APPENDIX B

Geological and Geotechnical

Drill Logs 1-44 - Volume 3 of 3

Noranda Minerals Wisconsin Corp.

LYNNE PROJECT

21

(p. 281-350)

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-110

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	TotalX	Sp	Cp	Ga	Py	Po	As	T
											Note: @ 400.0 431.0 Shatter fractures @ 20-30 degrees to axis								
											Note: @ 422.0 425.5 Fault, carbonate infilling								
										Rc	^^ 438.5 571.0 Rhyolite Crystal Tuff, to								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-110

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											Rhyolite Crystal Lapilli, moderately sheared								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-110

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											Note: @ 537.0 571.0 Fault Zone fracturing, shearing from 537.0 553.0, carbonate filling, gouge, high angle fracturing 553.0 to 559.0							
									-10										
										gR	^^ 571.0 601.0 Granophyric Rhyolite, moderately sheared and with shatter fractures								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-110

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	TotalX	Sp	Cp	Ga	Py	Po	As	T
										Md	^^ 601.0 605.0 Plag-phyric Mafic Dike, high angle								
										Rc	^^ 605.0 712.5 Rhyolite Crystal to Crystal Lapilli Tuff.								
									-30	pMd	^^ 651.0 654.0 Plag-phyric Mafic Dike margins show shearing @ same angle								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-110

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										D,SS	** 712.5 746.6 DACITE/SANDSTONE, black, massive								
									-5	FZ	^^ 720.0 724.0 Fracture Zone @ high angle to core axis, brecciation in fracture zone and shattering in hanging wall								
										R	** 746.6 789.5 RHYOLITE								
										Rcl	^^ 746.6 771.0 Rhyolite Crystal Lapilli Tuff								

ROCK QUALITY: FRACTURE FREQ. A:0-3,B:3-10 C:10-30,D:30-100 E:>100 cm.

DRILL HOLE: LYN91-110

SULFIDES: % (T) A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										ChT	^^ 771.0 782.5 Cherty Tuff								
										gQD	^^ 782.5 789.5 Granophyric Quartz Diorite								
										D	** 789.5 851.0 DACITE, black, massive, jointed								
									-30	gQDd	^^ 825.0 829.7 Quartz Diorite Dike, granophyric								
									-30										

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-110

SULFIDES: (T)

% A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-30										
										QD	** 851.0 935.0 QUARTZ DIORITE								
										gQD	^^ 851.0 880.0 Granophyric Quartz Diorite								

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 3-10-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-111 (WDNR #278)

DATE: 7-18-91
PAGE 1 OF 17

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-14-91

BEARING: S180E INCLINATION: -62 T.D: 1146'
COORDINATES: L9800 E 12125 N
ELEV: 1558.1' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
0.0 70.0			** 0.0 70.0 OVERBURDEN	
70.0 255.0		R	** 70.0 255.5 RHYOLITE	
255.0 332.0		SL	** 255.0 332.0 SILTSTONE	
332.0 450.0		R	** 332.0 450.0 RHYOLITE	
450.0 492.5		SL	** 450.0 492.5 SILTSTONE	
470.0 473.3		Xp	^^ 470.0 473.5 Tuffite with Pyrrhotite	10% cp
492.5 666.0		R	** 492.5 666.0 RHYOLITE	
666.0 707.0		SS	** 666.0 707.0 SANDSTONE	
707.0 779.0		R	** 707.0 779.0 RHYOLITE	
779.0 797.5		TS	** 779.0 797.5 TALCOSE SEDIMENT	
797.5 801.0		SL,Rc	** 797.5 801.0 INTERBEDDED SILTSTONE, RHYOLITE CRYSTAL TUFF	

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 3-10-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-111 (WDNR #278)

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-14-91

BEARING: S180E INCLINATION: -62 T.D: 1146'
COORDINATES: L9800 E 12125 N
ELEV: 1558.1' SEC: 15 TWP: 37N RANGE: 4E

DATE: 7-18-91

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
801.0 819.0		R	** 801.0 819.0 RHYOLITE	
819.0 822.0		CS	** 819.0 822.0 CALCAREOUS SEDIMENT	
822.0 899.0		SLm	** 822.0 899.0 SILTSTONE With Magnetite	
899.0 905.5		Xt	** 899.0 905.0 TUFFITE, Tuffaceous	10% sp
905.0 948.0		TS	** 905.0 948.0 TALCOSE SEDIMENT	
912.0 925.0		Xz,t	^^ 912.0 925.0 Tuffite, Talcose, stringery	
948.0 980.0		SLp	** 948.0 980.0 SILTSTONE With Pyrrhotite	10% sp
980.0 1060.3		SS	** 980.0 1060.3 SANDSTONE	
1060.3 1146.0		QD	** 1060.3 1146.0 QUARTZ DIORITE	
1060.3 1063.0		gQD	^^ 1060.3 1063.0 Granophyric Quartz Diorite	

E.O.H. 1146' (total depth)

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-111

SULFIDES: (T)

% A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											** 0.0 70.0 OVERBURDEN								
										SS	** 70.0 80.5 SANDSTONE, black, massive, crystal rich intervals								
										R	^^ 80.5 255.5 RHYOLITE FLOW, greyish glassy matrix, with subrounded rhyolite porphyry and cherty clasts.								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-111

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	TotalX	Sp	Cp	Ga	Py	Po	As	T

Note: @ 197.0 225.0 Calcareous and dalmatianite alteration in flow

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-111

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	TotalX	Sp	Cp	Ga	Py	Po	As	T
										SL	xx 255.5 332.0 SILTSTONE, black, massive, laminated, becomes subtley plag-phyric towards base								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-111

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										R	** 332.0 450.0 RHYOLITE								
										Rt	^^ 332.0 395.0 Rhyolite Tuff with oxidized porphyritic rhyolite intervals. Light grey, bleached								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-111

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										SL	^^ 395.0 401.0 Siltstone								
										Wqf	^^ 401.0 450.0 Quartz Feldspathic Wacke, possibly a small rhyolite flow								
										SL	** 450.0 492.5 SILTSTONE								
										SL	^^ 450.0 465.3 Siltstone, cherty and ashy, alternating, laminated								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-111

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	I
										W	^^ 465.3 470.0 Altered Wacke, dark green, with pyrrhotite and magnetite								
										Xp	^^ 470.0 473.5 Tuffite with Pyrrhotite	e		10		35			45
												e		10		35			45
										SL	^^ 473.5 492.5 Siltstone, Rhyolite interbeds increase towards base	e		10		35			45
										R	** 492.5 666.0 RHYOLITE								
										Rt	^^ 492.5 582.0 Rhyolite Tuff, fine-grained, glassy to granophyric								
											Note: @ 524.0 545.0 Core broken								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-111

SULFIDES: (T)
A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											Note: @ 535.0 543.0 Core sheared								
										pR	^^ 582.0 595.0 Rhyolite Porphyry, dark matrix, plag crystals, blue quartz eyes								
										Wqf	^^ 595.0 617.0 Quartz Feldspathic Wacke, cherty and rhyolitic angular fragments, (< 0.5") in a semi-altered (tactite) matrix								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-111

SULFIDES: (T)

% A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	TotalX	Sp	Cp	Ga	Py	Po	As	I
										gR	^^ 617.0 624.0 Granophyric Rhyolite								
										Rcl	^^ 624.0 630.0 Rhyolite Crystal Lapilli Tuff								
										Rt?	^^ 630.0 643.0 Rhyolite Tuff or Sandstone, medium-grey, fine-grained, disseminated pyrite along fractures								
										Rcl	^^ 643.0 666.0 Rhyolite Crystal Lapilli Tuff								
										SS	** 666.0 707.0 SANDSTONE, medium grey, massive, pyrite along fractures, occasionally laminated toward base, with rhyolitic material interbedded								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-111

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										R	** 707.0 779.0 RHYOLITE								
										IR	^^ 707.0 763.7 Intrusive to Granophyric Rhyolite, pinkish grey								
										Rc	^^ 763.0 779.0 Rhyolite Crystal Tuff, well bedded, with brownish sericitic								

ROCK QUALITY: FRACTURE FREQ. A:0-3,B:3-10 C:10-30,D:30-100 E:>100 cm.

DRILL HOLE: LYN91-111

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											alteration, blue quartz eyes								
										TS	** 779.0 797.5 TALCOSE SEDIMENT, bleached, light grey to white								
										SL,Rc	** 797.5 801.0 INTERBEDDED SILTSTONE, RHYOLITE CRYSTAL TUFF								
										Rc	** 801.0 814.0 RHYOLITE CRYSTAL TUFF, blue quartz eyes, rhyolitic flow-banded lapilli toward base								
										SL	** 814.0 815.5 SILTSTONE, green, with round cherty clasts (~1")								
										xR	** 815.0 819.0 SPHERULITIC RHYOLITE								
										CSS	** 819.0 822.0 CALCAREOUS SEDIMENT, with sphalerite, black chlorite	b b	5 5						5 5
										SL	** 822.0 899.0 SILTSTONE, with spherulitic rhyolite and pyrrhotite (magnetite) laminae								

DRILL HOLE: LYN91-111

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										Xt,t	** 899.0 905.0 TUFFITE, Tuffaceous, talcose matrix, with sulfides in matrix, and subrounded rhyolite clasts.	c c c	10 10 10						10 10 10
										TS	** 905.0 909.5 TALCOSE SEDIMENT								
										Rt,t	** 909.5 912.0 RHYOLITE TUFF, possibly talcose, chloritic matrix with large clasts								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-111

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										TS	** 912.0 948.0 TALCOSE SEDIMENT	c	10						10
										Xz,t	^^ 912.0 925.0 Tuffite, talcose, stringery	c	10						10
												c	10						10
												c	10						10
												c	10						10
												c	10						10
										SLp	** 948.0 980.0 SILTSTONE, with pyrrhotite, laminae and cherty interbeds	c				10			10
												c				10			10
												c				10			10
												c				10			10
												c				10			10
												c				10			10
												c				10			10
												c				10			10
												c				10			10
												c				10			10
										SS	** 980.0 1060.3 SANDSTONE grey-black, massive, grainy, occasionally laminated, subtle brownish alteration to 1000',								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-111

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	TotalX	Sp	Cp	Ga	Py	Po	As	T
											scattered pyrrhotite until 996'								
										gOD	^^ 1026.0 1027.0 Quartz Diorite veinlet at 0 degrees to core axis, granophyric								
									-30C	gODd	^^ 1046.5 1048.4 Quartz Diorite Dike, granophyric								
									-30C										
										SL	^^ 1055.0 1060.3 Siltstone, with pyrrhotite, with 2-3" clasts								
										OD	>< 1060.3 1146.0 QUARTZ DIORITE								
										gOD	^^ 1060.3 1063.0 Granophyric Quartz								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-111

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	TotalX	Sp	Cp	Ga	Py	Po	As	T
											Diorite								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-111

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											E.O.H. 1146' (total depth)								

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
0'	182.0	-59.9
100'	182.2	-60.2
200'	182.2	-60.5
300'	183.0	-60.8
400'	181.9	-60.7
554'	184.0	-60.3

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: J. Schaff
DATE COLLARED: 3-10-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-112 (WDNR #241)

DATE: 9-13-91
PAGE 1 OF 9

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-13-91

BEARING: S182E INCLINATION: -59.9 T.D: 554.0'
COORDINATES: L9900 E, 11280 N
ELEV: 1561.5' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
0.0 51.0			** 0.0 51.0 OVERBURDEN	
51.0 231.0		D	** 51.0 231.0 DACITE	
95.0 125.0		Rb	~~ 95.0 125.0 Rhyolite Tuff Breccia	
125.0 176.0		SS	~~ 125.0 176.0 Sandstone	
176.0 198.5		D	~~ 176.0 198.5 Dacite	
198.5 231.0		Rb	~~ 198.5 231.0 Rhyolite Tuff Breccia	
231.0 265.0		Sk	** 231.0 265.0 CHLORITIC SEDIMENT	
234.5 249.0		Rl	~~ 234.5 249.0 Rhyolite Lapilli Tuff	
249.0 256.5		Sk	~~ 249.0 256.5 Chloritic Sediment	
256.5 265.0		Rl	~~ 256.5 265.0 Rhyolite Lapilli Tuff	
265.0 400.0		SS	** 265.0 400.0 SANDSTONE	
275.0 285.0		SL	~~ 275.0 285.0 Siltstone	
285.0 310.0		SS	~~ 285.0 310.0 Sandstone	
310.0 321.0		Sk	~~ 310.0 321.0 Tactite	
321.0 337.0		D	~~ 321.0 337.0 Dacite	
337.0 348.0		IR	~~ 337.0 348.0 Intrusive Rhyolite	
348.0 352.5		Sk	~~ 348.0 352.5 Tactite	
352.5 360.0		BPM	~~ 352.5 360.0 Massive To Bedded Pyrrhotite	
360.0 364.0		gIR	~~ 360.0 364.0 Granophyric Intrusive Rhyolite Dike	
364.0 368.0		CS	~~ 364.0 368.0 Calcareous Sediment	
368.0 371.5		ChT	~~ 368.0 371.5 Rhyolite Tuff	
371.5 376.0		gIR	~~ 371.5 376.0 Granophyric Intrusive Rhyolite Dike	
376.0 392.0		Ch	~~ 376.0 392.0 Chert	

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
0'	182.0	-59.9
100'	182.2	-60.2
200'	182.2	-60.5
300'	183.0	-60.8
400'	181.9	-60.7
554'	184.0	-60.3

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: J. Schaff
DATE COLLARED: 3-10-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-112 (WDNR #241)

DATE: 9-13-91
PAGE 1 OF 9

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-13-91

BEARING: S182E INCLINATION: -59.9 T.D: 554.0'
COORDINATES: L9900 E, 11280 N
ELEV: 1561.5' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
392.0 400.0		Rt	^^ 392.0 400.0 Rhyolite Tuff	
400.0 554.0		QD	>>< 400.0 554.0 QUARTZ DIORITE	
400.0 433.5		gQD	^^ 400.0 433.5 Granophyric Quartz Diorite	
433.5 444.0		Md	^^ 433.5 444.0 Mafic Dike	
511.5 514.5		Md	^^ 511.5 514.5 Mafic Dike	
552.0 553.5		Md	^^ 552.0 553.5 Mafic Dike	

E.O.H. 554.0' (total depth)

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-112

SULFIDES: (T)

% A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	I
0.0 61.0											>< 0.0 61.0 OVERBURDEN								
											^^ 0.0 25.0 Sand								
											^^ 25.0 35.0 Silty sand								
											^^ 35.0 40.0 Gravel								
											^^ 40.0 51.0 Sand, gravel, and boulders								
											^^ 51.0 61.0 Boulders								
										D	>< 61.0 231.0 DACITE, fine-grained to plag-phyric, black, moderate patchy epidote alteration								
											Note: @ 89.0 99.5 Core very broken, drillers dropped it or tube mislatched								
										Rb	^^ 95.0 125.0 Rhyolite Tuff Breccia, black to orange, weakly porphyritic, vuggy								
											Note: @ 101.0 105.8 Possible fault zone, core very broken, minor clay gouge along fractures								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-112

SULFIDES: (T)

% A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										SS	^^ 125.0 176.0 Sandstone, black to greenish black, very fine-grained, massive (non-magnetic)								
									-30F	D	^^ 176.0 198.5 Dacite, plag-phyric, (possibly a porphyritic rhyolite dike?) Note: @ 179.0 180.0 Fault Zone, minor gouge, brecciation and carbonate								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-112

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										Rb	^^ 198.5 231.0 Rhyolite Tuff Breccia, fine-grained matrix, highly fractured								
									-20F	Sk	** 231.0 265.0 CHLORITIC SEDIMENT (Tactite)								
										Rl	^^ 234.5 249.0 Rhyolite Lapilli Tuff								
										Sk	^^ 249.0 256.5 Chloritic Sediment (Tactite)								
										Rl	^^ 256.5 265.0 Rhyolite Lapilli Tuff, well bedded to graded (?)								
										SS	** 265.0 400.0 SANDSTONE, black, very fine-grained, massive								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-112

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											SLm	^^ 275.0 285.0 Siltstone to Cherty Siltstone, laminated, weakly magnetic							
											SS	^^ 285.0 310.0 Sandstone, black, fine to medium-grained							
295.0	100	95	R3	c b b b b	20 40	2						Note: @ 293.0 296.0 Minor shear zone, weak epidote alteration							
305.0	100	95	R3	a a b a a	5 20 40	3						Note: @ 304.0 305.5 Altered zone with semi-massive pyrrhotite	d				30		30
											Sk	^^ 310.0 321.0 Tactite, strongly epidote and diopside (?) altered volcanic or volcaniclastic, zones of unaltered subtle feldspars, trace sericite (?)							
315.0	100	100	R3	b b b a a	5 20 40	3													
											SS	^^ 321.0 337.0 Sandstone\Dacite, plagphyric zones							
325.0																			
											IR	^^ 337.0 348.0 Intrusive Rhyolite, aphanitic to weakly porphyritic, grey-black, weakly fractured							
345.0										-30F		Note: @ 345.0 small fault (.1")							

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-112

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
	100	100	R3	c	30	2														
				c	50						Sk	^^ 348.0 352.5 Tactite, epidote and chlorite (?) altered volcanic or volcaniclastic	e				40		40
				c									e				40			40
				c									e		1		40			41
				c									c		1		15			16
											MP	^^ 352.5 360.0 Massive to Bedded Pyrrhotite, with trace chalcopyrite	c		1		15			16
355.0													c	1	1		15			17
	100	95	R3	c	10	2														
				c	30					-40C	gIR	^^ 360.0 364.0 Granophyric Intrusive Rhyolite Dike (?), black matrix with minor blue quartz eyes and plag-phyric zones, moderatly sheared	a	2					2
				c									a	2						2
				c						-40C										
				c																
											CS	^^ 364.0 368.0 Calcareous Sediment, weakly bedded								
365.0																				
	100	95	R2	c	10	3														
				c	30						Rtch	^^ 368.0 371.5 Rhyolite Tuff, cherty, grey, very fine-grained, fractured								
				a	45															
				a																
				b						-50C	gIR	^^ 371.0 376.0 Granophyric Intrusive Rhyolite Dike, black matrix, blue quartz eyes, sheared								
										-25C										
												Note: Small fault @ 373.0 minor clay gouge, breccia, and carbonate alteration								
375.0													c				15			15
	100	100	R3	b	30	1					Chp	^^ 376.0 392.0 Chert with disseminated to laminated pyrrhotite with chalcopyrite	c				15			15
				c									c				15			15
				d									c		1		15			16
				d									c		1		15			16
385.0				d									c		1		15			16
	100	90	R2	c	10	2							c		1		15			16
				b	30								c		1		15			16
				b							Rtch	^^ 392.0 400.0 Rhyolite Tuff, with cherty clasts (?)								
				b																
395.0				b																
	99	80	R3	b	10	3														
				b	30						QD	>< 400.0 554.0 QUARTZ DIORITE								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-112

SULFIDES: % (T)

A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
				a	60															
				a							gQD	^^ 400.0 554.0 Granophyric Quartz Diorite								
402.5																				
	100	95	R3	b	10	2														
405.0					40															
										-25C	Md	^^ 433.5 444.0 Mafic Dike, green with very small feldspar laths								
										-30C										

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-112

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-15C -20C	Md	^^ 511.0 514.5 Mafic Dike, black, aphanitic Note: Possible fault @ 515.5', rock very broken, minor clay gouge								
									-40C -30C	Md	^^ 552.0 553.5 Mafic Dike, black, aphanitic E.O.H. 554.0' (total depth)								

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: A. Zielinski/T. Harding
DATE COLLARED: 3-13-91
REMARKS: Log checked against assays.
CORE SIZE: NQ

HOLE NO: LYN91-113 (WDNR #279)

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-17-91

BEARING: S180E INCLINATION: -62
COORDINATES: L10600 E 11075 N
ELEV: 1559.6' SEC: 15 TWP: 37N

T.D: 730'
RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
0.0 61.5			0.0 61.5 OVERBURDEN	
61.5 96.2		D	61.5 96.2 DACITE	
96.2 126.6		R	96.2 126.6 RHYOLITE	
126.6 182.4		D,SL	126.6 182.4 DACITES, SILTSTONES	
182.4 421.2		R	182.4 421.2 RHYOLITE	
421.2 434.5		SS	421.2 434.5 SANDSTONE AND WACKE	
434.5 455.0		SL	434.5 455.0 SILTSTONE	
455.0 480.7		R	455.0 480.7 RHYOLITE	
480.7 500.1		SL,>R	480.7 500.1 SILTSTONE, SPHERULITIC RHYOLITE	
500.1 535.5		D	500.1 535.5 DACITE	
535.5 545.0		BP	535.5 545.0 BEDDED PYRRHOTITE	535.5 545.0 60% Po, Py

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: A. Zielinski/T. Harding
DATE COLLARED: 3-13-91
REMARKS: Log checked against assays.
CORE SIZE: NQ

HOLE NO: LYN91-113 (WDNR #279)

DATE: 10-8-91

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-17-91

BEARING: S180E INCLINATION: -62 T.D: 730'
COORDINATES: L10600 E 11075 N
ELEV: 1559.6' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
545.5 569.5		Chp	><< 545.0 569.5 CHERT, With Pyrrhotite	545.0 569.5 40% Po, Py
569.5 621.0		SS	><< 569.5 621.0 SANDSTONE	
621.0 640.7		R	><< 621.0 640.7 RHYOLITE	
640.7 663.0		Chp	><< 640.7 663.0 CHERT, With Pyrrhotite	
649.0 653.0		Xch	^^ 649.0 653.0 Tuffite, Cherty	640.7 663.0 20% Po, Py 649.0 653.0 15% Sp
663.0 686.0		XR	><< 663.0 686.0 SPHERULITIC RHYOLITE	
686.0 730.0		QD	><< 686.0 730.0 QUARTZ DIORITE	
686.0 710.0		gQD	^^ 686.0 710.0 Granophyric Quartz Diorite	
			E.O.H. 730' (total depth)	

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-113

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
0 61.5											>< 0.0 61.5 OVERBURDEN								
										D	>< 61.5 96.2 DACITE, fractured areas with calcite alteration and oxidization, medium dark grey, fine-grained, dense								
									-50C	pR	>< 96.2 126.6 RHYOLITE, dark red and purple, porphyritic at top, fine-grained at base, irregular upper contact alteration around fracture, cherty, oxidized feldspar								
									-80C	pIR	^^ 108.6 111.4 Porphyritic Intrusive Rhyolite, small euhedral white feldspar-rich								
									-38F										
										D/SL	>< 126.6 182.4 INTERBEDDED DACITES, AND SILTSTONES, dacite is porphyritic in places, also ash beds, siltstones are cherty, very minor pyrrhotite								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-113

SULFIDES: (T)

% A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-5F	Rc	^^ 153.0 159.7 Rhyolite Crystal Tuff, subtle irregular contacts, fractures (annealed) through center @ 5 degrees								
									-18C	FZ	^^ 172.0 177.6 Fault Zone, upper and lower contacts 18 degrees, slickensided fractures @ 24 degrees, calcite and chlorite fill, cherty & feldspathic alteration in center								
									-18C	R	>< 182.4 421.2 RHYOLITE								
										pR	^^ 182.4 224.0 Porphyritic Rhyolite, black, matrix, small white feldspars, epidote alteration around fractures								
									-75C	Rt	^^ 201.0 214.0 Rhyolite Tuff, becoming porphyritic at base								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-113

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-80C										
										Rcl	^^ 224.0 272.0 Rhyolite Crystal Lapilli Tuff, white feldspar and quartz in dark grey matrix, veins of quartz								
											Note: @ 253.7 256.0 Fine-grained chloritic sediments, epidote alteration, soft (talcose?)								
										FZ	^^ 272.0 288.0 (Annealed Fault Zone ?), calcite filled fractures, chloritic alteration, porphyritic rhyolite intrusive not fractured at base								
									-30F -20C										

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-113

SULFIDES: % (T)

A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-27C	Rcl	^^ 288.0 321.8 Rhyolite Crystal Lapilli Tuff, upper contact very brecciated. To 292, fractured and altered, massive quartz, patches of epidote and pyrite. The remaining has patchy diopside alteration, black matrix, numerous white feldspars, few blue quartz eyes, feldspars decreasing at base, masses of quartz and epidote. Very irregular lower contact.							
										pR	^^ 321.8 347.2 Porphyritic Rhyolite, grey, almost sandy matrix, feldspar cleavage visible, small white feldspar porphyry							
									-42C	Rc	^^ 347.2 359.8 Rhyolite Crystal Tuff, dark grey-purplish matrix, cherty, plentiful white feldspars							
									-45F										
									-70C	gR	^^ 359.8 390.0 Granophyric Rhyolite, ashy at top, subtle white feldspars							

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-113

SULFIDES: (T)

% A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										-28V										
										-42C	W1	^^ 390.0 421.2 Lapilli Wacke, dark grey matrix, clasts of pumice, fine-grained rhyolite and chert, quartz filled veins and epidote alteration at base								
										-32F		Note: @ 410.0 Fractured, slickensides, quartz filled								
						TAH started logging @ 420'				-45C	SS	>< 421.2 434.5 SANDSTONE & WACKE, dark grey matrix, subtle white feldspars, grading downward into rhyolite tuff clasts, reworked, dark grey								
432.00	100	90	R3	a	5	3					SLch	>< 434.5 455.0 SILTSTONE, cherty, laminated, with chert beds and rhyolite crystal tuff beds (blue quartz eyes)								
				a	30															
				a	60															
				a																
442.00				a																
	100	95	R3	a	5	2														
				b	40															

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-113

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
447.00				b																
	100	80	R3	b	5	2														
450.00				b	70															
	100	80	R3	b	10	2							b				9			9
452.00					30								b				9			9
	100	90	R3	b	10	2							b				9			9
455.00				a	30								b				9			9
	100	100	R3	b	30	2					R	** 455.0 480.7 RHYOLITE FLOW, blue quartz	b				9			9
457.00				c	60							eyes, cherty (ashy) and pumaceous layers	b				9			9
	100	85	R3	b	30	2														
				b	60															
				b																
463.00				b																
										-40B										
											SLXR	** 480.7 501.0 SILTSTONE AND SPHERULITIC	a				2			2
484.00												Rhyolite	a				2			2
	98	50	R3	a	20	2							a				2			2
486.50				a	50								a				2			2
	98	80	R3	a	20	2							a				2			2
489.00				a	50								a				2			2
	100	95	R3	a	10	3							a				2			2
				a	25								a				2			2
				a	60								a				2			2
497.00				a									a				2			2
										-38C	D	** 501.0 535.5 DACITE								
										-24C										

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-113

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											pRd	^^ 520.0 531.3 Porphyritic Rhyolite Dike, dark matrix, blue quartz eyes, high angle (<20 degrees)							
523.00																				
	100	100	R3	b	30	2														
525.00					55															
	100	100	R3	c	10	3														
				b	30															
				b	55					-22C										
				b																
535.00				b																
	100	100	R3	c	30	1				-62B	BP	** 535.0 545.0 BEDDED PYRRHOTITE, 50-60% sulfide	e			10	50			60
				c									e			10	50			60
				c						-70B			e			10	50			60
				b									e			10	50			60
545.00				b									e			10	50			60
	100	95	R3	c	40	1					Chp	** 545.0 569.5 CHERT, with pyrrhotite, 30-40% sulfide	d			10	30			40
				c									d			10	30			40
				b									d			10	30			40
				b									d			10	30			40
555.00				c									d			10	30			40
	100	100	R3	c	30	1							d			10	30			40
				c									d			10	30			40
				c									d			10	30			40
				b									d			10	30			40
565.00				c									d			10	30			40
	100	100	R3	c	15	2							d			10	30			40
				c	30								d			10	30			40
				c							SS	** 569.5 621.0 SANDSTONE, grainy, dark grey	d			10	30			40
574.00				b									d			10	30			40

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-113

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										gR	** 621.0 640.7 RHYOLITE, granophyric, with quartz								
635.00																			
	100	100	R3	b	20	2													
				b	40					CHP	** 640.7 663.0 CHERT, WITH PYRRHOTITE, 15-20% sulfide, laminated	c				5	15	20
				b								c				5	15	20
				c					-30C			c				5	15	20
645.00				c								c				5	15	20
	100	100	R3	c	20	2						c				5	15	20
				c	40					Xch	^^ 649.0 653.0 Tuffite, cherty	d	15			5	15	35
				c					-50B			d	15			5	15	35
654.00				c								c				5	15	20
	99	95	R3	c	20	2						c				5	15	20
655.00					40							c				5	15	20
	100	100	R3	c	20	2						c				5	15	20
				c	40							c				5	15	20
				c								c				5	15	20
				b						xR	** 663.0 686.0 SPHERULITIC RHYOLITE, dark brown matrix, buff colored spherules fractured	c				5	15	20
665.00				b								c				5	15	20

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-113

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										QD	>< 686.0 730.0 QUARTZ DIORITE								
										gQD	^^ 686.0 710.0 Granophyric, with mafic dikes , @ top (small @ 7")								
											Note: @ 708.0 710.0 Fracture Zone @ 50 degrees								
											E.O.H. 730' (total depth)								

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
0'	181.3	-60.1
100'	178.7	-60.2
200'	178.9	-60.2
300'	178.3	-59.6
400'	180.0	-58.9
510'	180.0	-58.7

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: J. Schaff
DATE COLLARED: 3-14-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-114 (WDNR #240)

DATE: 7-16-91
PAGE 1 OF 10

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-17-91

BEARING: S181.3E INCLINATION: -60.1 T.D: 625'
COORDINATES: 9900 E, 11390 N
ELEV: 1560.4' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
0.0 55.0			** 0.0 55.0 OVERBURDEN	
55.0 58.5	(not recovered)			
55.0 196.0		Rb	** 55.0 196.0 RHYOLITE TUFF BRECCIA	
64.0 84.7		D	^^ 64.0 84.7 Dacite	
155.0 166.0		D	^^ 155.0 166.0 Dacite	
196.0 262.5		SS	** 196.0 262.5 SANDSTONE	
247.5 262.5		VCS	^^ 247.5 262.5 Chloritic Sediment	
262.5 286.0		RI	** 262.5 286.0 LAPILLI TUFF	
286.0 407.0		IR	** 286.0 407.0 PORPHRYTIC INTRUSIVE RHYOLITE	
358.0 364.0		Dd	^^ 358.0 364.0 Dacite Dike	
407.0 424.0		sCS	^^ 407.0 424.0 Calcareous Sediment	
424.0 445.0		IR	^^ 424.0 445.0 Intrusive Rhyolite	
445.0 461.0		X	^^ 445.0 461.0 Tuffite	
461.0 525.0		CSs,b	** 461.0 525.0 CALCAREOUS SEDIMENT	
489.0 522.5		Xca,b	^^ 489.0 522.5 Tuffite	
522.5 525.0		FZ	^^ 522.5 525.0 Fault Zone	
525.0 625.0		QD	** 525.0 625.0 QUARTZ DIORITE	

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
0'	181.3	-60.1
100'	178.7	-60.2
200'	178.9	-60.2
300'	178.3	-59.6
400'	180.0	-58.9
510'	180.0	-58.7

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: J. Schaff
DATE COLLARED: 3-14-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-114 (WDNR #240)

DATE: 7-16-91
PAGE 1 OF 10

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-17-91

BEARING: S181.3E INCLINATION: -60.1 T.D: 625'
COORDINATES: 9900 E, 11390 N
ELEV: 1560.4' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
525.0 541.0		gQD	^^ 525.0 541.0 Granophyric Quartz Diorite	
592.2 593.3		Md	^^ 592.0 593.3 Mafic Dike	
604.0 605.5		Md	^^ 604.0 605.5 Mafic Dike	

E.O.H. 625.0' (total depth)

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-114

SULFIDES: (T)

% A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
0.0 55.0											** 0.0 55.0 OVERBURDEN								
											^^ 0.0 30.0 Sand								
											^^ 30.0 35.0 Silty sand								
											^^ 35.0 55.0 Sand, gravel, and cobbles								
											Note: @ 45.0-51.0 Lost circulation								
										Rb	** 55.0 196.0 RHYOLITE TUFF, OR BRECCIA, OR AGGLOMERATE								
										D	^^ 64.0 84.7 Dacite, minor subtle plagphyric zones								
									-30F		Note: Rhyolite Tuff breccia becoming more silicic or cherty, light grey,								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-114

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											cherty or aphanitic rhyolite clasts, pumice clasts (agglomerate)								
											Note: .2" Fault Zone @ 101.0', strong clay gouge and brecciation								
										D	^^ 155.0 166.0 Dacite, black, fine-grained, minor subtle plag-phyric zones								
											Note: @ 166.0 196.0 Rhyolite tuff breccia								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-114

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										SS	** 196.0 262.5 SANDSTONE, greenish-black, fine-grained, massive, minor bleached zones Note: @ 196.0 201.0 Moderate chloritic content								
245.0																			
	100	100	R3	c b c c c	10 60	2				VCS	^^ 247.5 262.5 Chloritic Sediment, minor stringer pyrrhotite and disseminated magnetite					1 1 1 1 1 1		1 1 1 1 1 1
255.0																			
	100	100	R3	c b c c	10 60	2				R1	** 262.5 286.0 LAPILLI TUFF, Rhyolite clasts in a pumice\ashy rich matrix,								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-114

SULFIDES: (T)

% A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE c	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
265.0											matrix dark grey to black								
										pIR	** 286.0 407.0 PORPHYRITIC INTRUSIVE RHYOLITE, tan-orange to greyish-green tan, porphyritic to aphanitic, strong epidote or chlorite alteration along fractures. Possible dike swarm.								
									-25F										
									-45										
									-25										
									-50										
									-25										
									-20F										
									-20										

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-114

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-30C	Dd	^^ 358.0 364.0 Dacite Dike (?), plag-phyric with aphanitic chilled margins (?)								
									-15F										
									-20C										
									-20F										
									-45F		Note: @ 379.0 407.0 Strongly sheared or strong foliation direction								
									-45F										
									-40										
											Note: @ 407.0 415.0 Very strong brecciation								
405.0	100	100	R2	c c c c c	10 30	2			-0-10F	CS	^^ 407.0 424.0 Calcareous Sediment, white to green, strongly sheared and brecciated								
415.0	100	100	R2	b b c c	10 30	2													
										IR	^^ 424.0 445.0 Intrusive Rhyolite,								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-114

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
425.0				b								porphyritic to aphanitic, black to								
	100	90	R3	b	30	2						green, possibly part of the dike swarm,								
				b	50							(286.0 407.0)								
				a																
				a																
435.0				a																
	100	95	R3	a	20	2														
				a	50							Note: @ 445.0 461.0 Dike swarm with								
				a								sulfides and carbonate								
				a																
445.0				a							X	^^ 445.0 461.0 Tuffite, matrix possibly	c	10	1		1		12
	100	90	R2	b	20	2						rhyolite to andesitic dike material (?)	c	10	1		1		12
				a	50								c	10	1		1		12
				b									c	10	1		1		12
				b									c	10			1		11
455.0				c									c	10			1		11
	100	100	R2	c	30	2							c	10			1		11
				c	60								b	8					8
				b							CSS,b	** 461.0 525.0 CALCAREOUS SEDIMENT with	b	8					8
				c								disseminated sulfides, bedded, minor	b	8					8
465.0				c								amber sphalerite, trace galena	b	8					8
	100	100	R2	b	40	2							b	8					8
				c	60								b	8					8
				c									b	8					8
				c									b	8					8
475.0				c									b	8					8
	100	100	R3	c	40	2				-55B			b	8					8
				c	60								b	8					8
				c									b	8					8
				c									b	8		1			9
485.0				c						-50B			b	8		1			9
	100	100	R3	c	20	2							b	8					8
				c	50								b	8					8
				c							Xca,b	^^ 489.0 522.5 Tuffite, calcareous, well	c	13		1	1		15
				c								bedded to weakly contorted	c	13		1	1		15
495.0				c									c	13		1	1		15
	100	100	R3	c	10	2							c	13		1	1		15
				c	55								c	13		1	1		15
				c									c	13		1	1		15
				c									c	13		1	1		15

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-114

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
505.0				c									d	24		1		1		26
	100	100	R3	c	50	1				-60B			d	24		1		1		26
				c									d	24		1		1		26
				c									d	24		1		1		26
				c									d	24		1		1		26
515.0				c									d	24		1		1		26
	99	80	R2	c	10	3							d	24		1		1		26
				c	30					-40B			d	24		1		1		26
				c	60						FZ	^^ 522.0 525.0 Fault Zone, very strongly sheared, strong serpentine	d	24		1		1		26
				c						-20F										
				a						-20F										
525.0											QD	** 525.0 625.0 QUARTZ DIORITE								
											gQD	^^ 525.0 541.0 Granophyric Quartz Diorite								
										-25F										

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-114

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-40C -15C	Md	^^ 592.2 593.3 Mafic Dike, green aphanitic								
									-35C -30C	Md	^^ 604.0 605.0 Same as above								
											E.O.H. 625.0' (total depth)								

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
0'	183.4	-60.1
100'	180.9	-61.4
200'	181.4	-60.9
300'	181.2	-60.9
400'	181.3	-60.8
520'	183.7	-59.9

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 5-15-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-115 (WDNR #247)

DATE: 7-17-91
PAGE 1 OF 8

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 5-17-91

BEARING: S183.4E INCLINATION: -60.1 T.D: 520'
COORDINATES: L9900 E 11050 N
ELEV: 1565.9' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
0.0 61.0			** 0.0 61.0 OVERBURDEN	
61.0 68.5	(not recovered)			
61.0 85.5		Wq	** 61.0 85.5 QUARTZ WACKE	
84.5 85.5		FZ	^^ 84.5 85.5 Fault Zone	
85.5 89.8		Sk	** 85.5 89.8 SKARN	85.5 89.8 Ep - Mt
89.8 97.5		BPM	** 89.8 97.5 BEDDED PYRRHOTITE, MAGNETITE	89.8 97.5 65% Po 25%
97.5 102.7		Xca	** 97.5 102.7 TUFFITE, Calcareous	
102.7 119.0		IR	** 102.7 119.0 INTRUSIVE RHYOLITE	
119.0 145.0		Sk(VCS)	** 119.0 145.0 SKARN, (VCS Protolith ?)	119.0 145.0 Ep - Mt
145.0 168.0		gRd	** 145.0 168.0 GRANOPHYRIC RHYOLITE DIKE	
168.0 224.9		pMd	** 168.0 224.9 PLAG-PHYRIC MAFIC DIKE	

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
0'	183.4	-60.1
100'	180.9	-61.4
200'	181.4	-60.9
300'	181.2	-60.9
400'	181.3	-60.8
520'	183.7	-59.9

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 5-15-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-115 (WDNR #247)

DATE: 7-17-91
PAGE 1 OF 8

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 5-17-91

BEARING: S183.4E INCLINATION: -60.1 T.D: 520'
COORDINATES: L9900 E 11050 N
ELEV: 1565.9' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
224.9 247.4		Xca	** 224.9 247.4 TUFFITE, Calcareous	224.9 247.4 20% Sp
247.4 255.5		R	** 247.4 255.5 RHYOLITE	
255.0 312.0		MSca	** 255.5 312.0 MASSIVE SULFIDE, Calcareous	255.5 312.0 80% Sp
285.9 290.0		IR	^^ 285.9 290.0 Intrusive Rhyolite	
312.0 338.7		Xca	** 312.0 338.3 TUFFITE, Calcareous	312.0 338.3 27% Sp, 1% Cp
338.7 345.0		Xz,t	** 338.3 345.0 TUFFITE, Talcose, Stringery	338.3 345.0 15% Sp, 1% Cp
345.0 377.0		MSca	** 345.0 377.0 MASSIVE SULFIDE, Calcareous	345.0 377.0 60% Sp, 1% Cp
377.0 387.0		CSs	** 377.0 387.0 CALCAREOUS SEDIMENTS WITH SULFIDES	377.0 387.0 8% Sp
387.0 439.0		ChC*	** 387.0 439.0 DIOPSIDE, CHERT	
434.5 439.0		Xch	^^ 434.5 439.0 Tuffite, Cherty, Calcareous	387.0 439.0 20% Sp
439.0 451.4		Sk	** 439.0 451.4 SKARN	

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
0'	183.4	-60.1
100'	180.9	-61.4
200'	181.4	-60.9
300'	181.2	-60.9
400'	181.3	-60.8
520'	183.7	-59.9

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 5-15-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-115 (WDNR #247)

DATE: 7-17-91
PAGE 1 OF 8

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 5-17-91

BEARING: S183.4E INCLINATION: -60.1 T.D: 520'
COORDINATES: L9900 E 11050 N
ELEV: 1565.9' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
451.4 520.0		QD	** 451.4 520.0 QUARTZ DIORITE	
451.4 455.0		gQD	^^ 451.4 455.0 Granophyric Quartz Diorite	

E.O.H. 520' (total depth)

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-115

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%		Sp	Cp	Ga	Py	Po	As	I
0.0 61.0												** 0.0 61.0 OVERBURDEN									
												^^ 0.0 25.0 Sand									
												^^ 25.0 30.0 Silty sand									
												^^ 30.0 50.0 Sand, gravel, and cobbles									
												^^ 50.0 61.0 Gravel and boulders									
											Wq	** 61.0 85.5 QUARTZ WACKE, fine-grained, green, with blue quartz eyes.									
68.00												Note: @ 68.0 75.0 ~5' of core lost.									
	40		R3	c	5	2															
				c	30																
75.00				c																	
	90	90	R3	c	5	2															
				c	25																
				c																	
83.00				c						-30C	FZ	^^ 84.4 85.5 Fault Zone, chloritic gouge									
	99	60	R3	b	25	2				-10C											
85.00				b	45						SK	** 85.5 89.8 SKARN, epidote, magnetite									
	100	85	R3	b	5	3															
				b	20						BPM	** 89.9 97.5 BEDDED TO MASSIVE PYRRHOTITE, MAGNETITE		f			5	60		65
				b	40									f			5	60		65
				c						-30F				f			5	60		65
95.00				c										f			5	60		65
	100	100	R3	c	15	2					Xca	** 97.5 102.7 TUFFITE, calcareous, stringery amber sphalerite. Uneven lower contact, roughly 60 degrees	d		25		1	4		30
				c	70								d		25		1	4		30
				c						-60C			d		25		1	4		30
				c									d		25		1	4		30
											IR	** 102.7 119.0 INTRUSIVE RYOLITE SILL, pinkish grey, moderately granophyric									
105.00				c																	
	100	100	R3	b	10	2															

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-115

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
				b	45															
				b																
				c																
115.00				c																
	100	85	R3	b	15	2														
				a	20					-70C	Sk(VCS)	** 119.0 145.0 SKARN, (VCS protolith), green, some cherty intervals, possible diopside alteration								
				b																
				a																
				a																
										-70B	BP,Rc	^^ 119.0 123.0 Interbedded bedded pyrrhotite and lapilli wacke, crystal tuff	d				25		25
122.00																				
	100	100	R3	a	10	2														
125.00				a	50															
	100	100	R3	b	5	2														
				b	75															
128.00				b																
	100	100	R3	c	20	2														
				c	40															
134.50				c																
	100	100	R3	b	5	3														
				c	30															
				c	65															
				a																
144.50				a						-20C	gRd	** 145.0 168.0 GRANOPHYRIC RHYOLITE DIKE, pinkish grey, granophyric, high angle (20 degrees) fractures with minor oxidation								
	100	95	R3	a	5	3														
147.00				b	30															
					65															
										-20C	pMD	** 168.0 224.9 MAFIC DIKE, plag-phyric, highly fractured, chloritic gouge along fractures, serpentine along fractures								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-115

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										-20F										
										-20F										
225.00	100	100	R3	c	20	2				-30C	Xca	** 224.9 247.4 TUFFITE, calcareous with apple-green diopside	d	20			2	3		25
				c	60								d	20			2	3		25
				c									d	20			2	3		25
				c									d	20			2	3		25
				c									d	20			2	3		25
235.00				c									d	20			2	3		25
	100	100	R3	c	5	2							d	20			2	3		25
				c	45								d	20			2	3		25
				c									d	20			2	3		25
				c									d	20			2	3		25
245.00				c																
	100	85	R3	b	10	3					R	** 247.4 255.5 RHYOLITE								
				b	40															
				b	60															
				a																
255.00				a							MSca	** 255.5 312.0 MASSIVE SULFIDE, Massive	f	80						80

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-115

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%		Sp	Cp	Ga	Py	Po	As	T
	100	95	R3	b	10	2						Sphalerite, more maroon than amber, where		f	80						80
				b	45							less massive, can see calcareous		f	80						80
				c								component.		f	80						80
				c										f	80						80
265.00				c										f	80						80
	99	85	R3	c	10	2								f	80						80
				c	50									f	80						80
				c										f	80						80
				c										f	80						80
275.00				b										f	80						80
	100	95	R3	c	20	2								f	80						80
				c	50									f	80						80
				c										f	80						80
				b										f	80						80
285.00				b						-55	IR	^^ 285.9 290.0 Intrusive Rhyolite, grey,		f	80						80
	100	100	R3	b	45	1						disseminated pyrite	a					1			1
287.50				b						-40			a					1			1
	100	95	R3	b	35	2								f	80						80
				b	50									f	80						80
295.00				b										f	80						80
	99	95	R3	b	30	2				-50B				f	80						80
				c	60					-50B				f	80						80
				c										f	80						80
				c										f	80						80
305.00				b						-45B	MSp	^^ 304.0 312.0 Massive Sulfide with		e	50	1		9			60
	100	100	R3	b	2							pyrite		e	50	1		9			60
				c	60									e	50	1		9			60
				b										e	50	1		9			60
				b							Xca	** 312.0 338.3 TUFFITE, calcareous.		e	50	1		9			60
315.00				b						-60B		Patchy replacement of calcareous		d	27	1		2			30
	99	95	R3	b	20	2						sediment, in places looks like old Xlb,		d	27	1		2			30
				b	60							patchy apple-green diopside, minor pyrite		d	27	1		2			30
				b								(~2%)		d	27	1		2			30
323.00				a										d	27	1		2			30
	100	100	R3	b	30	2				-60B				d	27	1		2			30
325.00				b	60									d	27	1		2			30
	100	100	R3	b	65	1								d	27	1		2			30
				b										d	27	1		2			30
				b										d	27	1		2			30
332.50				b						-60B				d	27	1		2			30

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-115

SULFIDES: (T)
A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
	99	95	R3	b	40	2							d	27	1		2			30
335.00				b	65					-70B			d	27	1		2			30
	10	100	R3	b	35	2														
				c	60					-70B	Xz,t	** 338.3 345.0 TUFFITE, Talcose, stringery stringery sphalerite, patchy diopside	c	15	1					16
				c						-65B			c	15	1					16
				c									c	15	1					16
345.00				c							MSca	** 345.0 377.0 MASSIVE SULFIDE, calcareous	e	45	1		3	10		59
	100	100	R3	b	30	2							e	45	1		3	10		59
				c	65						BP	^^ 349.0 352.0 Massive Pyrrhotite, in massive sphalerite, black patches, with disseminated pyrrhotite and pyrite, don't scratch with fingernail: chlorite or serpentine	f				10	80		90
351.00				c									f				10	80		90
	100	100	R3	c	25	2				-55F			f	60	2		3	12		77
355.00				b	60								f	60	2		3	12		77
	100	100	R3	c	40	2							f	60	2		3	12		77
				b	60								f	60	2		3	12		77
360.00				b									f	60	2		3	12		77
	100	100	R3	b	40	2				-50B			f	60	2		3	12		77
365.00				c	60					-30F			f	60	2		3	12		77
	100	100	R3	c	20	2							f	60	2		3	12		77
370.00				c	55								f	60	2		3	12		77
	100	95	R3	b	30	2				-50B			f	60	2		3	12		77
				a	65								f	60	2		3	12		77
375.00				c						-50B			f	60	2		3	12		77
	100	100	R2	c	40	2				-50B	CSs	** 377.0 387.0 CALCAREOUS SEDIMENT with sulfides. Contorted bedding, blue and green serpentine. Possible tourmaline	f	60	2		3	12		77
				c	60					-60B			c	8			2	3		13
				c						-50B			c	8			2	3		13
				c									c	8			2	3		13
385.00				c						-35B			c	8			2	3		13
	100	100	R3	c	30	2				-40B	ChC#	** 387.0 439.0 DIOPSIDE CHERT, greyish white chert, with patchy epidote and diopside	c	8			2	3		13
				c	60								c	8			5	15		28
				c																
395.00				c																
	100	100	R3	b	10	2														
397.00					65															
	100	100	R3	a	30	2														
				b	70															
				b																
405.00				b							ChC#S	^^ 404.7 414.0 With Sulfides								
	100	100	R3	c	25	2														
407.00					65								c	5	2		7			14
													c	5	2		7			14

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-115

SULFIDES: (T)
A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
	100	100	R3	c	10	2							c	5		2		7		14
411.00				c	30															
	100	100	R3	c	25	2														
415.00				c	65															
	100	100	R3	c	25	2														
				c	60															
				c																
				c																
425.00				c																
	100	100	R3	c	25	2														
				c	65															
				c																
				c																
435.00				c							Xch	^^ 434.5 439.0 Tuffite, cherty, calcareous	c	20						20
	100	100	R3	c	20	2							c	20						20
				b	60						Sk	** 439.0 451.4 SKARN Gt, Ep, Mt, Po with chalcopyrite	c		2			10		12
				b									c		2			10		12
				c									c		2			10		12
445.00				c									c		2			10		12
	100	100	R3	b	20	3				-50C	gQDd	^^ 447.3 450.0 Quartz Diorite Dike, granophyric	c		2			10		12
				c	40								c		2			10		12
				c	70								c		2			10		12
				c							QD	** 451.4 520.0 QUARTZ DIORITE	c		2			10		12
455.00				c																
											gQD	^^ 451.4 455.0 Granophyric Quartz Diorite								
											gQD	^^ 481.0 484.0 Granophyric Quartz Diorite,								

FRACTURE FREQ.
A:0-3,B:3-10
ROCK QUALITY: C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-115

SULFIDES: % A:1-5,B:5-10
(T) C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											with Fe-staining								
									-20F		Note: @ 507.0 512.5 Fe-staining along fractures @ 20 degrees to axis								
									-20F										
											E.O.H. 520' (total depth)								

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
0'	181.0	-61.0
100'	180.4	-59.2
200'	178.8	-59.5
300'	177.4	-59.4
462'	177.5	-59.7

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: J. Schaff
DATE COLLARED: 5-15-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-116 (WDNR #250)

DATE: 9-13-9
PAGE 1 OF 7

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 5-16-91

BEARING: S181E INCLINATION: -61.0 T.D: 462
COORDINATES: L9900 E, 10940 N
ELEV: 1568.4' SEC: 15 TWP: 37N RANGE: 4

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
0.0 69.0			>< 0.0 69.0 OVERBURDEN	
69.0 73.5	(not recovered)			
69.0 112.5		Sk	>< 69.0 112.5 SKARN	
112.5 127.0		pR	>< 112.5 127.0 PORPHYRITIC RHYOLITE	
127.0 305.0		Xca	>< 127.0 305.0 TUFFITE	
135.0 142.5		MSca	^^ 135.0 142.5 Massive Sulfide	
142.5 170.0		R	^^ 142.5 170.0 Rhyolite	
170.0 188.5		MSca	^^ 170.0 188.5 Massive Sulfide	
188.5 192.0		Xca	^^ 188.5 192.0 Tuffite, Calcareous	
192.0 220.0		MSca	^^ 192.0 220.0 Massive Sulfide	
220.0 223.0		Rd	^^ 220.0 223.0 Rhyolite Dike	
223.0 272.0		MSca	^^ 223.0 272.0 Massive Sulfide	
272.0 279.0		CS	^^ 272.0 279.0 Calcareous Sediment	
279.0 305.0		Xca	^^ 279.0 305.0 Tuffite	
305.0 339.0		TS	>< 305.0 339.0 TALCOSE SEDIMENT	
339.0 400.0		D	>< 339.0 400.0 DACITE	
389.5 392.0		QDd	^^ 389.5 392.0 Quartz Diorite Dike	

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
0'	181.0	-61.0
100'	180.4	-59.2
200'	178.8	-59.5
300'	177.4	-59.4
462'	177.5	-59.7

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: J. Schaff
DATE COLLARED: 5-15-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-116 (WDNR #250)

DATE: 9-13-91
PAGE 1 OF 7

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 5-16-91

BEARING: S181E INCLINATION: -61.0 T.D: 462.'
COORDINATES: L9900 E, 10940 N
ELEV: 1568.4' SEC: 15 TWP: 37N RANGE: 4(

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
400.0 462.5		QD	>< 400.0 462.5 QUARTZ DIORITE	
400.0 421.0		gQD	^^ 400.0 421.0 Quartz Diorite, Granophyric	
			E.O.H. 462.5' (total depth)	

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-116

SULFIDES: (T)

% A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	I
0.0 69.0											** 0.0 69.0 OVERBURDEN								
											^^ 0.0 20.0 Sand								
											^^ 20.0 40.0 Sand and gravel								
											^^ 40.0 69.0 Sand, gravel, cobbles, boulders								
											Note: @ 50.0 64.0 Lost circulation								
										Sk	** 69.0 112.5 SKARN, calc-silicate alteration, medium to dark green, very strong epidote alteration, ~ 4% magnetite, good garnet development, probably a rhyolite protolitholgy								
73.50																			
	99	100	R3	c	10	2													
75.00					40														
	100	100	R3	c	15	2													
76.00					40														
	100	100	R3	c	10	2													
				c	40														
				c															
				c															
85.00				c															
	100	100	R3	c	10	2													
				c	50														
				c															
				c															
95.00				c															
	100	100	R3	c	5	2					Note: @ 97.0-103.0 Strong garnet development, (~ 1-2% garnet)								
				c	25														

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-116

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
				c																
				b																
105.00				b																
	100	100	R3	a	5	2														
				a	30															
				b						-50C	pR	** 112.5 127.0 PORPHYRITIC RHYOLITE	c	10						10
				a								(DIKE ?), tan to ocassionally orange-								
115.00				a						-20F		black, numerous fractures at 20 degrees								
	100	95	R3	a	15	2						to core axis								
				a	30					-20F										
				a																
				b								Note: @ 123.0-124.0 Minor serpentine								
124.00				a								and clay gouge development along	d	30						30
	99	95	R3	a	5	2				-50B		fractures, rhyolite is bright orange in	c	10						10
				a	30							color	c	10						10
				c									c	10						10
				c							Xca	** 127.0 305.0 TUFFITE, calcareous, well	c	10						10
				c						-10B		laminated, trace serpentine	c	10						10
134.50										-50B			c	10			5			15
	100	100	R3	b	5	2					MSca	^^ 135.0 142.5 Massive Sulfide, cal-	c	10			5			15
				b	30							careous, minor amber sphalerite, minor	c	10			5			15
139.00												serpentine	e	40						40
	100	100	R3	b	5	2							e	40						40
				b	40					-30F	R	^^ 142.5 170.0 Rhyolite, dark grey to	e	40						40
142.00												black, aphanitic to weakly plag-phyric	e	40						40
	100	100	R3	a	5	2						(?), good flow banding or pervasive								
145.00				a	35							fractures @ 30-35 degrees to core axis								
	99	70	R3	a	5	2				-35F										
				a	35					-35F		Note: @ 149.5 Abundant galena in								
				a								remobilized (?) quartz vein (.1" wide)								
				b						-30F										
155.00				b						-35F										
	100	95	R3	a	5	2				-30F										
				b	35					-35F										
				b																
				b																
165.00				b																
	98	90	R3	a	5	3														
				a	30					-55B	MSca	^^ 170.0 188.5 Massive Sulfide,	e	40			1			41

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-116

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
				a	70							calcareous, moderately contorted bedding,	e	40			1			41
				b								trace serpentine	e	40			1			41
175.00				c						-50B			e	40			1			41
	100	95	R3	c	10	2							e	40			1			41
				c	45								e	40			1			41
				c									e	40			1			41
				c									e	40			1			41
185.00				c						-60B			e	40			1			41
	100	100	R3	c	40	1					Xca	^^ 188.5 192.0 Tuffite, calcareous, white,	e	40			1			41
				c								bedded, minor sulfides	a	10						10
				c									a	10						10
				c							MSca	^^ 192.0 220.0 Massive Sulfide, cal-	a	10						10
										-55B		careous, weakly bedded, minor serpentine	f	80						80
195.00				c									f	80						80
	100	95	R3	b	20	2							f	80						80
				c	55								f	80						80
				c									f	80						80
				c									f	80						80
205.00				b									f	80			2			82
	100	90	R3	b	20	2							f	80			2			82
				c	40					-40B			f	80			2			82
				c									f	80			2			82
				b									f	80			2			82
215.00				b								Note: @ 215.0-216.0 Moderate serpentine	f	80						80
	100	95	R3	c	10	3						development	f	80						80
				b	25								f	80						80
				a	40					-40C	Rd	^^ 220.0 223.0 Rhyolite Dike, light grey,	f	80						80
222.50				a								aphantic, numerous fractures								
	98	50	R3	b	5	3														
					25						MSca	^^ 223.0 272.0 Massive Sulfide, calcareous,	f	65						65
225.00					40							weakly bedded, minor serpentine and	f	65						65
	98	50	R3	b	5	3						pyrrhotite	f	65						65
				b	30								f	65						65
				b	60							Note: @ 222.0-232.0 Rock very broken	f	65						65
232.50				c									f	65				5		70
	100	100	R3	c	5	2							f	65				5		70
235.00					35								f	65				5		70
	100	100	R3	c	45	2							f	65				5		70
				c	60								f	65				5		70
				c									f	65				5		70