorescence which probably precipitated from recently circulating ground water. Such efflorescence apparently originated from the general uranium content of the Shinarump member and not from buried deposits.

Recent exploratory drilling on a rather extensive scale has verified the unfavorableness of some of the large channels in the vicinity of the applicant's property. Channels on tracts Nos. 2, 3, 4, 5, 8, 13, 14, 17, 20, 22, 24, and 25 were intensively explored with discouraging results (fig. 2). The flurry of exploratory activity that resulted when the Navajo Tribal Council opened this part of the reservation to mineral entry has consequently subsided and very little exploratory work is going on at the present time. Continental Oil and Newmont Exploration drilled 32 holes totalling 3100 feet on tract 8 adjoining the applicant's tract 9 on the northwest with discouraging results. The

Atomic Energy Commission drilled 14 barren holes totalling 2,018 feet on the west end of the long channel reportedly trending across tract 9 (fig. 2). Available drilling data on some of the Navajo Tribal tracts in the western part of Monument Valley are summarized below. The approximate positions of these tracts relative to the applicant's property are shown on figure 2.

Company	Land tract number	Holes drilled	Total footage	Classification of drill holes
Gibralter Minerals Co.	2, 25	10	2,400	9 barren 1 ore
Texas Zinc Mining Corp.	4,5,13,14 20, 22	593	86,100	all barren
Rare Metals Corporation	3	124	13,400	all barren
Continental Oil & Newmont Exploration	8	32	8,100	all barren
Phillips Petroleum Corp.	17	63	12,5000	65 barren 1 ore
AEC drilling (Hoskinnini Mesa)		14	2,018	all barren
AEC drilling (Nokai Mesa)		39	5,567	all barren
		875	130,088	

ORE RESERVES

There are no known ore reserves on or near the subject property.

PROPOSED EXPLORATION

The applicant's proposed project consists of 434 holes requiring an estimated 88,985 feet of non-core drilling and 1,740 feet of core drilling at an estimated overall cost of $212,417.19. The general drilling plan proposes fences of holes normal to the inferred axial trend of the channels. The fence lines would be 500 feet apart with the holes spaced 100 feet apart on the fences except on the flanks of the channel where the holes would be 50 to 100 feet apart. The closer spacing on the sides of the channel is considered necessary by the applicant in order to locate the channel boundary and explore it more thoroughly.

The applicant assumes, for estimating purposes, that sufficient mineralization or ore holes will be found in the first stage of drilling to justify a second stage of offset drilling amounting to 25 percent of the first stage. The estimated time for completion of the proposed project is seven months.

The applicant's estimate of costs for the proposed exploration is as follows:

(a) Independent contracts -

Drilling - Stage I (all holes are non-core drilled)

Area	No. of holes	Depth feet	Total feet	Cost per foot Non-core	Cost per foot Core	Total cost
Tract No. 9	153	175	26,775	1.25	-	$33,468.75
Tract No. 12	84	250	21,000	1.50	-	31,500.00
Tract No. 15	110	225	24,750	1.25	-	30,937.00
Total	347	-	72,525	-	-	$95,906.25

Drilling - Stage II (Bottom 20 feet of each hole is core drilled.)

Area	No. of holes	Depth feet	Total feet	Cost per foot Non-core	Cost per foot Core	Total cost
Tract No. 9	38	155	5,890	1.25	-	$7,362.50
	-	20	760	-	4.00	3,040.00
Tract No.12	21	230	4,830	1.50	-	7,245.00
	-	20	420	-	4.25	1,785.00
Tract No.15	28	205	5,740	1.25	-	7,175.00
	-	20	560	-	4.00	2,240.00
Total	87		18,200			$28,847.50
Total Drilling	434		90,725			$124,753.75

(b) Labor and Supervision:

2 laborers - 7 months at $345. per month	$ 4,830.00
1 engineer's helper - 7 months at $345. per month	2,415.00
1 cook - 7 months at $280. per month	1,960.00
1 foreman-cat operator - 7 months at $505. per month	3,535.00
1 mining engineer - 7 months at $750 per month	5,250.00
1 geologist - 7 months at $600. per month	4,200.00
Total	$22,190.00

(c) Operating Materials and Supplies

Camp supplies	$ 1,610.00
Fuel and lubrication supplies	2,777.00
Drilling and blasting supplies	1,243.00
Total	$ 5,630.00

(d) Operating Equipment:

2 pickups - 7 months at $80 per month	$ 560.00
1 Bulldozer - 7 months at $1,680 per month	11,760.00
1 Compressor - 7 months at $125 per month	875.00
1 Jackhammer - 7 months at $30 per month	210.00
1 2-ton truck - 7 months at $75 per month	525.00
Total	$13,930.00

(e) Rehabilitation and Repairs - None

(f) New Buildings

2 storage and camp shacks	$ 450.00

(g) Miscellaneous	
Sample analyses - 200 at $2.00 each	$400.00
Core boxes - 120 at $1.50 each	180.00
Accounting - 7 months at $50 per month	350.00
Compensation and insurance	2,000.00
Engineering supplies, drafting, survey stakes	50.00
Total	$2,980.00
(h) Contingencies - 25 percent of $169,933.75	$ 42,483.44
Estimated overall cost of project	$212,417.19
DMEA participation at 75 percent	159,312.89

Byden Mines, Inc., propose to pay their share of the exploration costs by cash and use allowances on company-owned equipment.

No alternate exploration program is submitted by the examining team.

CONCLUSIONS AND RECOMMENDATIONS

Significant uranium deposits in the Monument Valley area fall in an arcuate belt trending from the Monument No. 2 mine on the east to the Whirlwind mine near the San Juan River, on the north. The applicant's property lies about 2 to 7 miles west of this favorable belt in an area where Shinarump channels are characteristically long, deep, continuous scours. These channels are notably barren except for slight showings of uranium and copper mineralization as an efflorescence which probably originated from the uranium content of the Shinarump member and not from buried deposits. Recent exploratory drilling on a large scale by private industry, has verified the unfavorable nature of the long, deep channels in the vicinity of the applicant's property. The chances of finding uranium deposits of significant size and grade on the applicant's property are considered very poor. It is recommended therefore that the application for Government assistance be denied.

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
JANUARY 1957 DOCKET 4540

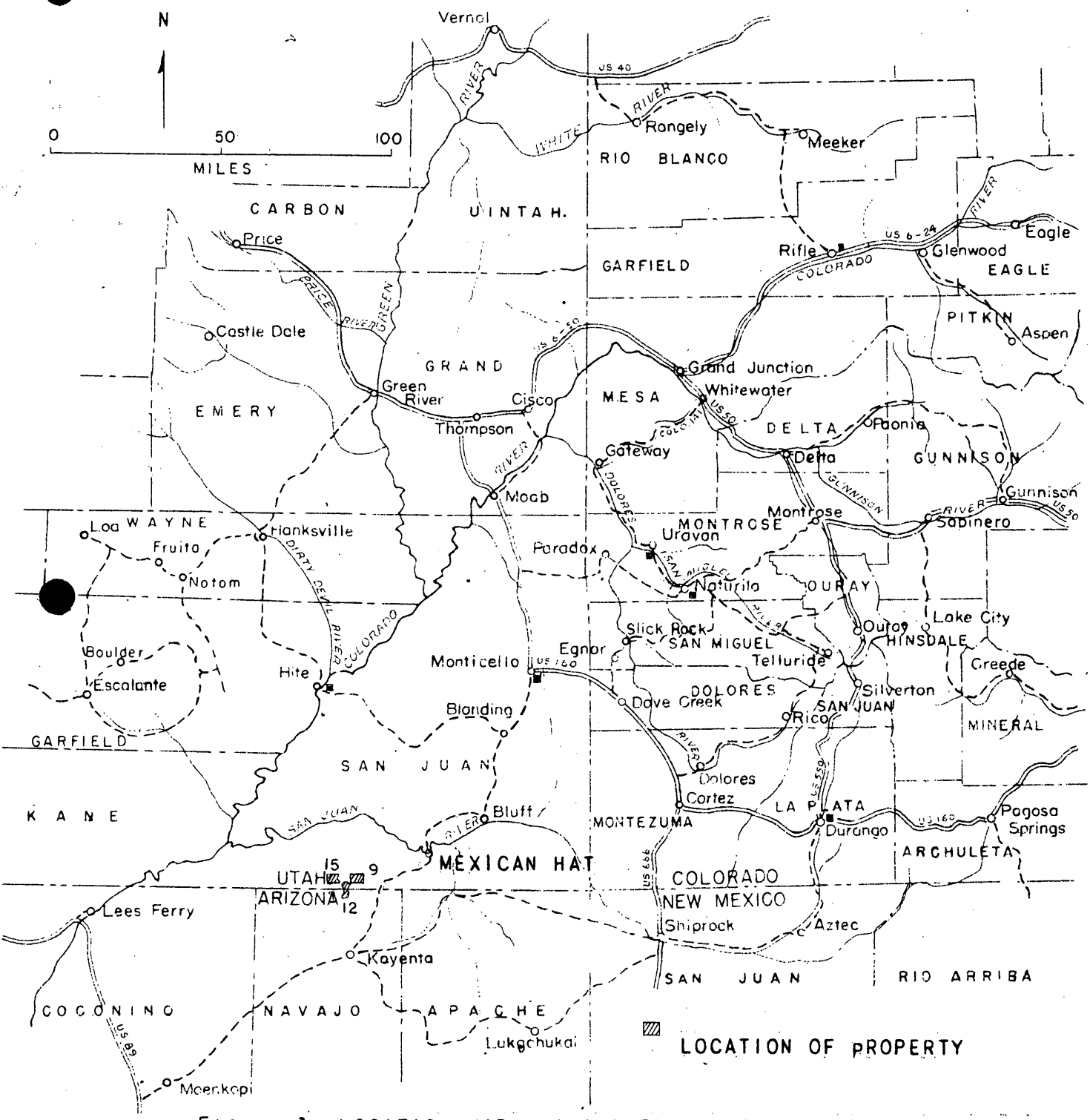


FIGURE 1. LOCATION MAP, NAVAJO TRIBAL TRACTS NUMBERS 9, 12, AND 15. BYDEN MINES INC., SAN JUAN COUNTY, UTAH.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

December 27, 1956

Mr. Max W. Bowen
Executive Vice President
Byden Mines, Inc.
P. O. Box 86
Colorado Springs, Colorado

Re: Docket DMEA 4540 (Uranium)
Navajo Tribal Council
Tracts 9, 12, and 15
San Juan County, Utah

Dear Mr. Bowen:

This will acknowledge receipt of your letter dated December 20, 1956, regarding the large scale map of the Little Mesa tract.

Since the field examination has been made on your property and no need was found for the large scale map of the Little Mesa tract, perhaps it will not be necessary to go to the expense of preparing this map. If at a later date the field examiners request the map, we will advise you.

Wishing you a happy and prosperous New Year, I am

Yours very truly,

Original signed by
W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

HMC:jy
cc: Sec. Op. Comm. (2)
Harshman
Shaw (2)
Hasler
Docket 4540
Chron.

w/copy of Applicant's letter

COPY

BYDEN MINES, INC.
P.O. Box 86
Colorado Springs, Colorado
December 20, 1956

Mr. W. M. Traver, Executive Officer, DMEA
Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Dear Mr. Traver:

Answering your letter of December 17th, I am sorry to say that due to a breakdown of our bulldozer, we were unable to complete the road to Little Mesa as we had previously expected. Mr. Ballard informed me last week that the bulldozer is back in operation and we should complete this road in early January. You will be advised as soon as this is done.

Thanking you for your cooperation, and with the Season's Greetings, I am

Yours very truly,

Max W. Bowen
Executive Vice-President

MWB:hr

(ytl)

RECEIVED DEC 31 1956

Region III

DMEA
DEPARTMENT OF THE INTERIOR
DEC 20 1956
REGION III
DENVER, COLORADO

Building 20
Denver Federal Center
Denver 2, Colorado

December 19, 1956

Memorandum

To: W. M. Traver, Executive Officer, DMEA Field Team, Reg. III

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 4540 (Uranium) Ryden Mines, Inc., (Navajo Tribal Tracts, 9, 12, and 15) San Juan County, Utah

The application for Ryden Mines, Inc., Docket DMEA 4540, in the amount of $212,417.00 was received in this office on December 19, 1956.

A field examination will be made and suitable report prepared by an engineer from the Denver or Grand Junction office.

W. H. KING
W. H. King

cc: W. M. Traver (2)
E. H. Harshman
J. W. Hasler
M. E. Salsbury
J. F. Shaw
Sec. Op. Com. (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED DEC 21 1956 D.M.E.A.

224 New Customhouse
Denver 2, Colorado

December 18, 1956

Memorandum

To: W. H. King (2) (w/brochure)
J. W. Hasler

From: DMEA Field Team, Region III

Subject: Docket DMEA 4540 (Uranium) Byden Mines, Inc. (Navajo Tribal Tracts, 9, 12, and 15) San Juan County, Utah.

Enclosed is the subject application in the amount of $212,417.00. A field examination and suitable report are requested.

Also enclosed is a copy of a letter from the Chairman of the Operating Committee, dated December 14, 1956, and memoranda of review of the application by W. P. Williams and John E. Crawford.

Will you please return the brochure with your report of examination.

DMEA Field Team, Region III

Original signed by
W. M. TRAVER

By W. M. Traver
Executive Officer

Enclosures

HMC: ytl

cc: Sec. Op. Comm. (2)
Harshman
Docket 4540
Chron.

12-21-56

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

December 17, 1956

Mr. Max W. Bowen
Executive-Vice-President
Byden Mines, Inc.
P. O. Box 86
Colorado Springs, Colorado

Re: Docket DMEA 4540 (Uranium)
Navaje Tribal Council
Tracts 9, 12, and 15
San Juan County, Utah

Dear Mr. Bowen:

Have you completed the map on the Little Mesa tract mentioned in your letter to me dated November 8, 1956? This map would be helpful to us when the field examination is scheduled on this property.

Will you please advise when we may expect to receive this map.

Yours very truly,

Original signed by
W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

HMC:ytl
cc
Sec. Op. Comm. (2)
Harshman
Shaw (2)
Hasler
Docket 4540
Chron.

700

FILE COPY

Surname:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

DEC 1 1 1956

Byden Mines, Inc.
P. O. Box 86
Colorado Springs, Colorado

Re: Docket No. DMEA-4540 (Uranium)
Navajo Tribal Tracts Nos. 9, 12, & 15
San Juan County, Utah

Gentlemen:

The application for assistance in exploring your property, under the captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred for a field examination to:

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

The Regional Office will contact you at the earliest opportunity in regard to your project.

Sincerely yours,

C. O. Mittendorf

Administrator

FMMurphy/izm 12-12-56
cc to: Docket
Code 700
Mr. Murphy
Admr.'s Reading File
DMEA Field Team, Reg. III (2)

A.C.L.

700

FILE COPY
Surname:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

DEC 14 1956

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4540 (Uranium)
Byden Mines, Inc.
Navajo Tribal Tracts Nos. 9, 12, & 15
San Juan County, Utah

Dear Mr. Traver:

The captioned application is referred to Region III Field Team for investigation, a field examination, and recommendation.

Enclosed are copies of memoranda, dated December 5 and 11, 1956, by J. E. Crawford, USBM, and W. P. Williams, USGS, respectively, relating to the application. Also enclosed is an extra copy of the application for Field Team use.

A Consent to Lien and Subordination Agreement will probably not be granted on the above-mentioned tracts. Therefore, in the event the Field Team recommends a project to explore the subject tracts, it should advise the Applicant that we will require a Performance Bond in lieu thereof.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures

APPROVED:

Frank D. Lamb
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

FMMurphy/izm 12-12-56
cc to: Docket
Code 700
Mr. Murphy
Admr.'s Reading File
Operating Committee

Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

12-11-56

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED DEC 11 1956 U.M.E.A.

December 11, 1956

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: W. P. Williams, U. S. Geological Survey

Subject: Review of application, DMEA 4540, Byden Mines, Inc., Navajo Reservation tracts nos. 9, 12, and 15, San Juan County, Utah, (uranium).

The applicant proposes an extensive drilling program on three large tracts. The work would consist of a total of 90,725 feet of drilling at a total estimated cost of $212,417.

No ore has been produced from any of the tracts. A small amount of drilling on the properties by the Atomic Energy Commission appears to have had discouraging results. The applicant states that copper minerals are present on Tract No. 9, and a sample from the area afforded a chemical assay value of 0.09 percent U_3O_8. The applicant, and Grand Junction personnel, point out that the Shinarump channels in the vicinity of the property are very large and well developed.

For a definite appraisal of the property, I recommend that the application be referred to the Field Team for field examination and report.

W. P. Williams

W. P. Williams

12/6/56

RECEIVED
DEC 6 1956
D.M.E.A.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
Washington 25, D. C.

Date December 5, 1956

DMEA Docket No. 4540
DMEA Contract No.
Commodity uranium
Name of applicant Byden Mines, Inc.
Name of property Navajo Tribal Council Tracts
Location of property San Juan County, Utah
Estimated cost of project $212,417.19

Memorandum

To: Ernest Willaim Ellis, DMEA Member
Uranium Commodity Committee

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Review of Application
(Application, Field Team Report, etc.)

1. Date of subject document: 11/8/56. 2. Date received by reviewer: 12/4/56.

3. Prior reports on this property known to reviewer: Yes [ ] No [x]

4. Prior reports on nearby properties known to reviewer: Yes [x] No [ ]

5. Information available on past production: Yes [ ] No [x]

6. Other pertinent factors known to reviewer: Yes [ ] No [x]

7. Explain items marked yes above:

DMEA Docket 4397, Texas Zinc Minerals

8. Factors needing special consideration:

a. Location [ ]
b. Ownership [ ]
c. Evidence of mineralization [ ]
d. Geology [ ]
e. Proposed exploration method [ ]
f. Alternate exploration method [ ]
g. Costs [ ]
h. _____ [ ]

9. Action advised:

a. Obtain information from applicant [ ]
b. Refer to Field Team [x]
c. Denial [ ]
d. Agree with Field Team [ ]
e. Disagree with Field Team [ ]
f. Suggest alternate plan [ ]
g. Request another examination [ ]
h. Approval [ ]
i. Consult with Mr. _____ at _____ AEC office.

10. Remarks: (Use back of page if necessary)

Mr. J. O. Hosted, Washington representative of the Atomic Energy Commission, assisted in the review.

12/3/56

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

November 29, 1956

RECEIVED DEC 3 1956 D.M.E.A.

Memorandum

To: Secretary to the Operating Committee

From: DMEA Field Team, Region III

Subject: Application Docket DMEA-4540 (Uranium) Byden Mines, Inc., (Navajo Tribal Council Tracts Nos. 9, 12, and 15), San Juan County, Utah

Enclosed are the original and three copies of a joint memorandum of review of the subject application by personnel of the DMEA Grand Junction office.

After review with the AEC and from knowledge of Monument Valley in Utah and Arizona where there is presently some uranium production although exploratory drilling in the immediate area by Phillips Petroleum Company and Texas-Zinc Minerals Corporation has been generally inconclusive, the reviewers recommend a field examination to obtain information on the specific tracts involved in the application. The Field Team concurs in this recommendation.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Enclosures

IN REPLY REFER TO:

DMEA

DEPARTMENT OF THE INTERIOR

NOV 29 1956

REGION III

DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. Box 360
Grand Junction, Colorado

November 26, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: E. N. Harshman

From: J. William Hasler
M. H. Salsbury

RECEIVED DEC 3 1956 DMEA

Subject: Recommendation for field examination relative to application for aid. DMEA docket 4540 (Uranium), Byden Mines, Inc., (Navajo Tribal Council Tracts Nos. 9, 12, and 15), San Juan County, Utah

The Byden Mines, Incorporated, applied to the Defense Minerals Exploration Administration to explore for uranium on the above-mentioned tracts of ground belonging to the Navajo Tribal Council on the Navajo Indian Reservation, San Juan County, Utah. The application has been reviewed with Mr. Charles H. Bowen, district geologist for the Atomic Energy Commission.

Uranium ore deposits in the Shinarump member of the Chinle formation have been discovered and extensively mined in Monument Valley in Utah and Arizona. Prominent among the producing mines in the area are Monument No. 1, Mitten Nos. 1, 2, and 3, the Radium Hill, Taylor-Reid, and Industrial Uranium's Daylight, Starlight and Moonlight claims. There has been a total of 43,500 tons of uranium ore mined from these mines and others in the area that will average 0.33 percent U_3O_8 and 0.93 percent V_2O_5.

Considerable amounts of drilling have been done by the Phillips Petroleum Company and the Texas-Zinc Minerals Corporation in the same general area. The majority of their drilling has proven to be essentially negative, although the channel scours in the area are large and very continuous.

Nothing?

A DMEA application by the Texas-Zinc Minerals, DMEA docket 4379, was examined in the field and was denied upon the grounds that the chances of finding significant uranium deposits were not good. It is questionable whether or not approval of this application will be forthcoming. However, we have no specific information about tracts 9, 12, and 15; therefore, it is advisable that a field examination be made.

J. William Hasler
J. William Hasler,
Geological Survey

M. H. Salsbury
M. H. Salsbury,
Bureau of Mines

JWH/mlr/kws

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Ryden Mines Inc.
P. O. Box 86
Colorado Springs, Colorado

November 14, 1956
Subject: DMEA-4540

Gentlemen

Your application for exploration assistance, dated November 8, 1956 submitted to our office at Denver, has been assigned Docket Number DMEA-4540 and referred to the Rare and Miscellaneous Metals Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Director
Operations Control and
Statistics Division

Copy to:

Region III. Denver, Colorado

Code 700

6416

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
JANUARY 1957 DOCKET 4540

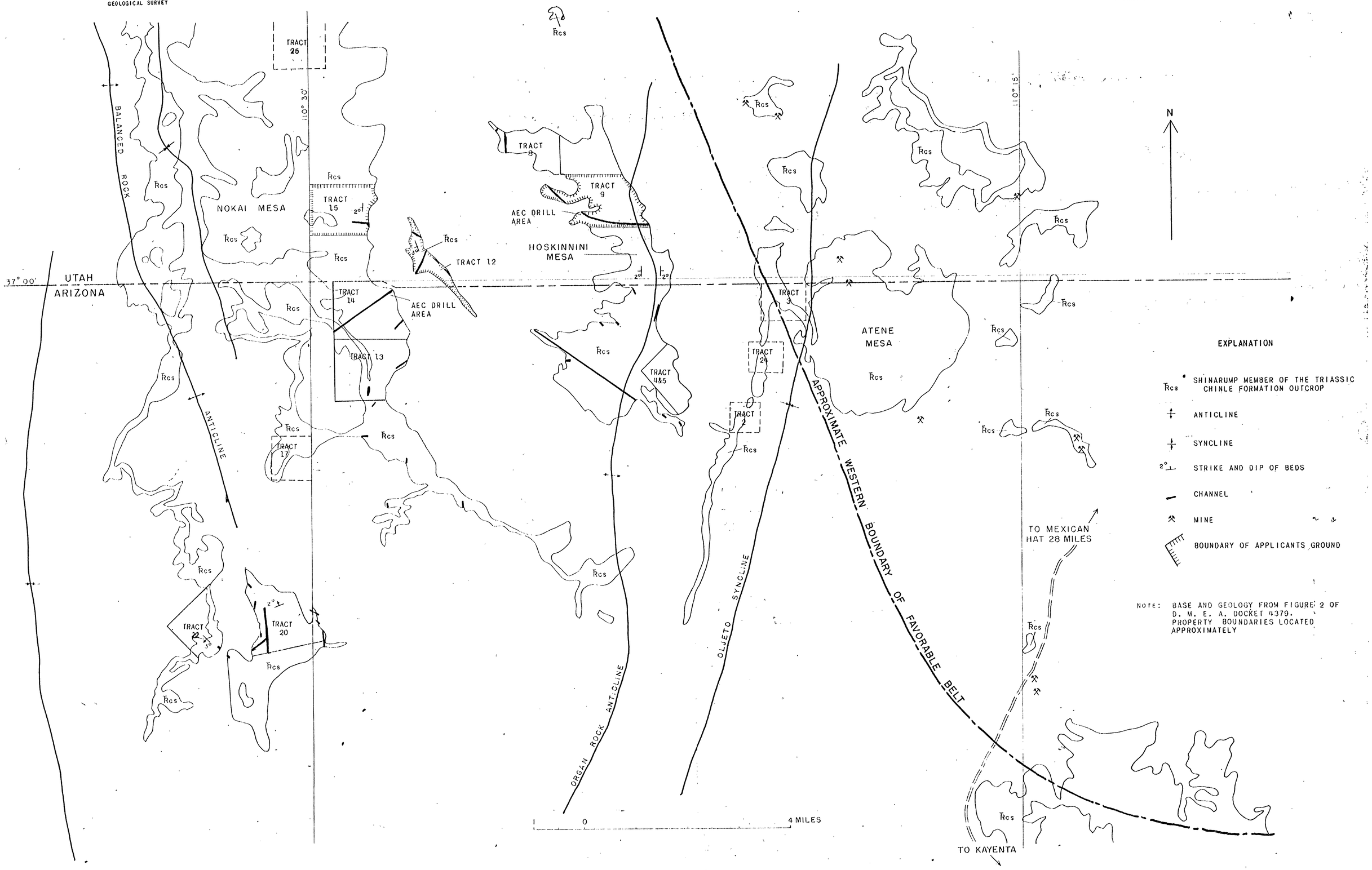
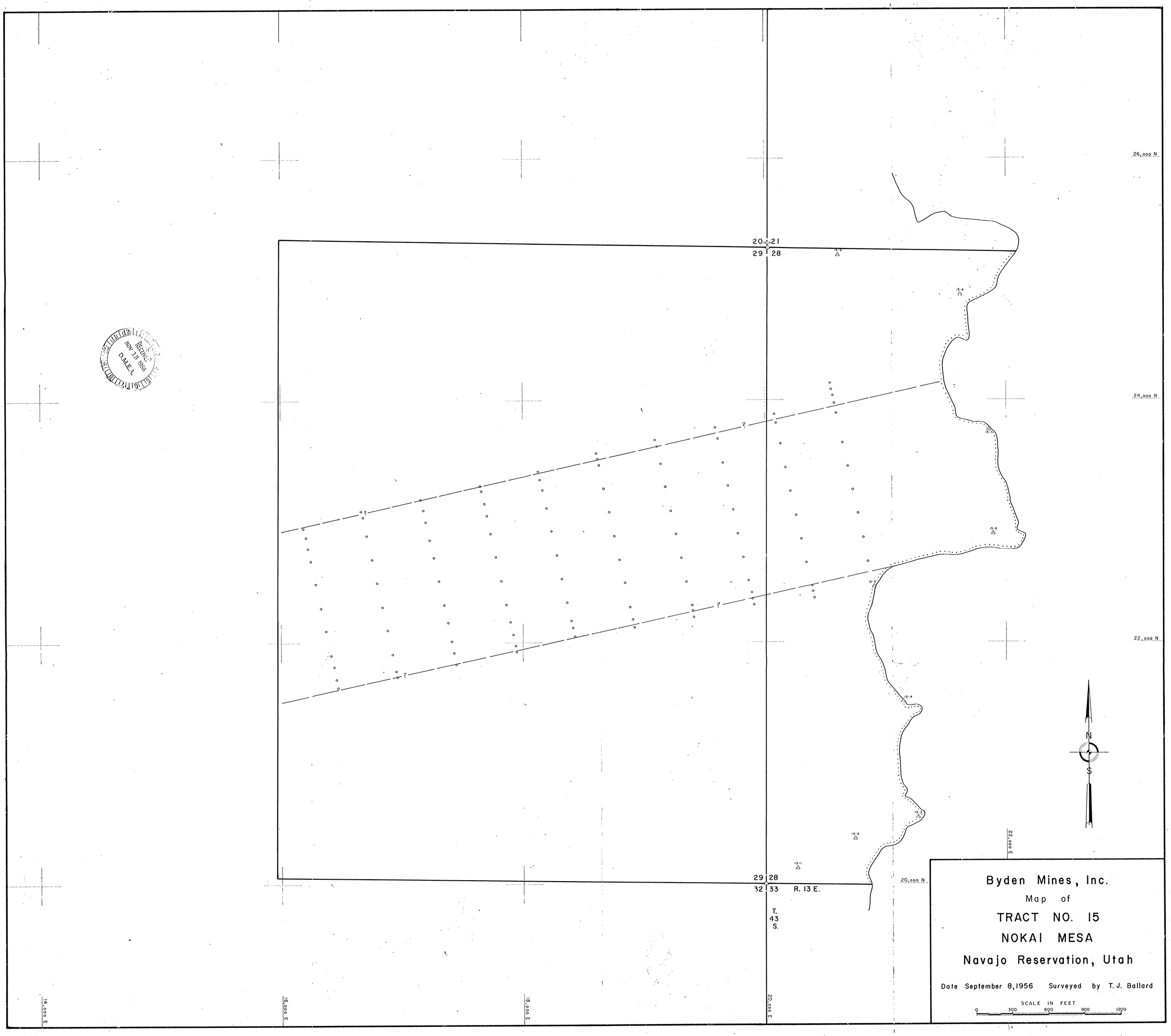
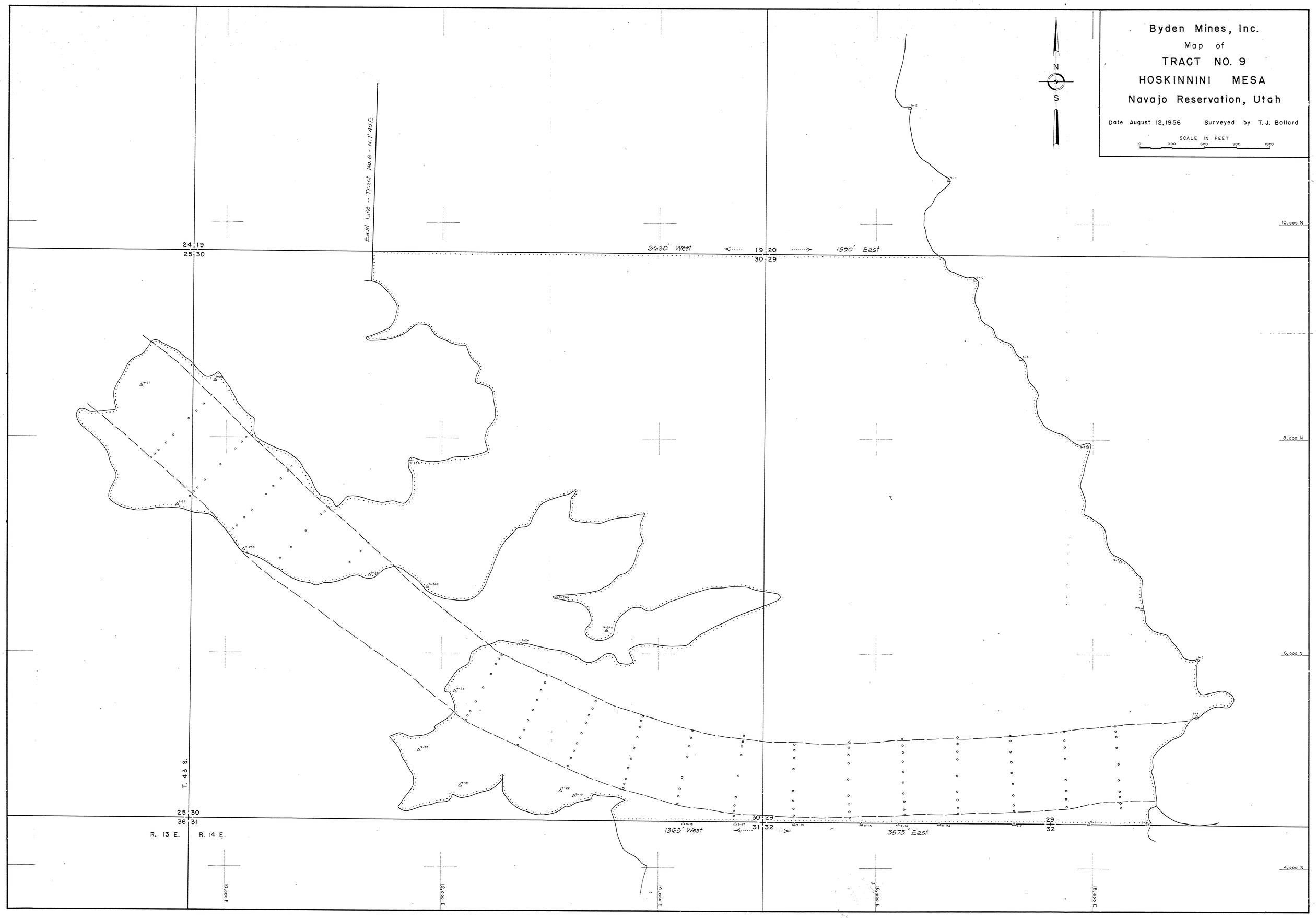


Figure 2. GEOLOGIC MAP OF PART OF MONUMENT VALLEY SHOWING NAVAJO TRIBAL TRACTS 9, 12, AND 15
BYDEN MINES INC., SAN JUAN COUNTY, UTAH, AND NAVAJO COUNTY, ARIZONA.

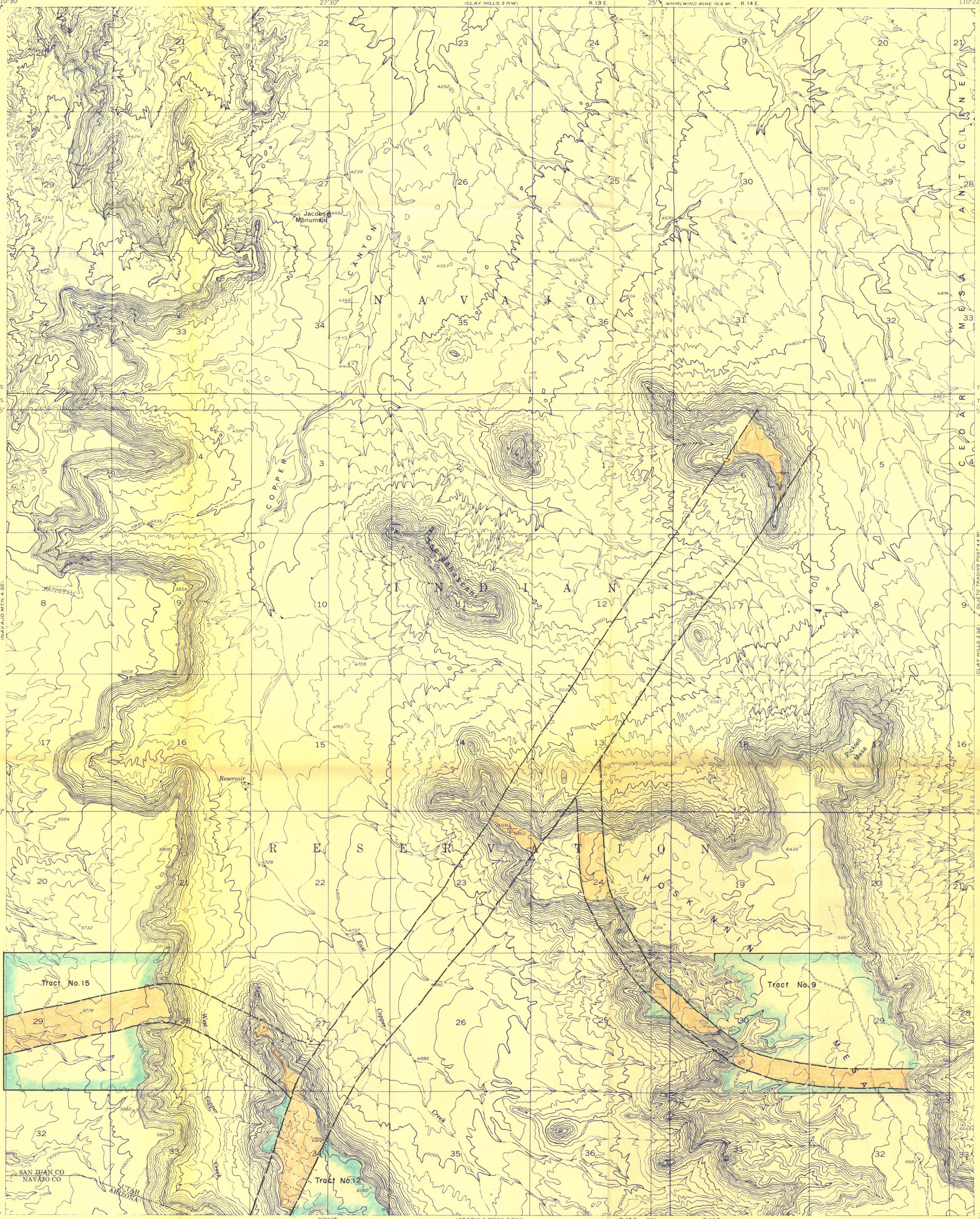


RECEIVED NOV 13 1956 D.M.E.A.


Byden Mines, Inc.
Map of
TRACT NO. 9
HOSKINNINI MESA
Navajo Reservation, Utah
Date August 12, 1956
Surveyed by T. J. Ballard
SCALE IN FEET
0 300 600 900 1200
N
S
East Line - Tract No. 8 - N. 1° 40' E.
3630' West
1590' East
1365' West
3575' East
24 19
25 30
19 20
30 29
25 30
36 31
30 29
31 32
29
32
T. 43 S.
R. 13 E.
R. 14 E.
10,000 N.
8,000 N.
6,000 N.
4,000 N.
10,000 E.
12,000 E.
14,000 E.
16,000 E.
18,000 E.

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

CLAY HILLS 3 SW QUADRANGLE
UTAH–ARIZONA



Mapped by the Geological Survey 1952

Topography by multiplex methods from aerial photographs taken 1951

Data subject to minor corrections when incorporated in a standard series map

TRUE NORTH
MAGNETIC NORTH
15°
APPROXIMATE MEAN DECLINATION, 1952

SCALE 1:24000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

ROAD CLASSIFICATION

Improved ——— Unimproved - - - - -

BYDEN MINES, INC.

CLAY HILLS 3 SW, UTAH-ARIZ.

N3700–W11022.5/7.5

U 363 SW

Dunkin Blue Print & Supply Co
Grand Junction, Colo.