NORANDA EXPLORATION COMPANY LTD.

Property	MARN	Started	Sept. 26, 1985	FIELD CO-ORDINATES	SURVEYED CO-ORDINATES	DIP TESTS						NTS no.	116 B/7
Hole no.	DDH-M-85-2	Finished	Oct. 9, 1985	Lat. 12188N	Lat.	Depth	Bearing	Dip	Depth	Bearing	Dip	Project no.	619
Bearing		Length	487.39 m	Dep. 9610E	Dep.							Logged by	S.J. Mackay
Dip - Collar	-90° vertical	Core size	NQ 0-119.00 m BQ 119.0-487.39	Elev.	Elev.							Sheet	1 of 6

METRES From	METRES To	% Recovery	Graphic Log	DESCRIPTION OF UNITS	% Mineralization	Sample no.	METRES From	METRES To	METRES Length	ASSAYS ppb Au	ASSAYS ppm Ag	ASSAYS ppm Cu/Zn	ASSAYS ppm Pb/W	ASSAYS ppm Bi/As
0	44.84			OVERBURDEN: Monzonite and diorite boulders in fine-grained sand.										
44.84	435.67	100		JURASSIC "SCHIST": Slate to fine-grained phyllite, quartzite and minor interbedded limestone at base.										
				44.84-46.00: Sheared laminated to thinly bedded silty argillite. Shear foliation parallel to bedding C.A. 20°.										
				46.00: Small scale tight isoclanal fold. Axial plane CA 45°.										
				46.82-49.02: Numerous 0.5-2 mm silty infillings of fracture. Often highly contorted as well as discontinuous over short distances.										
				47.92: Limonite and clay alteration along fractures.										
				48.55-50.78: Shear texture - some relict boudin like quartzite fragments 1-5 mm long.										
				50.78-55.51: Interbedded silty arg. and buff to brown-red laminated fine-grained biotite quartzite. Truncated laminations. C.A. 45°.										
				51.96-52.10: White quartzite dyke, sharply truncate lam. in biotite quartzite as well as distorting those at margin.										
				52.46: Limonite and clay coated fractures.										
				53.46: Irregular quartzite dyke.										
				55.51-66.78: Interbedded speckled slate, beds up to 6 cm thick, and fine-grained buff coloured lam. siltstone. Speckled slate contains crystals of fibrolitic sillimanite up to 2 mm long x 0.5 mm wide. 20-30% in the slate beds and rare to absent in the more siliceous siltstone beds. Crystals often have prismatic ends. Sequence contains various soft sediment deformation features including small scale drag folds, load grooves and rip up clasts. Laminated siltstone also cut by quartzite dykes <1 cm wide which truncate sharply at upper and lower slate contact. Crossbeds and soft sed. features indicate beds are right way up. C.A. 45°.	3% po										
				66.68-66.78: Biotite, chlorite and clay alteration. Minor calcite in fractures. Slickensides at contact with dyke.										
				66.78-72.81: Dyke-sill.										
				66.78-68.32: Fine-gr. biotite hornblende diorite dyke. Mesocratic with some coarser grained sections.	py 2%									
				67.26: Actinolite, quartz, calcite and Po. Pod in fracture 1 cm x 3 cm.	po 5%	93511	67.26	67.41	0.15	100	0.4	30/120	36/1	24/382
				67.41: Actinolite, quartz, calcite and po filled fracture.	po 15%									
				68.32-70.59: Hornblende diorite dyke. Hbld. laths up to 1.5 cm 30%. Flow oriented C.A. 45°. Minor diss. po and 1 mm wide calcite veinlets in fractures.										

NORANDA EXPLORATION COMPANY LTD. Property .....MARN..... Hole no. ....DDH-M-85-2..... Sheet ...2....of...6....

METRES From	METRES To	% Recovery	Graphic Log	DESCRIPTION OF UNITS	% Mineralization	Sample no.	METRES From	METRES To	METRES Length	ASSAYS
			–	70.59-72.81: Contact C.A. 25°, with sheared black po bearing slatey arg. Shearing parallel to contact. Some boudin like features. Po occurs as discrete blebs and disseminations. Chlorite and slicks on fractures.	Up to 20% py locally					
				72.81-93.23: Dyke-Sill						
				73.06-73.41: Fractured med. gr. hbld diorite with chlorite limonite, calcite, clay and py alteration along fractures.	py 2%					
				74.96-75.06: Locally calcareous.						
				75.72: Contact between fine gr. diorite and coarser gr. hbld plag. porphyritic diorite-monzonite (mafics ~25%, plag phenos ~40%). Flow oriented C.A. 55°						
				87.40-93.23: Contact grades to finer gr. darker version of above. Many fractures most of which have slicks, calcite, clay, chlorite and minor py. Diorite gets finer gr. to chilled margin at contact with slates.						
				93.23-93.30: Hornfelsed contact - slates, minor secondary clay and calcite alteration.	py 5%					
		95		93.30-98.70: Sheared black silty argillite-slate. Few primary bedding features preserved.						
				95.77-95.97: Shear zone - chlorite, graphite and carbonate along shear fractures. C.A. 20°. Quartz fragments preserved as brecciated fragments as well as boudins (5 cm x 10 cm) in the argillites.						
				98.70: Decrease in amount of quartzite and silt sequence becomes massive black slate-phyllite with locally faint laminations. C.A. 45°-60°. 3 dominant cleavages 40°, 30°, 20°. Often contain calcite and chlorite. Fine sillimanite.						
				104.50-104.60: 10 cm wide shear zone C.A. 45°. Chlorite and green talc?. Slicks	Up to 20% py locally					
				117.80-117.83: Po, chert lens C.A. 45°						
				121.09: Faint lam. and po blebs C.A. 45°						
				123.70: Vertical fracture with green talc? on surface.						
		90		133.73-140.15: Fractured broken and sheared zone. Graphite, quartz and calcite sealed fractures, some of which have been re-fractured.						
		90		137.55-138.13: Quartz-slate breccia. C.A. 45°. Slate breccia fragments 1 mm -5 cm long with yellow clay alteration rim. In grey amorphous quartz vein material. 5% po mainly in re-fractured zones with slicks.	po 5%					
				138.08: Well formed open space filled po rosettes.						
				138.78: Quartz slate breccia vein 2 cm wide. C.A. 20°						
				139.44: 5 mm wide fracture filling vein of quartz and clay. C.A. 20°. Slicks on lower surface.						
				Above sequence contains may fine silicified fractures.						
		95		140.15-142.12: Dyke: Silicified, green, 1-2 mm long py blebs elongated. Possibly replacing hbld laths.						
				141.70-141.80: Massive mesocratic section of dyke cut by hairline fractures.						
				141.80-142.12: Fresh dyke material, 30% hbld laths 1 mm in size fining down to 10 cm wide chilled margin.						
				142.12-195.64: Black slate - phyllite locally chert and po rich.						
		100		142.91-143.03: 40% po in slate. Occurs as disseminations in patches and blebs up to 5mm and as hairline fracture fillings, CA 45°	po 40%					

NORANDA EXPLORATION COMPANY LTD. Property ..... MARN ..... Hole no. ..... DDH-M-85-2 ..... Sheet ...3.... of ...6....

METRES From	METRES To	% Recovery	Graphic Log	DESCRIPTION OF UNITS	% Mineralization	Sample no.	METRES From	METRES To	METRES Length	ASSAYS ppb Au	ASSAYS ppm Ag	ASSAYS ppm Cu/Zn	ASSAYS ppm Pb/W	ASSAYS ppm Bi/As
				150.31-15.70: Faint irregular laminations, C.A. 20°										
				150.70: Unit here has an increase in Po occurring as wisps, lenses and nodules of fine gr. Po aggregates ± chert ± pyrite. These often have a red brown oxidized rim or contact around them.										
				Dominant cleavage is 20° many are calcite sealed.										
				161.54-167.48: Calcite and slicks on cleavage planes. Locally coarse gr. sillimanite.										
				167.48-173.02: Prevalent compaction deformation.										
				173.12-173.22: Po and chert nodule or bed.	Po 20%	93512	173.12	173.22	0.10	60	3.4	740/162	8/40	22/152
				178.30-183.89: Nodules up to 10 cm chert and po section in general appears to be more cherty.										
				195.64-372.32: Laminated and Interbedded Argillite (Slate-Phyllite) Quartzite to Greywacke. Much soft sed. deformation and brecciation. Chlorite and carbonate on fractures.										
				196.34: C.A. 70°										
		100		197.00: Arg. quartzite C.A. 90° just above C.A. 45° beds sharply truncated.										
				201.00-206.62: Lam. quartzite to beds 25 cm true thickness C.A. 45°										
				202.62-212.36: Soft sed. deformation features indicate beds right way up. This is confirmed by graded sequences. Two dominant cleavages 20° and 45°. Calcite ± pyrite sealed.										
				213.51-213.53: Calcite vein 50% angular slate fragments up to 2 cm long.										
		100		216.55-216.70: Quartzite, good fining upwards sequence.										
				215.81: 2 cleavages both are quartz sealed C.A. 15° cuts and offsets C.A. 20°. Angle b.t. both is 70°.										
				216.75: 2 cleavages, C.A. 20° and C.A. 45° which displays faint slicks. Both are calcite coated.										
				216.65-223.58: Argillaceous quartzite beds thicken to 50 cm and comprise 70% of the sequence. C.A. 40-45°										
				243.39: Py, Po and chert lenses stepped down by C.A. 25° opposite to bedding.										
				244.88-245.18: Shear and fracture zone C.A. 30°										
				Interbedded argillaceous quartzite, weakly graded to laminated sequences and black argillite. C.A. 45-60°										
				267.15-267.79: Good development of fibrolitic sillimanite in argillite beds between quartzite.										
				267.79-269.44: Dyke - C.A. 70°. Quartz biotite diorite with 5% diss. po.	Po 5%									
				Argillaceous quartzite. Graded sequences indicate right way up C.A. 60°										
				295.96: 0.5-1 cm quartz calcite vein. Faint banding and open space filled.										
				305.54-308.57: Dyke C.A. 75°. Fine to medium gr. hbld diorite. Hbld laths 30%. Cut by calcite filled fractures at various angles 0.1-2 mm wide.										
				Argillaceous content increases.										
		90		312.10-312.32: Shear zone - polished and chloritized faces parallel to C.A. Minor calcite and gouge.										
		95		312.92-314.65: Breccia shear zone - polished slicks with green white talc development.										
				Argillaceous content > Quartzite										

NORANDA EXPLORATION COMPANY LTD. Property ..... MARN ..... Hole no. ..... DDH-M-85-2 ..... Sheet ....4...of....6...

METRES From	METRES To	% Recovery	Graphic Log	DESCRIPTION OF UNITS	% Mineralization	Sample no.	METRES From	METRES To	METRES Length	ASSAYS ppb Au	ASSAYS ppm Ag	ASSAYS ppm Cu/Zn	ASSAYS ppm Pb/W	ASSAYS ppm Bi/As
		90		317.29-319.00: Broken section - polished faces as well as slicks. Talc.										
		90		324.74-325.80: Sheared and brecciated zone C.A. 45° sub-parallel to beds.										
				325.44-325.60: Good development of fault gouge.										
		100		326.70: Interbedded argillite (slate-phyllite) and argillaceous quartzite. C.A. 45°.										
		95		336.71-337.84: High angle shear and breccia zone. Polished and striated face. C.A. 0-20°. Quartz and light blue vitreous gypsum? coatings.										
				338.39: Core angle of beds becomes much more variable 20-60°. Fractures often have calcite and talc coatings. Argillite content increases.										
		90		361.50-365.20: Well broken section. Intermittent fault gouge.										
		100		366.80-372.32: Mainly slatey phyllite with quartzite beds being very thin to laminated.										
				372.32-396.60: Massive black slatey phyllite, fine gr. sillimanite development. Scattered py, po chert nodules, lenses and laminations.										
		95		391.62-391.90: Shear zone C.A. 15°. Associated bands of clay, chlorite, calcite and quartz as well as minor pyrite. 2 cm true thickness.										
		100		392.87-395.00: Dyke - fine gr. slightly porphyritic hbld. plag. 0.2-1 mm phenos, 40% plag. 20% hbld diorite. C.A. 70° top, C.A. 45° bottom.										
				392.57-392.77: Sillimanite crystals up to 1.5 mm 20%										
				392.77-392.87: Hornfels contact.										
				396.60-424.36: Interbedded limestone and cherty argillite (slate).										
				396.60-396.70: Limestone beds are laminated light grey to white in colour, micritic and argillaceous.										
				Core angles are irregular ranging from 5 to 45° to 80°. Greatest true thickness for a bed is 30 cm.										
				398.22-399.45: Limestone with 5% py disseminated and in blebs.	Py 5%	93513	399.15	399.45	0.30	10	0.2	16/24	10/1	62/22
		100		404.86-404.95: Py and quartz in fractures.	Py 10%	93514	404.86	404.95	0.09	10	0.6	58/118	18/1	22/176
				409.15-416.05: Limestone is peletal to mottled.										
				414.80-415.00: 1-6 mm wide quartz sulphide vein in cherty arg. (slate) with diss. po.	Po 30% Py 10%	93515	414.80	415.00	0.20	10	0.6	116/44	24/2	16/12
				416.05-423.60: Greater development of phyllite in more argillaceous beds. C.A. 45°.										
				423.87-423.96: Dyke: Hbld Diorite? appears to follow foliation.	Po 15%	93516	423.87	423.96	0.09	50	0.4	72/100	20/20	28/178
				424.36-435.67: Quartzite - fine gr. buff coloured hornfelsed. Fine gr. diss. po as well as blebs and fracture fillings.	Po 3%									
				425.26-425.36: Amphibole? calcite and py filled fracture 2 cm true width. Zoned with amphibole? concentrated on outer rim. Minor fine gr. epidote? C.A. 45°		93517	425.26	425.36	0.10	40	0.4	50/492	30/1	20/78
		95		429.10-429.90: Limonite and clay in fractures. C.A. 15°										
		100		434.13-434.24: First bed of Tahkandit type limestone. Dark grey laminated argillaceous to white mottled. No chert though. Wavy contact. C.A. ~60°										

NORANDA EXPLORATION COMPANY LTD. Property .....MARN..... Hole no. .....DDH-M-85-2..... Sheet ..5.....of..6.....

METRES From	METRES To	% Recovery	Graphic Log	DESCRIPTION OF UNITS	% Mineralization	Sample no.	METRES From	METRES To	METRES Length	ASSAYS ppb Au	ASSAYS ppm Ag	ASSAYS ppm Cu/Zn	ASSAYS ppm Pb/W	ASSAYS ppm Bi/As
				434.24-435.67: Quartzite - buff faintly banded po 5%, bottom 15 cm has matrix supported white grey chert breccia fragments up to 3 mm coarsening down. Some Po wisps and disseminations. Beds C.A. 45°.	Po 5%	93518	435.24	435.67	0.43	10	1.2	18/390	14/1	22/26
435.67	476.19			TAHKANDIT LIMESTONE: Chert pebble argillaceous limestone, locally fossiliferous and mottled.										
				435.67-435.92: White to grey black argillaceous limestone with 5% diss. py and po occurring in sparse blebs around chert fragments. Chert fragments are similar to those in unit above. 0.1 mm-4 mm subround to angular. Sequence is interbedded argillaceous limestone fine gr. micritic and matrix supported chert pebble breccia- conglomerate.		93519	435.67	435.92	0.25	10	0.4	8/94	8/1	64/28
				436.42-436.52: Foliation type texture around intraformational boudin shaped fragments as well as larger chert grains. Argillaceous limestone has a salt and pepper appearance. C.A. 55° possibly related to recrystallization.										
		100		438.03-440.41: Fine gr. arg. limestone with minor detrital chert.										
				440.41-440.95: More defined beds of white-light grey micritic limestone and fossiliferous beds containing crinoid stems. Section here is mottled and generally more porous. C.A. 75°		93520	440.41	440.95	0.54	10	0.2	4/32	10/1	30/8
				440.95-445.00: Fine gr. arg. limestone with minor detrital chert. Some cherty argillaceous bands 10 cm true thickness C.A. 70°										
				445.00-445.40: Amount of chert fragments increases. Fragments are generally subround to angular and up to 1 cm in size. Most fractures have regrown calcite.										
				445.40-446.83: Salt and pepper argillaceous limestone with minor chert.										
				446.83-452.18: Chert pebbles increase to 40%, grain size avg. 5 mm., grading and sorting is poor to non-existant.										
				448.88-449.38: 1 cm wide calcite vein. Faint banding with minor talc and silica. C.A. 05°		93521	448.88	449.38	0.50	10	0.2	6/38	6/1	56/14
				452.18-452.40: Black chert irregular banding as well as fractured.										
				452.40-452.50: Dyke - fine gr. biotite hornblende diorite.	Po 5%									
				452.50-453.23: Chert fragment dominated argillaceous limestone appears to fine downward from 1 cm fragments to 0.2 cm.										
				453.23-453.96: Argillaceous limestone. Fine gr. appears to be slightly recrystallized.		93522	453.23	453.96	0.73	10	0.2	6/20	20/2	64/18
				453.96-453.99: Contact with diorite dyke. Pale green, very fine grained. Diopside or epidote. 3% Po in blebs.	Po 3%	93523	453.96	453.99	0.03	80	0.2	6/62	32/1	24/262
				453.99-455.29: Dyke- Fine gr. diorite.		93524	453.99	454.12	0.13	10	0.4	32/74	18/2	20/44
				455.29-457.19: More massive bedded white crystalline limestone with some grey interbeds. Mottled. Effervesces right up to contact with dyke. Some darker patches are calcareous chert.										
		100		457.19-458.33: Laminated argillaceous chert with minor limestone.										

NORANDA EXPLORATION COMPANY LTD. Property ..... MARN ..... Hole no. ..... DDH-M-85-2 ..... Sheet ...6...of..6.....

METRES From	METRES To	% Recovery	Graphic Log	DESCRIPTION OF UNITS	% Mineralization	Sample no.	METRES From	METRES To	METRES Length	ASSAYS ppb Au	ASSAYS ppm Ag	ASSAYS ppm Cu/Zn	ASSAYS ppm Pb/W	ASSAYS ppm Bi/As
				458.33-461.89: Argillaceous limestone with minor detrital chert. Darker in colour than sections with abundant detrital chert.		93525	459.64	459.74	0.10	30	0.2	10/48	20/1	10/120
				461.69-462.05: Vein - 3 cm wide C.A. 5°. calcite with minor quartz. Some faint banding. Associated with small pyrolusite growths. Brecciated and clay altered fragments also occur. Vein separates dyke and limestone.		93526	461.69	462.05	0.36	10	0.2	16/48	16/1	46/40
				461.70-465.89: Dyke - fine gr. diorite. Clay and limonite alteration C.A. 85°.		93527	462.05	462.69	0.64	20	0.2	24/138	34/1	28/30
				461.70-462.69: Degree of alteration decreases.										
				465.89-466.84: Argillaceous limestone, black, fine gr., some bedded chert sections.										
				466.84-469.05: Argillaceous limestone. Fossiliferous brachiopods.										
				469.05-471.60: Argillaceous and mottled limestone with minor chert interbeds 10 cm thick.										
				471.60-473.78: Recrystallized argillaceous limestone. Certain sections are fairly porous.		93528	471.60	472.54	0.94	10	0.2	6/54	18/1	52/14
				473.71-473.78: 2 thin <1 mm Py veins in silicified or cherty section of limestone. C.A. 70°		93529	473.71	473.78	0.07	880	0.2	12/1080	178/1	50/402
				473.78-474.28: Increase in amount of detrital chert in mottled argillaceous limestone.										
				474.28-474.34: Dyke - fine gr. diorite. C.A. 20°		93530	474.24	474.34	0.10	10	0.4	30/74	18/2	18/24
				474.34-476.19: Argillaceous limestone with minor detrital chert increasing slightly towards clasts, white to grey brown, up to 1 cm in size, subround to angular. Appears to be derived from underlying formation. Basal contact is angular unconformity. C.A. contact 80°		93531	475.04	475.44	0.40	10	0.4	10/146	42/1	58/36
476.19	487.39			ROAD RIVER FORMATION: Interbedded black chert and argillite with minor sillimanite development. C.A. irregular 45-80°.										
				477.15-478.30: Dyke - diorite										
	487.39			END OF HOLE.										