

**KING ISLAND JOINT VENTURE**

**IRELAND'S FARM PROJECT**

**10 September 1969**

**68\_530**

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N.S.W. 2001KING ISLAND JOINT VENTUREIRELAND'S FARM PROJECT.Report - Diamond Drilling.A. PRELIMINARY INVESTIGATIONS

In the course of a regional soil sampling and Induced Polarization survey in the Pegasus district, a number of anomalies were delineated. From these, a site on a property known as "Ireland's" was selected as an initial target area. Here, strong I.P. anomalies together with associated geochemical highs occurred along a gabbro/sediment contact.

(I) Geochemical Anomalies:

A hand auger was used to obtain soil samples at a standard depth of 5 feet. This was done in an attempt to obtain true samples of weathered bedrock, as samples taken at intervals down several test holes showed marked leaching of metallic ions in the upper soil horizons.

Around the target area, the geochemical background was low; in the order of 10-30 p.p.m. copper, 20-40 p.p.m. lead, and 5-10 p.p.m. zinc. Several anomalies samples showed up to 200 p.p.m. copper, 110 p.p.m. lead and 170 p.p.m. zinc and here appeared in part to coincide with the I.P. anomalies. However, rock samples taken indicate a high background in unweathered gabbro; 200 p.p.m. Cu, 200 p.p.m. while a weathered shale showed 80 p.p.m. Cu, 100 p.p.m. Pb. Hence care must be taken in delineating soil geochemical anomalies.

(II) Induced Polarization Anomalies:

The survey was done using a standard 400 foot electrode spacing. The anomalies obtained were very marked in terms of resistivity with associated higher frequency effects. Following this, two of the three lines were tested using a 200 foot spread. This resulted in the not so well defined easterly anomaly (on line 5+75E) being resolved into 2 separate members of slightly differing characteristics, while the anomaly on the centre line (Line 0) showed as a single well defined anomaly. The change in position of the anomalies indicated that their source had a dip of  $40^{\circ}$  -  $60^{\circ}$ , grid north ( $300^{\circ}$ ).

### (III) Conclusions:

Although pyrite was present in the sediments in the area of the I.P. anomalies it appeared these anomalies were significant. This was decided as in other areas of pyritic sediments, I.P. showed high frequency effects over the whole line, but no clearly defined anomaly with such resistivity lows. The geochemical results, also gave interest to the area.

Hence it was decided to test these anomalies by diamond drilling and two holes were planned, both with a maximum depth of 500 feet. The first drill site was at 1+80N on line O (D.D.H.-R.01) with the second at 6+00S on line 5+75E (D.D.H.-R.02). Both holes were drilled in the direction of grid south, dipping at 45°.

### B. DRILLING OPERATIONS

The drilling was carried out with a machine using size "B" rods and core barrel, and fitted with "Wire-line" equipment. However, rate of drilling was slow, a total of 897 feet being achieved in the period 8th May, 1968 - 20th August, 1968, working one ten hour shift per day, six days a week. This low rate was due to two factors; periods during which the drill was idle, and low usage of "Wire-line" equipment.

### C. GEOLOGICAL SUMMARY OF DRILL-CORE

See relevant core-logs and cross sections.

#### (I) D.D.H.-R.01

This hole was completed to a depth of 471 feet. It commenced in a much weathered coarse gabbro, the contact with the sediments being at 33 feet. It appears that the gabbro occurs as a sill, with an apparent shallow dip to grid north (300°).

The approximate depth of weathering (based on the oxidation of pyrite) is 68 feet along the hole, or 48 feet vertically.

Between 411'8" and 415'11" a feldspar porphyry was encountered. This consisted of feldspar phenocryst from 1 - 3 m.m. in a quartz rich ground mass. Some biotite was present as small crystals less than 1 m.m.

The rest of the core consisted of sediments, quartzite, siltstones, mudstones and shale. These showed evidence of very low grade regional metamorphism. Interbedding occurred on a varying scale, going down to 1 m.m.

- (a) Quartzite: This is commonly hard massive fine-grained and unbedded, being a light grey in colour. Some muscovite is present, as are detrital minerals. Pyrite occurs in varying amounts up to 2-3%, but generally is less than 1%. It is present as "clots" of very small crystals, and as coatings on joint planes.
- (b) Siltstone & Mudstone: These are commonly finely bedded, being light to dark blue-grey in colour. They generally contain a fair amount of muscovite, and small particles of quartz. Pyrite is present up to 5% but generally 1-2%.
- (c) Shales: These are black and contain a fair amount of carbonaceous material. They show some tendency for the development of a slaty cleavage. Pyrite is present, being 2-10%, generally 2-5%. It occurs as small disseminated grains, 1-2 m.m. in size, with about 50% being concentrated in conformable bands from 1-10 m.m., but most commonly 1-3 m.m. in width. These contain some quartz and talc.

(II) D.D.H.-R.02

This hole was completed to a depth of 426 feet. Here, the apparent depth of weathering is 30 feet along the hole, giving a depth of 21 feet vertically.

Between 395 feet and 403 feet a feldspar porphyry was encountered, being very similar to that encountered in hole R.01. The feldspar phenocrysts were larger, up to 5 m.m. with some pyrite and biotite in the ground mass.

The rest of the core was very similar to that of hole R.01, being quartzite, mudstones and shales, as described above. The exception being from 65 feet to 101 feet, where a quartzite was encountered which was soft, muscovite rich and contained 5-10% pyrite as disseminated "clots" up to 10 m.m.

D. RESULTS OF ANALYSES

See drill cross-sections.

The core for both holes was sampled at regular intervals: the

core being split and half analysed spectrographically. Typical results are as follows:-

	Cu	Pb	Zn	Co	Ni	Zn	Mo(p.p.m.)
pyritic quartzite	40	10	40	50	80	2	3
pyritic mudstone	300	100	100	100	500	10	3
pyritic carbonaceous shale	700	200	400	300	400	5	80
feldspar porphyry	60	12	50	50	60	2	3

Thus it can be seen that while the amount of metals present is low, there is sufficient present in the shales, and possibly the mudstones to give a weak soil geochemical anomaly.

#### E. CONCLUSIONS

The diamond drilling showed that the source of the I.P. anomalies as being sedimentary pyrite. Any other anomalies found in an area of similar rock-type especially the pyritic carbonaceous shale, would not warrant any detailed investigation. As the other anomalies discovered in the surrounding area are in the above rock-type, and are very similar to those tested by drilling, it must be assumed that these are due to the same cause.

The soil geochemical anomalies appear to be due to relatively high trace metal variations in the rocks, and are not due to any form of economic mineral concentration.

E.R. Leckie.  
10th September, 1968.

CORE SAMPLESBulk Rock Samples - Split Core - to Amdel.Hole R. 01

<u>Sample No.</u>	<u>Footage</u>	<u>Rock Type</u>
80501	33' 8" - 33' 10"	Weathered red siltstone
80502	100' - 100' 3"	Grey pyritic mudstone
80503	160' - 160' 3"	Grey pyritic/quartzose siltstone
80504	196' - 196' 3"	Black pyritic mudstone with pyrite bands to 2 m.m.
80505	244' 3" - 244' 6"	Grey pyritic quartzite
80506	308' - 308' 3"	Grey pyritic quartzite
80507	351' 6" - 352'	Grey pyritic quartzite
80508	265' 4" - 265' 6"	Black carbonaceous shale with disseminated pyrite and pyrite bands - 2 m.m.
80509	322' - 322' 6"	Black carbonaceous shale and disseminated pyrite - 2 quartzite/pyrite veins - conformable - one with some graphite.
80510	412' - 412' 3"	Feldspar - quartzite - biotite porphyry
80511	416' 6" - 416' 9"	Dark grey quartzite and pyritic and micaceous
80512	454' - 454' 3"	Interbedded quartzite and siliceous mudstone and disseminated pyrite.

005

109007

## KING ISLAND JOINT VENTURE

PROJECT "IRELANDS"

D.D.H. No. R - 01

LOCATION 2N - Line 0

DATE 28th May, 1968

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
0	20'	20'	-	Done with a roller bit	
20'	24'	4'	30%	Very much weathered coarse gabbro	
24'	33'	7'	12%	Very much weathered finer grained gabbro	
33'	40'	7'	40%	Weathered red/orange/buff quartzose siltstone	
40'	46'	6'	33%	40' - 44' buff micaceous siltstone	
				44' - 46' blue-grey quartzose siltstones	
				- still much weathered - evidence of original pyrite	
46'	54'	8'	40%	46' - 49' interbedded blue-grey/buff weathered micaceous siltstone	
				49' - 51' weathered blue-grey mudstone	
				51' - 54' weathered interbedded blue-grey/buff mudstone.	

REMARKS:

006

109008

KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R - 01

LOCATION 2N - Line 0

DATE 28th May, 1968.

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
54'	64'	10'	2.5%	Weathered grey and light brown micaceous siltstone	
64'	74'	10'	15%	64' - 68' weathered grey and light brown micaceous siltstone.	
				68' - 74' dark blue-grey siltstones, - some interbedded black carbonaceous shale, some pyrite along joints	
74'	84'	10'	40%	Blue grey siltstone and some interbedded black shale - some pyrite along joints and some disseminated throughout - up to 4 - 5% in patches.	
84'	94'	10'	35%	Blue-grey siltstone with disseminated pyrite - approximately 2 - 4% interbedded black mudstone - up to 6" wide beds - forms 10 - 20% minor conformable bands of pyrite (up to 1 m.m.) occurring only within the black mudstone.	

REMARKS:

007

109009

KING ISLAND JOINT VENTURE

PROJECT "IRELANDS"

D.D.H. No. R - 01

LOCATION 2N - Line 0

DATE 28th May, 1968.

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
94'	104'	10'	45%	as above - pyrite bands up to 2 m.m. approximately frequency - 1 per 6" in black mudstone.	
104'	105'	1'	67%	As above	
105'	107'	1'6"	40%	As above	
107'	107'8"	8"	50%	Black mudstone as above	
107'8"	109'	1'4"	25%	Blue-grey siltstone/black muds as above for 84' - 94'	
109'	115'6"	4'6"	22%	Blue-grey siltstone with disseminated pyrite, black pyritic mudstone now more abundant $\hat{=}$ 30% disseminated pyrite grains from 1 m.m. to (rarely) 10 m.m. conformable pyrite bands up to 2m.m. - frequency approximately 1 per 3".	

REMARKS:



009

109011

KING ISLAND JOINT VENTURE  
PROJECT "IRELAND'S"

D.D.H. No. B - 01 LOCATION 2N - Line 0 DATE 1st June, 1968.

CORE SIZE B CORE RECOVERY %                     

DRILLER W. Power LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
125'	135'	10'	100%	Interbedded black mudstone/grey siltstone in beds 6" - 1' $\approx$ ratio 1:1 siltstone shows crossbedding and fine (1.5 m.m.) black laminal, both have disseminated pyrite ( $\approx$ 5%) ingrain up to 1m.m., while the black mudstone has pyrite bands up to 2 m.m. - frequency of bands $\approx$ 1 per 3"	
135'	145'	10'	100%	As above, but ratio mudstone/siltstone $\approx$ 1:9	
145'	155'	10'	90%	As above - pyrite along minor jointing.	
155'	165'	10'	95%	As above - shattered zones (close jointing) - 159' - 159'6", 160' - 161', 165'6" - 166'	
165'	170'	5'	90%	As above	
170'	177'	7'	100%	As above	

REMARKS:

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109012

KING ISLAND JOINT VENTURE  
PROJECT "IRELAND'S"

D.D.H. No. R - 01

LOCATION 2N - Line 0

DATE 1st June, 1968.

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
177'	187'	10'	100%	177' - 179' Grey pyritic siltstone.	
				179' - 186'6" black pyritic mudstone - many pyrite bands - 1 - 3 m.m. wide frequency ≈ 1 per 1"	
				186'6" - 187' grey pyritic siltstone.	
187'	197'	10'	100%	Black pyritic mudstone - disseminated grains up to 2 m.m. Pyrite bands up to 4 m.m. average 2 m.m. - 1 per inch.	
197'	205'	8'	95%	Black pyritic mudstone, pyrite bands up to 10 m.m. - average 3 m.m. - are fewer after 200'. Grey pyritic siltstone - 198' 10" - 199', 199'3" - 199'6", 200' - 201'. 204' - 205' interbedded grey silt/black mudstone scale 1" - 1/2".	

REMARKS:

011

109013

KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R - 01

LOCATION 2N - Line 0

DATE 7th June, 1968

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
205'	212'	7'	80%	205' - 205'6" interbedded grey siltstone/black mudstone and disseminated pyrite.	
				205' - 212' fine grained light grey quartzose siltstone and disseminated pyrite - grains up to 4 m.m. - approximately 5% pyrite less after 210'6".	
				209' - 211' shattered zone - pyrite along joints.	
				211'1/4" - quartz vein - 30 m.m. with pyrite around periphery.	
212'	220'	7'1/4"	92%	fine grained massive light grey quartzite. Disseminated pyrite grains up to 4 m.m. 2 - 5% varying in zones. Pyrite along joint planes, minor shale bands up to 1" wide.	

REMARKS:

KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R - 01

LOCATION 2n Line 0

DATE 7th June, 1968

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
220'	230'	10'	95%	As above - with very little shale shattered zones 227'6" - 228'6" 229'3" - 230'6"	
230'	238'	8'	87.5%	As above - some micaceous zones. Pyrite disseminated in patches - grains up to 4 m.m. $\approx$ 3%. Shattered zone - 236' - 238'.	
238'	245'	7'	100%	As above - some interbedded shale - pyrite disseminated in patches.	
245'	248'	3'	92%	As above Shattered zone 246' - 248'.	

REMARKS:

013

109015

KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R -01

LOCATION 2N - Line 0

DATE 7th June, 1968.

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
248'	258'	10'	100%	As above to 251'6"	
				Past 251'6" - interbedded dark grey fine grained quartzose mudstone/and black shale, and very minor quartzite.	
				Minor disseminated pyrite throughout and minor bands in shale - 2 m.m. in width.	
258'	264'	6'	95%	As above to 263'	
				263' - 264' - quartzite.	
				Minor disseminated pyrite in quartzite.	
264'	274'	10'	100%	Interbedded dark-grey mudstone and black shale with minor quartzite. Shale contains pyrite bands 1 - 4 m.m. in width, frequency is approximately one per inch from 269' - 271'	

REMARKS:

014

109016

KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R -01

LOCATION 2N - Line 0

DATE 14th June, 1968.

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
274'	281'6"	7'6"	80%	Massive grey quartzite with some mica (muscavite) - pyrite on joint planes 274' - 278' - disseminated pyrite in grains up to 4 m.m. $\Delta$ 4%. Minor mudstone bands 278'6" - 281' - very shattered.	
281'6"	278'6"	6'	95%	Interbedded micaceous quartzite/mudstone beds 1" - 2" wide and massive quartzite beds to 12" - very little pyrite - disseminated and on joint planes.	
287'	293'6"	6'	90%	As above	
293'6"	296'6"	3'	95%	Massive quartzite with very little mudstone, and very minor pyrite $\Delta$ 1%.	

REMARKS:

015

109017

KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R - 01

LOCATION 2N - Line 0

DATE 14th June, 1968.

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
296'6"	299'6"	3'	95%	As above	
299'6"	304'	4'6"	100%	As above	
304'	313'6"	9'6"	100%	As above - slight increase in amount of disseminated pyrite in quartzite (2%)	
313'6"	314'6"	1'	100%	As above	
314'6"	319'6"	5'	93%	As above	
319'6"	329'	9'6"	100%	to 321'6" - as above. 321'6" - 323'6" - black shale with disseminated pyrite and quartz/pyrite bands 2 m.m. - 6 m.m. One band - quartz/pyrite/and some graphite - 20 m.m. 323'6" - 329' quartzite and shale. Minor disseminated pyrite.	

REMARKS:

016

109018

## KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R - 01

LOCATION 2N line 0

DATE 14th June, 1968.

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
329'	339'6"	10'6"	100%	Quartzite and some interbedded shale and minor disseminated pyrite.	
339'6"	350'	10'6"	100%	As above	
350'	360'	10'	100%	As above with slight increase of finely bedded shale.	
360'	370'6"	10'	96%	As above	
370'6"	376'6"	6'	95%	As above	
376'6"	384'	7'6"	100%	As above Broken zone 382' - 386'	
384'	386'	2'	100%	As above.	

REMARKS:

017

109019

KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R - 01

LOCATION 2N - Line 0

DATE 23rd June, 1968.

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
386'	390'	4'	100%	As above - shattered zone 388'6" - 390'.	
390'	394'	4'	40%	As above - all core recovered being broken	
394'	395'	1'	100%	As above - not broken so much	
395'	399'6"	4'6"	100%	As above - broken zone 396' - 399'6"	
399'6"	401'6"	2'	75%	As above - broken zone 400'6" - 401'6"	
401'6"	403'6"	2'	87%	Dominantly quartzite from 400' on - minor disseminated pyrite. Broken zone - 402' - 403'6".	
403'6"	404'6"	1'	50%	As above - all core obtained being broken	

REMARKS:

018

109020

KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R - 01

LOCATION Line 0 - 2N

DATE 23rd June, 1968.

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
404'6"	406'	1'6"	82%	As above	
406'	410'	4'	30%	As above - some core being broken	
410'	411'6"	1'6"	67%	As above	
411'6"	416'	3'6"	55%	411'6" - 411'8" dark-grey shale. 418" - 415'11" fine grained porphyry, - feldspar crystals 1 - 3 m.m. quartz and biotite crystals (minor) to 1m.m. - very little pyrite 415'11" - 416' - dark-grey shale 413' - 416' - broken zone.	
416'	417'	1'	100%	Light-grey quartzite - with minor pyrite disseminated and on joints. Broken to minor degree.	

REMARKS:

019

109021

KING ISLAND JOINT VENTURE  
PROJECT "IRELAND'S"

D.D.H. No. R - 01

LOCATION Line 0 - 2N

DATE 23rd June, 1968

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
417'	417'8"	8"	100%	As above - all broken	
417' 8"	420'8"	3'	55%	As above with minor dark grey mudstone - more broken than above	
420'8"	424'	3'1/4"	75%	As above - less broken except 422'6" - 423'	
424'	427'	3'	20%	Quartzite and mudstone fragments, - much core lost due to "washing away" of soft material - possible fault zone.	
427'	429'6"	2'6"	60%	Quartzite with minor disseminated pyrite and pyrite on joint planes.	
429'6"	433'	3'6"	100%	Quartzite as above and minor mudstone.	

REMARKS:

020

109022

KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R - 01

LOCATION Line 0 - 2N

DATE 7th July, 1968.

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
433'	440'	7'	100%	Interbedded lightgrey quartzite and dark-grey mudstone and black shale. Minor pyrite disseminated throughout.	
				434' - 440' - dominantly black shale - pyrite bands to 3 m.m. $\approx$ 5%	
440'	444'	4'	100%	Quartzite and faintly banded mudstone. Minor pyrite disseminated and on joint planes.	
444'	448'	4'	100%	As above - broken zone 445' - 448'	
448'	451'	3'	100%	As above - broken zone 450' - 457'	

REMARKS:

021

109023

KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R - 01

LOCATION Line 0 - 2N

DATE 14th July, 1968.

CORE SIZE B

CORE RECOVERY %

DRILLER W. Power

LOGGED BY E. Leckie

From	To	Cut	Rec. %	Description	Sample No.
451'	453'	2'	100%	As above - finely interbedded	
453'	454'	1'	100%	As above - majority of core broken	
454'	455'	1'	67%	As above - all core being broken	
455'	462'	7'	50%	As above - dominantly quartzite. All core obtained being broken	
462'	466'	3'	57%	As above - all broken	
465'	466'	1'	50%	As above - very much broken	
466'	468'6"	2'6"	80%	As above - broken zone 466' - 468'	
468'6"	471'	2'6"	90%	As above - broken zone 470' - 471'	

REMARKS:

022

109024

KING ISLAND JOINT VENTURE

PROJECT "IRELANDS"

D.D.H. No. R - 02

LOCATION Line 5.75E - 65

DATE 28 - 7 - 68

CORE SIZE B

CORE RECOVERY %

DRILLER W. POWER

LOGGED BY E.R. LECKIE

From	To	Cut	Rec. %	Description	Sample No.
30'	34'	4'	100%	Black carbonaceous shale, weathered only to a minor degree, contains pyrite bands (conformable $\bar{e}$ bedding) with minor talc and quartz, width 1 - 3 m.m. frequency $\hat{=}$ 1 per 3" and disseminated pyrite grains - 1 m.m. total pyrite varies - 2 - 5%.	
34'	37'	2'6"	87%	As above	
37'	41'	3'6"	87.5%	As above	
41'	46'	5'	100%	As above	
46'	48'6"	2'	80%	As above	
48'6"	55'	6'	92%	As above	
55'	59'	3'6"	87.5%	55' - 57' Shale as above	
				57' - 59' light grey fine grained soft quartzite, interbedded with shale (as above) disseminated pyrite in grains to 5 m.m. total pyrite varies - 5 - 10%	

REMARKS:

023

109025

## KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R -02

LOCATION Line 5-75E - 65

DATE 28th July, 1968.

CORE SIZE B

CORE RECOVERY %

DRILLER W. POWER

LOGGED BY E.R. LECKIE

From	To	Cut	Rec. %	Description	Sample No.
89'	65'	6'	100%	59' - 62' quartzite as above	
				62' - 65' dominantly black shale as above	
65'	75'	10'	100%	65' - 65'6" black shale as above	
				65'6" - 75' quartzite as above	
75'	81'	3'3"	55%	quartzite as above	
81'	91'	8'	80%	quartzite as above - tendency for pyrite to be concentrated along a poorly developed foliation (bedding?)	
91'	101'	9'6"	95%	quartzite as above, past 95' pyrite decreases ≤2%	
101'	108'	7'	100%	quartzite, less mica and harder very little pyrite ≤1% on joints 102' - 103' some interbedded shale	

REMARKS:

024

109026

KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R - 02

LOCATION Line 5.75E - 65

DATE 28th July, 1968

CORE SIZE B

CORE RECOVERY %

DRILLER W. POWER

LOGGED BY E.R. LECKIE

From	To	Cut	Rec. %	Description	Sample No.
108'	114'	4'	80%	quartzite as above, 113'-114' very broken	
114'	121'	7'	100%	quartzite as above to 115' 6" 115'6"-121' interbedded black carbonaceous shale and dark grey mudstone; shows some tendency for a phyllitic foliation pyrite dissem. and in bands 1-2m.m. varying in amounts → 2%	
121'	131'	10'	100%	quartzite as above to 124' 124'-131' mudstone with minor interbedded shale and quartzite pyrite minor <1%	
131'	135'	4'	100%	quartzite with minor mudstone as above very minor pyrite	
135'	140'	4'	80%	interbedded quartzite/mudstone with minor shale - very minor pyrite	

REMARKS:

025

109027

## KING ISLAND JOIN VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R - 02

LOCATION Line 5.75E - 65

DATE 28 - 7 - 1968

CORE SIZE B

CORE RECOVERY %

DRILLER W. POWER

LOGGED BY E.R. LECKIE

From	To	Cut	Rec. %	Description	Sample No.
140'	146'	4'	70%	As above	
146'	149'	2'6"	62%	As above	
149'	155'	6'	100%	149'-150' mudstone-as above, minor pyrite	
				180'-156' dominantly black shale $\approx$ 2% pyrite	
				dissiminated and in bands (thin)	
				154'-156 quartzite as above minor pyrite	
155'	157'	2'	100%	quartzite as above	
157'	167'	6'	60%	interbedded quartzite/mudstone pyrite on	
				joints & disseminated <1% quartzite is dominant	
167'	170'	2'6"	88%	As above	
170'	174'	4'	100%	As above	
174'	181'	7'	100%	As above	
181'	187'	5'6"	92%	As above )	185'-196' all core is broken to varying degree
187'	193'	4'	100%	As above )	
193'	196'	2'	67%	As above )	
196'	201'	5'	100%	As above	

REMARKS:

026

109028

KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No.R - 02

LOCATION: Line 5.75E - 65

DATE 28 - 7 - 1968

CORE SIZE B

CORE RECOVERY %

DRILLER W. POWER

LOGGED BY E.R. LECKIE

From	To	Cut	Rec. %	Description	Sample No
201'	211'	10'	100%	201'-205'6" quartzite as above	
				205'6" - 207' black shale - pyrite dissem. and in fine bands $\approx$ 1-2%	
				207' - 211' quartzite as above, and some mudstone.	
211'	218'	6'6"	93%	quartzite/mudstone as above - no shale - very minor pyrite	
218'	228'	10'	100%	As above, - sligh increase in pyrite content - 1-2%	
228'	235'	6'6"	93%	228' - 230' black shale - pyrite $\approx$ 2% 230' - 235' quartzite/mudstone as above	
235'	241'	6'	100%	finely interbedded (1/8" - 2") quartzite and mudstones - pyrite up to 2%	
241'	243'	1'6"	75%	dominantly quartzite as above - minor mudstone.	
243'	248'	5'	100%	dominantly quartzite, - little mudstone very little pyrite $<$ 1%.	

REMARKS:

027

109029

## KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R-02

LOCATION Line 5-75E - 65

DATE 11th August, 1968

CORE SIZE B

CORE RECOVERY %

DRILLER W. POWER

LOGGED BY E.R. LECKIE

From	To	Cut	Rec. %	Description	Sample No.
248'	256'	8'	100%	quartzite as above	
256'	261'	4'6"	90%	quartzite as above - 268'6"-9" some pyrite	
261'	264'	3'	100%	quartzite/mudstone as above - ratio - 1:1	
264'	269'	5'	100%	as above	
269'	274'	5'	100%	as above	
274'	279'6"	5'3"	96%	as above, )	
279'6"	283'	2'9"	64%	as above )	278' - 292' majority of
283'	285'6"	2'	80%	as above )	core is broken - shatter zone
288'	291'	3'	100%	as above - slight increase in mudstone	
291'	295'6"	4'6"	88%	as above )	
295'6"	300'	4'	88%	as above	
300'	303'	3'	100%	as above - 296'6" - 316' majority of core	
303'	307'	1'	25%	as above shattered, - 307' - slickensiding	
307'	309'	2'	100%	as above and minor quartz veins	
309'	312'	3'	100%	as above	
312'	316'	3'	75%	as above - 314'-316' very shattered	

## REMARKS:

303' - 307' - "Wire-line" barrel used, - poor core recovery

028

109030

## KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R-02

LOCATION Line 5-75E - 65

DATE 18. 8. 1968

CORE SIZE B

CORE RECOVERY %

DRILLER W. POWER

LOGGED BY E.R. LECKIE

From	To	Cut	Rec. %	Description	Sample No.
316'	320'	3'3"	81%	Dominantly quartzite, minor mudstone - very minor pyrite	
320'	328'	8'	100%	as above	
328'	331'	3'	100%	as above	
331'	337'	6'	100%	as above	
337'	339'	2'	100%	as above	
339'	342'9"	3'	80%	as above	
342'6"	347'6"	4'6"	90%	as above	
347'6"	354'	6'6"	100%	increase in mudstone content, pyrite increasing varying up to 2% - is disseminated on joints	
354'	364'6"	10'6"	100%	dominantly mudstone with interbedded quartzite and shale in beds 6" - 1/8", pyrite varying - up to 2% in short sections.	
364'6"	372'6"	8'	100%	as above with increase in quartzite proportion	
372'6"	377'6"	4'6"	90%	quartzite with interbedded mudstone and shale very little pyrite	

REMARKS:

109031

029

## KING ISLAND JOINT VENTURE

PROJECT "IRELAND'S"

D.D.H. No. R-02

LOCATION Line 5-75E - 65

DATE 18. 8. 1968

CORE SIZE B

CORE RECOVERY %

DRILLER W. POWER

LOGGED BY E.R. LECKIE

From	To	Cut	Rec. %	Description	Sample No
377'6"	383'6"	5'6"	82%	377'6" - 380' as above	
				380' - 383'6" shale pyrite disseminated	
				and in bands to 4 m.m. - >5%	
				383' - quartz/pyrite vein - 1" wide	
383'6"	388'	4'	88%	interbedded mudstone, shale & quartzite	
				pyrite <2%	
388'	391'	2'	67%	quartzite with very minor pyrite - <1%	
391'	394'6"	3'6"	100%	as above	
394'6"	398'6"	3'3"	84%	394'6" - 395' quartzite as above	
398'6"	403'	4'6"	100%	395' - 403' feldspar porphyry; feldspar	
				crystals to 5 m.m. and minor amounts of	
				biotite in very fine grained quartzose	
				groundmass - some pyrite	
403'	408'	5'	100%	interbedded quartzite/shale/mudstone	
				increase in pyrite content, 404' - 405' -	
				shale with 10% pyrite, one band - 10 m.m. wide	

REMARKS:







