Steve.Traynor

From: Mike.Burke
Sent: Wednesday, August 31, 2005 1:49 PM
To: Steve.Traynor
Subject: FW: Andrew Deposit

Mike Burke

Staff Geologist

Yukon Geological Survey

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-----Original Message-----
From: Ron Berdahl [mailto:rberdahl@yukon.net]
Sent: Wednesday, June 08, 2005 11:55 PM
To: michael.burke@gov.yk.ca
Subject: Andrew Deposit

Mike, Here are the numbers Noranda came up with. These are from a power point (?) presentation to management, 7/16/2002 by project geo. Allan Huard. [redacted]
Ron B

Composite Data

HOLE-ID	FROM	TO	LENGTH	Zn (%)	Pb (%)	Ag (g/t)	Ge (ppm)	Cd (%)	DENSITY
AN0104	110.10	137.60	27.50	12.84	0.12	1.75	63.61	0.04	2.80
AN0111	89.00	107.50	18.50	14.89	3.12	12.58	56.03	0.05	2.89
AN0114	123.35	127.90	4.55	6.59	24.52	64.35	51.41	0.03	3.27
AN0115	185.85	196.10	10.25	10.98	20.16	45.70	31.67	0.05	3.30

Area and corrections

	Dip Corrections (Assume 75 dip of zone)			Azimuth corrections					
HOLE-ID	DDH dip	corrective angle	corrective factor	DDH Az	corrective angle	correction factor	True Thickness	Area	Tonnes
AN0104	-53	38	0.79	218	38	0.79	17.08	9,459	468,224
AN0111	-47	32	0.85	151	29	0.87	13.72	8,416	344,903
AN0114	-50	35	0.82	177	3	1.00	3.72	11,489	144,650
AN0115	-72	57	0.54	183	3	1.00	5.57	7,800	148,450
									1,106,226

Contained metals

	Zn (tonnes)	Pb (tonnes)	Ag (g)	Ge (g)	Cd (tonnes)
AN0104	60,125	571	821,282	29,783,467	199
AN0111	51,372	10,770	4,337,714	19,326,051	165
AN0114	9,529	35,472	9,308,198	7,436,220	36
AN0115	16,299	29,924	6,783,899	4,700,771	78
Total	137,325	76,737	21,251,092	61,246,508	478

Grade

Zn (%)	Pb (%)	Ag (g/t)	Ge (ppm)	Cd (%)
12.41	**6.94**	**19.21**	**55.37**	**0.04**

noranda

094274

EXPLORATION REPORT

ON THE

ANDREW PROPERTY, MAYO MINING DISTRICT

YUKON TERRITORY

CLAIM NAME	RECORD NO.
Andrew 1-10	YB65796-805
AMB 1-68	YC02355-422
AMB 69	YC02680
AMB 70	YC02423
AMB 71	YC02681
AMB 72-104	YC02424-456
AMB 105-112	YC02776-783
AMB 115-116	YC09953-954
AMB 123-146	YC09961-YC09984

FOR WORK UNDERTAKEN IN 2001
BY NORANDA INC.

NTS: 105K/16
LAT./LONG.: 132° 13' 7" N / -62° 55' 33" W
UTM CO-ORD: 6980155 N, 641070 E (Nad. 83, zone 8).

AUTHORS: ALLAN HUARD
MICHAEL SAVELL

DATE: JANUARY, 2002

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& RESOURCES LIBRARY
PO Box 2703
Whitehorse, Yukon Y1A 2C6

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 81,631 .

M. Burke

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

SUMMARY

This report documents geological, geochemical and diamond drilling surveys undertaken in July through October, 2001 on the Andrew Property, a group of mineral claims in central Yukon Territory, optioned by Noranda Inc. from Mr. R. Berdahl. The property was optioned in 2000 after field examinations and reviews of historical data confirmed its favorable geological setting and indications of significant zinc mineralization.

The property is underlain by fault-bounded slices of Devono-Mississippian Earn Group black clastics and Proterozoic to Lower Cambrian Hyland Group slate, sandstone, conglomerate, and limestone. The rocks have been folded along north-northwest trending axes, and faulting has been localized mostly within less competent, carbonaceous shaley units. A few kilometers west of the property, these sediments are in contact with a Cretaceous granitic batholith. Evidence suggests that areas on the property have been intruded and effected by this batholith at depth.

Geological and geochemical surveys were undertaken to assess previously identified occurrences, soil geochemical anomalies, and targets detected by an airborne electromagnetic and magnetic survey commissioned by Noranda in early 2001. This work was designed to aid in prioritizing and planning of targets for diamond drill testing. In addition, ground magnetic and gravity surveys were completed over selected areas.

The diamond drilling program totaled 2,717.7 meters in 15 holes. Five of the drillholes tested isolated mineral occurrences and geophysical anomalies across the property without success. The remaining ten holes were completed in and around the Andrew showing. At the Andrew showing, coarse sphalerite-galena-calcite-quartz veins and breccias occupy discordant, dilatent spaces in deformed sediments. Significant drill intercepts include 13.5 meters (est. true width) grading 0.12% Pb, 12.09% Zn, and 1.6 g/t Ag from hole AN-01-04, and 12.8 meters (est. true width) grading 2.31% Pb, 13.63% Zn, and 10.9 g/t Ag from hole AN-01-11.

Mineralization at the Andrew showing remains open along strike and at depth. In addition, other clusters of poorly exposed, similar mineralization suggest the structural setting may repeat itself elsewhere on the property.

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1.0 INTRODUCTION

This report was prepared to document the geological, geochemical and diamond drilling surveys undertaken in 2001 on the Andrew property to satisfy internal company mandates, government assessment requirements, and as an annual report of results and interpretations pertaining to these surveys for the vendor.

For assessment purposes, only the diamond drilling work completed up to August 15th was used in the application for a certificate of work for those claims filed on August 16th. The remaining diamond drilling work will be applied under a separate application for assessment to be submitted with this report.

All information and data documented in this report was obtained by employees of Noranda Inc., except for geochemical and assay analyses, which were contracted to ALS Chemex Laboratories of Vancouver, B.C. One of the authors was directly involved in the management of the field program and supervised the exploration team in the field. Conclusions and recommendations are those of the authors.

2.0 PROPERTY DESCRIPTION AND LOCATION

The Andrew property is a group of contiguous quartz mineral claims with an area totaling approximately 25 square kilometers, located 110 air kilometers north of Ross River in the Mayo Mining District, Yukon, NTS mapsheet # 105K/16 (figure 1). The center of the claim block is located at lat./long. 132° 13' 7" N / -62° 55' 33" W, or UTM co-ordinates 6980155 N, 641070 E (Nad. 83, zone 8).

At the time of the fieldwork, the property consisted of the following claims:

Table1. Claim Data

Claim Name	Claim Number	Area	Owner	Recording Date	Hectares	Expiry Date
Andrew 1-10	YB65796-805	Clearwater Creek	Noranda Inc.	8/16/00	20.9	8/16/06
AMB 1-68	YC02355-422	Clearwater Creek	Noranda Inc.	8/28/00	1,421.20	8/28/06
AMB 69	YC02680	Clearwater Creek	Noranda Inc.	11/20/00	20.9	11/20/06
AMB 70	YC02423	Clearwater Creek	Noranda Inc.	8/28/00	20.9	8/28/06
AMB 71	YC02681	Clearwater Creek	Noranda Inc.	11/20/00	20.9	11/20/06
AMB 72-104	YC02424-456	Clearwater Creek	Noranda Inc.	8/28/00	689.7	8/28/06
AMB 105-112	YC02776-783	Clearwater Creek	Noranda Inc.	8/10/01	167.2	8/10/06
AMB 115-116	YC09953-954	Clearwater Creek	Noranda Inc.	10/12/01	41.8	10/12/06
AMB 123-146	YC09961-YC09984	Clearwater Creek	Noranda Inc.	10/12/01	501.6	10/12/06
				Total	2549.8	

Note that the indicated expiry date is based on assessment work (diamond drilling) filed on August 16th, 2001 and with this report.

Noranda Inc. has the responsibility of permitting, claim maintenance, assessment filing and reporting, and all associated fees.

The claims lie on crown land, and surface rights belong to the crown. They do not lie within or near any park, special management zones, first nation settlement lands or land selections. However, they are situated within lands considered as traditional hunting and trapping areas by several first nation bands.

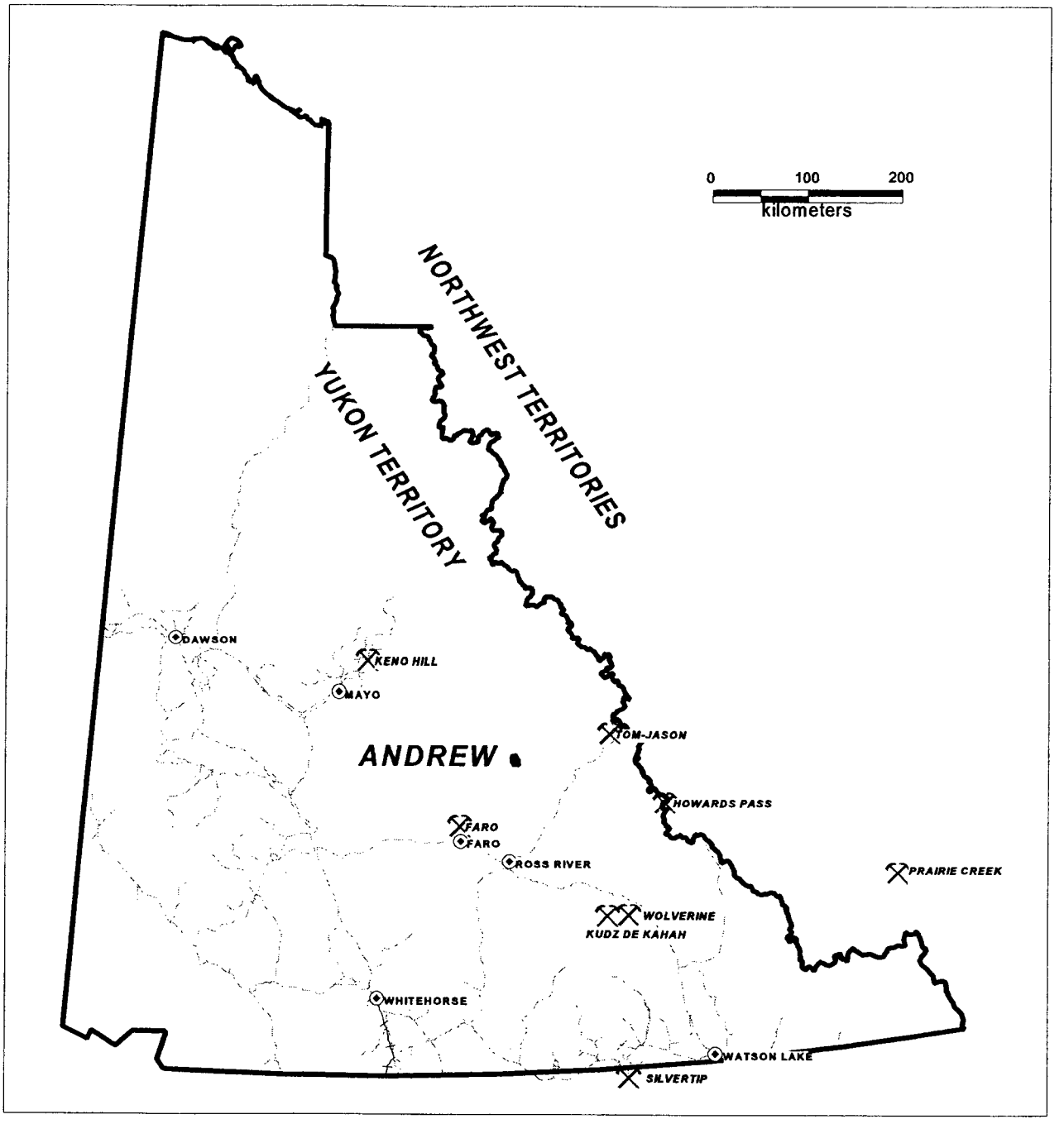


FIGURE 1. Location Sketch of Andrew property, showing major towns, roads, and significant zinc deposits in the area.

The agreement also encompasses an area of interest defined by a rectangle with its corners located at the following points:

UTM Coordinates (NAD 83, Zone 8)

Point	Easting	Northing
1	639585	6985806

2	645631	6980338
3	642573	6976832
4	636536	6982380

This area totals about 37.5 square kilometers. It includes the current claim block, and some additional ground to the northeast and northwest.

The property has not been legally surveyed. Most claim posts were located late in this program using handheld GPS units. As a result of this, a number of possible mislocations, fractions and gaps within the claim block were observed. To secure these areas, additional claims were staked in September 2001. Figure 2 shows the approximate position of the claims based on the GPS survey. Note that the geology and geochemical maps in this report show the boundary of the claims as indicated by this survey.

There has been no prior mineral extraction on the property. There are several known mineral zones on the property which were partially exposed by previous operators using bulldozer and hand trenching. Some of these have been tested by diamond drilling. Locations are provided on accompanying maps and descriptions in following sections. The quantity of diamond drilling to date is inadequate to allow an estimate of any resource or reserve.

Previous operators were responsible for construction of approximately 20 kilometers of bulldozer trails and trenches in the late 1960's. Other than a few areas on bare rock, these have revegetated naturally and no potential erosional problems were observed. A 1000-meter airstrip was also constructed by previous vendors, and was rehabilitated to provide access by single and twin otter craft with large wheels for supporting the current program. Approximately 75 empty fuel drums that were abandoned by previous operators at various parts of the property were collected and stored alongside the airstrip by Noranda personnel. These were subsequently removed and are now the responsibility of DIAND.

A tent camp accommodating up to 20 people, utilizing lumber frames and plywood floors was constructed adjacent to the airstrip for the current program. The camp was left in place and secured for winter in anticipation of future exploration programs by Noranda Inc. Approval for leaving the camp was granted by the mining inspector following his inspection of August 9, 2001.

This program was conducted pursuant to the Yukon Quartz Mining Act and Regulations and conditions specified in Mining Land Use Permit No. LQ00066, granted on April 16, 2001 and expiring on April 16th, 2006.

3.0 ACCESS, CLIMATE, INFRASTRUCTURE AND PHYSIOGRAPHY

Access for the current program was provided by helicopter and fixed wing aircraft. A single otter on wheels chartered from Inconnu Lodge at MacEvoy Lake, 105 kilometers east of Ross River hauled in most of the fuel, supplies, equipment and personnel from airstrips in Mayo or Sheldon Lake, on the North Canol road. Later in the season, as wheeled aircraft were not available, supplies were brought in on float equipped aircraft from Inconnu Lodge to a lake about 10 kilometers southeast of the camp. For the work program, personnel and equipment were transported by a helicopter chartered from Guardian Helicopters of Calgary, Alberta.

Previous operators hauled fuel and heavy equipment into the property on a winter bulldozer trail constructed from the North Canol road at Dragon Lake, about 60 kilometers from the claims. This would also be the most likely route for an access road if development were warranted in the future.

Owing to its high latitude, central Yukon has short summers, and long, severe winters, which are slightly tempered by its proximity to the Gulf of Alaska. Permafrost is common on north and east

facing slopes. Vegetation below 1500 meters is typical of the northern boreal forest. In the valley immediately east of the claims, there are spruce trees with trunk diameters over 1 meter, unusually large for this latitude.

The property lies within the South Fork Range of the Yukon Plateau, east of the Tintina Trench and west of the Mackenzie Mountains. Elevations range from about 1000 to 1800 meters on the property, which can be described as the east facing side of a wide valley with moderate slopes, cut by several east flowing creek valleys. There is ample room for potential tailings storage and waste disposal.

Near Faro, the Anvil district was once a significant base metal producing district, and is the nearest community with sufficient infrastructure to support a large mining operation. Concentrate was shipped by truck to tidewater at Skagway, Alaska, a distance of about 500 kilometers. Future development of base metal deposits at the Tom/Jason or Howard's Pass area east of the property could have a positive impact on the Andrew project, as the likely access route would also use the North Canol road.

4.0 HISTORY

Between 1967 and 1969, Atlas Exploration staked the area and undertook an exploration program consisting of 63 kilometers of linecutting, evidence of which is still visible. Magnetic, electromagnetic, and soil geochemical surveys were completed on these gridlines, and the work was filed as assessment. A helicopter-borne airborne electromagnetic and magnetic survey with flight lines spaced at 305 meters was flown over the property in 1969. Bulldozer trenching exposed several mineral occurrences, but none were thought significant enough to warrant additional work and the claims were allowed to lapse. In 1977, Cima Exploration drilled two short holes in the "Lad" showing, one of which encountered sulfide mineralization assaying 4.7% Zn, 5.3% Pb, and 133.7 g/t Ag over 1.2 meters, but later abandoned the area. Figure 3 shows the location of historical work.

There is no recorded production or evidence of production from the property.

The vendor's association with the property dates to 1996, when he staked the Andrew 1-10 claims to cover a prominent gossan associated with zinc and lead mineralization while on a grubstake funded by Cominco. Cominco turned down a proposal to acquire the property. In 1999, the vendor returned to the property to undertake assessment work consisting of hand and dynamite trenching and sampling of the gossan. Noranda was invited to examine the data, and a visit to evaluate the property followed in the summer of 2000.

As part of the agreement to acquire the property from Mr. Berdahl, Noranda commissioned staking of additional claims that would encompass the Lad and other showings. These were included in the Andrew property agreement.

5.0 GEOLOGICAL SETTING

The property lies within the ancestral North American Terrane of the northern Canadian Cordillera. This is composed of a thick prism of Proterozoic to Triassic sedimentary rocks that accumulated on and along the western margin of the Archean rocks of the Canadian Shield. This terrane has been divided into a series of fault and unconformably bounded assemblages or mappable sedimentary packages. In the area of the Andrew property, the following assemblages have been identified in the most recent compilation of the regional geology of the Yukon, GSC Openfile 3754, released in January 2001:

Table 2. Geological Formations

AGE	MAP CODE	FORMATION OR GROUP NAME	LITHOLOGIES
Carboniferous to Permian	CPMC	Mount Christie	green cherty shale, shale and chert, black siltstone; minor quartzite, limestone, dolostone
Mississippian	MK	Keno Hill	quartz arenite, black shale, phyllite
Upper Devonian and Mississippian	DME	Earn	black shale and chert, chert pebble conglomerate, barite
Ordovician to Lower Devonian	ODR	Road River	black shale and chert, siltstone or limestone
Lower Cambrian	IEG1	Gull Lake	shale, siltstone, mudstone; minor sandstone, local volcanics
Upper Proterozoic to Lower Cambrian	PEH1	Hyland	brown to green shale, sandstone, grit, quartz pebble conglomerate; minor limestone, phyllite
Upper Proterozoic to Lower Cambrian	PEH2	Hyland	grey limestone
Upper Proterozoic to Lower Cambrian	PEH3	Hyland	maroon and green slate

Figure 3 shows the GSC geological compilation for the Andrew area.

In general rocks follow the regional strike of 120 to 160 degrees and dip steeply to the northeast. Folding along this regional trend was observable at several outcrops. Faulting is evident by the presence of linear gullies, creek trends, and rarely in outcrop. In addition, many structures are evident from airborne magnetics. There are two preferential trends; the strike parallel trend at about 140 degrees and a cross-cutting trend at about 100 degrees.

The sediments of the Hyland group are characterized by a weakly to moderately developed schistosity or phyllitic texture in pelitic units. Limestones are finely crystalline. Younger assemblages display only very weak regional metamorphic effects.

Following accretion of terranes in the cordillera, Cretaceous granitic plutons intruded these assemblages, and several are mapped within a few kilometers east and west of the property. Outcrops of a granodioritic to monzonitic porphyry body on the south end of the property are likely Cretaceous and related to the large Mount Sealous pluton to the west.

The absence of continuous outcrops along ridges or creek valleys, and the overall heavy vegetation and lack of outcrop hinders the assignment of a formation name any particular outcrop, as many of the formations contain similar lithologies. The government compilation is considered a reasonable interpretation given the vast area, remote location and finite resources of the GSC. Our detailed work has determined that the assemblages identified in the compilation are present, but their areal distribution is different though still uncertain.

Location of mapped outcrops with lithologies and orientations, and interpretation of faults and contacts is shown on figure 4. As the shales are recessive and quartzite outcrop forming, there is a preponderance of quartzite outcrops. However, drilling indicates that the recessive, non-outcropping forming shaley units are the more abundant component of most assemblages. This feature also hinders mapping interpretation.

Contrasting competencies amongst various rock types, especially between soft, fissile, often carbonaceous shales and hard, outcrop-forming quartzite results in different deformational behaviour. The soft shales tend to accept most of the strain and movement during tectonic deformation. Faulting, shearing, and brecciation are present in these rocks to a greater degree. Quartzites tend to show only brittle fracturing in areas of structural deformation.

6.0 DEPOSIT TYPES

The property was acquired due to its favorable geological setting and the presence of untested zinc occurrences and geochemical anomalies. The setting has similarities to sediment hosted, stratiform, zinc-rich, base metal massive sulfide deposits elsewhere in the North American terrane. Well known examples include the Red Dog deposit in Alaska, and Sullivan in southern British Columbia, as well as the large though sub-economic resources at Howard's Pass, Yukon, and Cirque (Stronsay) in northern British Columbia. The majority of the world's largest producing zinc mines are of the sediment hosted, stratiform type.

These deposits form along tectonically active continental margins, where the discharge of hydrothermal fluids from fault zones results in precipitation of dissolved metals in a second order basin. They usually display evidence of syndepositional tectonic activity such as fault scarp talus and slump breccias, and evidence of syndepositional geothermal activity such as the presence of chemical sediments (exhalites) including chert, barite, pyrite, sphalerite and galena. Typical host rocks are deep marine clastic sedimentary rocks. The form of the deposit is typically concordant, bedded, with large lateral extents. Regional metamorphism and deformation often radically change the morphology of the deposit and texture of mineralization.

Figure 1 shows several other zinc deposits in the area, with a variety of styles including the above, as well as veins, manto replacements, and volcanogenic massive sulfides.

The current exploration program was designed to highlight features that may be indicative of stratiform massive sulfide mineralization. An airborne electromagnetic and magnetic survey was flown over the property and surrounding area at a line spacing of 200 meters to hopefully isolate areas with anomalous conductivity and magnetic susceptibility. Selected targets were further tested with ground magnetics and gravity surveys to distinguish sulfide-bearing sources from non-sulfide bearing sources. Mapping and prospecting attempted to identify favourable stratigraphy, structural settings, and mineralization but this work was hindered by lack of exposure. As these deposits often exhibit large geochemical haloes, limited soil geochemical surveys were undertaken over targets not previously covered by historical work. Selected areas were further tested by diamond drilling.

7.0 MINERALIZATION

During the course of mapping and prospecting, examinations of mineral occurrences previously documented by Atlas Exploration were undertaken, and several new occurrences or clusters of occurrences were discovered. Locations are plotted on figure 4 and summaries given below. For descriptions and analytical results of individual samples, refer to Appendices III and IV.

Table 3. Mineral Occurrences (following page)

NO.	NAME	MINERALOGY	ROCKTYPE	DESCRIPTION	CONTROLS	DIMENSIONS	CONTINUITY	SAMPLES	RESULTS
1	none	Barite	Black, cherty shales	aphanitic, massive, grey, hard	bedded, probably exhalative origin	10 –15 cm thick bed	not established	not sampled	not analyzed
2	Atlas "F" or Pinnacle	py-gal-sph-cpy	quartzite, re-crystallized limestone	irregular sulfide lenses, disseminations	replacement within silicified beds	lenses up to 15 x 50 cm	exposed over 2 x 30 meter area	644457 - 644460	assays of grab samples from sulfide pods averaged 2.5% Cu, 7.9% Pb, 6.9% Zn, 249g/t Ag
3	Atlas "G"	py-gal-sph-cpy	silicified limestone, siltstone	irregular sulfide lenses, disseminations	replacement within silicified beds	lenses up to 15 x 30 cm	exposed over 1x 10 meter area	644202 - 644203	assays of grab samples from sulfide pods averaged 1.9% Cu, 3.2% Pb, 5.2% Zn, 211g/t Ag
4	Bubble Tree	py-po-gal-sph-cpy	limestone, siltstone	small, irregular sulfide lenses	not established	lenses up to 15 x 25 cm	unclear	644067	geochemical analysis of grab sample returned 254 ppm Cu, 7380 ppm Pb, 25,000 ppm Zn, 0.4 ppm Ag
5	none	py-gal	quartz vein in quartzite	white quartz with minor coarse py-gal	vein cross-cutting bedding	10 cm thick vein	not established	644073	geochemical analysis of grab sample returned 254 ppm Cu, 7380 ppm Pb, 25,000 ppm Zn, 0.4 ppm Ag 1800 ppm Zn, 3 ppm Ag
6	none	py-gal	silicified quartzite, siltstone	disseminated, fracture filling, veinlets	weak hydrothermal alteration	cm scale veinlets	pyritic zone intermittent over ~100m	644454	geochemical analysis of chip sample returned 23 ppm Cu, 18 ppm Pb, 66 ppm Zn, 0.1 ppm Ag
7	none	py-cpy-gal	silicified quartzite in sloughed trench	narrow, ragged quartz veins, sulfides	vein cross-cutting bedding	10 cm thick vein	not established	644207	geochemical analysis of grab sample returned 200 ppm Cu, 4900 ppm Pb, 700 ppm Zn, 20 ppm Ag
8	none	Disseminated py-po, trace cpy-gal	schistose quartzite, qtz-ser-py schist	rare quartz-sulfide boudins in pyritic zn	weak hydrothermal alteration	cm scale boudins	pyritic zone intermittent over ~100m	644211 - 644212	geochemical analyses of chip samples averaged 91 ppm Cu, 20 ppm Pb, 76 ppm Zn, 0.1 ppm Ag
9	none	py-po	silicified and schistose quartzite	disseminated py-po	weak hydrothermal alteration	pervasive zone	pyritic zone exposed over ~100m	644216 - 644217	geochemical analyses of chip samples averaged 91 ppm Cu, 20 ppm Pb, 76 ppm Zn, 0.1 ppm Ag ppm Zn, 0.5 ppm Ag
10	none	py-po, trace cpy	schistose quartzite	disseminated py-po	weak hydrothermal alteration	pervasive zone	pyritic zone intermittent over ~150 m	644213, 644215	geochemical analyses of chip samples Averaged 251 ppm Cu, 43 ppm Pb, 98 ppm Zn, 2.0 ppm Ag
11	none	Cpy	subangular float boulder	quartz-cpy vein or silicified rock	unknown, probably vein	20 x 25 cm boulder	unknown	644214	geochemical analysis of grab sample Returned 56,400 ppm Cu, 1,000 ppm Pb, 2,400 ppm Zn, 263 ppm Ag
12	Atlas "A" in Hugo Creek	py-cpy-sph	pyritic metasiltstone-quartzite	sheared, brecciated qtz-sulfide vein	cross-cutting vein	up to 130 cm thick	traceable for 40 m	644239	geochemical analysis of chip sample returned 23 ppm Cu, 18 ppm Pb, 66 ppm Zn, 0.1 ppm Ag Pb, 14,300 ppm Zn, 130 ppm Ag
13	Atlas "C" and "D"	py-py-cpy-gal-sph	silicified quartzites	paralleling qtz-sulfide veins	cross-cutting veins	up to 50 cm thick	traceable for 8 m	644102, 644237	assays of chip sample from vein 1: 0.13% Cu, 7.44% Pb, 3.79% Zn, 95g/t Ag, and from vein 2: 3.76% Cu, 0.1% Pb, 0.5% Zn, 153g/t Ag
14	none	py-aspy-limonite	silicious rock or quartz vein	leached, silicified, brecciated, subcrop or residual boulders	probably veins	unknown	area of boulders ~10 x 25m	644233, 644235	geochemical analyses of chip samples averaged 25 ppm Cu, 2,610 ppm Pb, 71 ppm Zn, 13 ppm Ag, 804 ppm As
15	none	cpy	quartz vein in metasediments	scattered rubble, float of leached, white quartz veins	cross-cutting veins	unknown	area of boulders ~10 x 10m	644101	geochemical analysis of chip sample returned 31 ppm Cu, 384 ppm Pb, 26 ppm Zn, 1 ppm Ag
16	none	sph	quartzite, metasiltstone	subcropping, narrow quartz veins	cross-cutting veins	unknown	area of boulders ~5 x 10m	644240	geochemical analysis of chip sample returned 14 ppm Cu, 14 ppm Pb, 10 ppm Zn, 0.2 ppm Ag

NO.	NAME	MINERALOGY	ROCKTYPE	DESCRIPTION	CONTROLS	DIMENSIONS	CONTINUITY	SAMPLES	RESULTS
17	none	py-gal-sph	quartzite	scattered boulders of silicified, rusty quartzite with quartz veinlets with sulfides	cross-cutting veinlets	unknown	boulders over 30 m along creek gully	644081 - 644085	geochemical analyses of grab samples averaged 100 ppm Cu, 31,720 ppm Pb, 2,450 ppm Zn, 127 ppm Ag
18	none	sph-py-gal-cpy-marc	massive sulfide float boulder near quartzite	angular boulder of coarse, dark sphalerite, with fine pyrite, minor gal, cpy, late marcasite veinlets	unknown	40 x 45 cm boulder	unknown	644228	assay of chip sample returned 0.1% Cu, 1.0% Pb, 9.3% Zn, 40g/t Ag
19	none	py-sph	quartzite	rusty, silicified quartzite with thin veinlets of py-sph	unknown	<2 m wide	isolated occurrences over 50 m	644230	geochemical analysis of grab sample averaged 63 ppm Cu, 232 ppm Pb, 752 ppm Zn, 2.2 ppm Ag
20	none	py-gal-sph	quartzite	minor clots of fine py-gal-sph in rusty, silicious quartzite	unknown	<1 m wide	not established	644231	geochemical analysis of grab sample averaged 63 ppm Cu, 228 ppm Pb, 798 ppm Zn, 2 ppm Ag
21	none	limonite	quartzite	weak, positive zn "zap" reaction on limonite coated fractures	unknown	unknown	not established	not sampled	not analyzed
22	Atlas "U"	py-sph-cpy	quartzite, chert pebble conglomerate	subcrop rubble of silicified quartzite / conglomerate cut by quartz-carbonate-py-sph stringers, and disseminated cpy	unknown	unknown	not established	644065, 644066	geochemical analysis of one grab sample returned 100 ppm Cu, 200 ppm Pb, 219,000 ppm Zn, 1 ppm Ag
23	Atlas "T"	cpy	chert pebble conglomerate	subcropping conglomerate, cut by black siliceous stringers, with associated disseminated cpy, malachite	unknown	unknown	not established	644064	assay of chip sample returned 0.4% Cu, 0.1% Pb, 0.1% Zn, 2g/t Ag
24	Atlas "J" or Andrew	gal-py-sph-cpy-oxides	quartzite, silicified siltstone	veinlets, stringers, pods of weathered sulfides in silicified sediments and quartz-calcite breccias, forms gossan	structural-hydrothermal	sulfide cobbles up to 20 cm	scattered float sourced from 10 x 40 m subcrop	sampled in 2000	see drilling results
25	Atlas "S"	gal-sph-cpy	quartzite, chert pebble conglomerate	veinlets, stringers, pods of quartz-sulfides in silicified host	structural-hydrothermal	sulfide veins up to 15cm thick, a few meters long	isolated veins over 50 x 150 m area	644020, 644021, 644129, 644130, 644218	assays of well mineralized grab samples averaged 25.9% Pb, 6.6% Zn geochemical analyses of other grabs averaged 667 ppm Cu, 175 ppm Pb, 109 ppm Zn, 22 ppm Ag
26	none	cpy	quartzite	brecciated quartzite with quartz veins, minor cpy, positive zn "zap" reaction	unknown	unknown	not established	644131	geochemical analysis of grab sample returned 65 ppm Cu, 72 ppm Pb, 846 ppm Zn, 0.2 ppm Ag
27	none	sph		cherty quartz vein with sph	unknown	unknown	not established	644011	geochemical analysis of grab sample returned 34 ppm Cu, 30 ppm Pb, 5.0% Zn (assay), 0.6 ppm Ag
28	none	sph	quartzite	brecciated, silicified quartzite with quartz-calcite-sph veins, clots	unknown	unknown	scattered float along gully for ~100m	644087 - 644090, 644105 - 644107	assays of grab samples averaged 0.0% Cu, 0.0% Pb, 7.9% Zn, 0.6g/t Ag
29	none	cpy	quartzite	bleached, silicified quartzite with quartz veinlets, stringers, minor cpy	unknown	unknown	not established	not sampled	not analyzed
30	none	sph-gal	quartzite	bleached, brecciated, silicified quartzite with quartz-sph-gal stringers, float boulders	unknown	unknown	not established	644120	geochemical analysis of grab sample returned 21 ppm Cu, 16 ppm Pb, 3,290 ppm Zn, 0.1 ppm Ag
31	none	sph	quartzite	bleached, brecciated, silicified quartzite with quartz-sph stringers, float boulders	unknown	unknown	not established	not sampled	not analyzed
32	none	sph-gal	quartzite	bleached, brecciated, silicified quartzite with quartz-calcite-sph-gal stringers	unknown	unknown	not established	644012 - 644014	assay results of grab samples averaged 5.4% Zn, with one sample assaying >30% Pb, 172g/t Ag
33	Atlas "O,P,Q, and V"	sph-gal	quartzite, shale	brecciated, silicified sediments, mostly quartzite, with quartz-calcite-sph veins, clots - scattered float and outcrop	structural-hydrothermal	veins up to 20 cm thick	isolated veins over 50 x 150 m area	644002, 644112, 644114, 644124, 644451, 644452	assay results of 5 grab samples averaged 0.0% Cu, 0.6% Pb, 4.6% Zn, 2.7g/t Ag one grab assayed >30% Pb, 114g/t Ag

NO.	NAME	MINERALOGY	ROCKTYPE	DESCRIPTION	CONTROLS	DIMENSIONS	CONTINUITY	SAMPLES	RESULTS
34	none		quartzite	float of quartzite with limonite stain, positive zn "zap" reaction	unknown	unknown	not established	not sampled	not analyzed
35	none	sph	quartzite	bleached, brecciated, silicified quartzite with quartz-sph veinlets	unknown	unknown	not established	not sampled	not analyzed
36	none	sph	limestone	brecciated limestone with stringers of calcite-sph	unknown	unknown	not established	644098	assay of grab sample returned 0.0% Cu, 0.0% Pb, 4.5% Zn, 0.5g/t Ag
37	Atlas "A"	sph	quartzite, limestone	brecciated, silicified sediments, mostly quartzite, with quartz-calcite-sph veins and clots - scattered float and outcrop	structural-hydrothermal	veins up to 20 cm thick	isolated veins over 50 x 100 m area	644003, 644091 - 644097, 644104, 644109, 644115 - 644117	assay results of 13 grab samples averaged 0.0% Cu, 0.0% Pb, 8.1% Zn, 0.6g/t Ag
38	none	sph-gal	shale	scattered float of silicified, brecciated, quartz veined rock with sph-gal, in area of maroon shale outcrops	unknown	unknown	not established	not sampled	not analyzed
39	none	sph-gal	quartzite	scattered outcrops, boulders of silicified, brecciated, quartzite with quartz-calcite-sph-gal veinlets	unknown	unknown	not established	644001, 644099, 644100, 644110, 644111	assay results of 5 grab samples averaged 0.0% Cu, 0.1% Pb, 5.3% Zn, 0.5g/t Ag
40	none	sph-gal	quartzite	scattered outcrop of silicified, brecciated, quartz veined rock with sph-gal	unknown	unknown	not established	not sampled	not analyzed
41	none	sph-gal-cpy	quartzite	scattered outcrops, boulders of silicified, brecciated, quartzite with quartz-calcite-sph-gal veinlets	structural-hydrothermal	veins up to 20 cm thick	isolated veins over 25 x 100 m area	644004, 644009, 644118	assays from 2 grab samples averaged 0.0% Cu, 0.7% Pb, 0.4% Zn, 1.7g/t Ag
42	Atlas "M"	sph-gal-cpy	quartzite	scattered outcrops, boulders of silicified, brecciated, quartzite with quartz-calcite-sph-gal veinlets	structural-hydrothermal	veins up to 20 cm thick, 4 m long	isolated veins over 70 x 240 m area	644006 - 644008, 644018, 644019, 644121, 644122, 644126, 644127	assays from 4 grab samples averaged 0.0% Cu, 8.4% Cu, 2.5% Zn, 21.8g/t Ag
43	none	aspy	quartz vein	float of quartz-arsenopyrite vein	Unknown	40 cm diameter	not established	644244	geochemical analysis of grab sample returned 28 ppm Cu, 1,180 ppm Pb, 434 ppm Zn, 17.2 ppm Ag, and >30% As
44	Atlas "L" or Lad	sph-cpy-gal	silicified siltstone	silicified siltstone with poddy, bedding controlled pyrite-pyrrhotite-sphalerite-chalcopyrite-galena, replacement type	replacement within silicified beds	lenses up to 25 cm thick, several meters long	not intersected 50m downdip		Previous drilling by Cima Exploration intersected 4.7% Zn, 5.3% Pb, and 133.7 g/t Ag over 1.2 meters at a shallow depth. Deeper drilling down dip by Noranda failed to cut significant mineralization.

8.0 EXPLORATION

8.1 Geology and Prospecting

Geological and prospecting work was focused towards evaluation in and around previously identified mineral occurrences, geochemical anomalies, and airborne geophysical anomalies. Noranda employee crews consisting of a geologist – prospector pair who were set out by helicopter or traversed from camp. Locations of outcrops and samples were determined by handheld GPS units, and were recorded along with observations in a digital spreadsheet. These crews also completed all rock and soil sampling reported here.

Observations are summarized in Tables 3 and 4.

8.2 Soil Geochemistry

Two small areas were systematically sampled along gridlines at 200 meters spacings with samples collected at 25 meter intervals. The grid locations with zinc values are shown on figure 6. On the "D" grid (Snake Lake), the sampling was completed to aid in the location of the source for mineralized float of coarse pyrite-sphalerite in an area underlain principally by quartzite. The source was not located. On grid "B", the sampling tested several coincident electromagnetic and magnetic features. No corresponding soil geochemical features were detected.

8.3 Geophysical Surveys

To facilitate ground magnetic, gravity, and soil geochemistry surveys, three grids ("A", "B", and "C", figure 5) with lines spaced at 200 meters and station intervals at 25 meters were surveyed. The grid work and magnetic survey was contracted to Aurora Geosciences Ltd., and is fully described in their report of Total Magnetic Field Surveys. Gravity surveys were completed by Quantec Geophysics. This work is fully documented in a separate report prepared by the contractor. Noranda provided Camp and helicopter support for contract crews.

Table 4. Geophysical anomaly follow up summary. (following page)

EM ANOMALY#	DESCRIPTION	utm east	utm north
1	Two weak EM picks on the north flank of a large positive magnetic feature. No outcrop was observed along the conductor axis, which lies in an area of thick vegetation cover. Float of galena bearing quartz vein material was found in Clearwater Creek at the southeast end of the conductor, however this is believed to be sourced from occurrences upstream.	639713	6984366
2	Two weak EM picks on the north flank of a large positive magnetic feature. No outcrop was observed along the conductor axis, which lies in a boggy area of low relief with thick vegetation cover.	638890	6983782
3	Two weak EM picks on the northeast flank of a small positive magnetic feature. No outcrop was observed along the conductor axis, which lies in a boggy area of low relief with thick vegetation cover.	638787	6982778
4	A series of 5 weak EM picks with no coincident magnetic feature. It closely parallels a tributary of Clearwater Creek, which in turn follows the regional stratigraphic trend. One outcrop of dark grey to black, phyllitic shale, was located close to the conductor axis, in a mostly sloughed trench dug by Atlas Exploration. The trench tested a large copper in soil geochemical anomaly to the southwest.	638188	6982345
5	Three weak EM picks partially coincident with a small positive magnetic feature. On strike to the southeast about 75 meters away, Atlas Exploration had undertaken some bulldozer trenching on a Zn in soil geochemical anomaly without success. The only outcrops observed along the conductor axis are quartzites and rusty weathering, schistose quartzites. The schistose quartzites may be shear related, which the EM anomaly could be attributed to.	638825	6981804
6	Three weak EM picks coincident with a small positive magnetic feature. The only outcrops observed along the conductor axis are quartzites and rusty weathering, schistose quartzites. The schistose quartzites may be shear related, which the EM anomaly could be attributed to.	639067	6982069
7	Two weak EM picks in a magnetically low area. The area is flat and boggy with heavy vegetation.	639608	6981969
8	A long series of weak to moderate EM picks in an area of low magnetic relief, runs parallel to a linear positive magnetic feature. The area is flat and boggy with heavy vegetation, and no outcrop was observed.	639804	6981870
9	A series of 3 weak to moderate EM picks, coincident with a narrow, weak positive magnetic feature. Lies in flat area covered by heavy vegetation. An occurrence of massive py-gal-sph in veinlets and pods up to 10 cm across in limestones and calcareous quartzite (Bubble Tree showing) was located on strike of the conductor axis, immediately to the northwest. Nearby outcrops contained thin fracture filling pyrite veinlets. Because of the attractive coincidence of conductivity and magnetics, and the presence of mineralization on strike, this target was selected for drill testing (DDH AN-01-02). No mineralization was intersected. The anomaly is attributed to carbonaceous shales hosting graphitic shear zones with disseminations and blebs of pyrrhotite.	639843	6982594
10	A series of 4 weak to moderate EM picks, nearly coincident with a narrow, weak positive magnetic feature. Mostly covered by heavy vegetation, with a few outcrops of grey-green, fissile shale near the conductor axis.	639669	6982865
11	Three weak EM picks that are nearly coincident with a thin, positive magnetic feature. Mostly covered by heavy vegetation, with a few outcrops of quartzite and quartz-veined quartzite near the conductor axis. Some of the quartz veins carry small quantities of galena and sphalerite.	639732	6983125
12	Two weak EM picks flank the edge of a large positive magnetic feature to the east. The area is flat and heavily vegetated and no outcrop was observed.	639967	6983196
13	Three weak EM picks flanking the centre of a large positive magnetic feature to the east. Black, fissile, shaley siltstones outcrop along a creek that follows close to the conductor axis, and a single float occurrence of silicified, quartz veined quartzite with some pyrite and galena in a narrow quartz vein was located in the same creek.	639988	6983381
14	Two weak EM picks located on the east side of a large positive magnetic feature. The area is flat, boggy and heavily vegetated and no outcrop was observed.	641100	6982935
15	Two weak EM picks located near the east side of a large positive magnetic feature. The area is flat, boggy and heavily vegetated and no outcrop was observed.	641222	6983351
16	Five moderate EM picks with no magnetic correlation. Continuous with anomaly #139 and parallel with a carbonaceous fault zone in black shales and siltstones that is reflected intermittently by several other EM anomalies (EM Anomaly # 138, 130, 159-160) It is believed to have a similar source.	641400	6983825
17	A long series of weak conductors that follows a north-south trending, linear valley filled by Snake Lake, and corresponds with a sharp magnetic break. It cross cuts the regional stratigraphic trend and is believed to reflect a fault zone.	641618	6982420
18	A long series of weak to moderate EM picks in an area of low magnetic relief, runs parallel to a linear positive magnetic feature. The area is flat and boggy with heavy vegetation, and no outcrop was observed.	640516	6982108
19	Three weak EM picks associated with positive magnetics. There are several outcrops of quartzite in the area, however most of the anomaly is flat and boggy with heavy vegetation. The south half of the conductor corresponds with a linear gully which may indicate preferential weathering of a recessive rock type such as shale or a fault zone.	640294	6981638
20	Four weak to moderate EM picks between two large areas of positive magnetics. The area is gently sloping, boggy, with thick vegetation and no outcrop was observed.	640271	6981154
21	Three weak EM picks between two small magnetic highs. A sloughed trench dug by Atlas Exploration to test a Zn in soil geochemical anomaly crosses the anomaly. The area is gently sloping, boggy, with thick vegetation and no outcrop was observed.	639044	6981436

EM ANOMALY#	DESCRIPTION	utm east	utm north
22	Two weak EM picks in and area of low magnetics. The anomaly is nearly coincident with several quartz-sulfide vein occurrences outcropping in Hugo Creek. The veins are narrow and are not considered attractive targets, and are thought to be related to a buried intrusive. The host rocks are variably silicified and pyritic quartzites and phyllites and not obviously conductive, and the anomaly is believed to reflect the quartz-sulfide veins.	638990	6980652
23	Four weak EM picks in an area of low magnetics. It is coincident with outcropping carbonaceous black clastics. On strike to the southeast is a linear gully which may indicate preferential weathering of a recessive horizon or fault zone. The conductor likely reflects this feature.	639379	6980467
24	Three weak EM picks that closely parallels a long, linear magnetic high. It is coincident with outcropping carbonaceous black clastics. A similar conductor along strike to the southeast (EM Anomaly# 25) is coincident with a linear gully which may indicate preferential weathering of a recessive horizon or fault zone. At approximately 60 meters to the east of the center of the anomaly, rubble of a leached quartz-sulfide vein was observed along the edge of a snow filled gully. There is a 10 meter diameter area of rusty orange limonitic stained soil over which a compass needle is strongly deflected, suggesting the leached sulfide is pyrrhotite.	639509	6980471
25	Three weak EM picks in an area of flat magnetics. The area is gently sloping alpine meadow with thick buckbrush cover. One outcrop of black chert was observed near the axis, and float of quartz-galena float found nearby. The conductor axis is coincident with a linear gully suggesting that it may reflect a recessive weathering carbonaceous horizon or fault zone.	639966	6979914
26	Four weak EM picks in an area of low magnetic relief. The area is gently sloping alpine meadow with thick buckbrush cover. A few outcrops of black chert pebble conglomerate, black shales and black siltstones are located near the conductor axis, and suggest that the conductor may be reflecting a particular carbonaceous horizon or fault zone within these rocks.	639992	6980321
27	Two weak EM picks coincident with a magnetic break. The area is gently sloping alpine meadow with thick buckbrush cover. No outcrops were observed near the conductor axis. It is coincident with a linear draw or depression suggesting that the conductor may be reflecting a recessive weathering, carbonaceous horizon or fault zone.	639925	6980489
28	Two weak EM picks coincident with a linear magnetic high. Also coincident with a weak gravity anomaly. In flat area with no outcrop. Tested by drillhole AN-01-03. No obvious source.	640808	6981541
29	Three weak to moderate EM picks along narrow magnetic high, paralleling and northeast of #28. A few outcrops of quartzite along axis, but no obvious source.	641147	6981589
30	There are 3 weak EM picks in this area that are located very close to a positive magnetic feature. The trend of the conductor axis can be interpreted as roughly north-south (parallel to the Snake Lake fault zone) or northwest-southeast, which follows the local stratigraphic trend and also the trend of the positive magnetic feature. There are numerous outcrops of quartzite and pyritic, silicified, quartz-veined quartzite in the area. Anomalous Zn values were obtained from rock samples of some of the pyritic, silicified, and veined quartzites. A single, angular, float boulder of coarse, massive pyrite-sphalerite was found in the area of the EM picks (sample #644228). Intensive prospecting failed to locate either more boulders or the source outcrop. A small soil geochemistry grid survey was completed over the area ("Snake Lake grid). A single station Zn anomaly of 1300 ppm was detected upslope of the float occurrence, however further prospecting failed to indicate a source.	641840	6982216
31	This is coincident with a flat, marshy area with thick, black organic cover. No outcrop was observed. It appears to be a surficial response, or may reflect a recessive carbonaceous shale or fault zone.	642326	6982397
32	Two weak EM picks at the eastern end of a long, narrow, positive magnetic feature. Several outcrops of black shales are located close to the conductor axis, with some of them displaying carbonaceous to graphitic shear zones and narrow fault slips.	641850	6980817
33		641096	6980400
34		640814	6980551
35	Two weak EM picks in an area of flat magnetics. An outcrop of black, carbonaceous shale and grit alongside a linear gully was observed close to the conductor axis. The anomaly likely reflects a recessive weathering carbonaceous horizon or fault zone.	640714	6979878
36	Two weak EM picks in an area of flat magnetics. Several outcrops of black, carbonaceous, sheared shales were observed close to the conductor axis. The anomaly likely reflects graphitic shear zones.	640215	6979324
37	Two weak EM picks within a broad magnetic low. No outcrops were observed in the area of the anomaly.	641618	6977585
38	Three weak to moderate EM conductors almost coincident with a linear magnetic high. Because of the attractive profile and coincidence with magnetics, additional ground follow-up was planned on this and an adjoining target on strike (EM Anomaly #39). Gridlines spaced at 200 meters were cut in preparation for additional work (grid "B"). Mapping and prospecting indicated a close coincidence of a graphitic and carbonaceous fault zone in black clastic and carbonate sediments. Soil samples collected over the anomaly along gridlines failed to detect any enhanced metal values. The anomaly is believed to reflect a fault and no further work was undertaken.	642970	6979542

EM ANOMALY#	DESCRIPTION	utm east	utm north
39	Three weak to moderate EM conductors almost coincident with a linear magnetic high. Because of the attractive profile and coincidence with magnetics, additional ground follow-up was planned on this and an adjoining target on strike (EM Anomaly #38). Gridlines spaced at 200 meters were cut in preparation for additional work (grid "B"). Mapping and prospecting indicated a close coincidence of a graphitic and carbonaceous fault zone in black clastic and carbonate sediments. Soil samples collected over the anomaly along gridlines failed to detect any enhanced metal values, except for a spot Zn high from a sample collected in sandy flood gravels in East Creek valley. The EM anomaly is believed to reflect a fault and no further work was undertaken.	643243	6979082
40	Two weak EM picks located 180 meters northeast of an isolated magnetic high. No outcrop was observed in the area, which is heavily vegetated. It lies on strike with a gossanous bluff of rusty weathered black shales 100 meters to the southeast.	641618	6977585
120	This is an isolated high magnetic response about 50 by 200 meters in area with no associated conductivity. It lies on a gently sloping, heavily vegetated area with thick moss cover. No outcrop was observed in the immediate area. It lies on strike with an exposure of silicified, quartz-veined siltstone.	643964	6982192
130	The conductor axis is coincident with a linear gully that reflects preferential erosion in recessive rocks, most likely sheared, black, carbonaceous shales as suggested by nearby outcrops. It is also directly on strike of anomaly 159, which is clearly reflecting a zone of fault related shearing and brecciation with carbonaceous, clayey fault gouge and graphite.	643964	6982192
137	Three moderate EM picks with no magnetic correlation. It is coincident with a carbonaceous fault zone in black shales and siltstones that is reflected intermittently by several other EM anomalies along strike (EM Anomaly # 138, 159-160)	642897	6983010
138	Three moderate EM picks with no magnetic correlation. It is coincident with a carbonaceous fault zone in black shales and siltstones that is reflected intermittently by several other EM anomalies along strike (EM Anomaly # 130, 159-160)	642039	6983280
139	Five moderate EM picks with no magnetic correlation. It is parallel with a carbonaceous fault zone in black shales and siltstones that is reflected intermittently by several other EM anomalies (EM Anomaly # 138, 130, 159-160) It is believed to have a similar source.	642158	6983545
140	Three moderate EM picks with no magnetic correlation. It is parallel with a carbonaceous fault zone in black shales and siltstones that is reflected intermittently by several other EM anomalies (EM Anomaly # 138, 130, 159-160) It is believed to have a similar source.	642009	6983830
141	Two moderate EM picks with no magnetic correlation. It is parallel with a carbonaceous fault zone in black shales and siltstones that is reflected intermittently by several other EM anomalies (EM Anomaly # 138, 130, 159-160) It is believed to have a similar source.	641861	6984045
143	Three moderate EM picks with no magnetic correlation. It is parallel with a carbonaceous fault zone in black shales and siltstones that is reflected intermittently by several other EM anomalies (EM Anomaly # 138, 130, 159-160) It is believed to have a similar source.	640633	6984930
158	No outcrop observed in the immediate area of the anomaly. It is covered by talus derived from hornfelsed, pyritic sediments in the thermal aureole of a Cretaceous granitic stock about 800 meters to the east. It lies within the thermal aureole of a Cretaceous granitic stock about 900 meters to the east that is surrounded by a ring of spikey magnetic relief. Nearby outcrops suggest the conductivity reflects fault related shearing and brecciation focused in black carbonaceous shales. Zones of carbonaceous, clayey fault gouge and graphite are well exposed on the nearby, paralleling anomaly #159. Magnetic response is due to disseminated pyrrhotite.	645159	6981428
159	There is abundant outcrop exposed along the axis of the conductor along a stream bank. It lies within the thermal aureole of a Cretaceous granitic stock about 900 meters to the east that is surrounded by a ring of spikey magnetic relief. It is coincident with a 50 meter wide zone of fault related shearing and brecciation focused in black carbonaceous shales. Zones of carbonaceous, clayey fault gouge and graphite are believed to be the source of the conductive response.	644850	6981495
160	No outcrop observed in the immediate area of the anomaly. It is covered by talus derived from hornfelsed, pyritic sediments in the thermal aureole of a Cretaceous granitic stock about 900 meters to the east. The conductor axis in coincident with a small, positive magnetic response, one of several which define a ring of spikey magnetic relief surrounding the stock. Nearby outcrops suggest the conductivity reflects fault related shearing and brecciation focused in black carbonaceous shales. Zones of carbonaceous, clayey fault gouge and graphite are well exposed on the nearby, paralleling anomaly #159. Magnetic response is due to disseminated pyrrhotite.	644791	6981648

9.0 DRILLING

Fifteen drillholes totaling 2,717.66 meters of NQ sized core were completed in 2001 over two time periods. The first was from July 25th to August 14th in which the first eleven holes were completed. The second was from September 21st to October 13th in which the final four holes were drilled. The first attempt to drill hole AN-01-05 was abandoned at a depth of 41.5 meters. This meterage is not included in the above total.

Drilling was contracted to Advance Drilling Ltd. A Boyles 25 "fly" drill, unitized for helicopter transport, was utilized. Drill crews of two men each worked a 12 hour shift, and work was supervised by a foreman. Preparation of drill pads, and site reclamation was undertaken by the drilling contractors. Crew changes, drill moves and servicing relied on helicopter support. Camp facilities were provided by Noranda. The drill rig and equipment were secured and left in place on the final pad, in anticipation of additional drilling in 2002.

The core was placed in wooden trays at the drillsite, secured with lids, and transported by helicopter to the camp. All the core, except for an interval in hole AN-01-11, was cross-piled near the camp and covered with plywood lids. The interval from 86.6 to 117 meters in hole AN-01-11 was transported to Whitehorse following splitting and will be shipped to the Noranda Inc. office in Thunder Bay, Ontario.

Noranda Inc. personnel performed logging and sampling at the camp. All observations and analytical data were entered into a Gemcom drillhole database. Drillhole locations were surveyed with handheld GPS units and are shown on figure 7. Azimuth and dip measurements were surveyed down the hole at approximately 50 meter intervals using a Reflex EZ Shot borehole survey instrument. Table 5 summarizes the targets, locations, and other information. The results are summarized in table 6. The composited assays listed have been weighted by specific gravity determinations. Certificates of analysis and drill logs are provided in Appendix III and V.

9.1 Andrew Showing

Ten holes were collared in and around the Andrew Showing. Holes were drilled in several directions and are depicted in 6 irregularly oriented sections (Figures 8 – 13). The first drillhole (AN-01-04) intersected significant base metal mineralization (12.84% Zn and 0.12% Pb over 27.50 m (core length) from 110.1 to 137.6 m), primarily as coarse sphalerite veins, with lessor massive, coarse-grained lenses with galena and calcite, and in places as patchy to disseminated replacements. In places, calcite crosscuts the sphalerite and in others, sphalerite appears to be replacing calcite. Fragments of quartzite are still present but there is a considerable amount of open-space filling. The mineralization occupies a zone of brecciation in a unit dominated by quartzite, with lesser grey and black shales, that has an apparent thickness on the section of 150 m. Drilling downdip from this drillhole returned much less significant results in AN01-13 (approximately 80 m downdip).

Hole AN-01-08 was drilled approximately 800 east-southeast of the Andrew showing, to test an area where numerous boulders of similar mineralization suggested a possible extension or similar setting. No significant mineralization was intersected.

Stratigraphy

In both AN01-04 and AN01-13, the quartzite is overlain by a black shale dominated unit, then a sequence of maroon, green and grey shales. The black shale unit is commonly brecciated, with black shale fragments in a black shale matrix, possibly indicative of syndepositional slumping. The host quartzite is underlain by a limestone & calcarenite unit that is intersected in the two westernmost sections. Limestone also occurs unpredictably within the black shale sequence in intersections of varying thickness and it is suggested that these could be slump blocks indicative of syndepositional faulting.

Table 5. Drillhole Information

HOLE ID	TARGET	START	FINISH	DEPTH	CAMP	DIP	AZM	CASING DEPTH	GRID EAST	GRID NORTH	ELEV	UTM EAST	UTM NORTH	LOGGED BY	REMARKS
AN0101	Lad showing at -50m level	15-Jul-01	18-Jul-01	141.7	AMB 83	-50	225	3	380	443	1122	639596	6982428	C. Barr	No significant mineralization intersected. Lad showing has no continuity at depth.
AN0102	Coincident Mag-EM response	18-Jul-01	20-Jul-01	149.4	AMB 84	-50	225	8	389	737	1120	639818	6982654	C. Barr	Anomaly reflects sheared, carbonaceous rocks with minor pyrrhotite.
AN0103	Coincident Mag-Gravity anomaly	20-Jul-01	22-Jul-01	160.3	AMB 59	-50	220	9.14	1825	513	1202	640830	6981602	C. Barr	Anomaly reflects sheared, carbonaceous rocks with minor pyrrhotite.
AN0104	Andrew Kill Zone Showing at -75m vertical	23-Jul-01	25-Jul-01	171.6	ANDREW 7	-50	218	9.1	1080	412	1302	641590	6978292	C. Barr	Intensely carbonatized zone with extensive sphalerite mineralization from disseminated to massive.
AN0105	Gravity high on L1000E/500N	26-Jul-01	28-Jul-01	195.1	ANDREW 8	-51	218	5.2	990	577	1297	641604	6978472	C. Barr	No mineralization
AN0106	Andrew Breccia Zone 180m west of AN0104	29-Jul-01	31-Jul-01	159.7	ANDREW 7	-50	218	26.8	895	350	1342	641393	6978349	C. Barr	No mineralization
AN0107	Andrew Breccia Zone 150m east of AN0104	01-Aug-01	01-Aug-04	176.8	ANDREW 7	-52	200	NULL	1184	465	1282	641704	6978272	C. Barr	No mineralization
AN0108	Widespread Zn and Pb mineralization, Atlas "A" area	04-Aug-01	06-Aug-01	146.3	ANDREW 7	-50	205	4.6m	1802	700	1195	642337	6978040	C. Barr	Only minor sphalerite mineralization encountered.
AN0109	100m vertically below AN0104	07-Aug-01	09-Aug-01	239.3	ANDREW 7	-52	343	10.4	1167	276	1250	641569	6978138	C. Barr	No mineralization intersected. Faulting occurred throughout most of the hole from top to bottom.
AN0110	Pinnacle Showing at -75m vertical	10-Aug-01	11-Aug-01	98.5	AMB 99	-50	158	12.8	NA	NA	1005	639695	6983921	C. Barr	Massive sulfide pods at surface do not extend to depth.
AN0111	Stepout between ddh 4 and 7 at the Andrew Kill Zone	12-Aug-01	14-Aug-01	126.5	ANDREW 7	-50	155	18m	1080	414	1302	641591	6978293	C. Barr	Mineralized breccia with intense calcite alteration intersected over 25m with sphalerite, galena, and trace chalcopyrite. Drill left on site.
AN0112	75m down-dip below AN01-11	21-Sep-00	26-Sep-01	215.5	ANDREW 7	-80	155	4.6	1080	414	1302	641591	6978293	D. King	Several mineralized breccia intervals
AN0113	100m down-dip of AN01-04	27-Sep-01	03-Oct-01	308.76	ANDREW 7	-55	185	5.9	1019	500	1310	641547	6978404	D. King	Several mineralized breccia intervals
AN0114	100m west of AN01-04	04-Oct-01	09-Oct-01	210.9	ANDREW 7	-55	180	5.9	1032	333	1332	641444	6978303	D. King	Several mineralized breccia intervals
AN0115	80m downdip of AN01-14	09-Oct-01	13-Oct-01	217.3	ANDREW 7	-75	180	4.6	1032	333	1332	641444	6978303	D. King	Several mineralized breccia intervals

In summary, four units form the basis of the geological interpretation presented on the drill sections for the Andrew area. A basal limestone reflects stable carbonate sedimentation and the overlying quartzite may signal the start of platform drowning and the arrival of clastic detritus from some distance. Rapid onset of highly reducing conditions indicated by the black shales was probably accomplished by some fault control, with the underlying limestones partly exhumed and shed as slump blocks into the fault controlled basin. Shallowing probably resumed and is recorded by the green and maroon shales. These units reflect approximately 300 m in the immediate Andrew area and no attempt is made to extrapolate it.

Structure

Many zones of fault breccia and gouge were logged in the middle of the Andrew deposit area (Figures 10, 11, 12) and a multitude of interpretations are permissible. The outboard sections of the deposit, however (Figures 9 and 13), are similar in that they both reveal minor basemetal mineralization associated with a single fault. It is not possible to construct a reasonably planar surface that passes through both ends of the deposit, and through known faults in the middle. The interpretation depicted on the sectional interpretations, is that two NW-SE, steeply northeast-dipping faults pass through the outboard sections, and terminate in the area of the Andrew showing. Stress is transferred between the two by several east-west faults that localize the mineralization, giving it it's characteristic east-west strike, and high angle to bedding. Although lithological patterns indicate reverse movement on these faults, they could be primarily strike-slip and have abundant dilational sites along them. Note that AN-01-08 (Figure 8), collared 700 m east of the Andrew deposit, penetrated a fault zone from 18.5 to 42.7 m. No significant mineralization was intersected but the fault could represent another left step from the Andrew fault system. No attempt was made to place it in the limited stratigraphy developed in the area of the Andrew deposit.

Metal zoning

The four most significant intersections in the centre of the Andrew deposit (4, 11, 12 and 13) are low in Ag (generally < 5 g/t) and have Zn > Pb, or Zn >> Pb. Outboard of these to the west (14 and 15) and east (7), Pb:Zn is approximately 3:1 and Ag increases to > 30 g/t. Analytical data are summarized as composites on Table 6. Estimates of true thickness are based on the vertical and horizontal angles of intersection between the drillholes and the inferred distribution of mineralization.

9.2 Lad

AN-01-01 was collared to test the Lad showing down dip of surface mineralization and previous shallow drilling. It intersected a quartzite host rock although no significant mineralization was present. The quartzite is overlain by black shale, as at Andrew, and a fault contact between this and overlying quartzite invites comparison with the structural setting at Andrew. This interpretation is offered on Figure 15. Hole AN-01-02, which tested a geophysical anomaly about 250 meters to the northeast, intersected several fault zones in a shale sequence, but no mineralization. Hole AN-01-03 (figure 14) tested a coincident electromagnetic-magnetic-gravity feature about 1,400 meters southeast of the Lad showing, and intersected several zones of sheared, carbonaceous shales with minor pyrrhotite.

9.3 Pinnacle

AN-01-10 was collared to test the Pinnacle occurrence. A mineralized zone at 48.4 – 62.1 consists of strongly silicified and brecciated quartzite with approximately 1% disseminated pyrite and no significant basemetal concentrations.

Table 6. Drilling Results Summary

HOLE-ID	FROM	TO	DESCRIPTION	SIGNIFICANT ASSAYS, COMPOSITED						
				from	to	sampled length	estimated true length	%Pb	%Zn	g/tAg
AN-01-01	0.00	24.10	Grey coloured fine- to medium grained, with thin interbeds of dark grey to black argillite.							
	24.10	27.40	Fine-grained light grey quartzite with up to 1% disseminated pyrrhotite locally.							
	27.40	28.70	Fault breccia with 1% stringer pyrite.							
	28.70	48.60	Dark grey-black shale, with thin siltstone interbeds. 1-2% disseminated po+py+sp+gal from 40-44.5m.							
	48.60	70.80	Light grey, fine-grained, massive quartzite with 2% disseminated po, py on fractures.							
	70.80	73.20	Pale green, silicified shale.							
	73.20	77.50	Siliceous, light grey-white felsic dyke.							
	77.50	141.70	Black to maroon, to light green-grey shale. Local silicification. 100.5-118.6m fault zone, local trace po, cp, sp, gal.							
AN-01-02	0.00	7.70	Large boulders or possibly bedrock, intensely broken core.							
	7.70	25.50	Dark grey, silica, carb altered shale and siltstone.							
	25.50	37.00	Fault brecciated clasts of quartzite, siltstone and black shale in a silica, carbonate healed matrix. Locally graphitic.							
	37.00	67.20	Shale as above. Local trace po.							
	67.20	93.00	Brecciated black shale and siltstone. Locally graphitic.							
	93.00	103.40	Massively bedded fine-grained quartzite to local siltstone.							
	103.40	112.60	Grey to black shale.							
	112.60	118.60	Fault zone, intensely sheared with quartz-carb stringers, 1% po, py and local graphite.							
	118.60	149.40	Interbedded dark shale and siltstone.							
AN-01-03	0.00	10.00								
	10.00	24.70	Massive, pale grey limestone.							
	24.70	46.50	Grey to black well bedded shale with pervasive silica, carbonate alteration.							
	46.50	57.20	Massive quartzite and sandstone.							
	57.20	74.50	Grey to black shale with local pale green bleached zones.							
	74.50	80.50	Blocky core with clay filled fault gauge in mixed shale, quartzite.							
	80.50	96.60	Shale as above. Local po associated with quartz-carb veinlets.							
	96.60	121.70	Massive, crystalline limestone with cm scale black shale interbeds.							
	121.70	134.00	Grey-green to black shale							
	134.00	137.20	Massive limestone as above. Local trace pyrite.							
	137.20	149.70	Massive medium grained quartzite. Fault from 139-143m. Graphitic and 1% po.							
	149.70	160.30	Green to buff coloured shale. 150.8-154.9m fault with 1-2% po stringers.							
AN-01-04	0.00	1.50	Overburden							
	1.50	24.10	Fine grained maroon coloured shale.							
	24.10	37.90	Green shale.							
	37.90	43.80	Black shale.							
	43.80	52.90	Green, black and maroon shale. Fault gauge at base of unit.							

HOLE-ID	FROM	TO	DESCRIPTION	SIGNIFICANT ASSAYS, COMPOSITED						
				from	to	sampled length	estimated true length	%Pb	%Zn	g/tAg
	52.90	87.90	Medium-grained massive, light grey quartzite. Local sp, gal beginning 84.4m..							
	87.90	95.60	Grey-green shale cut by calcite stringers and veinlets with associated local sphalerite.							
	95.60	138.50	Brecciated, silicified, intensely carbonatized with altered quartzite clasts. Content of dark brown sphalerite varies from disseminated to massive and appears to both be cut by later calcite veining and to be replacing the calcite. Overall sphalerite content approximately 20%	96.60 110.10	103.40 137.60	6.80 27.50	3.33 13.48	0.01 0.12	10.78 12.84	0.6 1.8
	138.50	166.60	Quartzite with calcite veins.							
	166.60	171.60	Dark grey to black shale with local fault gauge.							
AN-01-05	0.00	5.20								
	5.20	73.00	Interbedded quartzite and fine-grained sandstone/siltstone.							
	73.00	126.70	Well bedded fine-grained maroon shale interbedded with short intervals of green-grey shale..							
	126.70	195.10	Dark grey to black coloured shale. Possible fault zone from 132.1-138.7m and 143.2-153.7m. Minor disseminated pyrite within the black shale.							
AN-01-06	0.00	3.10								
	3.10	19.80	Well bedded at 35-55 deg to c.a. (av. 40 deg), thin 5-20cm thin interbeds of grey-green shale.							
	19.80	72.00	Locally brecciated with minor graphite, minor narrow coarse sandstone and quartzite, bedding at 40 deg to core axis							
	72.00	85.80	Massive, minor c.g. sandstone, local breccia with minor graphite							
	85.80	89.90	Clay fault gouge intervals up to 1m thick, 2-3% Py							
	89.90	97.00	Intense calcite veining/flooding with local minor Sp-Gal-Py and quartzite clasts, blocky core, 85% recovery.							
	97.00	106.00	As 72-85.8m, minor silty and shale beds <0.5m thick, bedding 40 deg to c.a., lower 2m contains moderate carb and 1-2% Py							
	106.00	131.10	Dark grey to green shale, minor beds of thin <1m limestone beds with shale partings defining bedding at 40 degrees to c.a., qtz-carb stringers common and decrease downhole							
	131.10	159.70	Grey and m.g., locally silty, sandy, and microcrystalline, shale partings at 40 degrees to c.a., minor calcite veinlets and stringers.							
AN-01-07	0.00	6.10								
	6.10	17.70	F.g., minor silty beds, bedding 30-45 degrees to c.a.							
	17.70	33.00	F.g., maroon coloured shale with bedding at 40-45 degrees to c.a.							
	33.00	58.70	Soft, f.g., in general grey coloured but gradational change in colour to narrow green and maroon beds, minor quartzite beds <1m thick.							
	58.70	62.60	Grey, microcrystalline, dark shale partings give unit a stylolitic appearance at 45 degrees to c.a., 5-10cm clay fault gouge at 62.1m							
	62.60	111.60	Locally greenish, gradational change in colours, fault breccia at 68.6-72.2m, local Gal within 75.3-76.2m, lost 1m core from 74.3-75.3m, locally 50% Gal concentrated from 80.8-81.2m in badly broken core.							
	111.60	143.00	Light grey, local sandstone and minor thin 1-2m beds of very coarse quartzite to quartz pebble conglomerate, unit is massive in general but thin shale partings define bedding at 45-50 degrees to c.a., unit cut by fine dark quartz stringers and minor white							
	143.00	176.80	Dominated by greyish colour but local gradational changes to green and black, thinly bedded at 45-50 degrees to c.a., single 1cm of massive sphalerite at 167.7m							

HOLE-ID	FROM	TO	DESCRIPTION	SIGNIFICANT ASSAYS, COMPOSITED						
				from	to	sampled length	estimated true length	%Pb	%Zn	g/tAg
	18.50	42.70	Brecciated dark grey to black shale with rounded clasts of quartzite, siltstone, shale and limestone, lower 1-1.5m is partially washed out clay fault gouge.							
	42.70	59.90	Top few meters is clay gouge and bleached, locally pale green to maroon in colour, bedding as defined by narrow siltstone and fine quartzite ranges from 30-50 degrees to c.a.							
	59.90	92.70	Grey brecciated limestone with intense carbonatization (calcite) and rare isolated sphalerite clots/stringers at 63.9m and 72.6m with rare small blebs in between. Thin mm to dc scale dark grey to black shale and siltstone beds intermixed with the common							
	92.70	146.30	Well laminated to thinly bedded alternating grey to black shale at 40-85 degrees to c.a.(av. 80 deg), local thin dc scale limestone beds, top of unit is highly calcareous decreasing downhole, calcite stringers and veinlets are generally restricted to more							
AN-01-09	0.00	6.10								
	6.10	28.80	Intensely faulted and altered limestone with quartz-calcite stringers/veinlets/flooding. Poor core recovery, about 70% overall but most is lost closer to the top where clay gouge material is washed out, core is commonly fractured and broken parallel to s							
	28.80	41.40	Predominantly f.g. grey limestone commonly with grains of sand, silt and clay. Some narrow thin beds are either calcareous clastics or sandy limestones which grade into thicker beds of limestone, bedding averages 20 degrees to c.a.							
	41.40	52.40	Cherty grey shale interbedded with thin siltstone units, bedding 15-20 degrees to c.a., black shale bed from 45-48.7m is highly deformed with bedding varying from 30 degrees to parallel to c.a., lower contact is black clay-rich fault gouge mixed with calc							
	52.40	56.10	Intensely sheared, 70% quartz-carbonate with black clay-rich fault gouge infill, weakly graphitic, lower contact sharp to c.a. at 45 degrees							
	56.10	190.10	Calcareous quartzite and sandstone with well laminated/thinly bedded light grey chert and shale, bedding varies 35-40 degrees to c.a.near the top but gradually changes to 45 degrees by 190.5m, 60.1-67.2m is faulted black shale unit, most of unit is faulted							
	190.10	206.80	Grey shale and interbedded siltstone, significant change in bedding from above quartzite, bedding ranges from 0-15 degrees to c.a. which is typical of the shale units							
	206.80	218.10	Poor recovery of about 70% of highly deformed (broken, sheared, and folded) dark shale beds with black clay gouge material, locally graphitic, mixed at bottom with faulted calcareous quartzite.							
	218.10	229.60	Calcareous quartzite cut by weak to moderate quartz-calcite stringers and veinlets, local silty limestone or calcareous siltstone (take your pick) with thin black shale partings defining bedding at 25 degrees to c.a., unit changes to dark grey sandstone b							
	229.60	239.30	Faulted shale with siltstone beds, bedding parallel to subparallel to c.a. but also up to 25-30 degrees and wavy, minor quartz-calcite stringers at low angle to bedding, bottom meter or so appears to be more like the grey sandstone again with minor cross-							
AN-01-10	0.00	18.90	Casing driven down to 18.9m and appears to be just barely in the outcrop.							
	18.90	29.40	Faulted f.g. grey quartzite, poor recovery of about 60% rubble, what's left of the host is silicified with minor calcite stringers, the silicification occurs as crosscutting grey quartz along fractures and locally as matrix fill but also as a milky white							
	29.40	41.00	Top of unit is broken and silicified and a bleached pale green, recovery is about 70% down to 36.9m, bedding ranges from 30-45 degrees to c.a., core becoming green again towards lower contact.							

HOLE-ID	FROM	TO	DESCRIPTION	SIGNIFICANT ASSAYS, COMPOSITED						
				from	to	sampled length	estimated true length	%Pb	%Zn	g/tAg
	62.10	98.50	Light grey, local fine dark grey silicification, massive unless mixed with thin silty beds (20-40 deg to c.a.), dark grey silicification intensifies from 68.1-76.5m and contains minor pyrite and galena disseminations and smears along fractures, the hole a							
AN-01-11	0.00	12.80								
	12.80	24.70	Maroon coloured, soft, poor recovery to 16.8m (30%), bedding 40 degrees to c.a.							
	24.70	47.50	locally dark grey to black, bedding ranges from 60 degrees near top of unit to 85-90 degrees to c.a. near bottom, minor calcite stringers, 43.6-46.1m is 5cm thick deep mauve coloured shale interbedded with 0.2-1cm green shale beds, bedding now 75-90 degree							
	47.50	54.80	F.g., grey, moderate dark grey quartz along fractures - typical silicification of the quartzite, increase in calcite stringers compared to above shale, few thin 5-20cm limestone beds at 80 degrees to c.a., minor grey-green shale beds.							
	54.80	58.70	Minor silty lenses, blocky core with minor fault gouge at 56.4-58.7m, local calcite veining							
	58.70	70.40	Maroon shale changing to deep mauve colour near upper and lower contacts and is interbedded with thin 1cm average green shale, maroon shale generally >10cm thick beds at 40-45 degrees to core axis, 30cm light grey microcrystalline limestone near lower con							
	70.40	72.80	Grey shale with numerous thin 2-20cm limestone beds accounting for approximately 30% of the unit, bedding averages 45 degrees to c.a but up to 65 degrees, limestone is cut by weak to moderate calcite stringers.							
	72.80	87.10	Light to moderate grey, cut by calcite stringers/veinlets that intensifies downhole, moderate dark grey quartz alteration along fractures, local blocky core with good recovery of 90-100%, minor thin dark grey shale beds with fault gouge at contacts.							
	87.10	112.00	Brecciated quartzite with intense calcite flooding/veining/stringers, top of unit is intensely silicified with white quartz, approximately 15% sphalerite ranging from disseminated to massive, galena is relatively spotty and occurs as blebs, clots and vein	89.00	107.50	18.50	12.77	3.12	14.89	12.6
	112.00	124.50	Breccia consists of quartzite, shale, and limestone clasts floating in a calcite matrix, calcite alteration is intense but decreases downhole and grades into a carbonatized quartzite, minor amounts of galena occur as clots along fractures with calcite vein							
	124.50	126.50	Sheared and blocky green to green-grey shale, moderate calcite stringers, 70-80% recovery, fault gouge 124.6-124.8m							
AN-01-12	0.00	7.70	Overburden							
	7.70	146.70	Shale, Quartzite							
	146.70	151.15	Carbonatized Quartzite Breccia							
	151.15	164.20	Mineralized Breccia	151.15	163.15	12.00	5.40	0.01	5.25	0.8
	164.20	165.90	Grey Shale							
	165.90	176.65	Mineralized Breccia	167.00	173.20	6.20	2.79	0.01	6.13	0.7
	176.65	180.15	Carbonatized Quartzite Breccia							
	180.15	181.15	Mineralized Breccia							
	181.15	187.50	Carbonatized Quartzite Breccia							
	187.50	215.50	Quartzite							
AN-01-13	0.00	5.90	Overburden							

HOLE-ID	FROM	TO	DESCRIPTION	SIGNIFICANT ASSAYS, COMPOSITED						
				from	to	sampled length	estimated true length	%Pb	%Zn	g/tAg
	137.50	140.50	Diorite?							
	140.50	149.00	Shale-limestone breccia							
	149.00	199.85	Limestone, shale quartzite							
	199.85	200.20	Mineralized Breccia							
	200.20	214.70	Grey Shale							
	214.70	221.50	Mineralized Breccia	214.70	255.60	40.90	32.31	0.90	1.13	2.2
	221.50	227.00	Carbonatized Brecciated Quartz	Includes:						
	227.00	229.70	Mineralized Breccia	214.70	221.50	6.80	5.37	0.01	2.61	0.5
	229.70	237.40	Shale	and						
	237.40	243.60	Mineralized Breccia	251.15	255.60	4.45	3.52	6.32	2.40	12.5
	243.60	245.45	Grey Shale							
	245.45	253.80	Carbonatized Brecciated Quartz							
	253.80	255.60	Mineralized Breccia							
	255.60	260.00	Carbonatized Brecciated Quartz							
	260.00	261.60	Fault							
	261.60	308.76	Quartzite, Shale							
AN-01-14	0.00	4.80	Overburden							
	4.80	51.30	Shale							
	51.30	51.80	Fault?							
	51.80	87.20	Quartzite, limestone, shale							
	87.20	87.50	Fault Gauge							
	87.50	113.60	Shale							
	113.60	117.30	Quartzite to Breccia							
	117.30	123.50	Black Shale							
	123.50	125.20	Mineralized black shale	123.35	127.90	4.55	3.69	24.52	6.59	64.3
	125.20	127.90	Mineralized Fault Zone							
	127.90	210.90	Sandstone, limestone, shale, siltstone							
AN-01-15	0.00	4.60	Overburden							
	4.60	141.20	Shale, quartzite, minor limestone							
	141.20	141.50	Mineralized black shale	141.20	143.75	2.55	1.45	22.63	3.59	60.9
	141.50	143.00	Black Shale							
	143.00	143.50	Mineralized Fault?							
	143.50	143.75	Galena vein							
	150.30	162.00	Mineralized Breccia	153.60	162.00	8.40	4.79	18.84	9.52	67.9

HOLE-ID	FROM	TO	DESCRIPTION	SIGNIFICANT ASSAYS, COMPOSITED						
				from	to	sampled length	estimated true length	%Pb	%Zn	g/tAg
	162.00	180.50	Quartzite, shale							
	180.50	185.85	Black Shale/Breccia							
	185.85	196.10	Mineralized Zone	185.85	196.10	10.25	5.84	20.16	10.98	45.7
	196.10	217.30	Carbonaceous sandstone							

10.0 SAMPLING METHODOLOGY

10.1 Soil Geochemistry

Soil samples were collected over selected areas of the "B" and "D" grids, as well as a few isolated single samples. Soil geochemistry may provide an indication of enhanced metal concentrations in underlying rocks, providing the soil profile has been stable for a significant period of time. Samples were collected at 25 meter intervals along lines spaced at 200 meters. A total of 158 soil samples were collected and analyzed. Soils were collected by digging through the organic and leached layer with a hoe. An approximately 0.5 kilogram sample of "B" horizon material was placed in Kraft paper envelopes marked with the grid station co-ordinate. Results were entered into a digital spreadsheet and processed with commercial software.

10.2 Rock Samples

Rock samples were collected from outcrop and boulders by chipping with a rock hammer. Between 0.5 to 2 kilograms of 2 to 10 centimeter sized chips were placed in a clear, heavy-duty plastic bag, labeled with a number written on the bag and a heavy paper ticket placed inside. This method is less time consuming than channel sampling, however it only provides semi-quantitative results that can not be used in any resource estimation. A total of 155 rock samples were collected and analyzed. The samples were packed in polyweave bags at the camp and shipped for analysis at ALS Chemex Laboratories in Vancouver, B.C.

10.3 Drillcore

Drillcore was cleaned with water, logged, digitally photographed, and marked for sampling by the geologist at the camp. Only rocks with visible mineralization and adjacent to visible mineralization were sampled. Sample intervals were determined where clear mineralogical or lithological contrasts were observed. The minimum sample interval used was 0.3 meters, maximum was 1.6 meters, and average was 0.94 meters. Within intervals of similar mineralogy and lithology longer than about 1.6 meters, a maximum interval of 1.0 meters was used. These methods assured that a high-grade interval would not be assigned an exaggerated length, and provide a more accurate indication of the distribution and control of mineralization. A total of 227 samples from 6 holes were collected.

11.0 SAMPLE PREPARATION, ANALYSES, SECURITY

11.1 Soil Samples

Soil samples were air dried at camp, recorded on transmittal sheets, then packed in polyweave bags and shipped for analysis to ALS Chemex Laboratories in Vancouver, B.C. The samples were transported internally by the camp helicopter to our expediting service in Faro, who were responsible for delivering the bags by truck to Whitehorse. From Whitehorse, the bags were shipped by commercial trucking services direct to the lab in Vancouver. At the lab, the samples were oven dried, and sieved through a –180 micron mesh. A nitric-aqua regia digestion is performed, and a 32-element ICP analysis performed. The sample preparation and analytical technique applied is specified on each lab report, and is described in Appendix II.

11.2 Rock Samples

Rock samples were recorded, packed in polyweave bags at the camp and shipped for analysis to ALS Chemex Laboratories in Vancouver, B.C. Transportation was the same as used for the soil samples. At the lab, the samples were oven dried, and sieved through a –180 micron mesh. A nitric-aqua regia

digestion is performed, and a 32-element ICP analysis performed. The sample preparation and analytical technique applied is specified on each lab report, and is described in Appendix II.

11.3 Drillcore

Splitting was performed by a student geologist employed by Noranda and under the supervision of the geologist. An electric masonry saw with a sliding tray and circular diamond blade lubricated with fresh, non-recirculated water was used for all intervals except hole AN-01-11. Samples from hole AN-01-11 were split with a manual hydraulic splitter, due to mechanical problems with the masonry saw at the time. The split portions were placed in heavy duty, clear polythene bags with an identifying number marked on the bag and on a white heavy paper ticket placed inside the bag. The samples were recorded, packed in polyweave bags at the camp and shipped for analysis to ALS Chemex Laboratories in Vancouver, B.C. as for other samples, except that drillcore was freighted by commercial air services from Whitehorse to Vancouver. Both geochemical and assay analyses were performed, and laboratory preparation and analytical techniques applied are specified on each lab report, and are described in Appendix II.

12.0 DATA VERIFICATION

Noranda's standard QAQC procedure for initial stage drilling projects was implemented. The protocol is fully described in the report "Drill Core Sampling and Analysis Protocols", an internal manual formulated in 2000. The protocol calls for submission of blanks, control samples, and duplicates (remaining half of core) in all sample batches submitted to the lab. Pulp replicate analyses are also undertaken. A control sample database is maintained and results are charted as difference from expected values versus sample or batch number plots (control standards), or mean versus the difference plots (duplicates, repeats, and cross-checks).

12.1 Control Standards and Blanks

Standards were purchased from Geostats, a sampling and assay monitoring service based in Australia. Two different standard samples were used. Round robins conducted by Geostats give average values of 0.01% Cu, 1.38% Pb, 28.00% Zn and 9.7g/t Ag for standard GBM399-8, and 0.01% Cu, 0.96% Pb, 3.02% Zn, and 1.9g/t Ag for standard GBM300-8. One standard sample, consisting of 25 to 50 grams of pulp, was inserted every 20 samples on average for each shipment. Blanks were made from rock chips of barren quartzite collected on the property, and one sample weighing 0.5 to 1.0 kilograms was inserted every 20 samples on average for each shipment. Duplicate samples (the other half of the split core) were not submitted, as it was considered more important to preserve the core at this early stage.

Results for assay analyses of standards and blanks are presented graphically on charts of expected values (round robin average) versus the difference from the expected values, in Appendix VI. Charts of Cu, Pb, Zn and Ag assays for each standard and blank were prepared. For the standards, Pb, Zn and Ag values fall within a 2 standard deviation tolerance, except for a few marginal outliers. For Cu, there are more values beyond the 2 s.d. tolerance, however as the concentration in the standard is close to the lower limits of detection, this is not considered significant. Charts of assays on blank samples indicate a few marginal outliers. Note that no round robins were conducted for the blank. The standard deviation is calculated from the assays reported here. The high standard deviations may reflect the small population size and/or minor cross contamination from high-grade samples during sample preparation at the field or lab.

12.2 Pulp Replicates

Selected pulps from samples with high Pb and Zn assays were reanalyzed by ALS Chemex. Mean versus difference charts in Appendix VI show that most of the differences are within a tolerance of +/-10%

of the mean of the two analyses. There are a few marginal outliers, but these are not considered significant. However, on average, the second assay is lower. The average difference as a per cent of the second assay is –4.8% for Zn and –6.6% for Pb. Additional analyses including duplicates and cross-checks of pulps and rejects at a second lab are required to address this.

Note that the composited values listed in the tables above were calculated using the original assay results.

13.0 INTERPRETATION AND CONCLUSIONS

No clear evidence of stratiform, sediment hosted massive sulfide mineralization was observed on the property. New mineralization intersected in drilling at the Andrew showing is interpreted here as structurally controlled in the extensional zones caused by left-stepping of a sinistral fault system. As such, additional mineralization could be found in similar structural settings to the northwest and southeast. Although a few of the Andrew sections (Figures 10 and 11) indicate a diminishing of mineralization with depth, others (Figure 12) suggest the best mineralization may improve with depth.

At the Lad, Hugo Creek and Pinnacle areas, mineralization is weak and displays poor continuity. The style is distinct from the Andrew. The association of silicification with chalcopyrite and pyrrhotite in addition to sphalerite and galena suggest the mineralization is hydrothermal. The heat source is likely due to the presence of the Mount Sealous pluton at depth. This is suggested by the widespread silicification, disseminated pyrite, and noisy magnetic signature. These features are characteristic of sedimentary rocks affected by an extensive thermal aureole.

14.0 RECOMMENDATIONS

Additional drill testing should be considered at the Andrew showing, and where mineralization to the northwest and southeast suggest a similar structural setting.

15.0 REFERENCES

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(Quantec Geoscience Inc.)

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2001: Bedrock Geology, Yukon Territory; Geological Survey of Canada, Open File 3754 and Exploration and Geological Services Division, Yukon Indian and Northern Affairs Canada, Open File 2001-1, scale 1:1,000,000

Martin, L. et al
2000: Drill Core Sampling and Analysis Protocols
(Noranda Inc. internal report)

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Smith, P.A.
2001: DIGHEM^{V} Survey for Noranda Inc., Andrew Survey Area
(Fugro Airborne Surveys)

APPENDIX I

STATEMENT OF QUALIFICATIONS

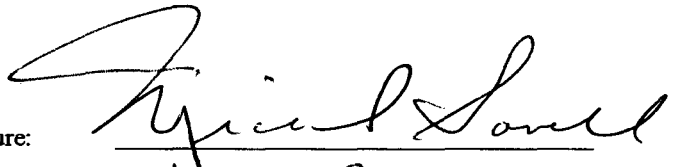
I, Michael Savell, hereby certify that:

1. I am a practicing geologist employed with Noranda Inc. in Thunder Bay, Ontario residing in Thunder Bay, Ontario.

2. I am a graduate of Dalhousie University with the degree of B.Sc. (honours) in Geology and have practiced my profession since graduation in 1980.

3. I was on the Andrew property undertaking the work program describedin this report during the period July 1st to August 13th, 2001, and prepared pertinent text and figures in this report.

4. I do not have, nor do I expect to receive, directly or indirectly, any interest in the properties of Noranda Inc.

Signature: 

Date: Feb 8, 2002

APPENDIX II

ANALYTICAL PROCEDURES

ALS Chemex

Sample Preparation Procedure - SCR-41 to 45

Method: Sieving

Geochemical samples (soils, stream sediments, silts) are dried and then hammered to disaggregate any clumps. The samples are then placed in a stainless steel sieve and shaken from side-to-side until as much minus fraction as possible has been extracted.

The sieve size opening determines which code will be applied.

ALS Chemex Code	New Service Schedule Code	Rush Code	Parameter	Opening Size (Microns)	Tyler Mesh Size
*240			Sieve to -10 Mesh	1700	10
3291	9409		Sieve to -20 Mesh	850	20
*203	*9408	*243	Sieve to -35 Mesh	425	35
204			Sieve to -60 Mesh	250	60
201	9406	241	Sieve to -80 Mesh	180	80
1338			Sieve to -100 Mesh	150	100
216	9403		Sieve to -150 Mesh	106	150
230			Sieve to -200 Mesh	75	200
254	9405		Sieve to -250 Mesh	63	250
3254	9404		Sieve to -270 Mesh	53	270

*Note: Samples typically undergo further particle size reduction prior to laboratory analysis.

ALS Chemex

Sample Preparation Procedure - CRU-31

Method: Crushing

The entire sample is passed through a primary crusher to yield a crushed product of which greater than 70% is less than approximately 2mm. A split (split size is determined by the final preparation method and analysis requested) is then taken using a stainless steel riffle splitter.

The crushing code indicates the weight of the original sample.

ALS Chemex Code	Rush Code	Parameter	Sample Weight (lb)	Sample Weight (kg)
226	295	0-3 kg Crush and Split	0 - 6	0 - 3
294	272	4-7 kg Crush and Split	7 - 15	4 - 7
276	293	8-12 kg Crush and Split	16 - 25	8 - 12
273	271	13-18 kg Crush and Split	26 - 40	13 -18
270		19-26 kg Crush and Split	41 - 60	19 - 26
278		27-36 kg Crush and Split	61 -79	27 - 36

ALS Chemex

Sample Preparation Procedure - PUL-31

Method: Grinding

A crushed sample split (200 - 300 grams) is ground using a ring mill pulverizer with a chrome steel ring set. The ALS Chemex specification for this procedure is that greater than 85% of the ground material passes through a 75 micron (Tyler 200 mesh) screen. Grinding with chrome steel may impart trace amounts of iron and chromium into a sample.

ALS Chemex Code	Rush Code	Parameter
208	258	Assay Grade Ring Grind
205	255	Geochemical Ring Grind

ALS Chemex

Geochemical Procedure - ME-ICP41
Trace Level Methods Using Conventional ICP-AES Analysis

Sample Decomposition: Nitric Aqua Regia Digestion
Analytical Method: Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP - AES)

A prepared sample (0.50 grams) is digested with aqua regia for at least one hour in a hot water bath. After cooling, the resulting solution is diluted to 12.5 ml with demineralized water, mixed and analyzed by inductively coupled plasma-atomic emission spectrometry. The analytical results are corrected for inter-element spectral interferences.

Chemex Code		Element	Symbol	Detection Limit	Upper Limit
229		ICP-AQ Digestion	n/a	n/a	n/a
2119	*	Aluminum	Al	0.01%	15 %
2141		Antimony	Sb	2 ppm	1 %
2120		Arsenic	As	2 ppm	1 %
2121	*	Barium	Ba	10 ppm	1 %
2122	*	Beryllium	Be	0.5 ppm	0.01 %
2123		Bismuth	Bi	2 ppm	1 %
557		Boron	B	10 ppm	10,000 ppm
2125		Cadmium	Cd	0.5 ppm	0.05 %
2124	*	Calcium	Ca	0.01%	15 %
2127	*	Chromium	Cr	1 ppm	1 %
2126		Cobalt	Co	1 ppm	1 %
2128		Copper	Cu	1 ppm	1 %
2130	*	Gallium	Ga	10 ppm	1 %
2150		Iron	Fe	0.01%	15 %
2151	*	Lanthanum	La	10 ppm	1 %
2140		Lead	Pb	2 ppm	1 %
2134	*	Magnesium	Mg	0.01%	15 %
2135		Manganese	Mn	5 ppm	1 %
2131		Mercury	Hg	1 ppm	1 %
2136		Molybdenum	Mo	1 ppm	1 %
2138		Nickel	Ni	1 ppm	1 %
2139		Phosphorus	P	10 ppm	1 %
2132	*	Potassium	K	0.01%	10 %

May 25, 2001

Geochemical Procedure - ME-ICP41 *(con't)*

Chemex Code		Element	Symbol	Detection Limit	Upper Limit
2142	*	Scandium	Sc	1 ppm	1 %
2118		Silver	Ag	0.2 ppm	0.01 %
2137	*	Sodium	Na	0.01%	10 %
2143	*	Strontium	Sr	1 ppm	1 %
551		Sulfur	S	0.01 %	10 %
2145	*	Thallium	Tl	10 ppm	1 %
2144	*	Titanium	Ti	0.01%	10 %
2148	*	Tungsten	W	10 ppm	1 %
2146		Uranium	U	10 ppm	1 %
2147		Vanadium	V	1 ppm	1 %
2149		Zinc	Zn	2 ppm	1 %

*Elements for which the digestion is possibly incomplete.

ALS Chemex

Geochemical Procedure - ME-MS61
Ultra-Trace Level Methods Using ICP-MS and ICP-AES

Sample Decomposition: $HF-HNO_3-HClO_4$ acid digestion, HCl leach
Analytical Methods: Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP - AES)
Inductively Coupled Plasma - Mass Spectrometry (ICP-MS)

A prepared sample (0.500 gram) is digested with perchloric, nitric and hydrofluoric acids to dryness. The residue is taken up in nitric and hydrochloric acids and diluted to a final volume with deionized water. The resulting solution is analyzed by inductively coupled plasma-atomic emission spectrometry. Following this analysis, the results are reviewed to ensure that base metal concentrations are less than 1%, with the exception of Silver, Bismuth, and Tungsten which have upper analytical limits of 100, 500, and 1000 ppm. Samples that meet this criteria are then diluted and analysed by ICPMS. Results are corrected for spectral interelement interferences.

Chemex Code	Element	Symbol	Detection Limit	Upper Limit	Analytical Technique
9327	Silver	Ag	0.02 ppm	100 ppm	AES+MS
9301	Aluminum	Al	0.01%	25%	AES
9340	Arsenic	As	0.2 ppm	10,000 ppm	AES+MS
9302	Barium	Ba	0.5 ppm	10,000 ppm	AES
9303	Beryllium	Be	0.05 ppm	1000 ppm	AES+MS
9304	Bismuth	Bi	0.01 ppm	10,000 ppm	AES+MS
9306	Calcium	Ca	0.01%	25%	AES
9305	Cadmium	Cd	0.02 ppm	500 ppm	AES+MS
9307	Cerium	Ce	0.01 ppm	500 ppm	MS
9310	Cobalt	Co	0.1 ppm	10,000 ppm	AES+MS
9309	Chromium	Cr	1 ppm	10,000 ppm	AES
9308	Cesium	Cs	0.05 ppm	500 ppm	MS
9311	Copper	Cu	0.2 ppm	10,000 ppm	AES
9315	Iron	Fe	0.01%	25%	AES
9312	Gallium	Ga	0.05 ppm	500 ppm	MS
9313	Germanium	Ge	0.05 ppm	500 ppm	MS
9243	Hafnium	Hf	0.1 ppm	500 ppm	MS
9314	Indium	In	0.005 ppm	500 ppm	MS
9325	Potassium	K	0.01%	10%	AES
9316	Lanthanum	La	0.5 ppm	500 ppm	MS

March 27, 2001

ALS Chemex

Geochemical Procedure - ME-MS61 *(con't)*

Chemex Code	Element	Symbol	Detection Limit	Upper Limit	Analytical Technique
9318	Lithium	Li	0.2 ppm	500 ppm	MS
9319	Magnesium	Mg	0.01%	15 %	AES
9320	Manganese	Mn	5 ppm	10,000 ppm	AES
9321	Molybdenum	Mo	0.05 ppm	10,000 ppm	AES
9328	Sodium	Na	0.01%	10 %	AES
9323	Niobium	Nb	0.1 ppm	500 ppm	MS
9322	Nickel	Ni	0.2 ppm	10,000 ppm	AES+MS
9324	Phosphorus	P	10 ppm	10,000 ppm	AES
9317	Lead	Pb	0.5 ppm	10,000 ppm	AES+MS
9326	Rubidium	Rb	0.1 ppm	500 ppm	MS
9349	Rhenium	Re	0.002 ppm	50 ppm	MS
9351	Sulfur	S	0.01%	10 %	AES
9341	Antimony	Sb	0.05 ppm	1,000 ppm	MS
9350	Selenium	Se	1 ppm	1,000 ppm	MS
9352	Tin	Sn	0.2 ppm	500 ppm	MS
9329	Strontium	Sr	0.2 ppm	10,000 ppm	AES+MS
9330	Tantalum	Ta	0.05 ppm	100 ppm	MS
9331	Tellurium	Te	0.05 ppm	500 ppm	MS
9333	Thorium	Th	0.2 ppm	500 ppm	MS
9334	Titanium	Ti	0.01%	10 %	AES+MS
9332	Thallium	Tl	0.02 ppm	500 ppm	MS
9336	Uranium	U	0.1 ppm	500 ppm	MS
9337	Vanadium	V	1 ppm	10,000 ppm	AES
9335	Tungsten	W	0.1 ppm	10,000 ppm	AES+MS
9338	Yttrium	Y	0.1 ppm	500 ppm	MS
9339	Zinc	Zn	2 ppm	1 %	AES
9353	Zirconium	Zr	0.5 ppm	500 ppm	MS

MS - Results are from the ICP-MS scan
AES - Results are from the ICP-AES scan
AES+MS - Results are a combination of ICP-AES and ICP-MS scans

Samples which fail to meet the Upper Concentration limits as outlined above, will be treated as regular T24 digestions and all detection limits will apply as per that method.

ALS Chemex

Geochemical Procedure - ME-MS62
ICP-MS - Multi Acid Digestion

Sample Decomposition: $HF-HNO_3-HClO_4$ acid digestion, HCl leach
Analytical Methods: Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP - AES)
Inductively Coupled Plasma - Mass Spectrometry (ICP-MS)

A prepared sample (0.500 gram) is digested with perchloric, nitric and hydrofluoric acids to dryness. The residue is taken up in nitric and hydrochloric acids and diluted to a final volume with deionized water. The resulting solution is analyzed by inductively coupled plasma-atomic emission spectrometry. Following this analysis, the results are reviewed to ensure that base metal concentrations are less than 1%, with the exception of Silver, Bismuth, and Tungsten which have upper analytical limits of 100, 500, and 1000 ppm. Samples that meet this criteria are then diluted and analysed by ICPMS. Results are corrected for spectral interelement interferences.

Element	Symbol	Detection Limit	Upper Limit
Arsenic	As	0.5 ppm	10,000 ppm
Bismuth	Bi	0.02 ppm	2,500 ppm
Gallium	Ga	0.1 ppm	2,500 ppm
Germanium	Ge	0.1 ppm	2,500 ppm
Molybdenum	Mo	2 ppm	2,500 ppm
Antimony	Sb	0.1 ppm	2,500 ppm
Selenium	Se	1 ppm	2,500 ppm
Tin	Sn	0.5 ppm	2,500 ppm
Tantalum	Ta	0.2 ppm	500 ppm
Tellurium	Te	0.05 ppm	2,500 ppm
Thallium	Tl	0.05 ppm	2,500 ppm
Uranium	U	2 ppm	2,500 ppm
Vanadium	V	2 ppm	2,500 ppm
Tungsten	W	0.1 ppm	2,500 ppm

ALS Chemex

Assay Procedure – ME-AA46
Evaluation of Ores and High Grade Materials by Aqua Regia digestion

Sample Decomposition: Nitric - Aqua Regia Digestion
Analytical Method: Atomic Absorption Spectroscopy (AAS)

A prepared sample (0.2 to 2.0g) is digested with concentrated nitric acid for one half hour. After cooling, hydrochloric acid is added to produce aqua regia and the mixture is then digested for an additional hour and a half. An ionization suppressant is added if molybdenum is to be measured. The resulting solution is diluted to volume (100 or 250 ml) with demineralized water, mixed and then analyzed by atomic absorption spectrometry against matrix-matched standards.

International Units:

ALS Chemex Code	Element	Symbol	Detection Limit	Upper Limit
331	Arsenic	As	0.01 %	30 %
349	Bismuth	Bi	0.001 %	30 %
320	Cadmium	Cd	0.001 %	10 %
301	Copper	Cu	0.01 %	30 %
3501	Copper	Cu	0.001 %	100 %
3508	Copper	Cu	10 ppm	1,000,000 ppm
326	Iron	Fe	0.01 %	30 %
312	Lead	Pb	0.01 %	30 %
306	Molybdenum	Mo	0.001 %	10 %
307	Molybdenum as MoS_2	MoS_2	0.001 %	100 %
386	Silver	Ag	0.3 g/t	1500 g/t
956	Silver (Rush charge)	Ag	0.3 g/t	1500 g/t
365	Selenium	Se	0.01%	30 %
316	Zinc	Zn	0.01 %	30 %
8089	Manganese	Mn	0.01 %	30 %

American/English Units:

ALS Chemex Code	Element	Symbol	Detection Limit	Upper Limit
385	Silver	Ag	0.01 oz/ton	50 oz/ton
980	Silver (Rush charge)	Ag	0.01 oz/ton	50 oz/ton

ALS Chemex

Assay Procedure - ME-AA62
Evaluation of Ores and High Grade Materials

Sample Decomposition: HNO_3-$HClO_4$-HF-HCl digestion
Analytical Method: Atomic Absorption Spectroscopy (AAS)

A prepared sample (0.2 to 2.0g) is digested with nitric, perchloric, and hydrofluoric acids, and then evaporated to dryness. Hydrochloric acid is added for further digestion, and the sample is again taken to dryness. The residue is dissolved in nitric and hydrochloric acids and transferred to a volumetric flask (100 or 250 ml). The resulting solution is diluted to volume with demineralized water, mixed and then analyzed by atomic absorption spectrometry against matrix-matched standards.

International Units:

ALS Chemex Code	Element	Symbol	Detection Limit	Upper Limit
323	Cobalt	Co	0.001 %	30 %
3310	Copper	Cu	0.01 %	30 %
3503	Copper	Cu	0.001 %	30 %
327	Iron	Fe	0.01 %	30 %
3312	Lead	Pb	0.01 %	30 %
3505	Lead	Pb	0.001 %	30 %
3328	Manganese	Mn	0.01 %	50 %
3506	Molybdenum	Mo	0.001 %	10 %
321	Nickel	Ni	0.01 %	30 %
3321	Nickel	Ni	0.001 %	30 %
3386	Silver	Ag	1 g/t	1,000 g/t
3316	Zinc	Zn	0.01 %	30 %
3504	Zinc	Zn	0.001 %	30 %

American/English Units:

ALS Chemex Code	Element	Symbol	Detection Limit	Upper Limit
3385	Silver	Ag	0.03 oz/ton	30 oz/ton

May 10, 2001

ALS Chemex

Fire Assay Procedure - Au-AA23 and Au-AA24
Fire Assay Fusion

Sample Decomposition: Fire Assay Fusion
Analytical Method: Atomic Absorption Spectroscopy (AAS)

A prepared sample is fused with a mixture of lead oxide, sodium carbonate, borax, silica and other reagents as required inquarted with 6 mg of gold-free silver and then cupelled to yield a precious metal bead.

The bead is digested for ½ hour in dilute nitric acid. Hydrochloric acid is then added and the solution is digested for an additional hour. The digested solution is cooled, diluted to 7.5 ml with demineralized water, homogenized and then analyzed by atomic absorption spectrometry.

International Units:

Routine Code	Rush Code	Element	Sample Weight (grams)	Symbol	Detection Limit	Upper Limit
983	991	Gold	30	Au	5 ppb	10,000 ppb
99	1091	Gold	30	Au	0.005 ppm	10 ppm
494	1209	Gold	30	Au	0.005 g/t	10 g/t
3583		Gold	50	Au	5 ppb	10,000 ppb
3584		Gold	50	Au	0.005 ppm	10 ppm
3594		Gold	50	Au	0.005 g/t	10 g/t

American/English Units:

Routine Code	Rush Code	Element	Sample Weight (grams)	Symbol	Detection Limit	Upper Limit
877	1977	Gold	30	Au	0.0002 oz/ton	0.3 oz/ton

May 24, 2001

ALS Chemex

Geochemical Procedure - G9g Metals Package

Sample Decomposition: Nitric Aqua Regia Digestion
Analytical Method: Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP - AES)

A prepared sample (0.50 grams) is digested with aqua regia for at least one hour in a hot water bath. After cooling, the resulting solution is diluted to 12.5 ml with demineralized water, mixed and analyzed by inductively coupled plasma-atomic emission spectrometry. The analytical results are corrected for inter-element spectral interferences.

Chemex Code	Element	Symbol	Detection Limit	Upper Limit
229	ICP-AQ Digestion	n/a	n/a	n/a
2141	Antimony	Sb	2 ppm	1 %
2120	Arsenic	As	2 ppm	1 %
2123	Bismuth	Bi	2 ppm	1 %
2128	Copper	Cu	1 ppm	1 %
2140	Lead	Pb	2 ppm	1 %
2131	Mercury	Hg	1 ppm	1 %
2136	Molybdenum	Mo	1 ppm	1 %
2118	Silver	Ag	0.2 ppm	0.01 %
2149	Zinc	Zn	2 ppm	1 %

ALS Chemex

Sample Preparation Procedure - Received as Pulp

Pulp samples are tested to determine if they meet the Chemex quality control requirement that greater than 90% of the pulp material pass through a 106 micron (Tyler 150 mesh) screen. If samples are found to fail these requirements, the client is notified. If requested, the sample may be run without any further preparation. Analytical work begins following consultation with the client.

Chemex Code	Parameter
214	Pulp Sample - Mesh Size Check
225	Run as received

May 15, 2000

ALS Chemex

Sample Preparation Procedure - Pulverizing

Method: Pulverizing - No Screen

A sample split (200 to 300 grams) is ground in a rotary pulverizer until approximately 90% of the material will pass through a 106 micron (Tyler 150 mesh) screen.

Chemex Code	Parameter
275	Assay Grade Pulverize
212	Geochemical Pulverize

ALS Chemex

Assay Concentrate Procedure - Lead

Sample Decomposition: Multiple Acid Digestion
Analytical Method: Titration

A prepared sample (0.5 g) is digested with hydrochloric, hydrofluoric, nitric and sulfuric acids. The resulting solution is evaporated to sulfuric fumes and cooled. Demineralized water is added and the solution is boiled, cooled and then filtered. The collected precipitate is dissolved in ammonium acetate solution, heated, and titrated with ammonium molybdate solution.

Chemex Code	Element	Symbol	Detection Limit	Upper Limit
314	Lead	Pb	0.01 %	100 %

May 15, 2000

ALS Chemex

Assay Concentrate Procedure - Zinc

Sample Decomposition: Multiple Acid Digestion
Analytical Method: Titration

A prepared sample (0.25 - 1.0g) is digested with nitric, hydrochloric, sulfuric and hydrofluoric acids. The resulting solution is evaporated to dryness and then dissolved with hydrochloric acid and water. Test lead is added to the sample and then it is boiled to precipitate antimony and copper. Iron is oxidized with potassium permanganate, and the acidity of the solution is then adjusted with hydrochloric acid. The resulting solution is titrated with potassium ferrocyanide.

Chemex Code	Element	Symbol	Detection Limit	Upper Limit
318	Zinc	Zn	0.01 %	100 %.

May 15, 2000

ALS Chemex

Assay Procedure - OA-GRA09
Bulk Density

Analytical Method: Gravimetric, Volumetric

The rock or core section (up to 6 kg) is weighed and then slowly placed into a bulk density apparatus which is filled with water. The displaced water is collected into a graduated cylinder and measured. From the data, the bulk density is calculated:

$$\text{Density} = \frac{\text{Weight of sample (g)}}{\text{Volume of water displaced (cm}^3\text{)}}$$

Chemex Code	Parameter	Symbol	Detection Limit	Upper Limit
441	Bulk Density	Bd	0.01 g/cm^3	20 g/cm^3

June 14, 2001

APPENDIX III

CERTIFICATES OF ANALYSIS

ALS Chemex
Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0112760

Comments: ATTN: CLINT BARR

CERTIFICATE A0112760

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. #:

Samples submitted to our lab in Thunder Bay, ON.
This report was printed on 09-MAR-2001.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
208	2	Assay ring to approx 150 mesh
226	2	0-3 Kg crush and split
3202	2	Rock - save entire reject

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
100	2	Au ppb: Fuse 10 g sample	FA-AAS	5	10000
386	2	Ag g/t: Conc. Nitric HCl dig'n	AAS	0.3	350
301	2	Cu %: Conc. Nitric-HCl dig'n	AAS	0.01	100.0
312	2	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	100.0
316	2	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	100.0

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :1
Certificate Date: 09-MAR-2001
Invoice No. :I0112760
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0112760

SAMPLE	PREP CODE		Au ppb FA+AA	Ag g/t	Cu %	Pb %	Zn %					
N254751	208	226	< 5	290	0.22	14.55	10.10					
N254752	208	226	< 5	209	0.17	11.90	10.60					

CERTIFICATION: _____

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874 TUNGSTEN ST.
THUNDER BAY, ON
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Project : 2501
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Page Number :1
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Certificate Date: 09-MAR-2001
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Account :BUF

CERTIFICATE OF ANALYSIS A0112760

SAMPLE	PREP CODE		Au ppb FA+AA	Ag g/t	Cu %	Pb %	Zn %					
N254751	208	226	< 5	290	0.22	14.55	10.10					
N254752	208	226	< 5	209	0.17	11.90	10.60					

CERTIFICATION:

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED JUL 3 1 2001

A0120653

Comments: ATTN: CLINT BARR

CERTIFICATE A0120653

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 25-JUL-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	16	Pulv. <250g to >85%/-75 micron
STO-21	16	Reject Storage-First 90 Days
LOG-22	17	Samples received without barcode
CRU-31	16	Crush to 70% minus 2mm
SPL-21	16	Splitting Charge
225	1	Run as received

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1433	17	Weight of received sample	BALANCE	0.01	1000.0
Au-AA23	17	Au-AA23 : Au ppb: Fuse 30 grams	FA-AAS	5	10000
Ag-AA46	17	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500
Cu-AA46	17	Cu %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Pb-AA46	17	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	17	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

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Project : 2501
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Invoice No. :I0120653
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CERTIFICATE OF ANALYSIS A0120653

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag g/t	Cu %	Pb %	Zn %				
644052	9413 9402	0.66	< 5	7	0.16	0.01	0.02				
644053	9413 9402	0.64	< 5	3	0.15	< 0.01	3.50				
644054	9413 9402	1.16	< 5	19	< 0.01	1.66	0.22				
644061	9413 9402	0.58	< 5	34	0.08	2.29	4.36				
644062	9413 9402	0.64	< 5	53	0.39	8.66	7.24				
644063	9413 9402	1.00	< 5	28	0.15	1.85	2.72				
644064	9413 9402	0.76	5	2	0.37	0.08	0.07				
644066	9413 9402	0.74	10	1	0.01	0.02	21.9				
644202	9413 9402	1.46	5	256	1.99	2.76	7.07				
644203	9413 9402	1.10	< 5	167	1.82	3.63	3.32				
644207	9413 9402	1.80	< 5	20	0.02	0.49	0.07				
644214	9413 9402	2.00	25	263	5.64	0.10	0.24				
644215	9413 9402	1.26	< 5	4	0.04	< 0.01	0.01				
644218	9413 9402	2.88	10	82	0.04	>50.0	< 0.01				
644251	9400 225	0.04	10	11	0.01	1.46	28.4				
644451	9413 9402	0.82	< 5	1	0.01	0.15	12.05				
644452	9413 9402	1.14	< 5	114	0.01	>50.0	0.18				

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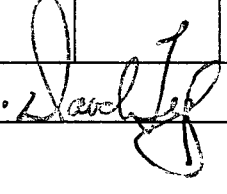
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CERTIFICATE OF ANALYSIS A0120653

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag g/t	Cu %	Pb %	Zn %				
644052	9413 9402	0.66	< 5	7	0.16	0.01	0.02				
644053	9413 9402	0.64	< 5	3	0.15	< 0.01	3.50				
644054	9413 9402	1.16	< 5	19	< 0.01	1.66	0.22				
644061	9413 9402	0.58	< 5	34	0.08	2.29	4.36				
644062	9413 9402	0.64	< 5	53	0.39	8.66	7.24				
644063	9413 9402	1.00	< 5	28	0.15	1.85	2.72				
644064	9413 9402	0.76	5	2	0.37	0.08	0.07				
644066	9413 9402	0.74	10	1	0.01	0.02	21.9				
644202	9413 9402	1.46	5	256	1.99	2.76	7.07				
644203	9413 9402	1.10	< 5	167	1.82	3.63	3.32				
644207	9413 9402	1.80	< 5	20	0.02	0.49	0.07				
644214	9413 9402	2.00	25	263	5.64	0.10	0.24				
644215	9413 9402	1.26	< 5	4	0.04	< 0.01	0.01				
644218	9413 9402	2.88	10	82	0.04	>50.0	< 0.01				
644251	9400 225	0.04	10	11	0.01	1.46	28.4				
644451	9413 9402	0.82	< 5	1	0.01	0.15	12.05				
644452	9413 9402	1.14	< 5	114	0.01	>50.0	0.18				

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CERTIFICATE A0120654

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 23-JUL-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	20	Pulv. <250g to >85%/-75 micron
STO-21	20	Reject Storage-First 90 Days
LOG-22	21	Samples received without barcode
CRU-31	20	Crush to 70% minus 2mm
SPL-21	20	Splitting Charge
225	1	Run as received
229	21	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1433	21	Weight in kilograms	BALANCE	0.01	1000.0
Ag-ICP41	21	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	21	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	21	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	21	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	21	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	21	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	21	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	21	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	21	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	21	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	21	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	21	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	21	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	21	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	21	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	21	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	21	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	21	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	21	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	21	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	21	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	21	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	21	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	21	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	21	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	21	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	21	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	21	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	21	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	21	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	21	U ppm: 32 element, soil & rock	ICP-AES	10	10000
V-ICP41	21	V ppm: 32 element, soil & rock	ICP-AES	1	10000

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0120654

Comments: ATTN: CLINT BARR

CERTIFICATE A0120654

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
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SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
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* NOTE 1:

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ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
W-ICP41	21	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	21	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

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Page Number : 1-A
Total Pages : 1
Certificate Date: 23-JUL-2001
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Account : BUF

CERTIFICATE OF ANALYSIS A0120654

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644051	94139402	1.12	2.0	1.30	8	< 10	10	< 0.5	< 2	0.55	1.5	20	102	131	3.18	< 10	< 1	0.04	< 10	0.93
644055	94139402	0.90	0.2	1.03	< 2	< 10	130	< 0.5	< 2	0.44	1.5	3	105	33	1.70	< 10	< 1	0.12	< 10	0.32
644056	94139402	0.48	< 0.2	1.37	< 2	< 10	50	< 0.5	< 2	1.62	< 0.5	5	77	46	2.34	< 10	< 1	0.16	< 10	0.91
644057	94139402	0.54	< 0.2	1.47	8	< 10	70	< 0.5	< 2	0.14	< 0.5	7	71	6	2.90	< 10	< 1	0.15	< 10	0.47
644058	94139402	0.50	< 0.2	1.10	< 2	< 10	50	< 0.5	< 2	0.17	< 0.5	4	121	60	2.26	< 10	< 1	0.04	< 10	0.47
644059	94139402	0.44	< 0.2	3.50	< 2	< 10	120	0.5	< 2	0.87	< 0.5	9	84	38	3.58	< 10	< 1	1.33	< 10	1.87
644060	94139402	1.08	0.8	0.88	12	< 10	150	< 0.5	2	0.77	4.0	4	88	39	1.90	< 10	< 1	0.16	< 10	0.33
644065	94139402	0.88	0.2	0.34	42	< 10	120	< 0.5	< 2	1.42	0.5	5	83	12	1.60	< 10	< 1	0.14	< 10	0.14
644067	94139402	0.62	0.4	0.41	8	< 10	80	0.5	< 2	0.66	63.5	21	83	254	0.62	< 10	1	0.16	10	0.02
644201	94139402	0.74	< 0.2	0.09	< 2	< 10	30	< 0.5	2	>15.00	< 0.5	1	4	9	0.34	< 10	1	0.03	< 10	0.19
644205	94139402	1.08	< 0.2	0.77	< 2	< 10	40	< 0.5	< 2	0.13	< 0.5	6	122	14	1.83	< 10	< 1	0.06	< 10	0.30
644206	94139402	0.74	< 0.2	1.71	14	< 10	400	1.0	< 2	0.20	1.0	9	37	57	2.73	< 10	< 1	0.38	30	0.65
644208	94139402	0.98	< 0.2	0.26	2	< 10	60	< 0.5	< 2	0.11	< 0.5	3	136	33	1.27	< 10	< 1	0.12	< 10	0.03
644209	94139402	0.76	< 0.2	2.72	12	< 10	160	1.5	< 2	0.28	< 0.5	8	35	34	3.51	< 10	< 1	0.54	< 10	1.03
644210	94139402	0.80	< 0.2	2.16	12	< 10	110	0.5	< 2	0.03	< 0.5	10	72	27	4.10	< 10	< 1	0.33	< 10	0.96
644211	94139402	1.22	< 0.2	4.12	6	< 10	80	1.0	< 2	1.16	< 0.5	16	80	63	4.07	10	< 1	1.01	< 10	2.29
644212	94139402	0.64	< 0.2	3.19	8	< 10	60	< 0.5	< 2	0.35	< 0.5	28	83	119	6.76	< 10	< 1	0.95	10	2.44
644213	94139402	0.80	< 0.2	3.11	18	< 10	40	0.5	< 2	0.59	< 0.5	26	73	102	6.31	< 10	< 1	0.38	< 10	2.00
644216	94139402	1.16	0.8	1.74	4	< 10	100	< 0.5	< 2	0.06	< 0.5	3	61	50	5.16	< 10	< 1	0.23	10	1.11
644217	94139402	0.04	0.2	1.89	< 2	< 10	60	0.5	< 2	0.55	< 0.5	15	63	135	6.00	< 10	< 1	0.29	< 10	1.19
644252	9400 225	1.28	12.0	0.50	12	< 10	10	1.5	< 2	0.45	66.0	8	12	124	13.25	< 10	5	0.19	< 10	0.75

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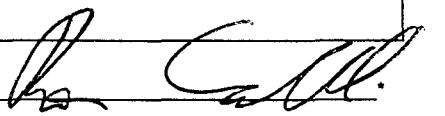
874 TUNGSTEN ST.
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Project : 2501
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Certificate Date: 23-JUL-2001
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CERTIFICATE OF ANALYSIS A0120654

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644051	94139402	330	< 1	0.03	42	160	252	1.20	2	1	15	0.19	< 10	< 10	47	< 10	120
644055	94139402	240	< 1	0.11	11	70	152	0.48	2	1	39	0.03	< 10	< 10	12	< 10	302
644056	94139402	785	< 1	0.01	12	1170	96	0.49	2	1	54	< 0.01	< 10	< 10	14	< 10	106
644057	94139402	415	1	0.04	12	190	40	0.21	< 2	1	15	0.01	< 10	< 10	8	< 10	52
644058	94139402	320	< 1	0.06	12	80	34	0.29	< 2	1	25	0.04	< 10	< 10	15	< 10	28
644059	94139402	865	1	0.23	20	510	16	0.64	2	6	103	0.13	< 10	< 10	64	< 10	58
644060	94139402	545	< 1	0.05	11	90	864	0.37	2	1	35	< 0.01	< 10	< 10	10	< 10	424
644065	94139402	2030	< 1	0.02	9	80	94	1.05	< 2	1	79	< 0.01	< 10	< 10	3	< 10	96
644067	94139402	860	< 1	0.01	15	120	7380	0.02	6	1	9	< 0.01	< 10	< 10	< 1	< 10	>10000
644201	94139402	185	< 1	< 0.01	4	160	24	0.01	< 2	< 1	1150	< 0.01	< 10	< 10	1	< 10	62
644205	94139402	170	< 1	0.01	16	170	18	0.38	< 2	< 1	7	< 0.01	< 10	< 10	5	< 10	38
644206	94139402	240	3	< 0.01	54	690	20	< 0.01	2	3	26	< 0.01	10	< 10	43	< 10	368
644208	94139402	400	< 1	< 0.01	7	140	8	0.17	< 2	< 1	6	< 0.01	< 10	< 10	1	< 10	30
644209	94139402	1480	1	0.08	19	350	16	0.34	2	5	47	0.10	< 10	< 10	23	< 10	44
644210	94139402	560	1	0.01	28	130	4	0.09	2	3	14	0.03	< 10	< 10	25	< 10	72
644211	94139402	520	1	0.26	60	500	30	0.93	4	5	99	0.13	< 10	< 10	74	< 10	62
644212	94139402	480	3	0.06	58	500	10	3.18	2	7	15	0.15	< 10	< 10	98	< 10	90
644213	94139402	1380	< 1	< 0.01	55	380	36	1.13	2	5	12	0.03	< 10	< 10	74	< 10	96
644216	94139402	260	< 1	0.01	8	510	510	0.17	< 2	2	8	0.03	< 10	< 10	28	< 10	76
644217	94139402	610	3	0.04	26	370	28	3.02	< 2	3	48	0.08	< 10	< 10	40	< 10	40
644252	9400 225	>10000	3	0.01	36	900	9070	2.08	8	3	7	< 0.01	< 10	< 10	22	< 10	>10000

CERTIFICATION: 

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P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0120654

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644051	94139402	1.12	2.0	1.30	8	< 10	10	< 0.5	< 2	0.55	1.5	20	102	131	3.18	< 10	< 1	0.04	< 10	0.93
644055	94139402	0.90	0.2	1.03	< 2	< 10	130	< 0.5	< 2	0.44	1.5	3	105	33	1.70	< 10	< 1	0.12	< 10	0.32
644056	94139402	0.48	< 0.2	1.37	< 2	< 10	50	< 0.5	< 2	1.62	< 0.5	5	77	46	2.34	< 10	< 1	0.16	< 10	0.91
644057	94139402	0.54	< 0.2	1.47	8	< 10	70	< 0.5	< 2	0.14	< 0.5	7	71	6	2.90	< 10	< 1	0.15	< 10	0.47
644058	94139402	0.50	< 0.2	1.10	< 2	< 10	50	< 0.5	< 2	0.17	< 0.5	4	121	60	2.26	< 10	< 1	0.04	< 10	0.47
644059	94139402	0.44	< 0.2	3.50	< 2	< 10	120	0.5	< 2	0.87	< 0.5	9	84	38	3.58	< 10	< 1	1.33	< 10	1.87
644060	94139402	1.08	0.8	0.88	12	< 10	150	< 0.5	2	0.77	4.0	4	88	39	1.90	< 10	< 1	0.16	< 10	0.33
644065	94139402	0.88	0.2	0.34	42	< 10	120	< 0.5	< 2	1.42	0.5	5	83	12	1.60	< 10	< 1	0.14	< 10	0.14
644067	94139402	0.62	0.4	0.41	8	< 10	80	0.5	< 2	0.66	63.5	21	83	254	0.62	< 10	1	0.16	10	0.02
644201	94139402	0.74	< 0.2	0.09	< 2	< 10	30	< 0.5	2	>15.00	< 0.5	1	4	9	0.34	< 10	1	0.03	< 10	0.19
644205	94139402	1.08	< 0.2	0.77	< 2	< 10	40	< 0.5	< 2	0.13	< 0.5	6	122	14	1.83	< 10	< 1	0.06	< 10	0.30
644206	94139402	0.74	< 0.2	1.71	14	< 10	400	1.0	< 2	0.20	1.0	9	37	57	2.73	< 10	< 1	0.38	30	0.65
644208	94139402	0.98	< 0.2	0.26	2	< 10	60	< 0.5	< 2	0.11	< 0.5	3	136	33	1.27	< 10	< 1	0.12	< 10	0.03
644209	94139402	0.76	< 0.2	2.72	12	< 10	160	1.5	< 2	0.28	< 0.5	8	35	34	3.51	< 10	< 1	0.54	< 10	1.03
644210	94139402	0.80	< 0.2	2.16	12	< 10	110	0.5	< 2	0.03	< 0.5	10	72	27	4.10	< 10	< 1	0.33	< 10	0.96
644211	94139402	1.22	< 0.2	4.12	6	< 10	80	1.0	< 2	1.16	< 0.5	16	80	63	4.07	10	< 1	1.01	< 10	2.29
644212	94139402	0.64	< 0.2	3.19	8	< 10	60	< 0.5	< 2	0.35	< 0.5	28	83	119	6.76	< 10	< 1	0.95	10	2.44
644213	94139402	0.80	< 0.2	3.11	18	< 10	40	0.5	< 2	0.59	< 0.5	26	73	102	6.31	< 10	< 1	0.38	< 10	2.00
644216	94139402	1.16	0.8	1.74	4	< 10	100	< 0.5	< 2	0.06	< 0.5	3	61	50	5.16	< 10	< 1	0.23	10	1.11
644217	94139402	0.04	0.2	1.89	< 2	< 10	60	0.5	< 2	0.55	< 0.5	15	63	135	6.00	< 10	< 1	0.29	< 10	1.19
644252	94400225	1.28	12.0	0.50	12	< 10	10	1.5	< 2	0.45	66.0	8	12	124	13.25	< 10	5	0.19	< 10	0.75

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-B
Total Pages : 1
Certificate Date: 23-JUL-2001
Invoice No. : I0120654
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0120654

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644051	94139402	330	< 1	0.03	42	160	252	1.20	2	1	15	0.19	< 10	< 10	47	< 10	120
644055	94139402	240	< 1	0.11	11	70	152	0.48	2	1	39	0.03	< 10	< 10	12	< 10	302
644056	94139402	785	< 1	0.01	12	1170	96	0.49	2	1	54	< 0.01	< 10	< 10	14	< 10	106
644057	94139402	415	1	0.04	12	190	40	0.21	< 2	1	15	0.01	< 10	< 10	8	< 10	52
644058	94139402	320	< 1	0.06	12	80	34	0.29	< 2	1	25	0.04	< 10	< 10	15	< 10	28
644059	94139402	865	1	0.23	20	510	16	0.64	2	6	103	0.13	< 10	< 10	64	< 10	58
644060	94139402	545	< 1	0.05	11	90	864	0.37	2	1	35	< 0.01	< 10	< 10	10	< 10	424
644065	94139402	2030	< 1	0.02	9	80	94	1.05	< 2	1	79	< 0.01	< 10	< 10	3	< 10	96
644067	94139402	860	< 1	0.01	15	120	7380	0.02	6	1	9	< 0.01	< 10	< 10	< 1	< 10	>10000
644201	94139402	185	< 1	< 0.01	4	160	24	0.01	< 2	< 1	1150	< 0.01	< 10	< 10	1	< 10	62
644205	94139402	170	< 1	0.01	16	170	18	0.38	< 2	< 1	7	< 0.01	< 10	< 10	5	< 10	38
644206	94139402	240	3	< 0.01	54	690	20	< 0.01	2	3	26	< 0.01	10	< 10	43	< 10	368
644208	94139402	400	< 1	< 0.01	7	140	8	0.17	< 2	< 1	6	< 0.01	< 10	< 10	1	< 10	30
644209	94139402	1480	1	0.08	19	350	16	0.34	2	5	47	0.10	< 10	< 10	23	< 10	44
644210	94139402	560	1	0.01	28	130	4	0.09	2	3	14	0.03	< 10	< 10	25	< 10	72
644211	94139402	520	1	0.26	60	500	30	0.93	4	5	99	0.13	< 10	< 10	74	< 10	62
644212	94139402	480	3	0.06	58	500	10	3.18	2	7	15	0.15	< 10	< 10	98	< 10	90
644213	94139402	1380	< 1	< 0.01	55	380	36	1.13	2	5	12	0.03	< 10	< 10	74	< 10	96
644216	94139402	260	< 1	0.01	8	510	510	0.17	< 2	2	8	0.03	< 10	< 10	28	< 10	76
644217	94139402	610	3	0.04	26	370	28	3.02	< 2	3	48	0.08	< 10	< 10	40	< 10	40
644252	9400 225	>10000	3	0.01	36	900	9070	2.08	8	3	7	< 0.01	< 10	< 10	22	< 10	>10000

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG - 3 2001

A0120828

Comments: ATTN: CLINT BARR

CERTIFICATE A0120828

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 27-JUL-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
225	1	Run as received
PUL-31	5	Pulv. <250g to >85%/-75 micron
STO-21	5	Reject Storage-First 90 Days
LOG-22	6	Samples received without barcode
CRU-31	5	Crush to 70% minus 2mm
SPL-21	5	Splitting Charge

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1433	6	Weight of received sample	BALANCE	0.01	1000.0
Au-AA23	6	Au-AA23 : Au ppb: Fuse 30 grams	FA-AAS	5	10000
Ag-AA46	6	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500
Cu-AA46	6	Cu %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Pb-AA46	6	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	6	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

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Certificate Date: 27-JUL-2001
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P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0120828

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag g/t	Cu %	Pb %	Zn %				
644102	9413 9402	0.90	< 5	95	0.13	7.44	3.79				
644228	9413 9402	1.66	< 5	40	0.09	0.98	9.26				
644237	9413 9402	1.22	10	153	3.76	0.10	0.50				
644238	9413 9402	1.48	25	4	0.02	< 0.01	0.02				
644239	9413 9402	1.00	25	130	1.24	0.52	1.43				
644242	225 9400	0.04	260	14	0.01	0.97	3.07				

CERTIFICATION: Barb Leinard

ALS Chemex

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CERTIFICATE OF ANALYSIS A0120828

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag g/t	Cu %	Pb %	Zn %				
644102	9413 9402	0.90	< 5	95	0.13	7.44	3.79				
644228	9413 9402	1.66	< 5	40	0.09	0.98	9.26				
644237	9413 9402	1.22	10	153	3.76	0.10	0.50				
644238	9413 9402	1.48	25	4	0.02	< 0.01	0.02				
644239	9413 9402	1.00	25	130	1.24	0.52	1.43				
644242	225 9400	0.04	260	14	0.01	0.97	3.07				

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG - 3 2001

A0120830

Comments: ATTN: CLINT BARR

CERTIFICATE A0120830

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 27-JUL-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
225	1	Run as received
PUL-31	27	Pulv. <250g to >85%/-75 micron
STO-21	27	Reject Storage-First 90 Days
LOG-22	28	Samples received without barcode
CRU-31	27	Crush to 70% minus 2mm
SPL-21	27	Splitting Charge
229	28	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1433	28	Weight of received sample	BALANCE	0.01	1000.0
Ag-ICP41	28	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	28	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	28	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	28	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	28	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	28	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	28	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	28	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	28	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	28	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	28	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	28	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	28	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	28	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	28	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	28	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	28	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	28	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	28	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	28	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	28	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	28	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	28	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	28	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	28	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	28	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	28	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	28	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	28	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	28	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	28	U ppm: 32 element, soil & rock	ICP-AES	10	10000
V-ICP41	28	V ppm: 32 element, soil & rock	ICP-AES	1	10000

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0120830

Comments: ATTN: CLINT BARR

CERTIFICATE A0120830

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 27-JUL-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
225	1	Run as received
PUL-31	27	Pulv. <250g to >85%/-75 micron
STO-21	27	Reject Storage-First 90 Days
LOG-22	28	Samples received without barcode
CRU-31	27	Crush to 70% minus 2mm
SPL-21	27	Splitting Charge
229	28	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
W-ICP41	28	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	28	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

ALS Chemex

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Page Number : 1-A
Total Pages : 1
Certificate Date: 27-JUL-2001
Invoice No. : I0120830
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Account : BUF

CERTIFICATE OF ANALYSIS A0120830

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644453	94139402	0.60	0.6	1.15	20	< 10	160	0.5	4	1.56	< 0.5	6	90	41	4.10	< 10	< 1	0.27	10	0.56
644454	94139402	0.68	< 0.2	1.38	12	< 10	120	0.5	< 2	0.14	< 0.5	9	74	23	2.74	< 10	< 1	0.50	< 10	0.51
644455	94139402	0.78	4.8	1.39	38	< 10	30	< 0.5	142	0.02	< 0.5	5	136	202	5.89	< 10	< 1	0.15	< 10	0.60
644219	94139402	0.80	< 0.2	2.27	6	< 10	500	1.5	< 2	0.13	< 0.5	19	31	27	4.54	< 10	< 1	0.37	40	0.61
644222	94139402	1.08	< 0.2	2.39	10	< 10	170	0.5	2	0.36	< 0.5	17	62	26	4.95	< 10	< 1	0.19	10	0.79
644223	94139402	0.78	0.2	1.45	12	< 10	290	0.5	< 2	0.30	0.5	9	31	52	2.41	< 10	< 1	0.33	30	0.60
644226	94139402	0.98	0.2	2.44	8	< 10	40	0.5	< 2	0.01	< 0.5	9	63	35	7.04	< 10	< 1	0.25	< 10	1.23
644227	94139402	0.68	1.2	0.16	18	< 10	< 10	0.5	< 2	0.01	< 0.5	7	48	57	>15.00	< 10	< 1	0.04	< 10	0.07
644229	94139402	0.84	< 0.2	0.98	8	< 10	140	< 0.5	< 2	0.02	< 0.5	6	140	12	2.11	< 10	< 1	0.16	10	0.37
644230	94139402	1.40	2.2	0.49	2	< 10	100	< 0.5	2	0.01	13.0	4	101	63	1.74	< 10	< 1	0.18	< 10	0.16
644231	94139402	0.70	2.0	0.48	< 2	< 10	90	< 0.5	6	0.01	13.5	4	115	63	1.70	< 10	< 1	0.18	< 10	0.16
644232	94139402	0.88	0.2	0.50	14	< 10	190	< 0.5	< 2	< 0.01	< 0.5	1	123	20	1.30	< 10	1	0.21	< 10	0.09
644233	94139402	0.96	8.2	0.26	158	< 10	50	< 0.5	< 2	< 0.01	< 0.5	4	133	24	2.42	< 10	< 1	0.19	< 10	0.01
644235	94139402	1.30	17.8	0.19	1450	< 10	130	< 0.5	26	0.01	0.5	3	84	27	2.87	< 10	< 1	0.15	< 10	0.01
644236	94139402	0.78	< 0.2	1.08	12	< 10	220	0.5	< 2	0.05	0.5	7	68	13	2.00	< 10	< 1	0.39	20	0.26
644240	94139402	1.36	0.2	0.35	8	< 10	10	< 0.5	< 2	0.02	< 0.5	1	138	14	1.44	< 10	< 1	0.01	< 10	0.21
644241	94139402	1.06	0.2	0.05	8	< 10	70	< 0.5	< 2	< 0.01	< 0.5	3	168	14	0.74	< 10	< 1	0.03	< 10	< 0.01
644068	94139402	0.84	0.4	0.63	144	< 10	220	< 0.5	< 2	< 0.01	< 0.5	1	114	11	1.14	< 10	< 1	0.14	< 10	0.01
644069	94139402	1.02	2.4	0.23	184	< 10	150	< 0.5	< 2	0.01	< 0.5	1	129	5	1.03	< 10	< 1	0.11	< 10	0.01
644070	94139402	1.06	0.2	4.08	32	< 10	40	0.5	< 2	1.41	< 0.5	24	45	31	5.69	< 10	< 1	0.27	< 10	1.16
644071	94139402	0.98	< 0.2	1.04	16	< 10	120	< 0.5	< 2	0.03	< 0.5	22	97	23	2.03	< 10	< 1	0.32	< 10	0.51
644072	94139402	0.74	0.2	1.51	8	< 10	220	< 0.5	< 2	< 0.01	< 0.5	10	61	28	2.46	< 10	< 1	0.43	10	0.55
644073	94139402	1.12	3.0	0.54	6	< 10	10	< 0.5	< 2	0.01	32.0	3	153	127	1.74	< 10	< 1	0.01	< 10	0.39
644074	94139402	1.20	4.8	0.15	8	< 10	60	< 0.5	< 2	0.04	14.0	3	109	174	3.23	< 10	< 1	0.05	< 10	0.02
644075	94139402	1.16	76.8	0.15	38	< 10	70	< 0.5	32	< 0.01	10.5	< 1	151	53	0.76	< 10	< 1	0.11	< 10	< 0.01
644076	94139402	0.68	0.4	0.49	< 2	< 10	50	< 0.5	< 2	0.04	< 0.5	4	113	6	1.54	< 10	< 1	0.10	< 10	0.21
644077	94139402	0.66	0.2	0.10	2	< 10	50	< 0.5	< 2	0.01	< 0.5	1	158	7	0.61	< 10	< 1	0.04	< 10	0.03
644243	22594400	0.02	10.6	0.44	16	< 10	< 10	1.5	< 2	0.43	66.5	10	10	116	12.90	< 10	8	0.17	< 10	0.70

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-B
Total Pages : 1
Certificate Date: 27-JUL-2001
Invoice No. : I0120830
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0120830

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644453	94139402	285	12	< 0.01	35	6430	16	0.06	< 2	2	234	< 0.01	< 10	< 10	91	< 10	152
644454	94139402	470	< 1	0.04	22	290	18	1.22	4	3	38	0.04	< 10	< 10	20	< 10	66
644455	94139402	270	< 1	< 0.01	30	150	358	1.34	100	5	6	< 0.01	< 10	< 10	52	< 10	36
644219	94139402	595	< 1	0.01	33	310	6	0.02	< 2	4	31	0.12	< 10	< 10	16	< 10	58
644222	94139402	680	1	0.01	30	290	64	0.15	< 2	3	35	< 0.01	< 10	< 10	22	< 10	84
644223	94139402	240	1	< 0.01	36	700	12	0.02	4	3	32	< 0.01	< 10	< 10	37	< 10	124
644226	94139402	265	< 1	0.01	17	400	16	0.15	< 2	3	9	0.01	< 10	< 10	50	< 10	80
644227	94139402	5	5	0.01	54	170	66	>10.00	4	< 1	16	< 0.01	< 10	< 10	8	40	30
644229	94139402	265	< 1	0.01	13	90	14	0.28	2	1	8	< 0.01	< 10	< 10	10	< 10	34
644230	94139402	200	1	< 0.01	7	60	232	0.54	6	< 1	5	< 0.01	< 10	< 10	4	< 10	752
644231	94139402	195	< 1	< 0.01	7	60	228	0.50	< 2	< 1	5	< 0.01	< 10	< 10	4	< 10	798
644232	94139402	40	1	< 0.01	6	140	6	0.03	< 2	2	9	< 0.01	< 10	< 10	23	< 10	44
644233	94139402	50	< 1	< 0.01	8	80	3680	1.60	6	< 1	6	< 0.01	< 10	< 10	2	< 10	40
644235	94139402	95	2	< 0.01	6	140	1540	0.72	104	< 1	20	< 0.01	< 10	< 10	6	< 10	102
644236	94139402	330	< 1	< 0.01	12	150	34	0.01	2	3	10	0.02	< 10	< 10	13	< 10	106
644240	94139402	50	< 1	0.03	3	80	14	0.15	< 2	< 1	5	< 0.01	< 10	< 10	4	< 10	10
644241	94139402	320	< 1	< 0.01	6	50	4	0.01	< 2	< 1	3	< 0.01	< 10	< 10	1	< 10	8
644068	94139402	5	< 1	0.01	10	40	6	0.49	< 2	< 1	18	< 0.01	< 10	< 10	3	< 10	10
644069	94139402	15	< 1	< 0.01	4	10	8	0.67	40	< 1	11	< 0.01	< 10	< 10	1	< 10	6
644070	94139402	270	2	0.31	4	490	34	3.49	8	10	108	0.10	< 10	< 10	68	< 10	56
644071	94139402	275	9	0.04	41	70	8	0.98	2	1	12	0.01	< 10	< 10	14	< 10	18
644072	94139402	215	1	0.01	18	120	18	0.34	< 2	< 1	5	< 0.01	< 10	< 10	6	< 10	46
644073	94139402	310	1	< 0.01	6	90	3760	0.48	< 2	< 1	4	< 0.01	< 10	< 10	16	< 10	1800
644074	94139402	625	1	< 0.01	5	50	670	0.70	< 2	< 1	3	< 0.01	< 10	< 10	2	< 10	570
644075	94139402	20	< 1	< 0.01	3	40	>10000	0.46	46	< 1	6	< 0.01	< 10	< 10	1	< 10	774
644076	94139402	80	< 1	0.03	7	110	76	0.49	2	< 1	7	< 0.01	< 10	< 10	4	< 10	42
644077	94139402	30	< 1	< 0.01	7	80	32	0.04	< 2	< 1	5	< 0.01	< 10	< 10	4	< 10	6
644243	22594400	>10000	2	0.01	30	910	8630	1.95	< 2	3	9	< 0.01	< 10	< 10	20	< 10	>10000

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists • Geochemists • Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-A
Total Pages :1
Certificate Date: 27-JUL-2001
Invoice No. :I0120830
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0120830

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644453	9413 9402	0.60	0.6	1.15	20	< 10	160	0.5	4	1.56	< 0.5	6	90	41	4.10	< 10	< 1	0.27	10	0.56
644454	9413 9402	0.68	< 0.2	1.38	12	< 10	120	0.5	< 2	0.14	< 0.5	9	74	23	2.74	< 10	< 1	0.50	< 10	0.51
644455	9413 9402	0.78	4.8	1.39	38	< 10	30	< 0.5	142	0.02	< 0.5	5	136	202	5.89	< 10	< 1	0.15	< 10	0.60
644219	9413 9402	0.80	< 0.2	2.27	6	< 10	500	1.5	< 2	0.13	< 0.5	19	31	27	4.54	< 10	< 1	0.37	40	0.61
644222	9413 9402	1.08	< 0.2	2.39	10	< 10	170	0.5	2	0.36	< 0.5	17	62	26	4.95	< 10	< 1	0.19	10	0.79
644223	9413 9402	0.78	0.2	1.45	12	< 10	290	0.5	< 2	0.30	0.5	9	31	52	2.41	< 10	< 1	0.33	30	0.60
644226	9413 9402	0.98	0.2	2.44	8	< 10	40	0.5	< 2	0.01	< 0.5	9	63	35	7.04	< 10	< 1	0.25	< 10	1.23
644227	9413 9402	0.68	1.2	0.16	18	< 10	< 10	0.5	< 2	0.01	< 0.5	7	48	57	>15.00	< 10	< 1	0.04	< 10	0.07
644229	9413 9402	0.84	< 0.2	0.98	8	< 10	140	< 0.5	< 2	0.02	< 0.5	6	140	12	2.11	< 10	< 1	0.16	10	0.37
644230	9413 9402	1.40	2.2	0.49	2	< 10	100	< 0.5	2	0.01	13.0	4	101	63	1.74	< 10	< 1	0.18	< 10	0.16
644231	9413 9402	0.70	2.0	0.48	< 2	< 10	90	< 0.5	6	0.01	13.5	4	115	63	1.70	< 10	< 1	0.18	< 10	0.16
644232	9413 9402	0.88	0.2	0.50	14	< 10	190	< 0.5	< 2	< 0.01	< 0.5	1	123	20	1.30	< 10	1	0.21	< 10	0.09
644233	9413 9402	0.96	8.2	0.26	158	< 10	50	< 0.5	< 2	< 0.01	< 0.5	4	133	24	2.42	< 10	< 1	0.19	< 10	0.01
644235	9413 9402	1.30	17.8	0.19	1450	< 10	130	< 0.5	26	0.01	0.5	3	84	27	2.87	< 10	< 1	0.15	< 10	0.01
644236	9413 9402	0.78	< 0.2	1.08	12	< 10	220	0.5	< 2	0.05	0.5	7	68	13	2.00	< 10	< 1	0.39	20	0.26
644240	9413 9402	1.36	0.2	0.35	8	< 10	10	< 0.5	< 2	0.02	< 0.5	1	138	14	1.44	< 10	< 1	0.01	< 10	0.21
644241	9413 9402	1.06	0.2	0.05	8	< 10	70	< 0.5	< 2	< 0.01	< 0.5	3	168	14	0.74	< 10	< 1	0.03	< 10	< 0.01
644068	9413 9402	0.84	0.4	0.63	144	< 10	220	< 0.5	< 2	< 0.01	< 0.5	1	114	11	1.14	< 10	< 1	0.14	< 10	0.01
644069	9413 9402	1.02	2.4	0.23	184	< 10	150	< 0.5	< 2	0.01	< 0.5	1	129	5	1.03	< 10	< 1	0.11	< 10	0.01
644070	9413 9402	1.06	0.2	4.08	32	< 10	40	0.5	< 2	1.41	< 0.5	24	45	31	5.69	< 10	< 1	0.27	< 10	1.16
644071	9413 9402	0.98	< 0.2	1.04	16	< 10	120	< 0.5	< 2	0.03	< 0.5	22	97	23	2.03	< 10	< 1	0.32	< 10	0.51
644072	9413 9402	0.74	0.2	1.51	8	< 10	220	< 0.5	< 2	< 0.01	< 0.5	10	61	28	2.46	< 10	< 1	0.43	10	0.55
644073	9413 9402	1.12	3.0	0.54	6	< 10	10	< 0.5	< 2	0.01	32.0	3	153	127	1.74	< 10	< 1	0.01	< 10	0.39
644074	9413 9402	1.20	4.8	0.15	8	< 10	60	< 0.5	< 2	0.04	14.0	3	109	174	3.23	< 10	< 1	0.05	< 10	0.02
644075	9413 9402	1.16	76.8	0.15	38	< 10	70	< 0.5	32	< 0.01	10.5	< 1	151	53	0.76	< 10	< 1	0.11	< 10	< 0.01
644076	9413 9402	0.68	0.4	0.49	< 2	< 10	50	< 0.5	< 2	0.04	< 0.5	4	113	6	1.54	< 10	< 1	0.10	< 10	0.21
644077	9413 9402	0.66	0.2	0.10	2	< 10	50	< 0.5	< 2	0.01	< 0.5	1	158	7	0.61	< 10	< 1	0.04	< 10	0.03
644243	225 9400	0.02	10.6	0.44	16	< 10	< 10	1.5	< 2	0.43	66.5	10	10	116	12.90	< 10	8	0.17	< 10	0.70

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 27-JUL-2001
Invoice No. : I0120830
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0120830

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644453	9413 9402	285	12	< 0.01	35	6430	16	0.06	< 2	2	234	< 0.01	< 10	< 10	91	< 10	152
644454	9413 9402	470	< 1	0.04	22	290	18	1.22	4	3	38	0.04	< 10	< 10	20	< 10	66
644455	9413 9402	270	< 1	< 0.01	30	150	358	1.34	100	5	6	< 0.01	< 10	< 10	52	< 10	36
644219	9413 9402	595	< 1	0.01	33	310	6	0.02	< 2	4	31	0.12	< 10	< 10	16	< 10	58
644222	9413 9402	680	1	0.01	30	290	64	0.15	< 2	3	35	< 0.01	< 10	< 10	22	< 10	84
644223	9413 9402	240	1	< 0.01	36	700	12	0.02	4	3	32	< 0.01	< 10	< 10	37	< 10	124
644226	9413 9402	265	< 1	0.01	17	400	16	0.15	< 2	3	9	0.01	< 10	< 10	50	< 10	80
644227	9413 9402	5	5	0.01	54	170	66	>10.00	4	< 1	16	< 0.01	< 10	< 10	8	40	30
644229	9413 9402	265	< 1	0.01	13	90	14	0.28	2	1	8	< 0.01	< 10	< 10	10	< 10	34
644230	9413 9402	200	1	< 0.01	7	60	232	0.54	6	< 1	5	< 0.01	< 10	< 10	4	< 10	752
644231	9413 9402	195	< 1	< 0.01	7	60	228	0.50	< 2	< 1	5	< 0.01	< 10	< 10	4	< 10	798
644232	9413 9402	40	1	< 0.01	6	140	6	0.03	< 2	2	9	< 0.01	< 10	< 10	23	< 10	44
644233	9413 9402	50	< 1	< 0.01	8	80	3680	1.60	6	< 1	6	< 0.01	< 10	< 10	2	< 10	40
644235	9413 9402	95	2	< 0.01	6	140	1540	0.72	104	< 1	20	< 0.01	< 10	< 10	6	< 10	102
644236	9413 9402	330	< 1	< 0.01	12	150	34	0.01	2	3	10	0.02	< 10	< 10	13	< 10	106
644240	9413 9402	50	< 1	0.03	3	80	14	0.15	< 2	< 1	5	< 0.01	< 10	< 10	4	< 10	10
644241	9413 9402	320	< 1	< 0.01	6	50	4	0.01	< 2	< 1	3	< 0.01	< 10	< 10	1	< 10	8
644068	9413 9402	5	< 1	0.01	10	40	6	0.49	< 2	< 1	18	< 0.01	< 10	< 10	3	< 10	10
644069	9413 9402	15	< 1	< 0.01	4	10	8	0.67	40	< 1	11	< 0.01	< 10	< 10	1	< 10	6
644070	9413 9402	270	2	0.31	4	490	34	3.49	8	10	108	0.10	< 10	< 10	68	< 10	56
644071	9413 9402	275	9	0.04	41	70	8	0.98	2	1	12	0.01	< 10	< 10	14	< 10	18
644072	9413 9402	215	1	0.01	18	120	18	0.34	< 2	< 1	5	< 0.01	< 10	< 10	6	< 10	46
644073	9413 9402	310	1	< 0.01	6	90	3760	0.48	< 2	< 1	4	< 0.01	< 10	< 10	16	< 10	1800
644074	9413 9402	625	1	< 0.01	5	50	670	0.70	< 2	< 1	3	< 0.01	< 10	< 10	2	< 10	570
644075	9413 9402	20	< 1	< 0.01	3	40	>10000	0.46	46	< 1	6	< 0.01	< 10	< 10	1	< 10	774
644076	9413 9402	80	< 1	0.03	7	110	76	0.49	2	< 1	7	< 0.01	< 10	< 10	4	< 10	42
644077	9413 9402	30	< 1	< 0.01	7	80	32	0.04	< 2	< 1	5	< 0.01	< 10	< 10	4	< 10	6
644243	225 9400	>10000	2	0.01	30	910	8630	1.95	< 2	3	9	< 0.01	< 10	< 10	20	< 10	>10000

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG 2 1 2001

A0120988

Comments: ATTN: DAVE KING

CERTIFICATE A0120988

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 16-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
SCR-42	5	-180 micron screen - Save Minus
SCR-01	5	Screen - Save Plus Charge
LOG-22	5	Samples received without barcode
229	5	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
WEI-21	5	Weight of received sample	BALANCE	0.01	1000.0
Ag-ICP41	5	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	5	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	5	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	5	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	5	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	5	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	5	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	5	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	5	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	5	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	5	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	5	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	5	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	5	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	5	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	5	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	5	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	5	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	5	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	5	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	5	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	5	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	5	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	5	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	5	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	5	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	5	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	5	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	5	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	5	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	5	U ppm: 32 element, soil & rock	ICP-AES	10	10000
V-ICP41	5	V ppm: 32 element, soil & rock	ICP-AES	1	10000
W-ICP41	5	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	5	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

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CERTIFICATE OF ANALYSIS A0120988

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
633234	94069407	0.48	82.6	1.21	76	< 10	60	1.0	54	0.12	23.5	10	18	937	12.10	< 10	< 1	0.07	< 10	0.18
644220	94069407	0.58	0.2	1.44	24	< 10	140	0.5	< 2	0.01	< 0.5	7	20	24	4.48	< 10	< 1	0.04	< 10	0.19
644221	94069407	0.40	0.2	0.70	14	< 10	80	< 0.5	< 2	< 0.01	< 0.5	3	7	14	1.30	< 10	1	0.03	< 10	0.04
644224	94069407	0.80	< 0.2	1.32	28	< 10	250	0.5	< 2	0.39	0.5	15	28	52	3.40	< 10	1	0.10	10	0.56
644225	94069407	0.48	< 0.2	0.82	16	< 10	190	0.5	2	0.35	< 0.5	11	14	36	2.52	< 10	2	0.06	10	0.30

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: DAVE KING

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Invoice No. :I0120988
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0120988

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
633234	94069407	1260	< 1	< 0.01	21	860	>10000	1.17	30	3	21	< 0.01	< 10	< 10	25	< 10	3120
644220	94069407	295	3	< 0.01	17	810	52	0.01	2	1	9	0.01	< 10	< 10	63	< 10	138
644221	94069407	165	1	< 0.01	6	340	78	0.01	< 2	< 1	5	0.01	< 10	< 10	42	< 10	58
644224	94069407	700	2	< 0.01	40	750	40	0.06	< 2	3	53	0.01	< 10	< 10	30	< 10	136
644225	94069407	530	< 1	< 0.01	28	510	34	0.02	< 2	3	44	< 0.01	< 10	< 10	17	< 10	118

CERTIFICATION:

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5175 Timberlea Blvd., Mississauga
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874 TUNGSTEN ST.
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P7B 6J3

Project : 2501
Comments: ATTN: DAVE KING

Page Number : 1-A
Total Pages : 1
Certificate Date: 27-JUL-2001
Invoice No. : I0120988
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0120988

SAMPLE	PREP CODE		Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
633234	94069	407	0.48	82.6	1.21	76	< 10	60	1.0	54	0.12	23.5	10	18	937	12.10	< 10	< 1	0.07	< 10	0.18
644220	94069	407	0.58	0.2	1.44	24	< 10	140	0.5	< 2	0.01	< 0.5	7	20	24	4.48	< 10	< 1	0.04	< 10	0.19
644221	94069	407	0.40	0.2	0.70	14	< 10	80	< 0.5	< 2	< 0.01	< 0.5	3	7	14	1.30	< 10	1	0.03	< 10	0.04
644224	94069	407	0.80	< 0.2	1.32	28	< 10	250	0.5	< 2	0.39	0.5	15	28	52	3.40	< 10	1	0.10	10	0.56
644225	94069	407	0.48	< 0.2	0.82	16	< 10	190	0.5	2	0.35	< 0.5	11	14	36	2.52	< 10	2	0.06	10	0.30

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To: NORANDA MINING AND EXPLORATION INC.

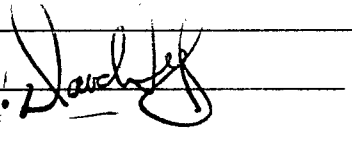
874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: DAVE KING

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P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0120988

SAMPLE	PREP CODE		Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
633234	9406	9407	1260	< 1	< 0.01	21	860	>10000	1.17	30	3	21	< 0.01	< 10	< 10	25	< 10	3120
644220	9406	9407	295	3	< 0.01	17	810	52	0.01	2	1	9	0.01	< 10	< 10	63	< 10	138
644221	9406	9407	165	1	< 0.01	6	340	78	0.01	< 2	< 1	5	0.01	< 10	< 10	42	< 10	58
644224	9406	9407	700	2	< 0.01	40	750	40	0.06	< 2	3	53	0.01	< 10	< 10	30	< 10	136
644225	9406	9407	530	< 1	< 0.01	28	510	34	0.02	< 2	3	44	< 0.01	< 10	< 10	17	< 10	118

CERTIFICATION: 

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG 2 1 2001

A0120992

Comments: ATTN: DAVE KING

CERTIFICATE A0120992

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 16-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	1	Pulv. <250g to >85%/-75 micron
STO-21	1	Reject Storage-First 90 Days
LOG-22	1	Samples received without barcode
CRU-31	1	Crush to 70% minus 2mm
SPL-21	1	Splitting Charge
229	1	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
WEI-21	1	Weight of received sample	BALANCE	0.01	1000.0
Ag-ICP41	1	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	1	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	1	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	1	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	1	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	1	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	1	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	1	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	1	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	1	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	1	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	1	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	1	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	1	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	1	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	1	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	1	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	1	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	1	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	1	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	1	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	1	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	1	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	1	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	1	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	1	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	1	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	1	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	1	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	1	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	1	U ppm: 32 element, soil & rock	ICP-AES	10	10000
V-ICP41	1	V ppm: 32 element, soil & rock	ICP-AES	1	10000
W-ICP41	1	W ppm: 32 element, soil & rock	ICP-AES	10	10000

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
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Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: DAVE KING

Page Number : 1-A
Total Pages : 1
Certificate Date: 27-JUL-2001
Invoice No. : I0120992
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Account : BUF

CERTIFICATE OF ANALYSIS A0120992

SAMPLE	PREP CODE		Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644101	9413	9402	1.60	1.0	0.19	2	< 10	10	< 0.5	< 2	0.21	< 0.5	3	149	31	0.75	< 10	1	0.04	< 10	0.08

CERTIFICATION:

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CERTIFICATE OF ANALYSIS A0120992

SAMPLE	PREP CODE		Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644101	9413	9402	170	< 1	< 0.01	5	10	384	0.11	4	< 1	11	< 0.01	< 10	< 10	2	< 10	26

CERTIFICATION:

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CERTIFICATE OF ANALYSIS A0120992

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644101	9413 9402	1.60	1.0	0.19	2	< 10	10	< 0.5	< 2	0.21	< 0.5	3	149	31	0.75	< 10	1	0.04	< 10	0.08

CERTIFICATION:

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CERTIFICATE OF ANALYSIS A0120992

SAMPLE	PREP CODE		Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644101	9413	9402	170	< 1	< 0.01	5	10	384	0.11	4	< 1	11	< 0.01	< 10	< 10	2	< 10	26

CERTIFICATION:

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Aurora Laboratory Services Ltd.
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

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A0121013

Comments: ATTN: CLINT BARR

CERTIFICATE A0121013

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 24-JUL-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	2	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Zn-AA46	2	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

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Project : 2501
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CERTIFICATE OF ANALYSIS A0121013

SAMPLE	PREP CODE	Zn %
644067	212 --	2.50
644252	212 --	2.90

CERTIFICATION: _____

OVERLIMITS from A0120654

ALS Chemex

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5175 Timberlea Blvd., Mississauga
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CERTIFICATE OF ANALYSIS A0121013

SAMPLE	PREP CODE	Zn %
644067	212 --	2.50
644252	212 --	2.90

CERTIFICATION: _____

OVERLIMITS from A0120654

ALS Chemex

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A0121249

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CERTIFICATE A0121249

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 31-JUL-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
SCR-42	144	-180 micron screen - Save Minus
SCR-01	144	Screen - Save Plus Charge
LOG-22	144	Samples received without barcode
229	144	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1433	144	Weight of received sample	BALANCE	0.01	1000.0
Ag-ICP41	144	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	144	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	144	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	144	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	144	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	144	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	144	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	144	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	144	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	144	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	144	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	144	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	144	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	144	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	144	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	144	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	144	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	144	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	144	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	144	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	144	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	144	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	144	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	144	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	144	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	144	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	144	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	144	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	144	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	144	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	144	U ppm: 32 element, soil & rock	ICP-AES	10	10000
V-ICP41	144	V ppm: 32 element, soil & rock	ICP-AES	1	10000
W-ICP41	144	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	144	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-A
Total Pages :4
Certificate Date: 31-JUL-2001
Invoice No. :I0121249
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
LB0E/300N	94069407	0.32	< 0.2	0.67	10	< 10	120	< 0.5	< 2	0.12	< 0.5	5	8	16	1.91	< 10	< 1	0.08	20	0.08
LB0E/325N	94069407	0.16	0.8	1.59	84	< 10	580	1.5	< 2	1.34	7.5	12	12	104	2.72	< 10	< 1	0.08	10	0.13
LB0E/350N	94069407	0.20	0.2	0.49	< 2	< 10	100	< 0.5	< 2	0.17	< 0.5	1	3	16	0.51	< 10	< 1	0.03	< 10	0.03
LB0E/375N	94069407	0.34	< 0.2	1.49	18	< 10	200	0.5	< 2	0.32	0.5	18	47	51	3.31	< 10	< 1	0.09	10	0.80
LB0E/400N	94069407	0.46	< 0.2	1.09	6	< 10	200	0.5	< 2	0.32	< 0.5	11	21	40	2.02	< 10	< 1	0.07	10	0.44
LB0E/425N	94069407	0.46	< 0.2	1.06	10	< 10	220	0.5	< 2	0.28	< 0.5	10	21	39	1.93	< 10	< 1	0.08	10	0.43
LB0E/450N	94069407	0.30	< 0.2	1.08	22	< 10	200	0.5	< 2	0.27	< 0.5	14	23	33	2.71	< 10	< 1	0.07	10	0.46
LB0E/475N	94069407	0.16	< 0.2	0.39	< 2	< 10	30	< 0.5	< 2	0.04	< 0.5	< 1	1	9	0.37	< 10	< 1	0.01	< 10	0.01
LB0E/500N	94069407	0.34	< 0.2	0.22	< 2	< 10	10	< 0.5	< 2	0.03	< 0.5	< 1	1	2	0.26	< 10	< 1	0.01	< 10	0.01
LB0E/525N	94069407	0.28	0.2	0.54	2	< 10	100	< 0.5	4	0.07	< 0.5	2	6	13	0.79	< 10	< 1	0.04	< 10	0.06
LB0E/550N	94069407	0.38	< 0.2	1.14	16	< 10	90	< 0.5	< 2	0.01	< 0.5	7	13	22	3.67	< 10	< 1	0.07	30	0.14
LB0E/575N	94069407	0.30	< 0.2	0.70	8	< 10	70	< 0.5	< 2	0.03	< 0.5	2	7	11	1.51	< 10	< 1	0.03	< 10	0.07
LB0E/600N	94069407	0.40	0.2	0.91	8	< 10	110	< 0.5	< 2	0.04	1.5	5	9	29	2.73	< 10	< 1	0.08	10	0.08
LB2E/300N	94069407	0.26	< 0.2	1.05	16	< 10	230	0.5	< 2	0.19	0.5	14	21	33	2.92	< 10	< 1	0.08	10	0.43
LB2E/325N	94069407	0.36	< 0.2	1.10	14	< 10	210	0.5	< 2	0.24	0.5	14	22	38	3.11	< 10	< 1	0.07	10	0.47
LB2E/350N	94069407	0.24	< 0.2	1.25	18	< 10	240	0.5	< 2	0.42	0.5	15	22	43	3.13	< 10	< 1	0.09	10	0.46
LB2E/375N	94069407	0.26	< 0.2	1.22	16	< 10	230	0.5	< 2	0.37	0.5	15	22	39	3.14	< 10	< 1	0.07	10	0.49
LB2E/400N	94069407	0.36	< 0.2	1.12	14	< 10	270	0.5	< 2	0.38	1.0	15	24	35	3.05	< 10	< 1	0.10	10	0.48
LB2E/425N	94069407	0.46	< 0.2	1.20	16	< 10	270	0.5	4	0.32	0.5	15	24	40	3.12	< 10	< 1	0.09	10	0.49
LB2E/450N	94069407	0.36	< 0.2	1.00	30	< 10	120	< 0.5	< 2	0.19	1.0	7	13	22	2.31	< 10	< 1	0.06	10	0.24
LB2E/475N	94069407	0.26	< 0.2	0.91	14	< 10	150	< 0.5	2	0.03	0.5	6	8	13	1.97	< 10	< 1	0.08	10	0.14
LB2E/500N	94069407	0.40	< 0.2	0.83	16	< 10	70	< 0.5	2	0.01	< 0.5	7	10	9	2.28	< 10	< 1	0.08	20	0.17
LB2E/525N	94069407	0.26	< 0.2	0.81	10	< 10	110	< 0.5	< 2	0.04	< 0.5	4	7	11	1.54	< 10	< 1	0.07	10	0.07
LB2E/550N	94069407	0.26	< 0.2	0.54	2	< 10	60	< 0.5	< 2	0.03	< 0.5	1	6	6	0.94	< 10	< 1	0.04	< 10	0.05
LB2E/575N	94069407	0.24	< 0.2	0.35	< 2	< 10	60	< 0.5	< 2	0.47	< 0.5	< 1	2	13	0.35	< 10	< 1	0.02	< 10	0.01
LB2E/600N	94069407	0.32	< 0.2	1.16	18	< 10	130	< 0.5	< 2	0.03	< 0.5	6	15	15	2.22	< 10	< 1	0.07	10	0.18
LB4E/300N	94069407	0.28	< 0.2	0.80	14	< 10	190	< 0.5	< 2	0.42	< 0.5	15	18	26	2.46	< 10	< 1	0.08	10	0.24
LB4E/325N	94069407	0.46	< 0.2	0.82	12	< 10	100	< 0.5	< 2	0.08	< 0.5	12	17	24	2.71	< 10	< 1	0.06	10	0.29
LB4E/350N	94069407	0.44	< 0.2	1.06	12	< 10	230	0.5	< 2	0.30	< 0.5	12	21	29	2.66	< 10	< 1	0.08	10	0.40
LB4E/375N	94069407	0.54	< 0.2	1.10	12	< 10	210	0.5	< 2	0.39	< 0.5	12	21	31	2.73	< 10	< 1	0.09	10	0.39
LB4E/400N	94069407	0.42	< 0.2	0.61	2	< 10	100	< 0.5	< 2	0.04	< 0.5	4	7	9	1.50	< 10	< 1	0.05	< 10	0.07
LB4E/425N	94069407	0.28	< 0.2	0.49	< 2	< 10	100	< 0.5	< 2	0.29	< 0.5	1	3	7	0.56	< 10	< 1	0.05	< 10	0.03
LB4E/450N	94069407	0.34	< 0.2	1.42	14	< 10	150	1.0	< 2	0.16	< 0.5	12	10	19	3.03	< 10	< 1	0.11	20	0.17
LB4E/475N	94069407	0.30	< 0.2	0.72	12	< 10	110	< 0.5	< 2	0.05	< 0.5	4	6	14	1.36	< 10	< 1	0.06	10	0.07
LB4E/500N	94069407	0.34	< 0.2	0.81	12	< 10	80	< 0.5	< 2	0.01	< 0.5	5	11	9	2.69	< 10	< 1	0.05	< 10	0.12
LB4E/525N	94069407	0.32	< 0.2	0.31	6	< 10	40	< 0.5	2	0.13	< 0.5	2	2	6	0.60	< 10	< 1	0.02	< 10	0.03
LB4E/550N	94069407	0.30	< 0.2	0.37	2	< 10	80	< 0.5	< 2	0.23	< 0.5	2	4	6	0.67	< 10	< 1	0.02	< 10	0.06
LB4E/575N	94069407	0.36	< 0.2	1.30	28	< 10	200	0.5	2	0.07	< 0.5	9	17	16	2.56	< 10	< 1	0.07	10	0.30
LB4E/600N	94069407	0.08	< 0.2	1.73	272	< 10	130	0.5	< 2	0.03	< 0.5	11	20	35	3.52	< 10	< 1	0.07	30	0.45
LB6E/300N	94069407	0.30	< 0.2	0.85	14	< 10	110	< 0.5	< 2	< 0.01	< 0.5	3	10	23	2.19	< 10	< 1	0.04	< 10	0.10

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 31-JUL-2001
Invoice No. : I0121249
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
LB0E/300N	94069407	170	1	0.01	8	240	62	0.01	< 2	< 1	15	< 0.01	< 10	< 10	21	< 10	94
LB0E/325N	94069407	3750	1	0.01	41	1040	34	0.05	2	1	120	< 0.01	< 10	< 10	28	< 10	260
LB0E/350N	94069407	250	< 1	0.02	6	350	18	0.03	< 2	< 1	19	< 0.01	< 10	< 10	8	< 10	24
LB0E/375N	94069407	245	1	< 0.01	54	720	22	0.04	6	5	43	0.01	< 10	< 10	40	< 10	118
LB0E/400N	94069407	135	1	0.01	32	660	18	0.03	4	3	40	0.01	< 10	< 10	27	< 10	102
LB0E/425N	94069407	140	2	< 0.01	32	600	16	0.03	2	3	35	0.01	< 10	< 10	25	< 10	86
LB0E/450N	94069407	480	1	< 0.01	33	460	16	0.03	4	2	34	0.01	< 10	< 10	26	< 10	96
LB0E/475N	94069407	15	< 1	0.02	1	320	2	0.02	< 2	< 1	10	0.01	< 10	< 10	7	< 10	18
LB0E/500N	94069407	10	1	0.03	< 1	230	< 2	< 0.01	< 2	< 1	8	0.01	< 10	< 10	8	< 10	10
LB0E/525N	94069407	85	1	0.01	5	600	6	0.03	< 2	< 1	13	< 0.01	< 10	< 10	11	< 10	20
LB0E/550N	94069407	290	3	< 0.01	12	1010	14	0.01	< 2	< 1	8	< 0.01	10	< 10	43	< 10	74
LB0E/575N	94069407	90	1	0.01	6	370	18	0.01	< 2	< 1	7	< 0.01	< 10	< 10	19	< 10	34
LB0E/600N	94069407	135	4	0.01	18	680	14	0.01	< 2	< 1	9	< 0.01	< 10	< 10	40	< 10	144
LB2E/300N	94069407	705	2	< 0.01	32	670	16	0.03	6	3	29	0.01	< 10	< 10	26	< 10	112
LB2E/325N	94069407	685	2	< 0.01	36	600	18	0.03	2	3	33	< 0.01	< 10	< 10	26	< 10	96
LB2E/350N	94069407	960	3	0.01	37	720	20	0.04	2	3	53	0.01	< 10	< 10	30	< 10	108
LB2E/375N	94069407	875	2	0.01	36	730	20	0.03	2	3	48	0.01	< 10	< 10	28	< 10	110
LB2E/400N	94069407	950	1	0.01	37	770	18	0.04	2	3	40	0.01	< 10	< 10	27	< 10	120
LB2E/425N	94069407	910	2	0.01	39	710	22	0.03	4	3	42	0.01	< 10	< 10	29	< 10	112
LB2E/450N	94069407	335	3	0.01	15	480	14	0.02	6	< 1	27	0.01	< 10	< 10	30	< 10	90
LB2E/475N	94069407	400	2	0.01	11	270	26	0.02	< 2	< 1	10	< 0.01	< 10	< 10	22	< 10	72
LB2E/500N	94069407	465	2	< 0.01	12	340	20	0.01	2	< 1	7	< 0.01	< 10	< 10	25	< 10	68
LB2E/525N	94069407	100	1	0.01	9	150	8	0.01	< 2	< 1	8	< 0.01	< 10	< 10	25	< 10	38
LB2E/550N	94069407	70	< 1	< 0.01	4	120	10	0.01	< 2	< 1	6	0.03	< 10	< 10	37	< 10	28
LB2E/575N	94069407	25	< 1	0.03	3	200	4	0.01	< 2	< 1	29	< 0.01	< 10	< 10	7	< 10	18
LB2E/600N	94069407	145	1	0.01	14	180	10	< 0.01	< 2	< 1	7	< 0.01	< 10	< 10	30	< 10	58
LB4E/300N	94069407	1150	1	0.01	21	520	34	0.04	2	1	43	< 0.01	< 10	< 10	26	< 10	118
LB4E/325N	94069407	605	3	< 0.01	23	480	24	0.01	2	1	10	< 0.01	< 10	< 10	24	< 10	82
LB4E/350N	94069407	795	1	0.01	33	700	16	0.01	2	3	29	0.01	< 10	< 10	25	< 10	88
LB4E/375N	94069407	785	1	0.01	30	680	20	0.01	2	3	34	0.01	< 10	< 10	26	< 10	112
LB4E/400N	94069407	255	< 1	0.02	7	260	4	0.01	< 2	< 1	8	0.01	< 10	< 10	21	< 10	42
LB4E/425N	94069407	140	< 1	0.02	3	300	< 2	0.01	< 2	< 1	22	< 0.01	< 10	< 10	11	< 10	28
LB4E/450N	94069407	610	1	0.01	20	290	24	0.01	< 2	1	17	< 0.01	< 10	< 10	18	< 10	56
LB4E/475N	94069407	150	< 1	0.01	7	170	6	< 0.01	< 2	< 1	8	< 0.01	< 10	< 10	19	< 10	32
LB4E/500N	94069407	425	1	< 0.01	9	230	20	< 0.01	< 2	< 1	4	0.01	< 10	< 10	28	< 10	52
LB4E/525N	94069407	110	< 1	0.03	3	440	2	< 0.01	< 2	< 1	11	0.01	< 10	< 10	13	< 10	16
LB4E/550N	94069407	90	< 1	0.03	3	280	2	0.03	< 2	< 1	18	0.01	< 10	< 10	15	< 10	22
LB4E/575N	94069407	395	1	< 0.01	16	260	18	< 0.01	6	1	9	< 0.01	< 10	< 10	29	< 10	58
LB4E/600N	94069407	430	2	< 0.01	29	280	34	0.01	< 2	1	5	< 0.01	< 10	< 10	23	< 10	86
LB6E/300N	94069407	115	3	< 0.01	12	480	8	< 0.01	2	< 1	5	< 0.01	< 10	< 10	51	< 10	72

CERTIFICATION: _____

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project: 2501
Comments: ATTN: CLINT BARR

Certificate Date: 31-JUL-2001
Invoice No. :I0121249
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
LB6E/325N	94069407	0.20	0.6	1.30	10	< 10	120	< 0.5	< 2	0.04	< 0.5	5	11	10	2.37	< 10	< 1	0.03	< 10	0.06
LB6E/350N	94069407	0.14	< 0.2	0.24	< 2	< 10	40	< 0.5	2	0.16	< 0.5	< 1	< 1	3	0.26	< 10	< 1	0.02	< 10	0.01
LB6E/375N	94069407	0.20	< 0.2	0.18	< 2	< 10	20	< 0.5	< 2	0.07	< 0.5	< 1	< 1	2	0.20	< 10	< 1	0.02	< 10	0.01
LB6E/400N	94069407	0.22	< 0.2	0.50	< 2	< 10	90	< 0.5	< 2	0.12	< 0.5	2	3	11	0.47	< 10	< 1	0.03	< 10	0.03
LB6E/425N	94069407	0.24	< 0.2	0.69	12	< 10	120	< 0.5	< 2	0.03	< 0.5	5	8	16	2.23	< 10	< 1	0.08	20	0.07
LB6E/450N	94069407	0.28	< 0.2	1.51	32	< 10	100	< 0.5	< 2	0.01	< 0.5	7	16	14	2.80	< 10	< 1	0.06	20	0.30
LB6E/475N	94069407	0.30	< 0.2	1.11	38	< 10	200	0.5	< 2	0.02	< 0.5	9	13	25	3.00	< 10	< 1	0.10	20	0.17
LB6E/500N	94069407	0.22	< 0.2	1.19	74	< 10	160	< 0.5	< 2	0.13	< 0.5	9	20	34	3.11	< 10	< 1	0.09	10	0.40
LB6E/525N	94069407	0.18	< 0.2	0.97	24	< 10	110	< 0.5	< 2	0.11	< 0.5	6	13	18	2.50	< 10	< 1	0.08	30	0.22
LB6E/550N	94069407	0.20	< 0.2	0.70	12	< 10	60	< 0.5	< 2	0.02	< 0.5	4	8	18	2.06	< 10	< 1	0.06	10	0.07
LB6E/575N	94069407	0.20	< 0.2	0.22	< 2	< 10	20	< 0.5	< 2	0.03	< 0.5	< 1	< 1	1	0.27	< 10	< 1	0.02	< 10	< 0.01
LB6E/600N	94069407	0.24	< 0.2	0.71	14	< 10	210	< 0.5	< 2	0.07	0.5	5	7	14	1.26	< 10	< 1	0.06	10	0.07
LB8E/300N	94069407	0.28	0.2	0.84	28	< 10	140	0.5	2	0.42	2.5	14	14	36	2.93	< 10	< 1	0.07	10	0.27
LB8E/325N	94069407	0.28	< 0.2	0.77	14	< 10	190	< 0.5	< 2	0.07	0.5	5	10	16	2.17	< 10	< 1	0.06	10	0.10
LB8E/350N	94069407	0.24	0.2	1.31	34	< 10	130	0.5	< 2	0.05	< 0.5	12	16	35	2.82	< 10	< 1	0.08	10	0.31
LB8E/375N	94069407	0.20	< 0.2	0.45	6	< 10	80	< 0.5	< 2	0.01	< 0.5	4	3	8	0.73	< 10	< 1	0.04	< 10	0.03
LB8E/400N	94069407	0.22	< 0.2	1.08	30	< 10	230	0.5	< 2	0.02	< 0.5	10	9	14	2.00	< 10	< 1	0.09	< 10	0.11
LB8E/425N	94069407	0.18	< 0.2	0.73	12	< 10	160	< 0.5	4	0.04	0.5	13	8	25	1.67	< 10	< 1	0.07	< 10	0.07
LB8E/450N	94069407	0.22	< 0.2	0.44	8	< 10	100	< 0.5	2	0.01	< 0.5	4	4	7	0.86	< 10	< 1	0.04	< 10	0.04
LB8E/475N	94069407	0.30	< 0.2	0.81	56	< 10	100	< 0.5	< 2	0.03	< 0.5	6	10	16	2.53	< 10	< 1	0.08	10	0.11
LB8E/500N	94069407	0.26	< 0.2	0.67	64	< 10	90	< 0.5	< 2	0.03	< 0.5	6	11	13	1.68	< 10	< 1	0.07	10	0.12
LB8E/525N	94069407	0.22	< 0.2	1.14	120	< 10	260	< 0.5	< 2	0.06	< 0.5	10	16	31	2.77	< 10	< 1	0.06	10	0.26
LB8E/550N	94069407	0.22	< 0.2	1.53	66	< 10	100	< 0.5	< 2	0.01	< 0.5	10	20	23	3.73	< 10	< 1	0.05	10	0.37
LB8E/575N	94069407	0.14	< 0.2	0.19	< 2	< 10	20	< 0.5	< 2	0.08	< 0.5	1	1	3	0.49	< 10	< 1	0.01	< 10	0.02
LB8E/600N	94069407	0.34	< 0.2	1.53	88	< 10	180	0.5	< 2	0.02	< 0.5	11	21	31	3.30	< 10	< 1	0.07	10	0.41
LB10E/300N	94069407	0.12	< 0.2	0.97	16	< 10	180	0.5	< 2	0.38	< 0.5	12	19	35	2.64	< 10	< 1	0.07	< 10	0.37
LB10E/325N	94069407	0.16	< 0.2	0.78	10	< 10	180	0.5	2	0.27	< 0.5	12	14	38	2.40	< 10	< 1	0.07	< 10	0.29
LB10E/350N	94069407	0.18	< 0.2	0.16	< 2	< 10	30	< 0.5	< 2	0.03	< 0.5	< 1	1	4	0.25	< 10	< 1	0.03	< 10	0.01
LB10E/375N	94069407	0.24	< 0.2	0.91	40	< 10	190	0.5	< 2	0.48	< 0.5	12	15	33	2.68	< 10	< 1	0.07	< 10	0.32
LB10E/400N	94069407	0.12	< 0.2	0.96	44	< 10	260	< 0.5	< 2	0.89	< 0.5	8	12	33	1.87	< 10	< 1	0.06	< 10	0.26
LB10E/425N	94069407	0.12	< 0.2	0.82	42	< 10	220	< 0.5	< 2	1.04	< 0.5	7	12	29	1.77	< 10	< 1	0.07	< 10	0.24
LB10E/450N	94069407	0.14	< 0.2	1.00	56	< 10	290	0.5	< 2	1.13	0.5	8	13	40	2.12	< 10	< 1	0.08	< 10	0.28
LB10E/475N	94069407	0.16	< 0.2	0.95	60	< 10	250	0.5	2	0.79	< 0.5	8	13	34	2.23	< 10	< 1	0.07	< 10	0.28
LB10E/500N	94069407	0.18	< 0.2	0.84	52	< 10	200	< 0.5	2	0.46	< 0.5	7	12	29	2.02	< 10	< 1	0.08	< 10	0.23
LB10E/525N	94069407	0.14	< 0.2	0.90	72	< 10	200	< 0.5	< 2	1.13	< 0.5	9	13	35	2.10	< 10	< 1	0.07	< 10	0.27
LB10E/550N	94069407	0.12	< 0.2	1.03	252	< 10	120	0.5	< 2	0.48	< 0.5	18	19	64	3.24	< 10	< 1	0.09	< 10	0.39
LB10E/575N	94069407	0.24	< 0.2	0.93	244	< 10	120	0.5	< 2	0.38	< 0.5	16	18	55	3.13	< 10	< 1	0.07	< 10	0.36
LB10E/600N	94069407	0.20	< 0.2	1.15	194	< 10	190	0.5	< 2	0.69	< 0.5	15	20	64	3.18	< 10	< 1	0.10	10	0.41
L0N/000E	94069407	0.38	< 0.2	1.45	52	< 10	140	0.5	< 2	0.03	< 0.5	8	24	17	3.50	< 10	< 1	0.06	20	0.43
L0N/025E	94069407	0.20	< 0.2	1.30	24	< 10	330	< 0.5	< 2	0.06	< 0.5	9	16	15	2.13	< 10	< 1	0.05	10	0.30

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 31-JUL-2001
Invoice No. : I0121249
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
LB6E/325N	94069407	495	1	0.01	8	580	14	0.02	< 2	< 1	6	< 0.01	< 10	< 10	28	< 10	56
LB6E/350N	94069407	25	< 1	0.03	1	390	< 2	< 0.01	< 2	< 1	15	0.01	< 10	< 10	8	< 10	12
LB6E/375N	94069407	20	< 1	0.03	< 1	190	< 2	< 0.01	< 2	< 1	9	0.01	< 10	< 10	6	< 10	6
LB6E/400N	94069407	135	< 1	0.03	3	140	2	0.01	< 2	< 1	17	< 0.01	< 10	< 10	8	< 10	16
LB6E/425N	94069407	225	1	0.01	12	670	16	0.01	< 2	< 1	8	< 0.01	< 10	< 10	28	< 10	60
LB6E/450N	94069407	295	2	< 0.01	16	370	12	< 0.01	6	1	6	< 0.01	< 10	< 10	37	< 10	92
LB6E/475N	94069407	385	2	< 0.01	17	350	16	0.01	2	< 1	7	< 0.01	< 10	< 10	33	< 10	84
LB6E/500N	94069407	505	2	0.01	23	430	16	0.01	6	1	14	< 0.01	< 10	< 10	34	< 10	88
LB6E/525N	94069407	220	1	< 0.01	16	640	20	0.01	6	< 1	11	< 0.01	< 10	< 10	26	< 10	88
LB6E/550N	94069407	150	1	0.01	10	450	8	0.01	< 2	< 1	6	< 0.01	< 10	< 10	31	< 10	68
LB6E/575N	94069407	10	< 1	0.03	< 1	110	< 2	< 0.01	< 2	< 1	8	0.01	< 10	< 10	7	< 10	6
LB6E/600N	94069407	265	1	0.01	8	280	14	0.01	< 2	< 1	12	0.01	< 10	< 10	27	< 10	46
LB8E/300N	94069407	845	1	< 0.01	29	590	68	0.03	< 2	3	47	< 0.01	< 10	< 10	23	< 10	774
LB8E/325N	94069407	225	2	< 0.01	12	290	20	< 0.01	2	< 1	12	0.01	< 10	< 10	34	< 10	72
LB8E/350N	94069407	710	3	0.01	24	550	16	0.02	< 2	1	16	< 0.01	< 10	< 10	24	< 10	80
LB8E/375N	94069407	410	< 1	0.03	3	230	4	< 0.01	< 2	< 1	5	0.01	< 10	< 10	11	< 10	20
LB8E/400N	94069407	1620	1	0.01	10	440	12	0.01	2	< 1	7	< 0.01	< 10	< 10	19	< 10	74
LB8E/425N	94069407	1790	1	0.02	9	440	18	0.01	2	< 1	13	0.01	< 10	< 10	25	< 10	58
LB8E/450N	94069407	205	< 1	0.02	4	280	6	0.01	< 2	< 1	6	< 0.01	< 10	< 10	14	< 10	22
LB8E/475N	94069407	210	1	0.01	12	580	14	0.01	4	< 1	6	< 0.01	< 10	< 10	30	< 10	70
LB8E/500N	94069407	545	2	< 0.01	9	410	10	< 0.01	< 2	< 1	7	0.02	< 10	< 10	35	< 10	64
LB8E/525N	94069407	495	2	0.01	19	420	30	0.01	2	< 1	9	< 0.01	< 10	< 10	32	< 10	94
LB8E/550N	94069407	415	3	< 0.01	23	550	20	0.01	< 2	< 1	6	0.01	< 10	< 10	53	< 10	96
LB8E/575N	94069407	50	< 1	0.03	1	340	< 2	< 0.01	< 2	< 1	9	0.02	< 10	< 10	17	< 10	8
LB8E/600N	94069407	315	1	< 0.01	25	230	16	< 0.01	6	1	5	< 0.01	< 10	< 10	30	< 10	74
LB10E/300N	94069407	675	1	< 0.01	34	530	18	0.02	2	2	45	< 0.01	< 10	< 10	20	< 10	88
LB10E/325N	94069407	680	1	< 0.01	32	570	14	0.01	2	3	35	< 0.01	< 10	< 10	18	< 10	94
LB10E/350N	94069407	15	< 1	0.02	< 1	190	< 2	0.01	< 2	< 1	7	0.01	< 10	< 10	7	< 10	2
LB10E/375N	94069407	730	2	0.01	28	630	20	0.03	6	2	45	< 0.01	< 10	< 10	20	< 10	110
LB10E/400N	94069407	450	1	0.01	22	530	16	0.05	2	1	73	< 0.01	< 10	< 10	19	< 10	78
LB10E/425N	94069407	420	1	0.01	20	530	14	0.06	2	1	79	< 0.01	< 10	< 10	17	< 10	84
LB10E/450N	94069407	485	1	0.01	25	530	20	0.06	< 2	1	85	< 0.01	< 10	< 10	19	< 10	96
LB10E/475N	94069407	385	1	0.01	23	410	16	0.04	4	1	63	< 0.01	< 10	< 10	20	< 10	82
LB10E/500N	94069407	205	< 1	< 0.01	20	300	14	0.03	2	1	36	< 0.01	< 10	< 10	20	< 10	74
LB10E/525N	94069407	415	< 1	0.01	23	490	16	0.06	4	1	65	< 0.01	< 10	< 10	19	< 10	100
LB10E/550N	94069407	590	< 1	< 0.01	34	230	38	0.05	10	3	24	< 0.01	< 10	< 10	29	< 10	114
LB10E/575N	94069407	400	< 1	< 0.01	31	350	44	0.07	6	3	21	< 0.01	< 10	< 10	27	< 10	96
LB10E/600N	94069407	550	< 1	0.01	36	430	36	0.04	10	3	37	< 0.01	< 10	< 10	29	< 10	124
L0N/000E	94069407	1235	< 1	< 0.01	22	290	26	0.01	8	1	4	< 0.01	< 10	< 10	27	< 10	100
L0N/025E	94069407	440	1	0.01	18	200	20	< 0.01	2	1	11	< 0.01	< 10	< 10	31	< 10	64

CERTIFICATION: David Lyle

ALS Chemex

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Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 31-JUL-2001
Invoice No. : I0121249
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
L0N/050E	9406 9407	0.38	< 0.2	0.90	26	< 10	120	< 0.5	< 2	0.03	< 0.5	5	13	16	2.99	< 10	< 1	0.07	10	0.13
L0N/075E	9406 9407	0.26	< 0.2	0.37	< 2	< 10	30	< 0.5	< 2	0.03	< 0.5	1	3	6	0.78	< 10	< 1	0.01	< 10	0.02
L0N/100E	9406 9407	0.44	< 0.2	1.11	28	< 10	200	< 0.5	< 2	0.02	< 0.5	6	15	12	2.07	< 10	1	0.05	10	0.22
L0N/125E	9406 9407	0.44	< 0.2	1.36	22	< 10	140	< 0.5	< 2	0.01	< 0.5	4	15	11	2.66	< 10	< 1	0.04	10	0.19
L0N/150E	9406 9407	0.32	< 0.2	1.22	14	< 10	180	< 0.5	< 2	0.05	< 0.5	3	15	9	1.93	< 10	< 1	0.04	10	0.20
L0N/175E	9406 9407	0.46	< 0.2	1.50	34	< 10	210	0.5	< 2	0.03	< 0.5	9	19	22	2.49	< 10	< 1	0.06	10	0.34
L0N/200E	9406 9407	0.58	< 0.2	1.51	22	< 10	280	< 0.5	< 2	0.04	< 0.5	8	22	21	3.14	< 10	< 1	0.06	10	0.33
L0N/225E	9406 9407	0.30	< 0.2	1.27	20	< 10	80	< 0.5	< 2	< 0.01	< 0.5	4	13	13	2.32	< 10	< 1	0.03	10	0.17
L0N/250E	9406 9407	0.28	< 0.2	0.64	4	< 10	60	< 0.5	< 2	0.04	< 0.5	1	5	6	0.73	< 10	< 1	0.03	< 10	0.05
L1N/000E	9406 9407	0.42	< 0.2	1.88	82	< 10	180	2.0	< 2	0.34	0.5	22	25	94	4.63	< 10	< 1	0.06	40	0.47
L1N/025E	9406 9407	0.24	< 0.2	1.43	24	< 10	120	0.5	< 2	0.24	< 0.5	13	22	17	3.58	< 10	< 1	0.05	20	0.38
L1N/050E	9406 9407	0.54	< 0.2	0.69	20	< 10	240	< 0.5	< 2	0.26	< 0.5	5	10	15	1.73	< 10	< 1	0.04	10	0.10
L1N/075E	9406 9407	0.36	< 0.2	0.89	36	< 10	60	< 0.5	< 2	< 0.01	< 0.5	5	13	15	3.24	< 10	< 1	0.03	10	0.10
L1N/100E	9406 9407	0.20	< 0.2	0.35	2	< 10	20	< 0.5	< 2	0.04	< 0.5	1	1	2	0.35	< 10	< 1	0.03	< 10	0.01
L1N/125E	9406 9407	0.46	< 0.2	1.22	30	< 10	70	< 0.5	< 2	0.01	< 0.5	12	17	12	3.02	< 10	< 1	0.04	10	0.21
L1N/150E	9406 9407	0.42	< 0.2	0.57	26	< 10	50	< 0.5	< 2	< 0.01	< 0.5	4	8	12	1.95	< 10	< 1	0.03	10	0.04
L1N/175E	9406 9407	0.34	0.2	0.62	30	< 10	70	< 0.5	< 2	0.04	< 0.5	5	7	19	2.13	< 10	< 1	0.04	10	0.06
L1N/200E	9406 9407	0.30	< 0.2	0.89	14	< 10	100	< 0.5	< 2	0.01	< 0.5	3	11	10	2.11	< 10	< 1	0.03	10	0.14
L1N/225E	9406 9407	0.36	< 0.2	1.52	22	< 10	130	< 0.5	< 2	0.01	< 0.5	7	19	12	3.15	< 10	< 1	0.04	10	0.25
L1N/250E	9406 9407	0.24	< 0.2	0.43	8	< 10	50	< 0.5	< 2	0.01	< 0.5	1	5	3	0.67	< 10	< 1	0.03	< 10	0.03
L2N/000E	9406 9407	0.26	0.2	0.37	2	< 10	10	< 0.5	< 2	0.02	< 0.5	< 1	1	2	0.30	< 10	< 1	0.01	< 10	0.01
L2N/025E	9406 9407	0.24	< 0.2	0.37	< 2	< 10	30	< 0.5	< 2	0.01	0.5	2	4	6	0.51	< 10	< 1	0.01	< 10	0.01
L2N/050E	9406 9407	0.34	< 0.2	0.55	56	< 10	100	< 0.5	< 2	0.03	2.5	3	7	29	2.05	< 10	< 1	0.03	10	0.02
L2N/075E	9406 9407	0.34	0.2	0.51	16	< 10	60	< 0.5	< 2	0.01	< 0.5	1	4	6	1.04	< 10	< 1	0.03	< 10	0.02
L2N/100E	9406 9407	0.40	0.2	1.07	22	< 10	80	< 0.5	< 2	0.01	0.5	5	14	9	2.46	< 10	< 1	0.03	< 10	0.13
L2N/125E	9406 9407	0.30	0.2	0.69	18	< 10	70	< 0.5	< 2	0.01	< 0.5	2	6	13	1.74	< 10	< 1	0.02	10	0.03
L2N/150E	9406 9407	0.36	< 0.2	0.62	12	< 10	30	< 0.5	< 2	< 0.01	< 0.5	1	4	6	1.12	< 10	< 1	0.02	< 10	0.03
L2N/175E	9406 9407	0.26	< 0.2	0.44	2	< 10	20	< 0.5	< 2	0.03	< 0.5	< 1	1	2	0.35	< 10	< 1	0.01	< 10	0.01
L2N/200E	9406 9407	0.22	< 0.2	0.40	2	< 10	40	< 0.5	< 2	0.01	< 0.5	< 1	2	< 1	0.59	< 10	< 1	0.02	< 10	0.02
L2N/225E	9406 9407	0.26	< 0.2	0.32	2	< 10	20	< 0.5	< 2	0.02	< 0.5	< 1	< 1	< 1	0.38	< 10	< 1	0.01	< 10	0.01
L2N/250E	9406 9407	0.22	< 0.2	0.61	4	< 10	60	< 0.5	< 2	0.01	< 0.5	< 1	4	5	0.66	< 10	< 1	0.01	< 10	0.02
L3N/000E	9406 9407	0.28	< 0.2	1.12	40	< 10	110	0.5	< 2	0.01	0.5	6	15	39	4.22	< 10	< 1	0.05	10	0.19
L3N/025E	9406 9407	0.24	< 0.2	0.65	28	< 10	50	< 0.5	< 2	0.01	< 0.5	5	10	16	2.65	< 10	< 1	0.03	< 10	0.08
L3N/050E	9406 9407	0.18	< 0.2	0.36	4	< 10	20	< 0.5	< 2	0.01	< 0.5	< 1	1	< 1	0.59	< 10	< 1	0.01	< 10	0.01
L3N/075E	9406 9407	0.16	< 0.2	0.61	14	< 10	60	< 0.5	< 2	0.01	< 0.5	3	6	5	1.47	< 10	< 1	0.03	< 10	0.07
L3N/100E	9406 9407	0.28	< 0.2	0.52	16	< 10	30	< 0.5	< 2	0.01	< 0.5	1	6	5	1.49	< 10	< 1	0.03	< 10	0.05
L3N/125E	9406 9407	0.14	< 0.2	0.58	10	< 10	50	< 0.5	2	0.01	0.5	< 1	3	2	0.99	< 10	< 1	0.01	< 10	0.01
L3N/150E	9406 9407	0.20	< 0.2	0.98	50	< 10	30	< 0.5	< 2	< 0.01	< 0.5	8	14	20	3.44	< 10	< 1	0.03	10	0.20
L3N/175E	9406 9407	0.22	< 0.2	1.06	10	< 10	90	< 0.5	< 2	0.04	< 0.5	4	16	4	2.82	< 10	< 1	0.06	20	0.16
L3N/200E	9406 9407	0.20	< 0.2	0.69	18	< 10	40	< 0.5	< 2	0.01	< 0.5	1	6	5	1.64	< 10	< 1	0.03	10	0.05

CERTIFICATION:

ALS Chemex

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CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
L0N/050E	94069407	275	1	< 0.01	12	340	12	< 0.01	4	< 1	8	0.01	< 10	< 10	39	< 10	78
L0N/075E	94069407	30	< 1	0.02	1	120	2	< 0.01	< 2	< 1	6	0.03	< 10	< 10	25	< 10	10
L0N/100E	94069407	355	< 1	< 0.01	13	280	10	< 0.01	2	1	7	0.01	< 10	< 10	29	< 10	50
L0N/125E	94069407	325	1	< 0.01	11	330	10	< 0.01	< 2	< 1	6	0.01	< 10	< 10	39	< 10	48
L0N/150E	94069407	150	1	< 0.01	9	170	14	< 0.01	2	< 1	11	0.01	< 10	< 10	36	< 10	36
L0N/175E	94069407	405	1	< 0.01	24	170	20	< 0.01	< 2	1	7	< 0.01	< 10	< 10	25	< 10	58
L0N/200E	94069407	335	2	< 0.01	21	280	14	< 0.01	2	1	12	< 0.01	< 10	< 10	29	< 10	64
L0N/225E	94069407	220	1	< 0.01	11	270	10	< 0.01	2	< 1	3	< 0.01	< 10	< 10	29	< 10	44
L0N/250E	94069407	70	1	0.01	3	240	4	< 0.01	< 2	< 1	6	0.02	< 10	< 10	22	< 10	16
L1N/000E	94069407	1315	1	< 0.01	52	280	60	0.03	12	4	28	< 0.01	10	< 10	19	< 10	216
L1N/025E	94069407	585	1	< 0.01	20	410	22	0.01	< 2	1	20	< 0.01	< 10	< 10	24	< 10	96
L1N/050E	94069407	225	1	< 0.01	9	230	14	< 0.01	< 2	< 1	21	0.01	< 10	< 10	26	< 10	54
L1N/075E	94069407	260	1	< 0.01	10	380	18	< 0.01	< 2	< 1	4	0.01	< 10	< 10	42	< 10	60
L1N/100E	94069407	85	< 1	0.01	1	190	2	0.01	< 2	< 1	8	0.01	< 10	< 10	6	< 10	20
L1N/125E	94069407	680	1	< 0.01	13	330	16	0.01	2	1	5	< 0.01	< 10	< 10	29	< 10	74
L1N/150E	94069407	190	1	< 0.01	8	510	10	< 0.01	< 2	< 1	4	0.01	< 10	< 10	37	< 10	52
L1N/175E	94069407	160	< 1	< 0.01	10	310	66	0.03	8	< 1	18	< 0.01	< 10	< 10	19	< 10	106
L1N/200E	94069407	150	< 1	< 0.01	8	180	12	< 0.01	2	< 1	7	< 0.01	< 10	< 10	22	< 10	48
L1N/225E	94069407	305	1	< 0.01	15	280	32	0.01	< 2	1	5	< 0.01	< 10	< 10	25	< 10	94
L1N/250E	94069407	200	1	< 0.01	2	190	8	< 0.01	< 2	< 1	5	0.01	< 10	< 10	22	< 10	26
L2N/000E	94069407	15	< 1	0.01	1	80	6	0.01	< 2	< 1	6	0.01	< 10	< 10	4	< 10	18
L2N/025E	94069407	85	< 1	0.01	2	140	44	0.01	< 2	< 1	7	0.01	< 10	< 10	9	< 10	28
L2N/050E	94069407	215	1	< 0.01	6	280	58	0.01	16	< 1	9	0.01	< 10	< 10	35	< 10	120
L2N/075E	94069407	55	1	< 0.01	4	100	10	< 0.01	< 2	< 1	5	0.01	< 10	< 10	17	< 10	52
L2N/100E	94069407	175	1	< 0.01	10	220	72	0.01	< 2	< 1	5	< 0.01	< 10	< 10	29	< 10	164
L2N/125E	94069407	155	1	< 0.01	4	200	68	< 0.01	< 2	< 1	5	0.01	< 10	< 10	30	< 10	102
L2N/150E	94069407	65	< 1	< 0.01	4	160	10	< 0.01	2	< 1	4	0.01	< 10	< 10	22	< 10	38
L2N/175E	94069407	40	< 1	0.01	< 1	360	10	< 0.01	< 2	< 1	5	0.01	< 10	< 10	8	< 10	14
L2N/200E	94069407	60	< 1	< 0.01	1	260	2	< 0.01	< 2	< 1	5	0.02	< 10	< 10	19	< 10	10
L2N/225E	94069407	25	< 1	0.01	< 1	310	< 2	< 0.01	< 2	< 1	7	0.01	< 10	< 10	8	< 10	6
L2N/250E	94069407	45	< 1	< 0.01	2	360	2	0.01	< 2	< 1	8	< 0.01	< 10	< 10	15	< 10	20
L3N/000E	94069407	200	1	< 0.01	16	400	34	0.03	4	1	12	< 0.01	< 10	< 10	26	< 10	160
L3N/025E	94069407	285	1	< 0.01	8	380	52	0.01	2	< 1	5	< 0.01	< 10	< 10	23	< 10	92
L3N/050E	94069407	65	< 1	0.01	< 1	180	10	0.01	< 2	< 1	5	0.01	< 10	< 10	10	< 10	26
L3N/075E	94069407	155	< 1	< 0.01	5	270	28	0.01	< 2	< 1	5	< 0.01	< 10	< 10	14	< 10	88
L3N/100E	94069407	145	< 1	< 0.01	5	210	26	< 0.01	< 2	< 1	5	0.01	< 10	< 10	31	< 10	72
L3N/125E	94069407	75	< 1	< 0.01	3	220	14	< 0.01	< 2	< 1	5	0.01	< 10	< 10	29	< 10	56
L3N/150E	94069407	360	1	< 0.01	13	430	64	0.01	6	< 1	4	< 0.01	< 10	< 10	20	< 10	134
L3N/175E	94069407	200	< 1	< 0.01	10	400	10	0.01	< 2	< 1	11	< 0.01	< 10	< 10	28	< 10	68
L3N/200E	94069407	105	< 1	< 0.01	6	240	6	< 0.01	< 2	< 1	4	0.01	< 10	< 10	35	< 10	44

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 31-JUL-2001
Invoice No. : I0121249
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
L3N/225E	94069407	0.20	< 0.2	0.45	6	< 10	70	< 0.5	< 2	0.01	< 0.5	< 1	4	4	0.74	< 10	< 1	0.01	< 10	0.01
L3N/250E	94069407	0.16	< 0.2	0.46	10	< 10	40	< 0.5	< 2	0.01	< 0.5	1	5	6	1.29	< 10	< 1	0.03	10	0.02
L4N/000E	94069407	0.36	< 0.2	0.80	80	< 10	50	0.5	< 2	0.02	0.5	5	15	53	6.52	< 10	< 1	0.04	10	0.04
L4N/025E	94069407	0.34	0.2	1.05	46	< 10	60	0.5	< 2	0.01	< 0.5	5	14	95	7.24	< 10	< 1	0.03	< 10	0.05
L4N/050E	94069407	0.34	< 0.2	0.43	36	< 10	40	< 0.5	< 2	0.04	< 0.5	< 1	1	6	0.93	< 10	< 1	0.01	< 10	0.01
L4N/075E	94069407	0.28	0.4	0.50	14	< 10	40	< 0.5	< 2	0.06	4.0	3	3	23	1.04	< 10	< 1	0.03	< 10	0.02
L4N/100E	94069407	0.34	0.2	0.96	24	< 10	110	0.5	< 2	0.49	23.0	6	8	24	1.71	< 10	< 1	0.03	< 10	0.14
L4N/125E	94069407	0.28	0.2	0.55	18	< 10	80	< 0.5	< 2	0.06	2.0	3	4	5	1.25	< 10	< 1	0.04	< 10	0.03
L4N/150E	94069407	0.38	< 0.2	1.57	60	< 10	60	0.5	< 2	0.02	< 0.5	12	20	35	4.12	< 10	< 1	0.04	10	0.27
L4N/175E	94069407	0.36	< 0.2	1.11	24	< 10	90	< 0.5	< 2	0.04	1.0	4	13	8	2.93	< 10	< 1	0.04	10	0.12
L4N/200E	94069407	0.40	< 0.2	1.29	52	< 10	100	< 0.5	< 2	0.04	1.5	5	17	10	3.33	< 10	< 1	0.05	10	0.18
L4N/225E	94069407	0.26	< 0.2	1.24	34	< 10	90	< 0.5	2	0.01	0.5	4	13	15	3.72	< 10	< 1	0.04	10	0.12
L4N/250E	94069407	0.26	< 0.2	0.50	14	< 10	50	< 0.5	2	0.08	< 0.5	3	5	6	1.72	< 10	< 1	0.03	10	0.04
L5N/000E	94069407	0.16	< 0.2	0.54	18	< 10	30	< 0.5	< 2	0.03	0.5	5	8	25	4.21	< 10	< 1	0.01	< 10	0.04
L5N/025E	94069407	0.16	< 0.2	0.98	12	< 10	80	< 0.5	< 2	0.01	0.5	6	10	9	2.41	< 10	< 1	0.04	10	0.08
L5N/050E	94069407	0.16	< 0.2	0.39	< 2	< 10	40	< 0.5	2	0.04	< 0.5	< 1	< 1	< 1	0.24	< 10	< 1	0.01	< 10	< 0.01
L5N/075E	94069407	0.24	< 0.2	0.37	12	< 10	50	< 0.5	< 2	0.04	< 0.5	1	3	2	0.96	< 10	< 1	0.03	< 10	0.04
L5N/100E	94069407	0.20	< 0.2	0.80	28	< 10	120	< 0.5	< 2	0.04	< 0.5	5	7	9	1.92	< 10	< 1	0.06	10	0.10
L5N/125E	94069407	0.26	< 0.2	1.59	82	< 10	90	0.5	< 2	0.01	< 0.5	7	17	18	3.59	< 10	< 1	0.04	10	0.29
L5N/150E	94069407	0.12	< 0.2	0.49	4	< 10	20	< 0.5	< 2	0.01	< 0.5	< 1	1	< 1	0.41	< 10	< 1	0.02	< 10	0.01
L5N/175E	94069407	0.18	< 0.2	0.20	2	< 10	30	< 0.5	< 2	0.13	< 0.5	< 1	< 1	3	0.15	< 10	< 1	0.01	< 10	0.01
L5N/200E	94069407	0.22	< 0.2	0.93	22	< 10	130	< 0.5	< 2	0.03	< 0.5	4	10	7	1.76	< 10	< 1	0.03	10	0.08
L5N/225E	94069407	0.22	< 0.2	0.99	136	< 10	120	< 0.5	< 2	0.03	0.5	5	14	19	3.40	< 10	< 1	0.04	10	0.23
L5N/250E	94069407	0.26	< 0.2	0.95	36	< 10	150	0.5	< 2	0.05	4.5	9	13	29	3.66	< 10	< 1	0.05	20	0.10

CERTIFICATION: _____

ALS Chemex
Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
L3N/225E	94069407	60	< 1	< 0.01	3	170	4	< 0.01	< 2	< 1	7	0.01	< 10	< 10	26	< 10	26
L3N/250E	94069407	85	1	< 0.01	5	200	6	< 0.01	2	< 1	5	0.01	< 10	< 10	33	< 10	36
L4N/000E	94069407	125	2	< 0.01	10	680	24	0.03	16	< 1	9	0.01	< 10	< 10	33	< 10	130
L4N/025E	94069407	130	5	< 0.01	10	680	68	0.06	14	< 1	8	< 0.01	< 10	< 10	22	< 10	66
L4N/050E	94069407	70	< 1	0.01	3	200	6	0.01	< 2	< 1	10	< 0.01	< 10	< 10	7	< 10	38
L4N/075E	94069407	290	< 1	0.01	3	420	8	0.01	< 2	< 1	10	0.01	< 10	< 10	7	< 10	226
L4N/100E	94069407	630	< 1	0.01	14	550	16	0.03	2	1	41	0.01	< 10	< 10	16	< 10	1350
L4N/125E	94069407	250	< 1	0.01	4	280	26	0.01	< 2	< 1	12	< 0.01	< 10	< 10	17	< 10	104
L4N/150E	94069407	450	1	< 0.01	19	470	72	0.03	6	1	7	< 0.01	< 10	< 10	22	< 10	252
L4N/175E	94069407	185	1	< 0.01	10	280	26	< 0.01	2	< 1	8	< 0.01	< 10	< 10	37	< 10	164
L4N/200E	94069407	225	1	< 0.01	12	270	42	< 0.01	< 2	1	10	0.01	< 10	< 10	43	< 10	224
L4N/225E	94069407	255	2	< 0.01	10	310	24	< 0.01	2	< 1	5	< 0.01	10	< 10	35	< 10	102
L4N/250E	94069407	110	1	< 0.01	6	140	6	< 0.01	2	< 1	10	0.01	< 10	< 10	35	< 10	42
L5N/000E	94069407	435	1	< 0.01	17	450	6	0.01	8	< 1	5	0.02	< 10	< 10	51	< 10	252
L5N/025E	94069407	340	< 1	< 0.01	7	400	30	0.01	< 2	< 1	5	< 0.01	< 10	< 10	19	< 10	80
L5N/050E	94069407	5	< 1	0.01	< 1	260	< 2	0.01	2	< 1	10	< 0.01	< 10	< 10	5	< 10	12
L5N/075E	94069407	115	< 1	0.01	2	220	16	< 0.01	< 2	< 1	6	0.01	< 10	< 10	13	< 10	40
L5N/100E	94069407	440	< 1	< 0.01	6	320	72	0.01	< 2	< 1	9	< 0.01	< 10	< 10	13	< 10	90
L5N/125E	94069407	375	2	< 0.01	19	270	42	0.01	2	1	4	< 0.01	< 10	< 10	22	< 10	186
L5N/150E	94069407	20	< 1	0.01	< 1	220	< 2	0.01	< 2	< 1	7	0.01	< 10	< 10	7	< 10	14
L5N/175E	94069407	15	< 1	0.03	1	130	< 2	0.01	< 2	< 1	13	< 0.01	< 10	< 10	4	< 10	10
L5N/200E	94069407	150	1	< 0.01	8	130	18	< 0.01	< 2	< 1	5	0.01	< 10	< 10	41	< 10	62
L5N/225E	94069407	210	1	< 0.01	10	350	54	0.02	2	< 1	8	< 0.01	< 10	< 10	29	< 10	150
L5N/250E	94069407	580	1	< 0.01	16	430	34	0.02	2	1	10	< 0.01	< 10	< 10	25	< 10	178

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-A
Total Pages : 4
Certificate Date: 31-JUL-2001
Invoice No. : I0121249
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
LB0E/300N	9406 9407	0.32	< 0.2	0.67	10	< 10	120	< 0.5	< 2	0.12	< 0.5	5	8	16	1.91	< 10	< 1	0.08	20	0.08
LB0E/325N	9406 9407	0.16	0.8	1.59	84	< 10	580	1.5	< 2	1.34	7.5	12	12	104	2.72	< 10	< 1	0.08	10	0.13
LB0E/350N	9406 9407	0.20	0.2	0.49	< 2	< 10	100	< 0.5	< 2	0.17	< 0.5	1	3	16	0.51	< 10	< 1	0.03	< 10	0.03
LB0E/375N	9406 9407	0.34	< 0.2	1.49	18	< 10	200	0.5	< 2	0.32	0.5	18	47	51	3.31	< 10	< 1	0.09	10	0.80
LB0E/400N	9406 9407	0.46	< 0.2	1.09	6	< 10	200	0.5	< 2	0.32	< 0.5	11	21	40	2.02	< 10	< 1	0.07	10	0.44
LB0E/425N	9406 9407	0.46	< 0.2	1.06	10	< 10	220	0.5	< 2	0.28	< 0.5	10	21	39	1.93	< 10	< 1	0.08	10	0.43
LB0E/450N	9406 9407	0.30	< 0.2	1.08	22	< 10	200	0.5	< 2	0.27	< 0.5	14	23	33	2.71	< 10	< 1	0.07	10	0.46
LB0E/475N	9406 9407	0.16	< 0.2	0.39	< 2	< 10	30	< 0.5	< 2	0.04	< 0.5	< 1	1	9	0.37	< 10	< 1	0.01	< 10	0.01
LB0E/500N	9406 9407	0.34	< 0.2	0.22	< 2	< 10	10	< 0.5	< 2	0.03	< 0.5	< 1	1	2	0.26	< 10	< 1	0.01	< 10	0.01
LB0E/525N	9406 9407	0.28	0.2	0.54	2	< 10	100	< 0.5	4	0.07	< 0.5	2	6	13	0.79	< 10	< 1	0.04	< 10	0.06
LB0E/550N	9406 9407	0.38	< 0.2	1.14	16	< 10	90	< 0.5	< 2	0.01	< 0.5	7	13	22	3.67	< 10	< 1	0.07	30	0.14
LB0E/575N	9406 9407	0.30	< 0.2	0.70	8	< 10	70	< 0.5	< 2	0.03	< 0.5	2	7	11	1.51	< 10	< 1	0.03	< 10	0.07
LB0E/600N	9406 9407	0.40	0.2	0.91	8	< 10	110	< 0.5	< 2	0.04	1.5	5	9	29	2.73	< 10	< 1	0.08	10	0.08
LB2E/300N	9406 9407	0.26	< 0.2	1.05	16	< 10	230	0.5	< 2	0.19	0.5	14	21	33	2.92	< 10	< 1	0.08	10	0.43
LB2E/325N	9406 9407	0.36	< 0.2	1.10	14	< 10	210	0.5	< 2	0.24	0.5	14	22	38	3.11	< 10	< 1	0.07	10	0.47
LB2E/350N	9406 9407	0.24	< 0.2	1.25	18	< 10	240	0.5	< 2	0.42	0.5	15	22	43	3.13	< 10	< 1	0.09	10	0.46
LB2E/375N	9406 9407	0.26	< 0.2	1.22	16	< 10	230	0.5	< 2	0.37	0.5	15	22	39	3.14	< 10	< 1	0.07	10	0.49
LB2E/400N	9406 9407	0.36	< 0.2	1.12	14	< 10	270	0.5	< 2	0.38	1.0	15	24	35	3.05	< 10	< 1	0.10	10	0.48
LB2E/425N	9406 9407	0.46	< 0.2	1.20	16	< 10	270	0.5	4	0.32	0.5	15	24	40	3.12	< 10	< 1	0.09	10	0.49
LB2E/450N	9406 9407	0.36	< 0.2	1.00	30	< 10	120	< 0.5	< 2	0.19	1.0	7	13	22	2.31	< 10	< 1	0.06	10	0.24
LB2E/475N	9406 9407	0.26	< 0.2	0.91	14	< 10	150	< 0.5	2	0.03	0.5	6	8	13	1.97	< 10	< 1	0.08	10	0.14
LB2E/500N	9406 9407	0.40	< 0.2	0.83	16	< 10	70	< 0.5	2	0.01	< 0.5	7	10	9	2.28	< 10	< 1	0.08	20	0.17
LB2E/525N	9406 9407	0.26	< 0.2	0.81	10	< 10	110	< 0.5	< 2	0.04	< 0.5	4	7	11	1.54	< 10	< 1	0.07	10	0.07
LB2E/550N	9406 9407	0.26	< 0.2	0.54	2	< 10	60	< 0.5	< 2	0.03	< 0.5	1	6	6	0.94	< 10	< 1	0.04	< 10	0.05
LB2E/575N	9406 9407	0.24	< 0.2	0.35	< 2	< 10	60	< 0.5	< 2	0.47	< 0.5	< 1	2	13	0.35	< 10	< 1	0.02	< 10	0.01
LB2E/600N	9406 9407	0.32	< 0.2	1.16	18	< 10	130	< 0.5	< 2	0.03	< 0.5	6	15	15	2.22	< 10	< 1	0.07	10	0.18
LB4E/300N	9406 9407	0.28	< 0.2	0.80	14	< 10	190	< 0.5	< 2	0.42	< 0.5	15	18	26	2.46	< 10	< 1	0.08	10	0.24
LB4E/325N	9406 9407	0.46	< 0.2	0.82	12	< 10	100	< 0.5	< 2	0.08	< 0.5	12	17	24	2.71	< 10	< 1	0.06	10	0.29
LB4E/350N	9406 9407	0.44	< 0.2	1.06	12	< 10	230	0.5	< 2	0.30	< 0.5	12	21	29	2.66	< 10	< 1	0.08	10	0.40
LB4E/375N	9406 9407	0.54	< 0.2	1.10	12	< 10	210	0.5	< 2	0.39	< 0.5	12	21	31	2.73	< 10	< 1	0.09	10	0.39
LB4E/400N	9406 9407	0.42	< 0.2	0.61	2	< 10	100	< 0.5	< 2	0.04	< 0.5	4	7	9	1.50	< 10	< 1	0.05	< 10	0.07
LB4E/425N	9406 9407	0.28	< 0.2	0.49	< 2	< 10	100	< 0.5	< 2	0.29	< 0.5	1	3	7	0.56	< 10	< 1	0.05	< 10	0.03
LB4E/450N	9406 9407	0.34	< 0.2	1.42	14	< 10	150	1.0	< 2	0.16	< 0.5	12	10	19	3.03	< 10	< 1	0.11	20	0.17
LB4E/475N	9406 9407	0.30	< 0.2	0.72	12	< 10	110	< 0.5	< 2	0.05	< 0.5	4	6	14	1.36	< 10	< 1	0.06	10	0.07
LB4E/500N	9406 9407	0.34	< 0.2	0.81	12	< 10	80	< 0.5	< 2	0.01	< 0.5	5	11	9	2.69	< 10	< 1	0.05	< 10	0.12
LB4E/525N	9406 9407	0.32	< 0.2	0.31	6	< 10	40	< 0.5	2	0.13	< 0.5	2	2	6	0.60	< 10	< 1	0.02	< 10	0.03
LB4E/550N	9406 9407	0.30	< 0.2	0.37	2	< 10	80	< 0.5	< 2	0.23	< 0.5	2	4	6	0.67	< 10	< 1	0.02	< 10	0.06
LB4E/575N	9406 9407	0.36	< 0.2	1.30	28	< 10	200	0.5	2	0.07	< 0.5	9	17	16	2.56	< 10	< 1	0.07	10	0.30
LB4E/600N	9406 9407	0.08	< 0.2	1.73	272	< 10	130	0.5	< 2	0.03	< 0.5	11	20	35	3.52	< 10	< 1	0.07	30	0.45
LB6E/300N	9406 9407	0.30	< 0.2	0.85	14	< 10	110	< 0.5	< 2	< 0.01	< 0.5	3	10	23	2.19	< 10	< 1	0.04	< 10	0.10

CERTIFICATION: _____

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CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
LB0E/300N	9406 9407	170	1	0.01	8	240	62	0.01	< 2	< 1	15	< 0.01	< 10	< 10	21	< 10	94
LB0E/325N	9406 9407	3750	1	0.01	41	1040	34	0.05	2	1	120	< 0.01	< 10	< 10	28	< 10	260
LB0E/350N	9406 9407	250	< 1	0.02	6	350	18	0.03	< 2	< 1	19	< 0.01	< 10	< 10	8	< 10	24
LB0E/375N	9406 9407	245	1	< 0.01	54	720	22	0.04	6	5	43	0.01	< 10	< 10	40	< 10	118
LB0E/400N	9406 9407	135	1	0.01	32	660	18	0.03	4	3	40	0.01	< 10	< 10	27	< 10	102
LB0E/425N	9406 9407	140	2	< 0.01	32	600	16	0.03	2	3	35	0.01	< 10	< 10	25	< 10	86
LB0E/450N	9406 9407	480	1	< 0.01	33	460	16	0.03	4	2	34	0.01	< 10	< 10	26	< 10	96
LB0E/475N	9406 9407	15	< 1	0.02	1	320	2	0.02	< 2	< 1	10	0.01	< 10	< 10	7	< 10	18
LB0E/500N	9406 9407	10	1	0.03	< 1	230	< 2	< 0.01	< 2	< 1	8	0.01	< 10	< 10	8	< 10	10
LB0E/525N	9406 9407	85	1	0.01	5	600	6	0.03	< 2	< 1	13	< 0.01	< 10	< 10	11	< 10	20
LB0E/550N	9406 9407	290	3	< 0.01	12	1010	14	0.01	< 2	< 1	8	< 0.01	10	< 10	43	< 10	74
LB0E/575N	9406 9407	90	1	0.01	6	370	18	0.01	< 2	< 1	7	< 0.01	< 10	< 10	19	< 10	34
LB0E/600N	9406 9407	135	4	0.01	18	680	14	0.01	< 2	< 1	9	< 0.01	< 10	< 10	40	< 10	144
LB2E/300N	9406 9407	705	2	< 0.01	32	670	16	0.03	6	3	29	0.01	< 10	< 10	26	< 10	112
LB2E/325N	9406 9407	685	2	< 0.01	36	600	18	0.03	2	3	33	< 0.01	< 10	< 10	26	< 10	96
LB2E/350N	9406 9407	960	3	0.01	37	720	20	0.04	2	3	53	0.01	< 10	< 10	30	< 10	108
LB2E/375N	9406 9407	875	2	0.01	36	730	20	0.03	2	3	48	0.01	< 10	< 10	28	< 10	110
LB2E/400N	9406 9407	950	1	0.01	37	770	18	0.04	2	3	40	0.01	< 10	< 10	27	< 10	120
LB2E/425N	9406 9407	910	2	0.01	39	710	22	0.03	4	3	42	0.01	< 10	< 10	29	< 10	112
LB2E/450N	9406 9407	335	3	0.01	15	480	14	0.02	6	< 1	27	0.01	< 10	< 10	30	< 10	90
LB2E/475N	9406 9407	400	2	0.01	11	270	26	0.02	< 2	< 1	10	< 0.01	< 10	< 10	22	< 10	72
LB2E/500N	9406 9407	465	2	< 0.01	12	340	20	0.01	2	< 1	7	< 0.01	< 10	< 10	25	< 10	68
LB2E/525N	9406 9407	100	1	0.01	9	150	8	0.01	< 2	< 1	8	< 0.01	< 10	< 10	25	< 10	38
LB2E/550N	9406 9407	70	< 1	< 0.01	4	120	10	0.01	< 2	< 1	6	0.03	< 10	< 10	37	< 10	28
LB2E/575N	9406 9407	25	< 1	0.03	3	200	4	0.01	< 2	< 1	29	< 0.01	< 10	< 10	7	< 10	18
LB2E/600N	9406 9407	145	1	0.01	14	180	10	< 0.01	< 2	< 1	7	< 0.01	< 10	< 10	30	< 10	58
LB4E/300N	9406 9407	1150	1	0.01	21	520	34	0.04	2	1	43	< 0.01	< 10	< 10	26	< 10	118
LB4E/325N	9406 9407	605	3	< 0.01	23	480	24	0.01	2	1	10	< 0.01	< 10	< 10	24	< 10	82
LB4E/350N	9406 9407	795	1	0.01	33	700	16	0.01	2	3	29	0.01	< 10	< 10	25	< 10	88
LB4E/375N	9406 9407	785	1	0.01	30	680	20	0.01	2	3	34	0.01	< 10	< 10	26	< 10	112
LB4E/400N	9406 9407	255	< 1	0.02	7	260	4	0.01	< 2	< 1	8	0.01	< 10	< 10	21	< 10	42
LB4E/425N	9406 9407	140	< 1	0.02	3	300	< 2	0.01	< 2	< 1	22	< 0.01	< 10	< 10	11	< 10	28
LB4E/450N	9406 9407	610	1	0.01	20	290	24	0.01	< 2	1	17	< 0.01	< 10	< 10	18	< 10	56
LB4E/475N	9406 9407	150	< 1	0.01	7	170	6	< 0.01	< 2	< 1	8	< 0.01	< 10	< 10	19	< 10	32
LB4E/500N	9406 9407	425	1	< 0.01	9	230	20	< 0.01	< 2	< 1	4	0.01	< 10	< 10	28	< 10	52
LB4E/525N	9406 9407	110	< 1	0.03	3	440	2	< 0.01	< 2	< 1	11	0.01	< 10	< 10	13	< 10	16
LB4E/550N	9406 9407	90	< 1	0.03	3	280	2	0.03	< 2	< 1	18	0.01	< 10	< 10	15	< 10	22
LB4E/575N	9406 9407	395	1	< 0.01	16	260	18	< 0.01	6	1	9	< 0.01	< 10	< 10	29	< 10	58
LB4E/600N	9406 9407	430	2	< 0.01	29	280	34	0.01	< 2	1	5	< 0.01	< 10	< 10	23	< 10	86
LB6E/300N	9406 9407	115	3	< 0.01	12	480	8	< 0.01	2	< 1	5	< 0.01	< 10	< 10	51	< 10	72

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
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5175 Timberlea Blvd., Mississauga
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 31-JUL-2001
Invoice No. : I0121249
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
LB6E/325N	94069407	0.20	0.6	1.30	10	< 10	120	< 0.5	< 2	0.04	< 0.5	5	11	10	2.37	< 10	< 1	0.03	< 10	0.06
LB6E/350N	94069407	0.14	< 0.2	0.24	< 2	< 10	40	< 0.5	2	0.16	< 0.5	< 1	< 1	3	0.26	< 10	< 1	0.02	< 10	0.01
LB6E/375N	94069407	0.20	< 0.2	0.18	< 2	< 10	20	< 0.5	< 2	0.07	< 0.5	< 1	< 1	2	0.20	< 10	< 1	0.02	< 10	0.01
LB6E/400N	94069407	0.22	< 0.2	0.50	< 2	< 10	90	< 0.5	< 2	0.12	< 0.5	2	3	11	0.47	< 10	< 1	0.03	< 10	0.03
LB6E/425N	94069407	0.24	< 0.2	0.69	12	< 10	120	< 0.5	< 2	0.03	< 0.5	5	8	16	2.23	< 10	< 1	0.08	20	0.07
LB6E/450N	94069407	0.28	< 0.2	1.51	32	< 10	100	< 0.5	< 2	0.01	< 0.5	7	16	14	2.80	< 10	< 1	0.06	20	0.30
LB6E/475N	94069407	0.30	< 0.2	1.11	38	< 10	200	0.5	< 2	0.02	< 0.5	9	13	25	3.00	< 10	< 1	0.10	20	0.17
LB6E/500N	94069407	0.22	< 0.2	1.19	74	< 10	160	< 0.5	< 2	0.13	< 0.5	9	20	34	3.11	< 10	< 1	0.09	10	0.40
LB6E/525N	94069407	0.18	< 0.2	0.97	24	< 10	110	< 0.5	< 2	0.11	< 0.5	6	13	18	2.50	< 10	< 1	0.08	30	0.22
LB6E/550N	94069407	0.20	< 0.2	0.70	12	< 10	60	< 0.5	< 2	0.02	< 0.5	4	8	18	2.06	< 10	< 1	0.06	10	0.07
LB6E/575N	94069407	0.20	< 0.2	0.22	< 2	< 10	20	< 0.5	< 2	0.03	< 0.5	< 1	< 1	1	0.27	< 10	< 1	0.02	< 10	< 0.01
LB6E/600N	94069407	0.24	< 0.2	0.71	14	< 10	210	< 0.5	< 2	0.07	0.5	5	7	14	1.26	< 10	< 1	0.06	10	0.07
LB8E/300N	94069407	0.28	0.2	0.84	28	< 10	140	0.5	2	0.42	2.5	14	14	36	2.93	< 10	< 1	0.07	10	0.27
LB8E/325N	94069407	0.28	< 0.2	0.77	14	< 10	190	< 0.5	< 2	0.07	0.5	5	10	16	2.17	< 10	< 1	0.06	10	0.10
LB8E/350N	94069407	0.24	0.2	1.31	34	< 10	130	0.5	< 2	0.05	< 0.5	12	16	35	2.82	< 10	< 1	0.08	10	0.31
LB8E/375N	94069407	0.20	< 0.2	0.45	6	< 10	80	< 0.5	< 2	0.01	< 0.5	4	3	8	0.73	< 10	< 1	0.04	< 10	0.03
LB8E/400N	94069407	0.22	< 0.2	1.08	30	< 10	230	0.5	< 2	0.02	< 0.5	10	9	14	2.00	< 10	< 1	0.09	< 10	0.11
LB8E/425N	94069407	0.18	< 0.2	0.73	12	< 10	160	< 0.5	4	0.04	0.5	13	8	25	1.67	< 10	< 1	0.07	< 10	0.07
LB8E/450N	94069407	0.22	< 0.2	0.44	8	< 10	100	< 0.5	2	0.01	< 0.5	4	4	7	0.86	< 10	< 1	0.04	< 10	0.04
LB8E/475N	94069407	0.30	< 0.2	0.81	56	< 10	100	< 0.5	< 2	0.03	< 0.5	6	10	16	2.53	< 10	< 1	0.08	10	0.11
LB8E/500N	94069407	0.26	< 0.2	0.67	64	< 10	90	< 0.5	< 2	0.03	< 0.5	6	11	13	1.68	< 10	< 1	0.07	10	0.12
LB8E/525N	94069407	0.22	< 0.2	1.14	120	< 10	260	< 0.5	< 2	0.06	< 0.5	10	16	31	2.77	< 10	< 1	0.06	10	0.26
LB8E/550N	94069407	0.22	< 0.2	1.53	66	< 10	100	< 0.5	< 2	0.01	< 0.5	10	20	23	3.73	< 10	< 1	0.05	10	0.37
LB8E/575N	94069407	0.14	< 0.2	0.19	< 2	< 10	20	< 0.5	< 2	0.08	< 0.5	1	1	3	0.49	< 10	< 1	0.01	< 10	0.02
LB8E/600N	94069407	0.34	< 0.2	1.53	88	< 10	180	0.5	< 2	0.02	< 0.5	11	21	31	3.30	< 10	< 1	0.07	10	0.41
LB10E/300N	94069407	0.12	< 0.2	0.97	16	< 10	180	0.5	< 2	0.38	< 0.5	12	19	35	2.64	< 10	< 1	0.07	< 10	0.37
LB10E/325N	94069407	0.16	< 0.2	0.78	10	< 10	180	0.5	2	0.27	< 0.5	12	14	38	2.40	< 10	< 1	0.07	< 10	0.29
LB10E/350N	94069407	0.18	< 0.2	0.16	< 2	< 10	30	< 0.5	< 2	0.03	< 0.5	< 1	1	4	0.25	< 10	< 1	0.03	< 10	0.01
LB10E/375N	94069407	0.24	< 0.2	0.91	40	< 10	190	0.5	< 2	0.48	< 0.5	12	15	33	2.68	< 10	< 1	0.07	< 10	0.32
LB10E/400N	94069407	0.12	< 0.2	0.96	44	< 10	260	< 0.5	< 2	0.89	< 0.5	8	12	33	1.87	< 10	< 1	0.06	< 10	0.26
LB10E/425N	94069407	0.12	< 0.2	0.82	42	< 10	220	< 0.5	< 2	1.04	< 0.5	7	12	29	1.77	< 10	< 1	0.07	< 10	0.24
LB10E/450N	94069407	0.14	< 0.2	1.00	56	< 10	290	0.5	< 2	1.13	0.5	8	13	40	2.12	< 10	< 1	0.08	< 10	0.28
LB10E/475N	94069407	0.16	< 0.2	0.95	60	< 10	250	0.5	2	0.79	< 0.5	8	13	34	2.23	< 10	< 1	0.07	< 10	0.28
LB10E/500N	94069407	0.18	< 0.2	0.84	52	< 10	200	< 0.5	2	0.46	< 0.5	7	12	29	2.02	< 10	< 1	0.08	< 10	0.23
LB10E/525N	94069407	0.14	< 0.2	0.90	72	< 10	200	< 0.5	< 2	1.13	< 0.5	9	13	35	2.10	< 10	< 1	0.07	< 10	0.27
LB10E/550N	94069407	0.12	< 0.2	1.03	252	< 10	120	0.5	< 2	0.48	< 0.5	18	19	64	3.24	< 10	< 1	0.09	< 10	0.39
LB10E/575N	94069407	0.24	< 0.2	0.93	244	< 10	120	0.5	< 2	0.38	< 0.5	16	18	55	3.13	< 10	< 1	0.07	< 10	0.36
LB10E/600N	94069407	0.20	< 0.2	1.15	194	< 10	190	0.5	< 2	0.69	< 0.5	15	20	64	3.18	< 10	< 1	0.10	10	0.41
L0N/000E	94069407	0.38	< 0.2	1.45	52	< 10	140	0.5	< 2	0.03	< 0.5	8	24	17	3.50	< 10	< 1	0.06	20	0.43
L0N/025E	94069407	0.20	< 0.2	1.30	24	< 10	330	< 0.5	< 2	0.06	< 0.5	9	16	15	2.13	< 10	< 1	0.05	10	0.30

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :2-B
Total Pages :4
Certificate Date: 31-JUL-2001
Invoice No. :I0121249
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
LB6E/325N	9406 9407	495	1	0.01	8	580	14	0.02	< 2	< 1	6	< 0.01	< 10	< 10	28	< 10	56
LB6E/350N	9406 9407	25	< 1	0.03	1	390	< 2	< 0.01	< 2	< 1	15	0.01	< 10	< 10	8	< 10	12
LB6E/375N	9406 9407	20	< 1	0.03	< 1	190	< 2	< 0.01	< 2	< 1	9	0.01	< 10	< 10	6	< 10	6
LB6E/400N	9406 9407	135	< 1	0.03	3	140	2	0.01	< 2	< 1	17	< 0.01	< 10	< 10	8	< 10	16
LB6E/425N	9406 9407	225	1	0.01	12	670	16	0.01	< 2	< 1	8	< 0.01	< 10	< 10	28	< 10	60
LB6E/450N	9406 9407	295	2	< 0.01	16	370	12	< 0.01	6	1	6	< 0.01	< 10	< 10	37	< 10	92
LB6E/475N	9406 9407	385	2	< 0.01	17	350	16	0.01	2	< 1	7	< 0.01	< 10	< 10	33	< 10	84
LB6E/500N	9406 9407	505	2	0.01	23	430	16	0.01	6	1	14	< 0.01	< 10	< 10	34	< 10	88
LB6E/525N	9406 9407	220	1	< 0.01	16	640	20	0.01	6	< 1	11	< 0.01	< 10	< 10	26	< 10	88
LB6E/550N	9406 9407	150	1	0.01	10	450	8	0.01	< 2	< 1	6	< 0.01	< 10	< 10	31	< 10	68
LB6E/575N	9406 9407	10	< 1	0.03	< 1	110	< 2	< 0.01	< 2	< 1	8	0.01	< 10	< 10	7	< 10	6
LB6E/600N	9406 9407	265	1	0.01	8	280	14	0.01	< 2	< 1	12	0.01	< 10	< 10	27	< 10	46
LB8E/300N	9406 9407	845	1	< 0.01	29	590	68	0.03	< 2	3	47	< 0.01	< 10	< 10	23	< 10	774
LB8E/325N	9406 9407	225	2	< 0.01	12	290	20	< 0.01	2	< 1	12	0.01	< 10	< 10	34	< 10	72
LB8E/350N	9406 9407	710	3	0.01	24	550	16	0.02	< 2	1	16	< 0.01	< 10	< 10	24	< 10	80
LB8E/375N	9406 9407	410	< 1	0.03	3	230	4	< 0.01	< 2	< 1	5	0.01	< 10	< 10	11	< 10	20
LB8E/400N	9406 9407	1620	1	0.01	10	440	12	0.01	2	< 1	7	< 0.01	< 10	< 10	19	< 10	74
LB8E/425N	9406 9407	1790	1	0.02	9	440	18	0.01	2	< 1	13	0.01	< 10	< 10	25	< 10	58
LB8E/450N	9406 9407	205	< 1	0.02	4	280	6	0.01	< 2	< 1	6	< 0.01	< 10	< 10	14	< 10	22
LB8E/475N	9406 9407	210	1	0.01	12	580	14	0.01	4	< 1	6	< 0.01	< 10	< 10	30	< 10	70
LB8E/500N	9406 9407	545	2	< 0.01	9	410	10	< 0.01	< 2	< 1	7	0.02	< 10	< 10	35	< 10	64
LB8E/525N	9406 9407	495	2	0.01	19	420	30	0.01	2	< 1	9	< 0.01	< 10	< 10	32	< 10	94
LB8E/550N	9406 9407	415	3	< 0.01	23	550	20	0.01	< 2	< 1	6	0.01	< 10	< 10	53	< 10	96
LB8E/575N	9406 9407	50	< 1	0.03	1	340	< 2	< 0.01	< 2	< 1	9	0.02	< 10	< 10	17	< 10	8
LB8E/600N	9406 9407	315	1	< 0.01	25	230	16	< 0.01	6	1	5	< 0.01	< 10	< 10	30	< 10	74
LB10E/300N	9406 9407	675	1	< 0.01	34	530	18	0.02	2	2	45	< 0.01	< 10	< 10	20	< 10	88
LB10E/325N	9406 9407	680	1	< 0.01	32	570	14	0.01	2	3	35	< 0.01	< 10	< 10	18	< 10	94
LB10E/350N	9406 9407	15	< 1	0.02	< 1	190	< 2	0.01	< 2	< 1	7	0.01	< 10	< 10	7	< 10	2
LB10E/375N	9406 9407	730	2	0.01	28	630	20	0.03	6	2	45	< 0.01	< 10	< 10	20	< 10	110
LB10E/400N	9406 9407	450	1	0.01	22	530	16	0.05	2	1	73	< 0.01	< 10	< 10	19	< 10	78
LB10E/425N	9406 9407	420	1	0.01	20	530	14	0.06	2	1	79	< 0.01	< 10	< 10	17	< 10	84
LB10E/450N	9406 9407	485	1	0.01	25	530	20	0.06	< 2	1	85	< 0.01	< 10	< 10	19	< 10	96
LB10E/475N	9406 9407	385	1	0.01	23	410	16	0.04	4	1	63	< 0.01	< 10	< 10	20	< 10	82
LB10E/500N	9406 9407	205	< 1	< 0.01	20	300	14	0.03	2	1	36	< 0.01	< 10	< 10	20	< 10	74
LB10E/525N	9406 9407	415	< 1	0.01	23	490	16	0.06	4	1	65	< 0.01	< 10	< 10	19	< 10	100
LB10E/550N	9406 9407	590	< 1	< 0.01	34	230	38	0.05	10	3	24	< 0.01	< 10	< 10	29	< 10	114
LB10E/575N	9406 9407	400	< 1	< 0.01	31	350	44	0.07	6	3	21	< 0.01	< 10	< 10	27	< 10	96
LB10E/600N	9406 9407	550	< 1	0.01	36	430	36	0.04	10	3	37	< 0.01	< 10	< 10	29	< 10	124
L0N/000E	9406 9407	1235	< 1	< 0.01	22	290	26	0.01	8	1	4	< 0.01	< 10	< 10	27	< 10	100
L0N/025E	9406 9407	440	1	0.01	18	200	20	< 0.01	2	1	11	< 0.01	< 10	< 10	31	< 10	64

CERTIFICATION: _____

ALS Chemex

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CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
L0N/050E	9406 9407	0.38	< 0.2	0.90	26	< 10	120	< 0.5	< 2	0.03	< 0.5	5	13	16	2.99	< 10	< 1	0.07	10	0.13
L0N/075E	9406 9407	0.26	< 0.2	0.37	< 2	< 10	30	< 0.5	< 2	0.03	< 0.5	1	3	6	0.78	< 10	< 1	0.01	< 10	0.02
L0N/100E	9406 9407	0.44	< 0.2	1.11	28	< 10	200	< 0.5	< 2	0.02	< 0.5	6	15	12	2.07	< 10	1	0.05	10	0.22
L0N/125E	9406 9407	0.44	< 0.2	1.36	22	< 10	140	< 0.5	< 2	0.01	< 0.5	4	15	11	2.66	< 10	< 1	0.04	10	0.19
L0N/150E	9406 9407	0.32	< 0.2	1.22	14	< 10	180	< 0.5	< 2	0.05	< 0.5	3	15	9	1.93	< 10	< 1	0.04	10	0.20
L0N/175E	9406 9407	0.46	< 0.2	1.50	34	< 10	210	0.5	< 2	0.03	< 0.5	9	19	22	2.49	< 10	< 1	0.06	10	0.34
L0N/200E	9406 9407	0.58	< 0.2	1.51	22	< 10	280	< 0.5	< 2	0.04	< 0.5	8	22	21	3.14	< 10	< 1	0.06	10	0.33
L0N/225E	9406 9407	0.30	< 0.2	1.27	20	< 10	80	< 0.5	< 2	< 0.01	< 0.5	4	13	13	2.32	< 10	< 1	0.03	10	0.17
L0N/250E	9406 9407	0.28	< 0.2	0.64	4	< 10	60	< 0.5	< 2	0.04	< 0.5	1	5	6	0.73	< 10	< 1	0.03	< 10	0.05
L1N/000E	9406 9407	0.42	< 0.2	1.88	82	< 10	180	2.0	< 2	0.34	0.5	22	25	94	4.63	< 10	< 1	0.06	40	0.47
L1N/025E	9406 9407	0.24	< 0.2	1.43	24	< 10	120	0.5	< 2	0.24	< 0.5	13	22	17	3.58	< 10	< 1	0.05	20	0.38
L1N/050E	9406 9407	0.54	< 0.2	0.69	20	< 10	240	< 0.5	< 2	0.26	< 0.5	5	10	15	1.73	< 10	< 1	0.04	10	0.10
L1N/075E	9406 9407	0.36	< 0.2	0.89	36	< 10	60	< 0.5	< 2	< 0.01	< 0.5	5	13	15	3.24	< 10	< 1	0.03	10	0.10
L1N/100E	9406 9407	0.20	< 0.2	0.35	2	< 10	20	< 0.5	< 2	0.04	< 0.5	1	1	2	0.35	< 10	< 1	0.03	< 10	0.01
L1N/125E	9406 9407	0.46	< 0.2	1.22	30	< 10	70	< 0.5	< 2	0.01	< 0.5	12	17	12	3.02	< 10	< 1	0.04	10	0.21
L1N/150E	9406 9407	0.42	< 0.2	0.57	26	< 10	50	< 0.5	< 2	< 0.01	< 0.5	4	8	12	1.95	< 10	< 1	0.03	10	0.04
L1N/175E	9406 9407	0.34	0.2	0.62	30	< 10	70	< 0.5	< 2	0.04	< 0.5	5	7	19	2.13	< 10	< 1	0.04	10	0.06
L1N/200E	9406 9407	0.30	< 0.2	0.89	14	< 10	100	< 0.5	< 2	0.01	< 0.5	3	11	10	2.11	< 10	< 1	0.03	10	0.14
L1N/225E	9406 9407	0.36	< 0.2	1.52	22	< 10	130	< 0.5	< 2	0.01	< 0.5	7	19	12	3.15	< 10	< 1	0.04	10	0.25
L1N/250E	9406 9407	0.24	< 0.2	0.43	8	< 10	50	< 0.5	< 2	0.01	< 0.5	1	5	3	0.67	< 10	< 1	0.03	< 10	0.03
L2N/000E	9406 9407	0.26	0.2	0.37	2	< 10	10	< 0.5	< 2	0.02	< 0.5	< 1	1	2	0.30	< 10	< 1	0.01	< 10	0.01
L2N/025E	9406 9407	0.24	< 0.2	0.37	< 2	< 10	30	< 0.5	< 2	0.01	0.5	2	4	6	0.51	< 10	< 1	0.01	< 10	0.01
L2N/050E	9406 9407	0.34	< 0.2	0.55	56	< 10	100	< 0.5	< 2	0.03	2.5	3	7	29	2.05	< 10	< 1	0.03	10	0.02
L2N/075E	9406 9407	0.34	0.2	0.51	16	< 10	60	< 0.5	< 2	0.01	< 0.5	1	4	6	1.04	< 10	< 1	0.03	< 10	0.02
L2N/100E	9406 9407	0.40	0.2	1.07	22	< 10	80	< 0.5	< 2	0.01	0.5	5	14	9	2.46	< 10	< 1	0.03	< 10	0.13
L2N/125E	9406 9407	0.30	0.2	0.69	18	< 10	70	< 0.5	< 2	0.01	< 0.5	2	6	13	1.74	< 10	< 1	0.02	10	0.03
L2N/150E	9406 9407	0.36	< 0.2	0.62	12	< 10	30	< 0.5	< 2	< 0.01	< 0.5	1	4	6	1.12	< 10	< 1	0.02	< 10	0.03
L2N/175E	9406 9407	0.26	< 0.2	0.44	2	< 10	20	< 0.5	< 2	0.03	< 0.5	< 1	1	2	0.35	< 10	< 1	0.01	< 10	0.01
L2N/200E	9406 9407	0.22	< 0.2	0.40	2	< 10	40	< 0.5	< 2	0.01	< 0.5	< 1	2	< 1	0.59	< 10	< 1	0.02	< 10	0.02
L2N/225E	9406 9407	0.26	< 0.2	0.32	2	< 10	20	< 0.5	< 2	0.02	< 0.5	< 1	< 1	< 1	0.38	< 10	< 1	0.01	< 10	0.01
L2N/250E	9406 9407	0.22	< 0.2	0.61	4	< 10	60	< 0.5	< 2	0.01	< 0.5	< 1	4	5	0.66	< 10	< 1	0.01	< 10	0.02
L3N/000E	9406 9407	0.28	< 0.2	1.12	40	< 10	110	0.5	< 2	0.01	0.5	6	15	39	4.22	< 10	< 1	0.05	10	0.19
L3N/025E	9406 9407	0.24	< 0.2	0.65	28	< 10	50	< 0.5	< 2	0.01	< 0.5	5	10	16	2.65	< 10	< 1	0.03	< 10	0.08
L3N/050E	9406 9407	0.18	< 0.2	0.36	4	< 10	20	< 0.5	< 2	0.01	< 0.5	< 1	1	< 1	0.59	< 10	< 1	0.01	< 10	0.01
L3N/075E	9406 9407	0.16	< 0.2	0.61	14	< 10	60	< 0.5	< 2	0.01	< 0.5	3	6	5	1.47	< 10	< 1	0.03	< 10	0.07
L3N/100E	9406 9407	0.28	< 0.2	0.52	16	< 10	30	< 0.5	< 2	0.01	< 0.5	1	6	5	1.49	< 10	< 1	0.03	< 10	0.05
L3N/125E	9406 9407	0.14	< 0.2	0.58	10	< 10	50	< 0.5	2	0.01	0.5	< 1	3	2	0.99	< 10	< 1	0.01	< 10	0.01
L3N/150E	9406 9407	0.20	< 0.2	0.98	50	< 10	30	< 0.5	< 2	< 0.01	< 0.5	8	14	20	3.44	< 10	< 1	0.03	10	0.20
L3N/175E	9406 9407	0.22	< 0.2	1.06	10	< 10	90	< 0.5	< 2	0.04	< 0.5	4	16	4	2.82	< 10	< 1	0.06	20	0.16
L3N/200E	9406 9407	0.20	< 0.2	0.69	18	< 10	40	< 0.5	< 2	0.01	< 0.5	1	6	5	1.64	< 10	< 1	0.03	10	0.05

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.
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5175 Timberlea Blvd., Mississauga
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 31-JUL-2001
Invoice No. :I0121249
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
L0N/050E	94069407	275	1	< 0.01	12	340	12	< 0.01	4	< 1	8	0.01	< 10	< 10	39	< 10	78
L0N/075E	94069407	30	< 1	0.02	1	120	2	< 0.01	< 2	< 1	6	0.03	< 10	< 10	25	< 10	10
L0N/100E	94069407	355	< 1	< 0.01	13	280	10	< 0.01	2	1	7	0.01	< 10	< 10	29	< 10	50
L0N/125E	94069407	325	1	< 0.01	11	330	10	< 0.01	< 2	< 1	6	0.01	< 10	< 10	39	< 10	48
L0N/150E	94069407	150	1	< 0.01	9	170	14	< 0.01	2	< 1	11	0.01	< 10	< 10	36	< 10	36
L0N/175E	94069407	405	1	< 0.01	24	170	20	< 0.01	< 2	1	7	< 0.01	< 10	< 10	25	< 10	58
L0N/200E	94069407	335	2	< 0.01	21	280	14	< 0.01	2	1	12	< 0.01	< 10	< 10	29	< 10	64
L0N/225E	94069407	220	1	< 0.01	11	270	10	< 0.01	2	< 1	3	< 0.01	< 10	< 10	29	< 10	44
L0N/250E	94069407	70	1	0.01	3	240	4	< 0.01	< 2	< 1	6	0.02	< 10	< 10	22	< 10	16
L1N/000E	94069407	1315	1	< 0.01	52	280	60	0.03	12	4	28	< 0.01	10	< 10	19	< 10	216
L1N/025E	94069407	585	1	< 0.01	20	410	22	0.01	< 2	1	20	< 0.01	< 10	< 10	24	< 10	96
L1N/050E	94069407	225	1	< 0.01	9	230	14	< 0.01	< 2	< 1	21	0.01	< 10	< 10	26	< 10	54
L1N/075E	94069407	260	1	< 0.01	10	380	18	< 0.01	< 2	< 1	4	0.01	< 10	< 10	42	< 10	60
L1N/100E	94069407	85	< 1	0.01	1	190	2	0.01	< 2	< 1	8	0.01	< 10	< 10	6	< 10	20
L1N/125E	94069407	680	1	< 0.01	13	330	16	0.01	2	1	5	< 0.01	< 10	< 10	29	< 10	74
L1N/150E	94069407	190	1	< 0.01	8	510	10	< 0.01	< 2	< 1	4	0.01	< 10	< 10	37	< 10	52
L1N/175E	94069407	160	< 1	< 0.01	10	310	66	0.03	8	< 1	18	< 0.01	< 10	< 10	19	< 10	106
L1N/200E	94069407	150	< 1	< 0.01	8	180	12	< 0.01	2	< 1	7	< 0.01	< 10	< 10	22	< 10	48
L1N/225E	94069407	305	1	< 0.01	15	280	32	0.01	< 2	1	5	< 0.01	< 10	< 10	25	< 10	94
L1N/250E	94069407	200	1	< 0.01	2	190	8	< 0.01	< 2	< 1	5	0.01	< 10	< 10	22	< 10	26
L2N/000E	94069407	15	< 1	0.01	1	80	6	0.01	< 2	< 1	6	0.01	< 10	< 10	4	< 10	18
L2N/025E	94069407	85	< 1	0.01	2	140	44	0.01	< 2	< 1	7	0.01	< 10	< 10	9	< 10	28
L2N/050E	94069407	215	1	< 0.01	6	280	58	0.01	16	< 1	9	0.01	< 10	< 10	35	< 10	120
L2N/075E	94069407	55	1	< 0.01	4	100	10	< 0.01	< 2	< 1	5	0.01	< 10	< 10	17	< 10	52
L2N/100E	94069407	175	1	< 0.01	10	220	72	0.01	< 2	< 1	5	< 0.01	< 10	< 10	29	< 10	164
L2N/125E	94069407	155	1	< 0.01	4	200	68	< 0.01	< 2	< 1	5	0.01	< 10	< 10	30	< 10	102
L2N/150E	94069407	65	< 1	< 0.01	4	160	10	< 0.01	2	< 1	4	0.01	< 10	< 10	22	< 10	38
L2N/175E	94069407	40	< 1	0.01	< 1	360	10	< 0.01	< 2	< 1	5	0.01	< 10	< 10	8	< 10	14
L2N/200E	94069407	60	< 1	< 0.01	1	260	2	< 0.01	< 2	< 1	5	0.02	< 10	< 10	19	< 10	10
L2N/225E	94069407	25	< 1	0.01	< 1	310	< 2	< 0.01	< 2	< 1	7	0.01	< 10	< 10	8	< 10	6
L2N/250E	94069407	45	< 1	< 0.01	2	360	2	0.01	< 2	< 1	8	< 0.01	< 10	< 10	15	< 10	20
L3N/000E	94069407	200	1	< 0.01	16	400	34	0.03	4	1	12	< 0.01	< 10	< 10	26	< 10	160
L3N/025E	94069407	285	1	< 0.01	8	380	52	0.01	2	< 1	5	< 0.01	< 10	< 10	23	< 10	92
L3N/050E	94069407	65	< 1	0.01	< 1	180	10	0.01	< 2	< 1	5	0.01	< 10	< 10	10	< 10	26
L3N/075E	94069407	155	< 1	< 0.01	5	270	28	0.01	< 2	< 1	5	< 0.01	< 10	< 10	14	< 10	88
L3N/100E	94069407	145	< 1	< 0.01	5	210	26	< 0.01	< 2	< 1	5	0.01	< 10	< 10	31	< 10	72
L3N/125E	94069407	75	< 1	< 0.01	3	220	14	< 0.01	< 2	< 1	5	0.01	< 10	< 10	29	< 10	56
L3N/150E	94069407	360	1	< 0.01	13	430	64	0.01	6	< 1	4	< 0.01	< 10	< 10	20	< 10	134
L3N/175E	94069407	200	< 1	< 0.01	10	400	10	0.01	< 2	< 1	11	< 0.01	< 10	< 10	28	< 10	68
L3N/200E	94069407	105	< 1	< 0.01	6	240	6	< 0.01	< 2	< 1	4	0.01	< 10	< 10	35	< 10	44

CERTIFICATION:

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project: 2501
Comments: ATTN: CLINT BARR

Certificate Date: 31-JUL-2001
Invoice No. :I0121249
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
L3N/225E	94069407	0.20	< 0.2	0.45	6	< 10	70	< 0.5	< 2	0.01	< 0.5	< 1	4	4	0.74	< 10	< 1	0.01	< 10	0.01
L3N/250E	94069407	0.16	< 0.2	0.46	10	< 10	40	< 0.5	< 2	0.01	< 0.5	1	5	6	1.29	< 10	< 1	0.03	10	0.02
L4N/000E	94069407	0.36	< 0.2	0.80	80	< 10	50	0.5	< 2	0.02	0.5	5	15	53	6.52	< 10	< 1	0.04	10	0.04
L4N/025E	94069407	0.34	0.2	1.05	46	< 10	60	0.5	< 2	0.01	< 0.5	5	14	95	7.24	< 10	< 1	0.03	< 10	0.05
L4N/050E	94069407	0.34	< 0.2	0.43	36	< 10	40	< 0.5	< 2	0.04	< 0.5	< 1	1	6	0.93	< 10	< 1	0.01	< 10	0.01
L4N/075E	94069407	0.28	0.4	0.50	14	< 10	40	< 0.5	< 2	0.06	4.0	3	3	23	1.04	< 10	< 1	0.03	< 10	0.02
L4N/100E	94069407	0.34	0.2	0.96	24	< 10	110	0.5	< 2	0.49	23.0	6	8	24	1.71	< 10	< 1	0.03	< 10	0.14
L4N/125E	94069407	0.28	0.2	0.55	18	< 10	80	< 0.5	< 2	0.06	2.0	3	4	5	1.25	< 10	< 1	0.04	< 10	0.03
L4N/150E	94069407	0.38	< 0.2	1.57	60	< 10	60	0.5	< 2	0.02	< 0.5	12	20	35	4.12	< 10	< 1	0.04	10	0.27
L4N/175E	94069407	0.36	< 0.2	1.11	24	< 10	90	< 0.5	< 2	0.04	1.0	4	13	8	2.93	< 10	< 1	0.04	10	0.12
L4N/200E	94069407	0.40	< 0.2	1.29	52	< 10	100	< 0.5	< 2	0.04	1.5	5	17	10	3.33	< 10	< 1	0.05	10	0.18
L4N/225E	94069407	0.26	< 0.2	1.24	34	< 10	90	< 0.5	2	0.01	0.5	4	13	15	3.72	< 10	< 1	0.04	10	0.12
L4N/250E	94069407	0.26	< 0.2	0.50	14	< 10	50	< 0.5	2	0.08	< 0.5	3	5	6	1.72	< 10	< 1	0.03	10	0.04
L5N/000E	94069407	0.16	< 0.2	0.54	18	< 10	30	< 0.5	< 2	0.03	0.5	5	8	25	4.21	< 10	< 1	0.01	< 10	0.04
L5N/025E	94069407	0.16	< 0.2	0.98	12	< 10	80	< 0.5	< 2	0.01	0.5	6	10	9	2.41	< 10	< 1	0.04	10	0.08
L5N/050E	94069407	0.16	< 0.2	0.39	< 2	< 10	40	< 0.5	2	0.04	< 0.5	< 1	< 1	< 1	0.24	< 10	< 1	0.01	< 10	< 0.01
L5N/075E	94069407	0.24	< 0.2	0.37	12	< 10	50	< 0.5	< 2	0.04	< 0.5	1	3	2	0.96	< 10	< 1	0.03	< 10	0.04
L5N/100E	94069407	0.20	< 0.2	0.80	28	< 10	120	< 0.5	< 2	0.04	< 0.5	5	7	9	1.92	< 10	< 1	0.06	10	0.10
L5N/125E	94069407	0.26	< 0.2	1.59	82	< 10	90	0.5	< 2	0.01	< 0.5	7	17	18	3.59	< 10	< 1	0.04	10	0.29
L5N/150E	94069407	0.12	< 0.2	0.49	4	< 10	20	< 0.5	< 2	0.01	< 0.5	< 1	1	< 1	0.41	< 10	< 1	0.02	< 10	0.01
L5N/175E	94069407	0.18	< 0.2	0.20	2	< 10	30	< 0.5	< 2	0.13	< 0.5	< 1	< 1	3	0.15	< 10	< 1	0.01	< 10	0.01
L5N/200E	94069407	0.22	< 0.2	0.93	22	< 10	130	< 0.5	< 2	0.03	< 0.5	4	10	7	1.76	< 10	< 1	0.03	10	0.08
L5N/225E	94069407	0.22	< 0.2	0.99	136	< 10	120	< 0.5	< 2	0.03	0.5	5	14	19	3.40	< 10	< 1	0.04	10	0.23
L5N/250E	94069407	0.26	< 0.2	0.95	36	< 10	150	0.5	< 2	0.05	4.5	9	13	29	3.66	< 10	< 1	0.05	20	0.10

CERTIFICATION: _____

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CERTIFICATE OF ANALYSIS A0121249

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
L3N/225E	9406 9407	60	< 1	< 0.01	3	170	4	< 0.01	< 2	< 1	7	0.01	< 10	< 10	26	< 10	26
L3N/250E	9406 9407	85	1	< 0.01	5	200	6	< 0.01	2	< 1	5	0.01	< 10	< 10	33	< 10	36
L4N/000E	9406 9407	125	2	< 0.01	10	680	24	0.03	16	< 1	9	0.01	< 10	< 10	33	< 10	130
L4N/025E	9406 9407	130	5	< 0.01	10	680	68	0.06	14	< 1	8	< 0.01	< 10	< 10	22	< 10	66
L4N/050E	9406 9407	70	< 1	0.01	3	200	6	0.01	< 2	< 1	10	< 0.01	< 10	< 10	7	< 10	38
L4N/075E	9406 9407	290	< 1	0.01	3	420	8	0.01	< 2	< 1	10	0.01	< 10	< 10	7	< 10	226
L4N/100E	9406 9407	630	< 1	0.01	14	550	16	0.03	2	1	41	0.01	< 10	< 10	16	< 10	1350
L4N/125E	9406 9407	250	< 1	0.01	4	280	26	0.01	< 2	< 1	12	< 0.01	< 10	< 10	17	< 10	104
L4N/150E	9406 9407	450	1	< 0.01	19	470	72	0.03	6	1	7	< 0.01	< 10	< 10	22	< 10	252
L4N/175E	9406 9407	185	1	< 0.01	10	280	26	< 0.01	2	< 1	8	< 0.01	< 10	< 10	37	< 10	164
L4N/200E	9406 9407	225	1	< 0.01	12	270	42	< 0.01	< 2	1	10	0.01	< 10	< 10	43	< 10	224
L4N/225E	9406 9407	255	2	< 0.01	10	310	24	< 0.01	2	< 1	5	< 0.01	10	< 10	35	< 10	102
L4N/250E	9406 9407	110	1	< 0.01	6	140	6	< 0.01	2	< 1	10	0.01	< 10	< 10	35	< 10	42
L5N/000E	9406 9407	435	1	< 0.01	17	450	6	0.01	8	< 1	5	0.02	< 10	< 10	51	< 10	252
L5N/025E	9406 9407	340	< 1	< 0.01	7	400	30	0.01	< 2	< 1	5	< 0.01	< 10	< 10	19	< 10	80
L5N/050E	9406 9407	5	< 1	0.01	< 1	260	< 2	0.01	2	< 1	10	< 0.01	< 10	< 10	5	< 10	12
L5N/075E	9406 9407	115	< 1	0.01	2	220	16	< 0.01	< 2	< 1	6	0.01	< 10	< 10	13	< 10	40
L5N/100E	9406 9407	440	< 1	< 0.01	6	320	72	0.01	< 2	< 1	9	< 0.01	< 10	< 10	13	< 10	90
L5N/125E	9406 9407	375	2	< 0.01	19	270	42	0.01	2	1	4	< 0.01	< 10	< 10	22	< 10	186
L5N/150E	9406 9407	20	< 1	0.01	< 1	220	< 2	0.01	< 2	< 1	7	0.01	< 10	< 10	7	< 10	14
L5N/175E	9406 9407	15	< 1	0.03	1	130	< 2	0.01	< 2	< 1	13	< 0.01	< 10	< 10	4	< 10	10
L5N/200E	9406 9407	150	1	< 0.01	8	130	18	< 0.01	< 2	< 1	5	0.01	< 10	< 10	41	< 10	62
L5N/225E	9406 9407	210	1	< 0.01	10	350	54	0.02	2	< 1	8	< 0.01	< 10	< 10	29	< 10	150
L5N/250E	9406 9407	580	1	< 0.01	16	430	34	0.02	2	1	10	< 0.01	< 10	< 10	25	< 10	178

CERTIFICATION: _____

ALS Chemex
Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG - 8 2001

A0121251

Comments: ATTN: CLINT BARR

CERTIFICATE A0121251

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 01-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	7	Pulv. <250g to >85%/-75 micron
STO-21	7	Reject Storage-First 90 Days
LOG-22	8	Samples received without barcode
CRU-31	7	Crush to 70% minus 2mm
SPL-21	7	Splitting Charge
225	1	Run as received

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1433	8	Weight of received sample	BALANCE	0.01	1000.0
Au-AA23	8	Au-AA23 : Au ppb: Fuse 30 grams	FA-AAS	5	10000
Cu-AA46	8	Cu %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Pb-AA46	8	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	8	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Ag-AA46	8	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500

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Certificate Date: 01-AUG-2001
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CERTIFICATE OF ANALYSIS A0121251

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Cu %	Pb %	Zn %	Ag g/t
644081	9413 9402	1.18	20	0.01	1.08	2.32	46
644082	9413 9402	0.82	< 5	< 0.01	2.39	0.15	91
644083	9413 9402	1.26	10	0.02	6.99	1.04	270
644084	9413 9402	1.66	< 5	< 0.01	0.78	0.06	27
644085	9413 9402	0.60	15	0.01	4.62	0.43	203
644086	9413 9402	0.48	< 5	0.03	0.01	31.5	3
644104	9413 9402	0.86	< 5	< 0.01	0.15	1.56	< 1
644769	9400 225	0.02	265	0.01	0.98	2.93	12

CERTIFICATION: _____

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SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Cu %	Pb %	Zn %	Ag g/t
644081	9413 9402	1.18	20	0.01	1.08	2.32	46
644082	9413 9402	0.82	< 5	< 0.01	2.39	0.15	91
644083	9413 9402	1.26	10	0.02	6.99	1.04	270
644084	9413 9402	1.66	< 5	< 0.01	0.78	0.06	27
644085	9413 9402	0.60	15	0.01	4.62	0.43	203
644086	9413 9402	0.48	< 5	0.03	0.01	31.5	3
644104	9413 9402	0.86	< 5	< 0.01	0.15	1.56	< 1
644769	9400 225	0.02	265	0.01	0.98	2.93	12

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SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	18	Pulv. <250g to >85%/-75 micron
STO-21	18	Reject Storage-First 90 Days
LOG-22	19	Samples received without barcode
CRU-31	18	Crush to 70% minus 2mm
SPL-21	18	Splitting Charge
225	1	Run as received
229	19	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1433	19	Weight of received sample	BALANCE	0.01	1000.0
Ag-ICP41	19	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	19	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	19	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	19	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	19	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	19	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	19	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	19	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	19	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	19	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	19	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	19	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	19	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	19	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	19	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	19	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	19	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	19	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	19	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	19	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	19	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	19	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	19	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	19	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	19	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	19	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	19	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	19	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	19	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	19	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	19	U ppm: 32 element, soil & rock	ICP-AES	10	10000
V-ICP41	19	V ppm: 32 element, soil & rock	ICP-AES	1	10000

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0121253

Comments: ATTN: CLINT BARR

CERTIFICATE A0121253

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Project: 2501
P.O. # :

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SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	18	Pulv. <250g to >85%/-75 micron
STO-21	18	Reject Storage-First 90 Days
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SPL-21	18	Splitting Charge
225	1	Run as received
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* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
W-ICP41	19	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	19	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

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Account :BUF

CERTIFICATE OF ANALYSIS A0121253

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644248	94139402	0.74	0.2	1.45	8	< 10	240	0.5	< 2	0.06	0.5	11	47	59	2.73	< 10	< 1	0.32	10	0.46
644249	94139402	0.64	0.2	1.42	10	< 10	460	0.5	< 2	0.13	< 0.5	9	33	69	2.56	< 10	< 1	0.30	10	0.55
644250	94139402	0.68	0.6	0.55	18	< 10	380	< 0.5	< 2	0.04	< 0.5	1	60	30	1.62	< 10	< 1	0.23	10	0.09
644756	94139402	2.44	< 0.2	3.34	10	< 10	280	1.0	4	4.94	< 0.5	17	67	47	4.58	< 10	< 1	1.37	20	2.16
644757	94139402	2.24	2.0	4.53	28	< 10	110	1.5	8	4.38	1.5	25	124	85	5.53	10	1	1.67	30	2.49
644758	94139402	2.26	< 0.2	1.48	16	< 10	120	0.5	< 2	0.96	< 0.5	10	28	69	3.43	< 10	< 1	0.45	< 10	0.88
644759	94139402	2.06	< 0.2	1.63	10	< 10	110	0.5	< 2	0.70	< 0.5	10	27	63	3.91	< 10	< 1	0.44	< 10	0.97
644760	94139402	3.42	< 0.2	1.47	10	< 10	110	0.5	< 2	0.57	< 0.5	11	24	63	3.65	< 10	< 1	0.44	< 10	0.86
644761	94139402	2.38	< 0.2	1.59	16	< 10	130	0.5	< 2	0.63	< 0.5	13	31	85	3.60	< 10	< 1	0.51	< 10	0.87
644762	94139402	1.90	< 0.2	1.68	10	< 10	130	0.5	< 2	0.71	< 0.5	9	30	77	3.55	< 10	< 1	0.49	< 10	0.86
644763	94139402	2.30	< 0.2	1.51	18	< 10	110	0.5	< 2	0.96	< 0.5	11	47	74	3.83	< 10	< 1	0.35	< 10	0.92
644764	94139402	2.24	0.4	1.07	1600	< 10	100	1.0	< 2	0.74	< 0.5	16	31	43	3.27	< 10	< 1	0.29	10	0.57
644765	94139402	3.18	0.8	1.06	2490	< 10	80	1.0	< 2	0.61	< 0.5	19	23	46	3.84	< 10	< 1	0.31	10	0.62
644766	94139402	2.54	0.6	1.27	38	< 10	90	1.5	< 2	0.19	< 0.5	20	20	52	4.29	< 10	< 1	0.32	10	0.68
644767	94139402	2.42	1.2	0.92	2450	< 10	70	1.0	< 2	0.88	< 0.5	19	24	59	4.77	< 10	< 1	0.32	10	0.54
644768	94139402	2.48	0.2	1.26	60	< 10	100	1.0	< 2	0.38	< 0.5	19	18	39	3.72	< 10	1	0.31	10	0.62
644462	94139402	0.60	< 0.2	3.37	6	< 10	30	< 0.5	6	0.44	< 0.5	38	81	245	6.15	< 10	< 1	0.30	< 10	2.12
644770	94002 25	0.02	11.4	0.48	12	< 10	10	1.5	< 2	0.42	58.0	7	10	121	11.80	< 10	5	0.18	< 10	0.70
644771	94139402	1.26	< 0.2	0.12	6	< 10	30	< 0.5	< 2	0.01	< 0.5	< 1	115	11	0.75	< 10	< 1	0.07	10	0.01

CERTIFICATION: _____

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-B
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Account :BUF

CERTIFICATE OF ANALYSIS A0121253

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644248	94139402	235	2	0.01	44	670	54	0.01	6	4	9	< 0.01	< 10	< 10	36	< 10	232
644249	94139402	210	3	0.01	37	680	44	0.04	4	4	26	< 0.01	< 10	< 10	43	< 10	156
644250	94139402	65	7	< 0.01	20	470	30	0.11	6	2	11	< 0.01	< 10	< 10	44	< 10	176
644756	94139402	1380	1	0.06	36	2290	16	0.78	6	6	343	0.14	< 10	< 10	98	< 10	82
644757	94139402	890	5	0.19	59	3440	16	0.99	10	10	445	0.19	< 10	< 10	155	< 10	112
644758	94139402	580	< 1	0.01	23	670	10	1.12	6	2	73	0.03	< 10	< 10	25	< 10	62
644759	94139402	745	1	0.01	22	560	12	1.23	6	1	58	0.02	< 10	< 10	22	< 10	62
644760	94139402	795	< 1	0.01	22	490	12	1.21	8	1	49	0.03	< 10	< 10	21	< 10	62
644761	94139402	965	3	0.01	27	550	12	0.95	6	2	52	0.04	< 10	< 10	31	< 10	64
644762	94139402	1590	< 1	0.01	20	400	16	0.46	6	2	56	0.06	< 10	< 10	23	< 10	58
644763	94139402	1200	1	0.01	23	500	20	1.19	4	2	79	0.02	< 10	< 10	28	< 10	60
644764	94139402	1190	< 1	0.01	30	290	12	1.48	8	1	54	< 0.01	< 10	< 10	8	< 10	110
644765	94139402	1030	< 1	0.01	35	300	94	1.96	8	1	41	< 0.01	< 10	< 10	7	< 10	134
644766	94139402	900	< 1	0.01	38	300	12	1.83	6	1	21	< 0.01	< 10	< 10	9	< 10	90
644767	94139402	1510	< 1	0.01	36	300	172	2.44	10	< 1	37	< 0.01	< 10	< 10	6	< 10	322
644768	94139402	1235	< 1	0.01	34	310	4	1.40	2	1	32	0.01	< 10	< 10	8	< 10	60
644462	94139402	635	33	0.01	59	220	2	0.78	6	< 1	10	0.20	< 10	< 10	53	< 10	112
644770	9400 225	>10000	3	0.01	33	920	8360	1.77	2	< 1	3	< 0.01	< 10	30	19	< 10	>10000
644771	94139402	125	2	< 0.01	3	140	40	0.02	< 2	< 1	4	< 0.01	< 10	< 10	1	< 10	218

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644248	94139402	0.74	0.2	1.45	8	< 10	240	0.5	< 2	0.06	0.5	11	47	59	2.73	< 10	< 1	0.32	10	0.46
644249	94139402	0.64	0.2	1.42	10	< 10	460	0.5	< 2	0.13	< 0.5	9	33	69	2.56	< 10	< 1	0.30	10	0.55
644250	94139402	0.68	0.6	0.55	18	< 10	380	< 0.5	< 2	0.04	< 0.5	1	60	30	1.62	< 10	< 1	0.23	10	0.09
644756	94139402	2.44	< 0.2	3.34	10	< 10	280	1.0	4	4.94	< 0.5	17	67	47	4.58	< 10	< 1	1.37	20	2.16
644757	94139402	2.24	2.0	4.53	28	< 10	110	1.5	8	4.38	1.5	25	124	85	5.53	10	1	1.67	30	2.49
644758	94139402	2.26	< 0.2	1.48	16	< 10	120	0.5	< 2	0.96	< 0.5	10	28	69	3.43	< 10	< 1	0.45	< 10	0.88
644759	94139402	2.06	< 0.2	1.63	10	< 10	110	0.5	< 2	0.70	< 0.5	10	27	63	3.91	< 10	< 1	0.44	< 10	0.97
644760	94139402	3.42	< 0.2	1.47	10	< 10	110	0.5	< 2	0.57	< 0.5	11	24	63	3.65	< 10	< 1	0.44	< 10	0.86
644761	94139402	2.38	< 0.2	1.59	16	< 10	130	0.5	< 2	0.63	< 0.5	13	31	85	3.60	< 10	< 1	0.51	< 10	0.87
644762	94139402	1.90	< 0.2	1.68	10	< 10	130	0.5	< 2	0.71	< 0.5	9	30	77	3.55	< 10	< 1	0.49	< 10	0.86
644763	94139402	2.30	< 0.2	1.51	18	< 10	110	0.5	< 2	0.96	< 0.5	11	47	74	3.83	< 10	< 1	0.35	< 10	0.92
644764	94139402	2.24	0.4	1.07	1600	< 10	100	1.0	< 2	0.74	< 0.5	16	31	43	3.27	< 10	< 1	0.29	10	0.57
644765	94139402	3.18	0.8	1.06	2490	< 10	80	1.0	< 2	0.61	< 0.5	19	23	46	3.84	< 10	< 1	0.31	10	0.62
644766	94139402	2.54	0.6	1.27	38	< 10	90	1.5	< 2	0.19	< 0.5	20	20	52	4.29	< 10	< 1	0.32	10	0.68
644767	94139402	2.42	1.2	0.92	2450	< 10	70	1.0	< 2	0.88	< 0.5	19	24	59	4.77	< 10	< 1	0.32	10	0.54
644768	94139402	2.48	0.2	1.26	60	< 10	100	1.0	< 2	0.38	< 0.5	19	18	39	3.72	< 10	1	0.31	10	0.62
644462	94139402	0.60	< 0.2	3.37	6	< 10	30	< 0.5	6	0.44	< 0.5	38	81	245	6.15	< 10	< 1	0.30	< 10	2.12
644770	94000225	0.02	11.4	0.48	12	< 10	10	1.5	< 2	0.42	58.0	7	10	121	11.80	< 10	5	0.18	< 10	0.70
644771	94139402	1.26	< 0.2	0.12	6	< 10	30	< 0.5	< 2	0.01	< 0.5	< 1	115	11	0.75	< 10	< 1	0.07	10	0.01

CERTIFICATION: _____

ALS Chemex
Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

CERTIFICATE OF ANALYSIS A0121253

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644248	9413 9402	235	2	0.01	44	670	54	0.01	6	4	9	< 0.01	< 10	< 10	36	< 10	232
644249	9413 9402	210	3	0.01	37	680	44	0.04	4	4	26	< 0.01	< 10	< 10	43	< 10	156
644250	9413 9402	65	7	< 0.01	20	470	30	0.11	6	2	11	< 0.01	< 10	< 10	44	< 10	176
644756	9413 9402	1380	1	0.06	36	2290	16	0.78	6	6	343	0.14	< 10	< 10	98	< 10	82
644757	9413 9402	890	5	0.19	59	3440	16	0.99	10	10	445	0.19	< 10	< 10	155	< 10	112
644758	9413 9402	580	< 1	0.01	23	670	10	1.12	6	2	73	0.03	< 10	< 10	25	< 10	62
644759	9413 9402	745	1	0.01	22	560	12	1.23	6	1	58	0.02	< 10	< 10	22	< 10	62
644760	9413 9402	795	< 1	0.01	22	490	12	1.21	8	1	49	0.03	< 10	< 10	21	< 10	62
644761	9413 9402	965	3	0.01	27	550	12	0.95	6	2	52	0.04	< 10	< 10	31	< 10	64
644762	9413 9402	1590	< 1	0.01	20	400	16	0.46	6	2	56	0.06	< 10	< 10	23	< 10	58
644763	9413 9402	1200	1	0.01	23	500	20	1.19	4	2	79	0.02	< 10	< 10	28	< 10	60
644764	9413 9402	1190	< 1	0.01	30	290	12	1.48	8	1	54	< 0.01	< 10	< 10	8	< 10	110
644765	9413 9402	1030	< 1	0.01	35	300	94	1.96	8	1	41	< 0.01	< 10	< 10	7	< 10	134
644766	9413 9402	900	< 1	0.01	38	300	12	1.83	6	1	21	< 0.01	< 10	< 10	9	< 10	90
644767	9413 9402	1510	< 1	0.01	36	300	172	2.44	10	< 1	37	< 0.01	< 10	< 10	6	< 10	322
644768	9413 9402	1235	< 1	0.01	34	310	4	1.40	2	1	32	0.01	< 10	< 10	8	< 10	60
644462	9413 9402	635	33	0.01	59	220	2	0.78	6	< 1	10	0.20	< 10	< 10	53	< 10	112
644770	9400 225	>10000	3	0.01	33	920	8360	1.77	2	< 1	3	< 0.01	< 10	30	19	< 10	>10000
644771	9413 9402	125	2	< 0.01	3	140	40	0.02	< 2	< 1	4	< 0.01	< 10	< 10	1	< 10	218

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ALS Chemex

Aurora Laboratory Services Ltd.
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5175 Timberlea Blvd., Mississauga
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0121257

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Comments: ATTN: CLINT BARR

CERTIFICATE A0121257

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 09-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	2	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Pb-AA46	1	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Pb-VOL71	1	Pb %: Concentrate	TITRATION	0.01	100.00

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

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P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0121257

SAMPLE	PREP CODE	Pb %	Pb % con
644218	212 --	34.5	-----
644452	212 --	-----	66.16

CERTIFICATION:

OVERLIMITS from A0120653

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CERTIFICATE OF ANALYSIS A0121257

SAMPLE	PREP CODE	Pb %	Pb % con
644218	212 --	34.5	-----
644452	212 --	-----	66.16

CERTIFICATION:

OVERLIMITS from A0120653

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A0121259

Comments: ATTN: CLINT BARR

CERTIFICATE A0121259

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 01-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	3	Pulv. <250g to >85%/-75 micron
STO-21	3	Reject Storage-First 90 Days
LOG-22	4	Samples received without barcode
CRU-31	3	Crush to 70% minus 2mm
SPL-21	3	Splitting Charge
225	1	Run as received

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1433	5	Weight of received sample	BALANCE	0.01	1000.0
Au-AA23	4	Au-AA23 : Au ppb: Fuse 30 grams	FA-AAS	5	10000
Cu-AA46	4	Cu %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Pb-AA46	4	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	4	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Ag-AA46	4	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500

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SAMPLE	PREP CODE		Weight Kg	Au ppb FA+AA	Cu %	Pb %	Zn %	Ag g/t				
644458	9413	9402	0.78	5	3.54	6.34	1.56	215				
644459	9413	9402	0.74	5	2.81	14.65	17.00	475				
644460	9413	9402	0.48	< 5	1.13	2.84	2.28	57				
644461	9400	225	0.04	355	0.01	1.00	2.54	12				
644242	--	--	0.00	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd				

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.

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P7B 6J3

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CERTIFICATE OF ANALYSIS A0121259

SAMPLE	PREP CODE		Weight Kg	Au ppb FA+AA	Cu %	Pb %	Zn %	Ag g/t				
644458	9413	9402	0.78	5	3.54	6.34	1.56	215				
644459	9413	9402	0.74	5	2.81	14.65	17.00	475				
644460	9413	9402	0.48	< 5	1.13	2.84	2.28	57				
644461	9400	225	0.04	355	0.01	1.00	2.54	12				
644242	--	--	0.00	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd				

CERTIFICATION: _____ +

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Comments: ATTN: CLINT BARR

CERTIFICATE A0121260

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 01-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	13	Pulv. <250g to >85%/-75 micron
STO-21	13	Reject Storage-First 90 Days
LOG-22	14	Samples received without barcode
CRU-31	13	Crush to 70% minus 2mm
SPL-21	13	Splitting Charge
225	1	Run as received
229	14	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1433	14	Weight of received sample	BALANCE	0.01	1000.0
Ag-ICP41	14	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	14	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	14	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	14	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	14	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	14	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	14	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	14	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	14	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	14	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	14	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	14	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	14	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	14	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	14	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	14	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	14	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	14	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	14	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	14	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	14	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	14	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	14	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	14	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	14	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	14	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	14	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	14	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	14	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	14	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	14	U ppm: 32 element, soil & rock	ICP-AES	10	10000
V-ICP41	14	V ppm: 32 element, soil & rock	ICP-AES	1	10000

ALS Chemex

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PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0121260

Comments: ATTN: CLINT BARR

CERTIFICATE A0121260

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 01-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	13	Pulv. <250g to >85%/-75 micron
STO-21	13	Reject Storage-First 90 Days
LOG-22	14	Samples received without barcode
CRU-31	13	Crush to 70% minus 2mm
SPL-21	13	Splitting Charge
225	1	Run as received
229	14	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
W-ICP41	14	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	14	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-A
Total Pages :1
Certificate Date: 01-AUG-2001
Invoice No. :I0121260
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0121260

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644103	94139402	0.76	< 0.2	1.54	20	< 10	60	< 0.5	< 2	3.23	< 0.5	4	83	19	2.98	< 10	< 1	0.13	< 10	0.74
644244	94139402	1.04	17.2	0.63	>10000	< 10	10	0.5	138	0.08	3.0	252	29	28	>15.00	10	< 1	0.10	< 10	0.32
644245	94139402	1.28	0.6	0.26	1075	< 10	130	< 0.5	2	0.02	< 0.5	2	110	30	1.87	< 10	< 1	0.21	< 10	0.02
644246	94139402	0.98	< 0.2	0.83	960	< 10	50	< 0.5	< 2	0.25	< 0.5	4	114	19	2.05	< 10	< 1	0.10	< 10	0.45
644078	94139402	1.20	< 0.2	0.64	72	< 10	80	< 0.5	< 2	0.64	1.5	4	103	57	1.99	< 10	< 1	0.10	< 10	0.34
644079	94139402	1.10	0.2	0.11	74	< 10	30	< 0.5	< 2	0.02	5.5	< 1	134	35	1.55	< 10	< 1	0.07	< 10	0.03
644751	94139402	2.62	2.0	3.13	52	< 10	120	1.5	2	1.09	3.5	19	58	100	4.05	< 10	1	0.62	< 10	1.10
644752	94139402	2.12	0.2	2.22	64	< 10	100	0.5	< 2	0.37	< 0.5	18	69	67	4.38	< 10	< 1	0.27	< 10	1.07
644753	94139402	2.50	0.2	2.53	46	< 10	100	1.5	< 2	0.50	< 0.5	24	29	68	4.41	< 10	< 1	0.44	< 10	1.07
644754	94139402	2.54	44.8	2.73	160	< 10	80	1.5	96	0.49	79.0	29	52	230	5.73	< 10	< 1	0.50	< 10	1.16
644755	94139402	2.16	19.4	2.39	14	< 10	110	0.5	40	0.50	28.0	12	66	137	4.22	< 10	< 1	0.18	< 10	1.07
644247	94000225	0.04	12.0	0.51	22	< 10	10	1.5	< 2	0.43	61.0	8	11	130	12.15	< 10	5	0.19	< 10	0.73
644456	94139402	0.62	0.8	0.27	10	< 10	110	< 0.5	< 2	3.14	134.0	16	50	1405	1.67	< 10	< 1	0.19	< 10	0.34
644457	94139402	0.34	33.8	1.44	20	< 10	100	< 0.5	54	4.64	95.0	13	31	639	3.70	< 10	< 1	0.21	< 10	0.68

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
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Total Pages :1
Certificate Date: 01-AUG-2001
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Account :BUF

CERTIFICATE OF ANALYSIS A0121260

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644103	94139402	900	< 1	0.01	15	90	10	0.05	6	1	210	< 0.01	< 10	< 10	17	< 10	82
644244	94139402	145	< 1	0.01	35	190	1180	8.12	258	< 1	18	< 0.01	< 10	< 10	13	< 10	434
644245	94139402	35	< 1	< 0.01	5	70	28	0.15	6	< 1	5	< 0.01	< 10	< 10	2	< 10	384
644246	94139402	385	< 1	0.01	9	70	12	0.36	6	< 1	21	< 0.01	< 10	< 10	6	< 10	44
644078	94139402	430	< 1	0.02	13	80	8	0.62	2	1	29	< 0.01	< 10	< 10	10	< 10	176
644079	94139402	70	1	< 0.01	4	50	4	0.36	2	< 1	2	< 0.01	< 10	< 10	1	< 10	492
644751	94139402	660	3	0.20	42	410	206	1.25	4	4	129	0.09	< 10	< 10	49	< 10	320
644752	94139402	525	1	0.07	39	200	10	1.39	2	1	78	0.05	< 10	< 10	17	< 10	68
644753	94139402	525	1	0.10	50	340	12	1.42	< 2	2	93	0.03	< 10	< 10	15	< 10	80
644754	94139402	610	1	0.10	53	450	2370	2.09	8	4	82	0.07	< 10	< 10	36	< 10	3800
644755	94139402	700	< 1	0.10	29	270	844	0.88	2	5	56	0.11	< 10	< 10	49	< 10	1435
644247	94400 225	>10000	3	0.02	34	910	8700	1.87	< 2	< 1	3	< 0.01	< 10	40	19	< 10	>10000
644456	94139402	2740	< 1	< 0.01	9	110	192	0.30	2	< 1	80	< 0.01	< 10	< 10	2	< 10	9740
644457	94139402	3380	< 1	0.01	19	500	9100	0.81	8	1	80	< 0.01	< 10	< 10	10	< 10	7650

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-A
Total Pages : 1
Certificate Date: 01-AUG-2001
Invoice No. : I0121260
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121260

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644103	9413 9402	0.76	< 0.2	1.54	20	< 10	60	< 0.5	< 2	3.23	< 0.5	4	83	19	2.98	< 10	< 1	0.13	< 10	0.74
644244	9413 9402	1.04	17.2	0.63	>10000	< 10	10	0.5	138	0.08	3.0	252	29	28	>15.00	10	< 1	0.10	< 10	0.32
644245	9413 9402	1.28	0.6	0.26	1075	< 10	130	< 0.5	2	0.02	< 0.5	2	110	30	1.87	< 10	< 1	0.21	< 10	0.02
644246	9413 9402	0.98	< 0.2	0.83	960	< 10	50	< 0.5	< 2	0.25	< 0.5	4	114	19	2.05	< 10	< 1	0.10	< 10	0.45
644078	9413 9402	1.20	< 0.2	0.64	72	< 10	80	< 0.5	< 2	0.64	1.5	4	103	57	1.99	< 10	< 1	0.10	< 10	0.34
644079	9413 9402	1.10	0.2	0.11	74	< 10	30	< 0.5	< 2	0.02	5.5	< 1	134	35	1.55	< 10	< 1	0.07	< 10	0.03
644751	9413 9402	2.62	2.0	3.13	52	< 10	120	1.5	2	1.09	3.5	19	58	100	4.05	< 10	1	0.62	< 10	1.10
644752	9413 9402	2.12	0.2	2.22	64	< 10	100	0.5	< 2	0.37	< 0.5	18	69	67	4.38	< 10	< 1	0.27	< 10	1.07
644753	9413 9402	2.50	0.2	2.53	46	< 10	100	1.5	< 2	0.50	< 0.5	24	29	68	4.41	< 10	< 1	0.44	< 10	1.07
644754	9413 9402	2.54	44.8	2.73	160	< 10	80	1.5	96	0.49	79.0	29	52	230	5.73	< 10	< 1	0.50	< 10	1.16
644755	9413 9402	2.16	19.4	2.39	14	< 10	110	0.5	40	0.50	28.0	12	66	137	4.22	< 10	< 1	0.18	< 10	1.07
644247	9400 225	0.04	12.0	0.51	22	< 10	10	1.5	< 2	0.43	61.0	8	11	130	12.15	< 10	5	0.19	< 10	0.73
644456	9413 9402	0.62	0.8	0.27	10	< 10	110	< 0.5	< 2	3.14	134.0	16	50	1405	1.67	< 10	< 1	0.19	< 10	0.34
644457	9413 9402	0.34	33.8	1.44	20	< 10	100	< 0.5	54	4.64	95.0	13	31	639	3.70	< 10	< 1	0.21	< 10	0.68

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-B
Total Pages : 1
Certificate Date: 01-AUG-2001
Invoice No. : I0121260
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121260

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644103	94139402	900	< 1	0.01	15	90	10	0.05	6	1	210	< 0.01	< 10	< 10	17	< 10	82
644244	94139402	145	< 1	0.01	35	190	1180	8.12	258	< 1	18	< 0.01	< 10	< 10	13	< 10	434
644245	94139402	35	< 1	< 0.01	5	70	28	0.15	6	< 1	5	< 0.01	< 10	< 10	2	< 10	384
644246	94139402	385	< 1	0.01	9	70	12	0.36	6	< 1	21	< 0.01	< 10	< 10	6	< 10	44
644078	94139402	430	< 1	0.02	13	80	8	0.62	2	1	29	< 0.01	< 10	< 10	10	< 10	176
644079	94139402	70	1	< 0.01	4	50	4	0.36	2	< 1	2	< 0.01	< 10	< 10	1	< 10	492
644751	94139402	660	3	0.20	42	410	206	1.25	4	4	129	0.09	< 10	< 10	49	< 10	320
644752	94139402	525	1	0.07	39	200	10	1.39	2	1	78	0.05	< 10	< 10	17	< 10	68
644753	94139402	525	1	0.10	50	340	12	1.42	< 2	2	93	0.03	< 10	< 10	15	< 10	80
644754	94139402	610	1	0.10	53	450	2370	2.09	8	4	82	0.07	< 10	< 10	36	< 10	3800
644755	94139402	700	< 1	0.10	29	270	844	0.88	2	5	56	0.11	< 10	< 10	49	< 10	1435
644247	94400 225	>10000	3	0.02	34	910	8700	1.87	< 2	< 1	3	< 0.01	< 10	40	19	< 10	>10000
644456	94139402	2740	< 1	< 0.01	9	110	192	0.30	2	< 1	80	< 0.01	< 10	< 10	2	< 10	9740
644457	94139402	3380	< 1	0.01	19	500	9100	0.81	8	1	80	< 0.01	< 10	< 10	10	< 10	7650

CERTIFICATION: _____

ALS Chemex
Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG - 7 2001

A0121345

Comments: ATTN: DAVE KING

CERTIFICATE A0121345

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 30-JUL-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	1	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Pb-AA46	1	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: DAVE KING

Page Number :1
Total Pages :1
Certificate Date: 30-JUL-2001
Invoice No. : I0121345
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121345

SAMPLE	PREP CODE		Pb %
633234	212	--	3.58

CERTIFICATION: David Lee

OVERLIMITS from A0120988

ALS Chemex

Aurora Laboratory Services Ltd.
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5175 Timberlea Blvd., Mississauga
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
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Project : 2501
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Page Number :1
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Account : BUF

CERTIFICATE OF ANALYSIS A0121345

SAMPLE	PREP CODE	Pb %
633234	212 --	3.58

CERTIFICATION: _____

OVERLIMITS from A0120988

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
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A0121371

Comments: ATTN: CLINT BARR

CERTIFICATE A0121371

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 30-JUL-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	2	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Pb-AA46	1	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	1	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

ALS Chemex

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874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

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P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121371

SAMPLE	PREP CODE	Pb %	Zn %
644075	212 --	1.32	-----
644243	212 --	-----	2.99

CERTIFICATION: _____

OVERLIMITS from A0120830

ALS Chemex

Aurora Laboratory Services Ltd.
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :1
Certificate Date: 30-JUL-2001
Invoice No. : I0121371
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121371

SAMPLE	PREP CODE		Pb %	Zn %							
644075	212	--	1.32	-----							
644243	212	--	-----	2.99							

CERTIFICATION: _____

OVERLIMITS from A0120830

ALS Chemex

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5175 Timberlea Blvd., Mississauga
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0121577

Comments: ATTN: CLINT BARR

CERTIFICATE A0121577

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 28-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	34	Pulv. <250g to >85%/-75 micron
STO-21	34	Reject Storage-First 90 Days
LOG-22	35	Samples received without barcode
CRU-31	34	Crush to 70% minus 2mm
SPL-21	34	Splitting Charge
225	1	Run as received
229	35	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
WEI-21	35	Weight of received sample	BALANCE	0.01	1000.0
Au-AA23	34	Au-AA23 : Au ppb: Fuse 30 grams	FA-AAS	5	10000
Ag-ICP41	35	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	35	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	35	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	35	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	35	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	35	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	35	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	35	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	35	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	35	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	35	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	35	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	35	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	35	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	35	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	35	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	35	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	35	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	35	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	35	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	35	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	35	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	35	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	35	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	35	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	35	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	35	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	35	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	35	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	35	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	35	U ppm: 32 element, soil & rock	ICP-AES	10	10000

ALS Chemex
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0121577

Comments: ATTN: CLINT BARR

CERTIFICATE A0121577

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 28-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	34	Pulv. <250g to >85%/-75 micron
STO-21	34	Reject Storage-First 90 Days
LOG-22	35	Samples received without barcode
CRU-31	34	Crush to 70% minus 2mm
SPL-21	34	Splitting Charge
225	1	Run as received
229	35	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
V-ICP41	35	V ppm: 32 element, soil & rock	ICP-AES	1	10000
W-ICP41	35	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	35	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000
Ag-AA46	35	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500
Pb-AA46	35	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	35	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-A
Total Pages :1
Certificate Date: 10-AUG-2001
Invoice No. :I0121577
P.O. Number :
Account :BUF

** CORRECTED COPY

CERTIFICATE OF ANALYSIS A0121577

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm
644777	94139402	2.62	< 5	0.2	0.29	6	< 10	110	< 0.5	6	1.32	< 0.5	8	108	29
644778	94139402	3.20	< 5	8.8	0.20	8	< 10	100	< 0.5	< 2	5.98	< 0.5	7	40	14
644779	94139402	3.04	< 5	< 0.2	0.48	24	< 10	150	0.5	2	1.34	< 0.5	24	70	18
644780	94139402	4.26	< 5	5.4	0.31	10	< 10	30	< 0.5	8	0.29	195.5	16	111	100
644781	94139402	2.20	< 5	< 0.2	0.68	14	< 10	90	0.5	< 2	0.12	< 0.5	7	97	7
644782	94139402	2.06	< 5	0.2	0.30	6	< 10	50	< 0.5	< 2	0.27	0.5	1	128	5
644783	94139402	0.94	15	>100.0	0.18	< 2	< 10	10	< 0.5	< 2	0.21	111.0	8	50	52
644784	94139402	2.88	< 5	0.2	0.62	2	< 10	170	1.5	< 2	1.75	< 0.5	5	21	5
644785	94139402	2.56	< 5	0.2	0.65	2	< 10	160	1.5	6	1.23	1.5	10	15	8
644786	94139402	2.20	< 5	< 0.2	0.50	< 2	< 10	140	1.0	< 2	7.17	< 0.5	8	15	1
644787	94139402	1.70	< 5	< 0.2	0.47	< 2	< 10	230	0.5	< 2	6.60	< 0.5	9	41	< 1
644788	94139402	2.12	< 5	< 0.2	0.58	24	< 10	140	1.5	6	2.51	< 0.5	14	28	5
644789	94139402	1.22	15	12.2	0.44	394	< 10	40	0.5	6	2.54	105.5	99	54	53
644790	94139402	1.72	< 5	0.2	0.51	124	< 10	80	1.0	4	1.20	15.5	45	43	14
644791	9400 225	0.04	not/ss	9.0	0.41	52	< 10	< 10	0.5	12	0.31	440	10	5	134
644792	94139402	2.42	5	1.8	0.39	182	< 10	10	0.5	10	2.32	202	60	41	135
644793	94139402	2.32	< 5	< 0.2	0.43	52	< 10	180	0.5	6	2.61	6.0	22	56	28
644794	94139402	2.42	< 5	< 0.2	0.43	28	< 10	80	< 0.5	2	1.24	4.5	13	136	8
644795	94139402	1.84	< 5	1.6	0.27	36	< 10	< 10	< 0.5	20	2.02	>500	78	56	145
644796	94139402	1.32	< 5	< 0.2	0.32	18	< 10	90	< 0.5	2	3.65	21.0	13	69	12
644797	94139402	2.02	< 5	0.8	0.12	10	< 10	< 10	< 0.5	< 2	7.09	~~335~~ 432	36	29	73
644798	94139402	2.28	5	1.2	0.14	12	< 10	< 10	< 0.5	12	3.08	~~309~~ >500	37	29	99
644799	94139402	1.98	< 5	< 0.2	0.05	2	< 10	50	< 0.5	< 2	9.64	7.0	3	7	11
644800	94139402	2.06	< 5	< 0.2	0.29	18	< 10	70	< 0.5	< 2	2.67	0.5	9	98	15
644801	94139402	3.06	< 5	1.2	0.20	14	< 10	< 10	< 0.5	20	1.20	>500	64	52	89
644802	94139402	3.76	< 5	1.2	0.26	16	< 10	< 10	< 0.5	16	1.56	390	51	79	120
644803	94139402	1.06	< 5	< 0.2	0.25	10	< 10	50	< 0.5	2	0.61	5.0	7	118	24
644804	94139402	3.32	< 5	7.6	0.35	14	< 10	30	< 0.5	8	1.51	225	33	77	64
644805	94139402	0.50	< 5	< 0.2	0.18	2	< 10	60	< 0.5	< 2	0.03	1.5	1	115	9
644806	94139402	2.62	< 5	< 0.2	0.25	10	< 10	50	< 0.5	6	1.85	0.5	6	93	25
644807	94139402	3.74	< 5	< 0.2	0.38	12	< 10	90	0.5	< 2	2.84	< 0.5	7	96	22
644808	94139402	3.12	< 5	0.2	0.18	6	< 10	30	< 0.5	6	3.29	84.0	10	164	25
644809	94139402	2.88	< 5	< 0.2	0.19	18	< 10	60	< 0.5	< 2	2.69	4.0	9	103	7
644810	94139402	2.22	< 5	0.8	0.19	22	< 10	< 10	< 0.5	14	0.76	272	41	87	78
644811	94139402	2.54	< 5	0.8	0.12	12	< 10	20	< 0.5	< 2	11.30	231	33	33	76

CERTIFICATION: _____

corrected on later version

** FOR ALL ELEMENTS ON SAMPLES 644782 AND 644783.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 10-AUG-2001
Invoice No. : I0121577
P.O. Number :
Account : BUF

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CERTIFICATE OF ANALYSIS A0121577

SAMPLE	PREP CODE	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm
644777	94139402	0.30	< 10	< 1	0.20	10	0.03	290	5	0.02	9	90	544	0.06	2
644778	94139402	0.38	< 10	< 1	0.16	< 10	0.03	1305	1	0.01	14	190	>10000	0.70	10
644779	94139402	0.76	< 10	< 1	0.33	10	0.06	290	1	0.01	44	170	268	0.45	< 2
644780	94139402	0.61	10	18	0.17	< 10	0.03	75	< 1	0.01	15	120	>10000	4.24	< 2
644781	94139402	1.14	< 10	< 1	0.24	10	0.10	55	< 1	0.01	22	180	26	0.07	8
644782	94139402	0.51	< 10	< 1	0.14	< 10	0.04	60	1	0.01	10	80	112	0.04	6
644783	94139402	0.29	< 10	10	0.12	< 10	0.01	40	14	< 0.01	7	130	>10000	7.53	300
644784	94139402	1.28	< 10	< 1	0.44	10	0.08	395	< 1	< 0.01	14	350	714	0.81	8
644785	94139402	1.33	< 10	< 1	0.50	20	0.09	285	1	0.01	22	310	1320	0.73	< 2
644786	94139402	1.19	< 10	< 1	0.40	10	0.08	1420	1	0.01	15	350	26	0.52	< 2
644787	94139402	0.71	< 10	1	0.37	10	0.06	1235	< 1	0.01	11	280	52	0.28	< 2
644788	94139402	1.08	< 10	< 1	0.42	30	0.09	640	3	0.01	23	310	906	0.51	< 2
644789	94139402	1.31	< 10	12	0.28	< 10	0.07	460	< 1	0.01	215	210	>10000	3.77	4
644790	94139402	1.16	< 10	1	0.39	20	0.06	250	< 1	0.01	75	220	66	1.17	4
644791	9400 225	2.78	10	9	0.15	< 10	0.07	810	13	0.01	20	1490	>10000	>10.00	20
644792	94139402	1.18	< 10	25	0.31	< 10	0.06	445	< 1	0.01	121	280	108	4.70	< 2
644793	94139402	0.66	< 10	< 1	0.32	30	0.07	535	< 1	0.01	37	240	62	0.35	2
644794	94139402	0.58	< 10	< 1	0.19	10	0.09	310	< 1	0.02	20	130	16	0.16	< 2
644795	94139402	1.23	40	60	0.18	< 10	0.03	510	< 1	0.01	25	240	32	9.92	< 2
644796	94139402	0.33	< 10	3	0.20	< 10	0.05	875	1	0.03	13	140	6	0.43	< 2
644797	94139402	0.72	20	31	0.08	< 10	0.03	1570	< 1	< 0.01	9	30	14	5.07	< 2
644798	94139402	0.65	20	30	0.07	< 10	0.01	690	< 1	< 0.01	9	110	16	4.63	< 2
644799	94139402	0.24	< 10	2	0.04	< 10	0.02	2740	< 1	< 0.01	3	40	< 2	0.13	< 2
644800	94139402	0.26	< 10	1	0.18	10	0.02	695	< 1	0.02	11	100	10	0.07	6
644801	94139402	0.83	40	49	0.14	< 10	0.01	275	< 1	0.01	11	190	608	7.91	< 2
644802	94139402	0.84	30	39	0.16	< 10	0.03	380	< 1	0.01	12	190	32	5.80	< 2
644803	94139402	0.25	< 10	< 1	0.12	< 10	0.03	110	1	0.02	7	70	8	0.11	< 2
644804	94139402	0.52	10	20	0.20	< 10	0.03	375	< 1	0.01	9	160	>10000	4.16	< 2
644805	94139402	0.53	< 10	< 1	0.08	10	< 0.01	45	1	< 0.01	3	130	122	0.08	2
644806	94139402	0.24	< 10	1	0.15	10	0.02	435	< 1	0.01	8	100	36	0.06	< 2
644807	94139402	0.30	< 10	1	0.24	10	0.04	700	< 1	< 0.01	10	210	18	0.09	< 2
644808	94139402	0.42	< 10	9	0.07	< 10	0.03	810	< 1	0.01	5	180	10	1.49	< 2
644809	94139402	0.28	< 10	< 1	0.08	< 10	0.05	655	< 1	< 0.01	11	110	6	0.11	< 2
644810	94139402	0.64	20	32	0.12	< 10	0.01	155	< 1	0.01	13	130	18	4.32	< 2
644811	94139402	0.71	20	36	0.09	10	0.03	2240	< 1	< 0.01	9	150	14	4.01	< 2

CERTIFICATION: _____ *

** FOR ALL ELEMENTS ON SAMPLES 644782 AND 644783.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-C
Total Pages :1
Certificate Date: 10-AUG-2001
Invoice No. :I0121577
P.O. Number :
Account :BUF

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CERTIFICATE OF ANALYSIS A0121577

SAMPLE	PREP CODE	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Ag g/t	Pb %	Zn %
644777	94139402	1	69	< 0.01	< 10	< 10	2	< 10	2	< 1	0.05	< 0.01
644778	94139402	4	157	< 0.01	< 10	< 10	1	< 10	84	9	3.47	0.01
644779	94139402	3	74	< 0.01	< 10	< 10	5	< 10	28	< 1	0.03	< 0.01
644780	94139402	< 1	20	< 0.01	< 10	< 10	< 1	< 10	>10000	4	1.89	7.37
644781	94139402	< 1	31	< 0.01	< 10	< 10	4	< 10	100	< 1	< 0.01	0.01
644782	94139402	< 1	27	< 0.01	< 10	< 10	1	< 10	228	< 1	0.01	0.02
644783	94139402	< 1	19	< 0.01	< 10	< 10	< 1	< 10	>10000	113	47.3	4.48
644784	94139402	4	113	< 0.01	< 10	< 10	6	< 10	160	< 1	0.01	< 0.01
644785	94139402	4	92	< 0.01	< 10	< 10	7	< 10	424	< 1	0.14	0.01
644786	94139402	4	231	< 0.01	< 10	< 10	5	< 10	22	< 1	< 0.01	< 0.01
644787	94139402	3	217	< 0.01	< 10	< 10	4	< 10	14	< 1	< 0.01	< 0.01
644788	94139402	4	138	< 0.01	< 10	< 10	5	< 10	20	< 1	0.09	< 0.01
644789	94139402	3	139	< 0.01	< 10	< 10	3	< 10	>10000	12	5.17	4.68
644790	94139402	3	82	< 0.01	< 10	< 10	5	< 10	6460	< 1	< 0.01	0.68
644791	9400 225	1	7	< 0.01	< 10	< 10	11	< 10	>10000	10	1.38	27.7
644792	94139402	3	131	< 0.01	< 10	< 10	1	< 10	>10000	1	0.01	8.87
644793	94139402	3	151	< 0.01	< 10	< 10	4	< 10	1775	< 1	< 0.01	0.20
644794	94139402	1	62	< 0.01	< 10	< 10	2	< 10	1765	< 1	< 0.01	0.16
644795	94139402	1	80	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	18.60
644796	94139402	3	178	< 0.01	< 10	< 10	2	< 10	6190	< 1	< 0.01	0.74
644797	94139402	1	197	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	14.00
644798	94139402	1	116	< 0.01	< 10	< 10	< 1	< 10	>10000	1	< 0.01	16.55
644799	94139402	3	275	< 0.01	< 10	< 10	< 1	< 10	2440	< 1	< 0.01	0.56
644800	94139402	1	75	< 0.01	< 10	< 10	2	< 10	330	< 1	< 0.01	0.03
644801	94139402	< 1	55	< 0.01	< 10	< 10	< 1	< 10	>10000	1	0.07	17.65
644802	94139402	< 1	63	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	11.00
644803	94139402	< 1	46	< 0.01	< 10	< 10	1	< 10	1940	< 1	< 0.01	0.13
644804	94139402	< 1	56	< 0.01	< 10	< 10	< 1	< 10	>10000	7	2.66	7.16
644805	94139402	< 1	3	< 0.01	< 10	< 10	1	< 10	966	< 1	< 0.01	0.04
644806	94139402	1	61	< 0.01	< 10	< 10	1	< 10	274	< 1	< 0.01	0.03
644807	94139402	2	93	< 0.01	< 10	< 10	3	< 10	200	< 1	< 0.01	0.02
644808	94139402	< 1	140	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	2.62
644809	94139402	1	97	< 0.01	< 10	< 10	1	< 10	1465	< 1	< 0.01	0.12
644810	94139402	< 1	51	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	10.15
644811	94139402	3	334	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	9.27

CERTIFICATION: _____

** FOR ALL ELEMENTS ON SAMPLES 644782 AND 644783.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-A
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Certificate Date: 10-AUG-2001
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CERTIFICATE OF ANALYSIS A0121577

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm
644777	9413 9402	2.62	< 5	0.2	0.29	6	< 10	110	< 0.5	6	1.32	< 0.5	8	108	29
644778	9413 9402	3.20	< 5	8.8	0.20	8	< 10	100	< 0.5	< 2	5.98	< 0.5	7	40	14
644779	9413 9402	3.04	< 5	< 0.2	0.48	24	< 10	150	0.5	2	1.34	< 0.5	24	70	18
644780	9413 9402	4.26	< 5	5.4	0.31	10	< 10	30	< 0.5	8	0.29	195.5	16	111	100
644781	9413 9402	2.20	< 5	< 0.2	0.68	14	< 10	90	0.5	< 2	0.12	< 0.5	7	97	7
644782	9413 9402	2.06	< 5	0.2	0.30	6	< 10	50	< 0.5	< 2	0.27	0.5	1	128	5
644783	9413 9402	0.94	15	>100.0	0.18	< 2	< 10	10	< 0.5	< 2	0.21	111.0	8	50	52
644784	9413 9402	2.88	< 5	0.2	0.62	2	< 10	170	1.5	< 2	1.75	< 0.5	5	21	5
644785	9413 9402	2.56	< 5	0.2	0.65	2	< 10	160	1.5	6	1.23	1.5	10	15	8
644786	9413 9402	2.20	< 5	< 0.2	0.50	< 2	< 10	140	1.0	< 2	7.17	< 0.5	8	15	1
644787	9413 9402	1.70	< 5	< 0.2	0.47	< 2	< 10	230	0.5	< 2	6.60	< 0.5	9	41	< 1
644788	9413 9402	2.12	< 5	< 0.2	0.58	24	< 10	140	1.5	6	2.51	< 0.5	14	28	5
644789	9413 9402	1.22	15	12.2	0.44	394	< 10	40	0.5	6	2.54	105.5	99	54	53
644790	9413 9402	1.72	< 5	0.2	0.51	124	< 10	80	1.0	4	1.20	15.5	45	43	14
644791	9400 225	0.04	not/ss	9.0	0.41	52	< 10	< 10	0.5	12	0.31	440	10	5	134
644792	9413 9402	2.42	5	1.8	0.39	182	< 10	10	0.5	10	2.32	202	60	41	135
644793	9413 9402	2.32	< 5	< 0.2	0.43	52	< 10	180	0.5	6	2.61	6.0	22	56	28
644794	9413 9402	2.42	< 5	< 0.2	0.43	28	< 10	80	< 0.5	2	1.24	4.5	13	136	8
644795	9413 9402	1.84	< 5	1.6	0.27	36	< 10	< 10	< 0.5	20	2.02	>500	78	56	145
644796	9413 9402	1.32	< 5	< 0.2	0.32	18	< 10	90	< 0.5	2	3.65	21.0	13	69	12
644797	9413 9402	2.02	< 5	0.8	0.12	10	< 10	< 10	< 0.5	< 2	7.09	335	36	29	73
644798	9413 9402	2.28	5	1.2	0.14	12	< 10	< 10	< 0.5	12	3.08	309	37	29	99
644799	9413 9402	1.98	< 5	< 0.2	0.05	2	< 10	50	< 0.5	< 2	9.64	7.0	3	7	11
644800	9413 9402	2.06	< 5	< 0.2	0.29	18	< 10	70	< 0.5	< 2	2.67	0.5	9	98	15
644801	9413 9402	3.06	< 5	1.2	0.20	14	< 10	< 10	< 0.5	20	1.20	>500	64	52	89
644802	9413 9402	3.76	< 5	1.2	0.26	16	< 10	< 10	< 0.5	16	1.56	390	51	79	120
644803	9413 9402	1.06	< 5	< 0.2	0.25	10	< 10	50	< 0.5	2	0.61	5.0	7	118	24
644804	9413 9402	3.32	< 5	7.6	0.35	14	< 10	30	< 0.5	8	1.51	225	33	77	64
644805	9413 9402	0.50	< 5	< 0.2	0.18	2	< 10	60	< 0.5	< 2	0.03	1.5	1	115	9
644806	9413 9402	2.62	< 5	< 0.2	0.25	10	< 10	50	< 0.5	6	1.85	0.5	6	93	25
644807	9413 9402	3.74	< 5	< 0.2	0.38	12	< 10	90	0.5	< 2	2.84	< 0.5	7	96	22
644808	9413 9402	3.12	< 5	0.2	0.18	6	< 10	30	< 0.5	6	3.29	84.0	10	164	25
644809	9413 9402	2.88	< 5	< 0.2	0.19	18	< 10	60	< 0.5	< 2	2.69	4.0	9	103	7
644810	9413 9402	2.22	< 5	0.8	0.19	22	< 10	< 10	< 0.5	14	0.76	272	41	87	78
644811	9413 9402	2.54	< 5	0.8	0.12	12	< 10	20	< 0.5	< 2	11.30	231	33	33	76

CERTIFICATION: _____

** FOR ALL ELEMENTS ON SAMPLES 644782 AND 644783.

ALS Chemex

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874 TUNGSTEN ST.
THUNDER BAY, ON
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CERTIFICATE OF ANALYSIS A0121577

SAMPLE	PREP CODE	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm
644777	94139402	0.30	< 10	< 1	0.20	10	0.03	290	5	0.02	9	90	544	0.06	2
644778	94139402	0.38	< 10	< 1	0.16	< 10	0.03	1305	1	0.01	14	190	>10000	0.70	10
644779	94139402	0.76	< 10	< 1	0.33	10	0.06	290	1	0.01	44	170	268	0.45	< 2
644780	94139402	0.61	10	18	0.17	< 10	0.03	75	< 1	0.01	15	120	>10000	4.24	< 2
644781	94139402	1.14	< 10	< 1	0.24	10	0.10	55	< 1	0.01	22	180	26	0.07	8
644782	94139402	0.51	< 10	< 1	0.14	< 10	0.04	60	1	0.01	10	80	112	0.04	6
644783	94139402	0.29	< 10	10	0.12	< 10	0.01	40	14	< 0.01	7	130	>10000	7.53	300
644784	94139402	1.28	< 10	< 1	0.44	10	0.08	395	< 1	< 0.01	14	350	714	0.81	8
644785	94139402	1.33	< 10	< 1	0.50	20	0.09	285	1	0.01	22	310	1320	0.73	< 2
644786	94139402	1.19	< 10	< 1	0.40	10	0.08	1420	1	0.01	15	350	26	0.52	< 2
644787	94139402	0.71	< 10	1	0.37	10	0.06	1235	< 1	0.01	11	280	52	0.28	< 2
644788	94139402	1.08	< 10	< 1	0.42	30	0.09	640	3	0.01	23	310	906	0.51	< 2
644789	94139402	1.31	< 10	12	0.28	< 10	0.07	460	< 1	0.01	215	210	>10000	3.77	4
644790	94139402	1.16	< 10	1	0.39	20	0.06	250	< 1	0.01	75	220	66	1.17	4
644791	9400 225	2.78	10	9	0.15	< 10	0.07	810	13	0.01	20	1490	>10000	>10.00	20
644792	94139402	1.18	< 10	25	0.31	< 10	0.06	445	< 1	0.01	121	280	108	4.70	< 2
644793	94139402	0.66	< 10	< 1	0.32	30	0.07	535	< 1	0.01	37	240	62	0.35	2
644794	94139402	0.58	< 10	< 1	0.19	10	0.09	310	< 1	0.02	20	130	16	0.16	< 2
644795	94139402	1.23	40	60	0.18	< 10	0.03	510	< 1	0.01	25	240	32	9.92	< 2
644796	94139402	0.33	< 10	3	0.20	< 10	0.05	875	1	0.03	13	140	6	0.43	< 2
644797	94139402	0.72	20	31	0.08	< 10	0.03	1570	< 1	< 0.01	9	30	14	5.07	< 2
644798	94139402	0.65	20	30	0.07	< 10	0.01	690	< 1	< 0.01	9	110	16	4.63	< 2
644799	94139402	0.24	< 10	2	0.04	< 10	0.02	2740	< 1	< 0.01	3	40	< 2	0.13	< 2
644800	94139402	0.26	< 10	1	0.18	10	0.02	695	< 1	0.02	11	100	10	0.07	6
644801	94139402	0.83	40	49	0.14	< 10	0.01	275	< 1	0.01	11	190	608	7.91	< 2
644802	94139402	0.84	30	39	0.16	< 10	0.03	380	< 1	0.01	12	190	32	5.80	< 2
644803	94139402	0.25	< 10	< 1	0.12	< 10	0.03	110	1	0.02	7	70	8	0.11	< 2
644804	94139402	0.52	10	20	0.20	< 10	0.03	375	< 1	0.01	9	160	>10000	4.16	< 2
644805	94139402	0.53	< 10	< 1	0.08	10	< 0.01	45	1	< 0.01	3	130	122	0.08	2
644806	94139402	0.24	< 10	1	0.15	10	0.02	435	< 1	0.01	8	100	36	0.06	< 2
644807	94139402	0.30	< 10	1	0.24	10	0.04	700	< 1	< 0.01	10	210	18	0.09	< 2
644808	94139402	0.42	< 10	9	0.07	< 10	0.03	810	< 1	0.01	5	180	10	1.49	< 2
644809	94139402	0.28	< 10	< 1	0.08	< 10	0.05	655	< 1	< 0.01	11	110	6	0.11	< 2
644810	94139402	0.64	20	32	0.12	< 10	0.01	155	< 1	0.01	13	130	18	4.32	< 2
644811	94139402	0.71	20	36	0.09	10	0.03	2240	< 1	< 0.01	9	150	14	4.01	< 2

CERTIFICATION: _____

** FOR ALL ELEMENTS ON SAMPLES 644782 AND 644783.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-C
Total Pages : 1
Certificate Date: 10-AUG-2001
Invoice No. : I0121577
P.O. Number :
Account : BUF

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CERTIFICATE OF ANALYSIS A0121577

SAMPLE	PREP CODE	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Ag g/t	Pb %	Zn %
644777	94139402	1	69	< 0.01	< 10	< 10	2	< 10	2	< 1	0.05	< 0.01
644778	94139402	4	157	< 0.01	< 10	< 10	1	< 10	84	9	3.47	0.01
644779	94139402	3	74	< 0.01	< 10	< 10	5	< 10	28	< 1	0.03	< 0.01
644780	94139402	< 1	20	< 0.01	< 10	< 10	< 1	< 10	>10000	4	1.89	7.37
644781	94139402	< 1	31	< 0.01	< 10	< 10	4	< 10	100	< 1	< 0.01	0.01
644782	94139402	< 1	27	< 0.01	< 10	< 10	1	< 10	228	< 1	0.01	0.02
644783	94139402	< 1	19	< 0.01	< 10	< 10	< 1	< 10	>10000	113	47.3	4.48
644784	94139402	4	113	< 0.01	< 10	< 10	6	< 10	160	< 1	0.01	< 0.01
644785	94139402	4	92	< 0.01	< 10	< 10	7	< 10	424	< 1	0.14	0.01
644786	94139402	4	231	< 0.01	< 10	< 10	5	< 10	22	< 1	< 0.01	< 0.01
644787	94139402	3	217	< 0.01	< 10	< 10	4	< 10	14	< 1	< 0.01	< 0.01
644788	94139402	4	138	< 0.01	< 10	< 10	5	< 10	20	< 1	0.09	< 0.01
644789	94139402	3	139	< 0.01	< 10	< 10	3	< 10	>10000	12	5.17	4.68
644790	94139402	3	82	< 0.01	< 10	< 10	5	< 10	6460	< 1	< 0.01	0.68
644791	94002 225	1	7	< 0.01	< 10	< 10	11	< 10	>10000	10	1.38	27.7
644792	94139402	3	131	< 0.01	< 10	< 10	1	< 10	>10000	1	0.01	8.87
644793	94139402	3	151	< 0.01	< 10	< 10	4	< 10	1775	< 1	< 0.01	0.20
644794	94139402	1	62	< 0.01	< 10	< 10	2	< 10	1765	< 1	< 0.01	0.16
644795	94139402	1	80	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	18.60
644796	94139402	3	178	< 0.01	< 10	< 10	2	< 10	6190	< 1	< 0.01	0.74
644797	94139402	1	197	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	14.00
644798	94139402	1	116	< 0.01	< 10	< 10	< 1	< 10	>10000	1	< 0.01	16.55
644799	94139402	3	275	< 0.01	< 10	< 10	< 1	< 10	2440	< 1	< 0.01	0.56
644800	94139402	1	75	< 0.01	< 10	< 10	2	< 10	330	< 1	< 0.01	0.03
644801	94139402	< 1	55	< 0.01	< 10	< 10	< 1	< 10	>10000	1	0.07	17.65
644802	94139402	< 1	63	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	11.00
644803	94139402	< 1	46	< 0.01	< 10	< 10	1	< 10	1940	< 1	< 0.01	0.13
644804	94139402	< 1	56	< 0.01	< 10	< 10	< 1	< 10	>10000	7	2.66	7.16
644805	94139402	< 1	3	< 0.01	< 10	< 10	1	< 10	966	< 1	< 0.01	0.04
644806	94139402	1	61	< 0.01	< 10	< 10	1	< 10	274	< 1	< 0.01	0.03
644807	94139402	2	93	< 0.01	< 10	< 10	3	< 10	200	< 1	< 0.01	0.02
644808	94139402	< 1	140	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	2.62
644809	94139402	1	97	< 0.01	< 10	< 10	1	< 10	1465	< 1	< 0.01	0.12
644810	94139402	< 1	51	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	10.15
644811	94139402	3	334	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	9.27

CERTIFICATION: _____

** FOR ALL ELEMENTS ON SAMPLES 644782 AND 644783.

ALS Chemex

AURORA LABORATORY SERVICES LTD.
212 Brooksbank Ave, North Vancouver BC Canada V7J 2C1
Phone: 604-984-0221 Fax: 604-984-0218 Website: www.alschemex.com

FAX DATA REPORT

COMPANY : NORANDA MINING AND EXPLORATION INC.

CONTACT : ATTN: CLINT BARR

FAX NUMBER : 1-807-623-0452

SENDER : BILL **DATE SUBMITTED : 30-NOV-01 at 12:13 PDT**
NO OF PAGES : 4 INCL COVER
SUBJECT : Automated FAX data delivery

DESCRIPTION :

Results for workorder A0121577 - Project : 2501
35 samples received on 31-JUL-01 by our Vancouver office
This workorder has all data entered

Corrected copy for Cd - samples 644797 and 644798.
Letter of explanation to follow.

FAX COPY ONLY - A certified copy will be sent through the mail

If there are any problems with this transmission, please call our office immediately at 604 984 0221

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A Campbell Brothers Limited Company

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-A
Total Pages : 1
Certificate Date: 10-AUG-01
Invoice No. : I0121577
P.O. Number :
Account : BUF

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CERTIFICATE OF ANALYSIS A0121577

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm
644777	94139402	2.62	< 5	0.2	0.29	6	< 10	110	< 0.5	6	1.32	< 0.5	8	108	29
644778	94139402	3.20	< 5	8.8	0.20	8	< 10	100	< 0.5	< 2	5.98	< 0.5	7	40	14
644779	94139402	3.04	< 5	< 0.2	0.48	24	< 10	150	0.5	2	1.34	< 0.5	24	70	18
644780	94139402	4.26	< 5	5.4	0.31	10	< 10	30	< 0.5	8	0.29	195.5	16	111	100
644781	94139402	2.20	< 5	< 0.2	0.68	14	< 10	90	0.5	< 2	0.12	< 0.5	7	97	7
644782	94139402	2.06	< 5	0.2	0.30	6	< 10	50	< 0.5	< 2	0.27	0.5	1	128	5
644783	94139402	0.94	15	>100.0	0.18	< 2	< 10	10	< 0.5	< 2	0.21	111.0	8	50	52
644784	94139402	2.88	< 5	0.2	0.62	2	< 10	170	1.5	< 2	1.75	< 0.5	5	21	5
644785	94139402	2.56	< 5	0.2	0.65	2	< 10	160	1.5	6	1.23	1.5	10	15	8
644786	94139402	2.20	< 5	< 0.2	0.50	< 2	< 10	140	1.0	< 2	7.17	< 0.5	8	15	1
644787	94139402	1.70	< 5	< 0.2	0.47	< 2	< 10	230	0.5	< 2	6.60	< 0.5	9	41	< 1
644788	94139402	2.12	< 5	< 0.2	0.58	24	< 10	140	1.5	6	2.51	< 0.5	14	28	5
644789	94139402	1.22	15	12.2	0.44	394	< 10	40	0.5	6	2.54	105.5	99	54	53
644790	94139402	1.72	< 5	0.2	0.51	124	< 10	80	1.0	4	1.20	15.5	45	43	14
644791	9400 225	0.04	not/ss	9.0	0.41	52	< 10	< 10	0.5	12	0.31	440	10	5	134
644792	94139402	2.42	5	1.8	0.39	182	< 10	10	0.5	10	2.32	202	60	41	135
644793	94139402	2.32	< 5	< 0.2	0.43	52	< 10	180	0.5	6	2.61	6.0	22	56	28
644794	94139402	2.42	< 5	< 0.2	0.43	28	< 10	80	< 0.5	2	1.24	4.5	13	136	8
644795	94139402	1.84	< 5	1.6	0.27	36	< 10	< 10	< 0.5	20	2.02	>500	78	56	145
644796	94139402	1.32	< 5	< 0.2	0.32	18	< 10	90	< 0.5	2	3.65	21.0	13	69	12
644797	94139402	2.02	< 5	0.8	0.12	10	< 10	< 10	< 0.5	< 2	7.09	432	36	29	73
644798	94139402	2.28	5	1.2	0.14	12	< 10	< 10	< 0.5	12	3.08	>500	37	29	99
644799	94139402	1.98	< 5	< 0.2	0.05	2	< 10	50	< 0.5	< 2	9.64	7.0	3	7	11
644800	94139402	2.06	< 5	< 0.2	0.29	18	< 10	70	< 0.5	< 2	2.67	0.5	9	98	15
644801	94139402	3.06	< 5	1.2	0.20	14	< 10	< 10	< 0.5	20	1.20	>500	64	52	89
644802	94139402	3.76	< 5	1.2	0.26	16	< 10	< 10	< 0.5	16	1.56	390	51	79	120
644803	94139402	1.06	< 5	< 0.2	0.25	10	< 10	50	< 0.5	2	0.61	5.0	7	118	24
644804	94139402	3.32	< 5	7.6	0.35	14	< 10	30	< 0.5	8	1.51	225	33	77	64
644805	94139402	0.50	< 5	< 0.2	0.18	2	< 10	60	< 0.5	< 2	0.03	1.5	1	115	9
644806	94139402	2.62	< 5	< 0.2	0.25	10	< 10	50	< 0.5	6	1.85	0.5	6	93	25
644807	94139402	3.74	< 5	< 0.2	0.38	12	< 10	90	0.5	< 2	2.84	< 0.5	7	96	22
644808	94139402	3.12	< 5	0.2	0.18	6	< 10	30	< 0.5	6	3.29	84.0	10	164	25
644809	94139402	2.88	< 5	< 0.2	0.19	18	< 10	60	< 0.5	< 2	2.69	4.0	9	103	7
644810	94139402	2.22	< 5	0.8	0.19	22	< 10	< 10	< 0.5	14	0.76	272	41	87	78
644811	94139402	2.54	< 5	0.8	0.12	12	< 10	20	< 0.5	< 2	11.30	231	33	33	76

CERTIFICATION: _____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-B
Total Pages :1
Certificate Date: 10-AUG-01
Invoice No. :I0121577
P.O. Number :
Account :BUF

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CERTIFICATE OF ANALYSIS A0121577

SAMPLE	PREP CODE	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm
644777	9413 9402	0.30	< 10	< 1	0.20	10	0.03	290	5	0.02	9	90	544	0.06	2
644778	9413 9402	0.38	< 10	< 1	0.16	< 10	0.03	1305	1	0.01	14	190	>10000	0.70	10
644779	9413 9402	0.76	< 10	< 1	0.33	10	0.06	290	1	0.01	44	170	268	0.45	< 2
644780	9413 9402	0.61	10	18	0.17	< 10	0.03	75	< 1	0.01	15	120	>10000	4.24	< 2
644781	9413 9402	1.14	< 10	< 1	0.24	10	0.10	55	< 1	0.01	22	180	26	0.07	8
644782	9413 9402	0.51	< 10	< 1	0.14	< 10	0.04	60	1	0.01	10	80	112	0.04	6
644783	9413 9402	0.29	< 10	10	0.12	< 10	0.01	40	14	< 0.01	7	130	>10000	7.53	300
644784	9413 9402	1.28	< 10	< 1	0.44	10	0.08	395	< 1	< 0.01	14	350	714	0.81	8
644785	9413 9402	1.33	< 10	< 1	0.50	20	0.09	285	1	0.01	22	310	1320	0.73	< 2
644786	9413 9402	1.19	< 10	< 1	0.40	10	0.08	1420	1	0.01	15	350	26	0.52	< 2
644787	9413 9402	0.71	< 10	1	0.37	10	0.06	1235	< 1	0.01	11	280	52	0.28	< 2
644788	9413 9402	1.08	< 10	< 1	0.42	30	0.09	640	3	0.01	23	310	906	0.51	< 2
644789	9413 9402	1.31	< 10	12	0.28	< 10	0.07	460	< 1	0.01	215	210	>10000	3.77	4
644790	9413 9402	1.16	< 10	1	0.39	20	0.06	250	< 1	0.01	75	220	66	1.17	4
644791	9400 225	2.78	10	9	0.15	< 10	0.07	810	13	0.01	20	1490	>10000	>10.00	20
644792	9413 9402	1.18	< 10	25	0.31	< 10	0.06	445	< 1	0.01	121	280	108	4.70	< 2
644793	9413 9402	0.66	< 10	< 1	0.32	30	0.07	535	< 1	0.01	37	240	62	0.35	2
644794	9413 9402	0.58	< 10	< 1	0.19	10	0.09	310	< 1	0.02	20	130	16	0.16	< 2
644795	9413 9402	1.23	40	60	0.18	< 10	0.03	510	< 1	0.01	25	240	32	9.92	< 2
644796	9413 9402	0.33	< 10	3	0.20	< 10	0.05	875	1	0.03	13	140	6	0.43	< 2
644797	9413 9402	0.72	20	31	0.08	< 10	0.03	1570	< 1	< 0.01	9	30	14	5.07	< 2
644798	9413 9402	0.65	20	30	0.07	< 10	0.01	690	< 1	< 0.01	9	110	16	4.63	< 2
644799	9413 9402	0.24	< 10	2	0.04	< 10	0.02	2740	< 1	< 0.01	3	40	< 2	0.13	< 2
644800	9413 9402	0.26	< 10	1	0.18	10	0.02	695	< 1	0.02	11	100	10	0.07	6
644801	9413 9402	0.83	40	49	0.14	< 10	0.01	275	< 1	0.01	11	190	608	7.91	< 2
644802	9413 9402	0.84	30	39	0.16	< 10	0.03	380	< 1	0.01	12	190	32	5.80	< 2
644803	9413 9402	0.25	< 10	< 1	0.12	< 10	0.03	110	1	0.02	7	70	8	0.11	< 2
644804	9413 9402	0.52	10	20	0.20	< 10	0.03	375	< 1	0.01	9	160	>10000	4.16	< 2
644805	9413 9402	0.53	< 10	< 1	0.08	10	< 0.01	45	1	< 0.01	3	130	122	0.08	2
644806	9413 9402	0.24	< 10	1	0.15	10	0.02	435	< 1	0.01	8	100	36	0.06	< 2
644807	9413 9402	0.30	< 10	1	0.24	10	0.04	700	< 1	< 0.01	10	210	18	0.09	< 2
644808	9413 9402	0.42	< 10	9	0.07	< 10	0.03	810	< 1	0.01	5	180	10	1.49	< 2
644809	9413 9402	0.28	< 10	< 1	0.08	< 10	0.05	655	< 1	< 0.01	11	110	6	0.11	< 2
644810	9413 9402	0.64	20	32	0.12	< 10	0.01	155	< 1	0.01	13	130	18	4.32	< 2
644811	9413 9402	0.71	20	36	0.09	10	0.03	2240	< 1	< 0.01	9	150	14	4.01	< 2

CERTIFICATION: _____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

Aurora Laboratory Services Ltd.
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5175 Timberlea Blvd., Mississauga
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-C
Total Pages : 1
Certificate Date: 10-AUG-01
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P.O. Number :
Account : BUF

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CERTIFICATE OF ANALYSIS A0121577

SAMPLE	PREP CODE	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Ag g/t	Pb %	Zn %			
644777	94139402	1	69	< 0.01	< 10	< 10	2	< 10	2	< 1	0.05	< 0.01			
644778	94139402	4	157	< 0.01	< 10	< 10	1	< 10	84	9	3.47	0.01			
644779	94139402	3	74	< 0.01	< 10	< 10	5	< 10	28	< 1	0.03	< 0.01			
644780	94139402	< 1	20	< 0.01	< 10	< 10	< 1	< 10	>10000	4	1.89	7.37			
644781	94139402	< 1	31	< 0.01	< 10	< 10	4	< 10	100	< 1	< 0.01	0.01			
644782	94139402	< 1	27	< 0.01	< 10	< 10	1	< 10	228	< 1	0.01	0.02			
644783	94139402	< 1	19	< 0.01	< 10	< 10	< 1	< 10	>10000	113	47.3	4.48			
644784	94139402	4	113	< 0.01	< 10	< 10	6	< 10	160	< 1	0.01	< 0.01			
644785	94139402	4	92	< 0.01	< 10	< 10	7	< 10	424	< 1	0.14	0.01			
644786	94139402	4	231	< 0.01	< 10	< 10	5	< 10	22	< 1	< 0.01	< 0.01			
644787	94139402	3	217	< 0.01	< 10	< 10	4	< 10	14	< 1	< 0.01	< 0.01			
644788	94139402	4	138	< 0.01	< 10	< 10	5	< 10	20	< 1	0.09	< 0.01			
644789	94139402	3	139	< 0.01	< 10	< 10	3	< 10	>10000	12	5.17	4.68			
644790	94139402	3	82	< 0.01	< 10	< 10	5	< 10	6460	< 1	< 0.01	0.68			
644791	9400 225	1	7	< 0.01	< 10	< 10	11	< 10	>10000	10	1.38	27.7			
644792	94139402	3	131	< 0.01	< 10	< 10	1	< 10	>10000	1	0.01	8.87			
644793	94139402	3	151	< 0.01	< 10	< 10	4	< 10	1775	< 1	< 0.01	0.20			
644794	94139402	1	62	< 0.01	< 10	< 10	2	< 10	1765	< 1	< 0.01	0.16			
644795	94139402	1	80	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	18.60			
644796	94139402	3	178	< 0.01	< 10	< 10	2	< 10	6190	< 1	< 0.01	0.74			
644797	94139402	1	197	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	14.00			
644798	94139402	1	116	< 0.01	< 10	< 10	< 1	< 10	>10000	1	< 0.01	16.55			
644799	94139402	3	275	< 0.01	< 10	< 10	< 1	< 10	2440	< 1	< 0.01	0.56			
644800	94139402	1	75	< 0.01	< 10	< 10	2	< 10	330	< 1	< 0.01	0.03			
644801	94139402	< 1	55	< 0.01	< 10	< 10	< 1	< 10	>10000	1	0.07	17.65			
644802	94139402	< 1	63	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	11.00			
644803	94139402	< 1	46	< 0.01	< 10	< 10	1	< 10	1940	< 1	< 0.01	0.13			
644804	94139402	< 1	56	< 0.01	< 10	< 10	< 1	< 10	>10000	7	2.66	7.16			
644805	94139402	< 1	3	< 0.01	< 10	< 10	1	< 10	966	< 1	< 0.01	0.04			
644806	94139402	1	61	< 0.01	< 10	< 10	1	< 10	274	< 1	< 0.01	0.03			
644807	94139402	2	93	< 0.01	< 10	< 10	3	< 10	200	< 1	< 0.01	0.02			
644808	94139402	< 1	140	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	2.62			
644809	94139402	1	97	< 0.01	< 10	< 10	1	< 10	1465	< 1	< 0.01	0.12			
644810	94139402	< 1	51	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	10.15			
644811	94139402	3	334	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	9.27			

CERTIFICATION: _____

ALSCHEMEX LABS Alpha-FAX2 PAGE 004

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG 2 0 2001

A0121578

Comments: ATTN: CLINT BARR

CERTIFICATE A0121578

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 09-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	30	Pulv. <250g to >85%/-75 micron
STO-21	30	Reject Storage-First 90 Days
LOG-22	32	Samples received without barcode
CRU-31	30	Crush to 70% minus 2mm
SPL-21	30	Splitting Charge
225	2	Run as received
229	32	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1433	32	Weight of received sample	BALANCE	0.01	1000.0
Au-AA23	31	Au-AA23 : Au ppb: Fuse 30 grams	FA-AAS	5	10000
Ag-ICP41	32	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	32	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	32	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	32	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	32	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	32	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	32	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	32	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	32	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	32	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	32	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	32	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	32	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	32	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	32	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	32	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	32	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	32	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	32	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	32	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	32	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	32	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	32	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	32	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	32	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	32	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	32	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	32	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	32	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	32	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	32	U ppm: 32 element, soil & rock	ICP-AES	10	10000

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0121578

Comments: ATTN: CLINT BARR

CERTIFICATE A0121578

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
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SAMPLE PREPARATION

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* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
V-ICP41	32	V ppm: 32 element, soil & rock	ICP-AES	1	10000
W-ICP41	32	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	32	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000
Ag-AA46	32	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500
Pb-AA46	32	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	32	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

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Project : 2501
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Certificate Date: 09-AUG-2001
Invoice No. : I0121578
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121578

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm
644812	9413 9402	2.14	< 5	1.0	0.07	2	< 10	30	< 0.5	< 2	>15.00	243	32	25	94
644813	9413 9402	2.58	< 5	1.6	0.08	< 2	< 10	10	< 0.5	< 2	7.05	452	69	49	142
644814	9413 9402	2.34	< 5	0.4	0.24	52	< 10	90	< 0.5	< 2	4.72	68.0	22	61	33
644815	9413 9402	2.72	< 5	< 0.2	0.22	22	< 10	60	< 0.5	< 2	0.79	26.0	16	104	8
644816	9413 9402	2.84	15	3.2	0.06	< 2	< 10	20	< 0.5	6	2.68	>500	112	39	311
644817	9413 9402	2.84	10	3.6	0.04	< 2	< 10	20	< 0.5	4	6.28	>500	112	21	378
644818	9413 9402	1.62	< 5	< 0.2	< 0.01	< 2	< 10	60	< 0.5	< 2	>15.00	4.0	< 1	5	2
644819	9413 9402	2.46	< 5	0.2	0.25	16	< 10	70	< 0.5	< 2	4.35	77.0	20	58	27
644820	9400 225	0.04	not/ss	11.6	0.47	14	< 10	10	1.0	< 2	0.41	61.5	9	15	121
644821	9413 9402	2.64	10	1.4	0.16	14	< 10	20	< 0.5	< 2	2.13	340	58	57	90
644822	9413 9402	2.78	10	0.6	0.18	24	< 10	40	< 0.5	< 2	0.99	165.0	37	101	48
644823	9413 9402	2.82	10	1.4	0.15	< 2	< 10	10	< 0.5	< 2	0.66	413	66	78	117
644824	9413 9402	3.06	15	2.4	0.11	< 2	< 10	10	< 0.5	2	1.07	>500	93	56	216
644825	9413 9402	2.90	10	1.4	0.18	10	< 10	20	< 0.5	< 2	3.50	285	46	59	97
644826	9413 9402	2.04	< 5	< 0.2	< 0.01	< 2	< 10	60	< 0.5	< 2	>15.00	11.5	1	5	10
644827	9400 225	0.54	< 5	< 0.2	0.11	2	< 10	60	< 0.5	< 2	0.12	1.5	1	138	9
644828	9413 9402	2.40	20	4.6	0.09	4	< 10	10	< 0.5	8	2.62	>500	123	27	284
644829	9413 9402	2.44	< 5	< 0.2	< 0.01	< 2	< 10	50	< 0.5	< 2	>15.00	12.0	3	5	6
644830	9413 9402	3.44	< 5	1.4	0.01	< 2	< 10	60	< 0.5	< 2	>15.00	84.0	7	9	63
644831	9413 9402	3.56	< 5	1.8	0.01	< 2	< 10	50	< 0.5	< 2	>15.00	175.0	18	9	90
644832	9413 9402	1.20	5	0.4	0.21	< 2	< 10	70	< 0.5	< 2	0.76	110.5	17	108	42
644833	9413 9402	2.58	5	0.4	0.38	46	< 10	120	0.5	< 2	1.84	33.5	25	32	21
644834	9413 9402	3.06	10	4.4	0.17	8	< 10	10	< 0.5	12	1.71	>500	51	46	410
644835	9413 9402	1.70	< 5	2.2	0.21	16	< 10	20	< 0.5	2	2.08	463	36	49	208
644836	9413 9402	2.72	15	6.6	0.12	< 2	< 10	10	< 0.5	18	2.71	>500	60	32	529
644837	9413 9402	2.40	75	13.0	0.01	< 2	< 10	10	< 0.5	24	0.58	>500	92	37	476
644838	9413 9402	1.20	< 5	8.4	0.08	10	< 10	60	< 0.5	< 2	>15.00	45.5	14	27	86
644839	9413 9402	1.28	10	4.2	0.10	< 2	< 10	20	< 0.5	< 2	5.89	>500	81	35	159
644840	9413 9402	3.22	15	2.8	0.11	4	< 10	30	< 0.5	< 2	8.13	263	42	41	159
644841	9413 9402	2.34	5	1.6	0.12	12	< 10	40	< 0.5	< 2	4.78	182.0	33	57	124
644842	9413 9402	2.54	< 5	0.8	0.05	< 2	< 10	60	< 0.5	< 2	>15.00	2.0	1	23	4
644843	9413 9402	1.54	< 5	0.8	0.08	< 2	< 10	80	< 0.5	< 2	>15.00	2.5	3	16	14

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-B
Total Pages :1
Certificate Date: 09-AUG-2001
Invoice No. : I0121578
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121578

SAMPLE	PREP CODE	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm
644812	94139402	0.80	10	31	0.06	40	0.03	3450	4	< 0.01	9	80	14	3.01	< 2
644813	94139402	1.20	30	52	0.06	20	0.02	1715	6	< 0.01	10	140	24	7.87	8
644814	94139402	0.42	< 10	8	0.19	10	0.03	990	1	< 0.01	30	150	150	1.39	< 2
644815	94139402	0.36	< 10	3	0.14	10	0.03	155	1	< 0.01	17	120	8	0.60	< 2
644816	94139402	2.32	60	102	0.05	< 10	0.01	605	10	< 0.01	14	180	22	7.18	18
644817	94139402	2.38	60	111	0.04	10	0.01	1310	11	< 0.01	16	160	20	6.02	20
644818	94139402	0.50	< 10	2	< 0.01	90	0.03	6780	< 1	< 0.01	1	10	< 2	0.07	< 2
644819	94139402	0.60	< 10	9	0.16	10	0.03	770	1	< 0.01	16	550	14	1.80	< 2
644820	9400 225	12.85	< 10	5	0.18	< 10	0.66	>10000	4	0.01	32	900	8880	1.99	2
644821	94139402	1.09	20	38	0.11	< 10	0.01	455	6	< 0.01	18	150	18	6.32	6
644822	94139402	0.71	10	19	0.11	< 10	0.01	215	5	< 0.01	22	100	14	3.33	2
644823	94139402	1.12	30	46	0.09	< 10	0.01	100	8	0.01	11	140	14	7.45	6
644824	94139402	1.68	50	75	0.08	< 10	0.01	175	8	< 0.01	12	170	18	>10.00	12
644825	94139402	0.92	10	32	0.11	< 10	0.04	700	6	< 0.01	15	120	28	5.50	4
644826	94139402	0.50	< 10	3	< 0.01	80	0.03	5890	< 1	< 0.01	1	10	2	0.24	< 2
644827	9400 225	0.71	< 10	< 1	0.05	10	< 0.01	75	1	< 0.01	4	140	18	0.06	< 2
644828	94139402	2.24	60	107	0.08	< 10	0.01	595	10	< 0.01	17	210	22	8.30	18
644829	94139402	0.49	< 10	3	< 0.01	100	0.03	6500	< 1	< 0.01	4	10	< 2	0.10	< 2
644830	94139402	0.45	< 10	13	0.01	50	0.02	5150	1	< 0.01	5	30	22	0.79	< 2
644831	94139402	0.64	< 10	27	0.01	40	0.02	4100	1	< 0.01	5	50	6	1.31	2
644832	94139402	0.55	< 10	14	0.11	< 10	0.03	205	4	< 0.01	10	100	6	1.81	< 2
644833	94139402	0.59	< 10	5	0.27	30	0.03	325	< 1	< 0.01	32	360	404	1.10	4
644834	94139402	0.85	60	84	0.12	< 10	0.01	350	10	< 0.01	22	490	48	>10.00	28
644835	94139402	0.61	20	46	0.16	< 10	0.03	505	7	< 0.01	23	250	172	5.04	16
644836	94139402	0.91	50	118	0.10	< 10	0.01	545	11	< 0.01	19	230	34	7.33	40
644837	94139402	1.92	80	154	0.03	< 10	< 0.01	150	14	< 0.01	17	200	>10000	8.49	50
644838	94139402	0.56	< 10	7	0.07	10	0.06	3180	< 1	< 0.01	13	60	>10000	1.18	10
644839	94139402	1.01	60	61	0.09	< 10	0.02	970	7	< 0.01	12	170	94	7.03	10
644840	94139402	0.78	20	31	0.09	< 10	0.02	1415	6	< 0.01	10	120	4810	4.73	6
644841	94139402	0.52	10	22	0.09	< 10	0.02	795	3	< 0.01	12	130	1160	3.53	6
644842	94139402	0.38	< 10	1	0.04	10	0.04	3760	< 1	< 0.01	3	10	28	0.07	< 2
644843	94139402	0.44	< 10	1	0.07	20	0.04	3910	< 1	< 0.01	5	40	6	0.14	2

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CERTIFICATE OF ANALYSIS A0121578

SAMPLE	PREP CODE	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Ag g/t	Pb %	Zn %			
644812	9413 9402	2	375	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	9.88			
644813	9413 9402	1	152	< 0.01	< 10	< 10	< 1	< 10	>10000	1	< 0.01	16.20			
644814	9413 9402	3	73	< 0.01	< 10	< 10	1	< 10	>10000	< 1	0.01	2.48			
644815	9413 9402	< 1	42	< 0.01	< 10	< 10	1	< 10	8430	< 1	< 0.01	0.84			
644816	9413 9402	< 1	45	< 0.01	< 10	< 10	< 1	20	>10000	1	< 0.01	28.6			
644817	9413 9402	1	97	< 0.01	< 10	< 10	< 1	20	>10000	2	< 0.01	34.3			
644818	9413 9402	3	444	< 0.01	10	< 10	< 1	< 10	1785	< 1	< 0.01	0.24			
644819	9413 9402	1	127	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	2.73			
644820	9400 225	3	20	< 0.01	< 10	< 10	18	< 10	>10000	12	0.98	2.91			
644821	9413 9402	< 1	52	< 0.01	< 10	< 10	< 1	< 10	>10000	1	< 0.01	11.55			
644822	9413 9402	< 1	27	< 0.01	< 10	< 10	< 1	< 10	>10000	1	< 0.01	5.84			
644823	9413 9402	< 1	31	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	13.05			
644824	9413 9402	< 1	56	< 0.01	< 10	< 10	< 1	10	>10000	1	< 0.01	20.6			
644825	9413 9402	< 1	182	< 0.01	< 10	< 10	< 1	< 10	>10000	1	< 0.01	8.55			
644826	9413 9402	3	404	< 0.01	10	< 10	< 1	< 10	4260	< 1	< 0.01	0.56			
644827	9400 225	< 1	6	< 0.01	< 10	< 10	1	< 10	450	< 1	< 0.01	0.04			
644828	9413 9402	< 1	54	< 0.01	< 10	< 10	< 1	30	>10000	3	< 0.01	31.9			
644829	9413 9402	3	305	< 0.01	10	< 10	< 1	< 10	4590	< 1	< 0.01	0.56			
644830	9413 9402	8	260	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	3.58			
644831	9413 9402	6	240	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	7.51			
644832	9413 9402	< 1	32	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	3.79			
644833	9413 9402	3	54	< 0.01	< 10	< 10	2	< 10	>10000	< 1	0.04	1.10			
644834	9413 9402	1	33	< 0.01	< 10	< 10	< 1	10	>10000	4	< 0.01	24.8			
644835	9413 9402	1	62	< 0.01	< 10	< 10	< 1	< 10	>10000	2	0.01	13.55			
644836	9413 9402	< 1	55	< 0.01	< 10	< 10	< 1	30	>10000	6	< 0.01	32.0			
644837	9413 9402	< 1	22	< 0.01	< 10	< 10	< 1	40	>10000	11	1.39	40.1			
644838	9413 9402	3	1090	< 0.01	< 10	< 10	< 1	< 10	>10000	8	2.69	1.85			
644839	9413 9402	2	268	< 0.01	< 10	< 10	< 1	10	>10000	3	0.01	18.15			
644840	9413 9402	6	236	< 0.01	< 10	< 10	< 1	< 10	>10000	2	0.51	9.67			
644841	9413 9402	4	155	< 0.01	< 10	< 10	< 1	< 10	>10000	1	0.12	6.56			
644842	9413 9402	7	544	< 0.01	< 10	< 10	< 1	< 10	930	< 1	< 0.01	0.13			
644843	9413 9402	6	523	< 0.01	< 10	< 10	< 1	< 10	1150	< 1	< 0.01	0.14			

CERTIFICATION: David Lee

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-A
Total Pages : 1
Certificate Date: 09-AUG-2001
Invoice No. : I0121578
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121578

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm
644812	9413 9402	2.14	< 5	1.0	0.07	2	< 10	30	< 0.5	< 2	>15.00	243	32	25	94
644813	9413 9402	2.58	< 5	1.6	0.08	< 2	< 10	10	< 0.5	< 2	7.05	452	69	49	142
644814	9413 9402	2.34	< 5	0.4	0.24	52	< 10	90	< 0.5	< 2	4.72	68.0	22	61	33
644815	9413 9402	2.72	< 5	< 0.2	0.22	22	< 10	60	< 0.5	< 2	0.79	26.0	16	104	8
644816	9413 9402	2.84	15	3.2	0.06	< 2	< 10	20	< 0.5	6	2.68	>500	112	39	311
644817	9413 9402	2.84	10	3.6	0.04	< 2	< 10	20	< 0.5	4	6.28	>500	112	21	378
644818	9413 9402	1.62	< 5	< 0.2	< 0.01	< 2	< 10	60	< 0.5	< 2	>15.00	4.0	< 1	5	2
644819	9413 9402	2.46	< 5	0.2	0.25	16	< 10	70	< 0.5	< 2	4.35	77.0	20	58	27
644820	9400 225	0.04	not/ss	11.6	0.47	14	< 10	10	1.0	< 2	0.41	61.5	9	15	121
644821	9413 9402	2.64	10	1.4	0.16	14	< 10	20	< 0.5	< 2	2.13	340	58	57	90
644822	9413 9402	2.78	10	0.6	0.18	24	< 10	40	< 0.5	< 2	0.99	165.0	37	101	48
644823	9413 9402	2.82	10	1.4	0.15	< 2	< 10	10	< 0.5	< 2	0.66	413	66	78	117
644824	9413 9402	3.06	15	2.4	0.11	< 2	< 10	10	< 0.5	2	1.07	>500	93	56	216
644825	9413 9402	2.90	10	1.4	0.18	10	< 10	20	< 0.5	< 2	3.50	285	46	59	97
644826	9413 9402	2.04	< 5	< 0.2	< 0.01	< 2	< 10	60	< 0.5	< 2	>15.00	11.5	1	5	10
644827	9400 225	0.54	< 5	< 0.2	0.11	2	< 10	60	< 0.5	< 2	0.12	1.5	1	138	9
644828	9413 9402	2.40	20	4.6	0.09	4	< 10	10	< 0.5	8	2.62	>500	123	27	284
644829	9413 9402	2.44	< 5	< 0.2	< 0.01	< 2	< 10	50	< 0.5	< 2	>15.00	12.0	3	5	6
644830	9413 9402	3.44	< 5	1.4	0.01	< 2	< 10	60	< 0.5	< 2	>15.00	84.0	7	9	63
644831	9413 9402	3.56	< 5	1.8	0.01	< 2	< 10	50	< 0.5	< 2	>15.00	175.0	18	9	90
644832	9413 9402	1.20	5	0.4	0.21	< 2	< 10	70	< 0.5	< 2	0.76	110.5	17	108	42
644833	9413 9402	2.58	5	0.4	0.38	46	< 10	120	0.5	< 2	1.84	33.5	25	32	21
644834	9413 9402	3.06	10	4.4	0.17	8	< 10	10	< 0.5	12	1.71	>500	51	46	410
644835	9413 9402	1.70	< 5	2.2	0.21	16	< 10	20	< 0.5	2	2.08	463	36	49	208
644836	9413 9402	2.72	15	6.6	0.12	< 2	< 10	10	< 0.5	18	2.71	>500	60	32	529
644837	9413 9402	2.40	75	13.0	0.01	< 2	< 10	10	< 0.5	24	0.58	>500	92	37	476
644838	9413 9402	1.20	< 5	8.4	0.08	10	< 10	60	< 0.5	< 2	>15.00	45.5	14	27	86
644839	9413 9402	1.28	10	4.2	0.10	< 2	< 10	20	< 0.5	< 2	5.89	>500	81	35	159
644840	9413 9402	3.22	15	2.8	0.11	4	< 10	30	< 0.5	< 2	8.13	263	42	41	159
644841	9413 9402	2.34	5	1.6	0.12	12	< 10	40	< 0.5	< 2	4.78	182.0	33	57	124
644842	9413 9402	2.54	< 5	0.8	0.05	< 2	< 10	60	< 0.5	< 2	>15.00	2.0	1	23	4
644843	9413 9402	1.54	< 5	0.8	0.08	< 2	< 10	80	< 0.5	< 2	>15.00	2.5	3	16	14

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 09-AUG-2001
Invoice No. : I0121578
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CERTIFICATE OF ANALYSIS A0121578

SAMPLE	PREP CODE	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm
644812	9413 9402	0.80	10	31	0.06	40	0.03	3450	4	< 0.01	9	80	14	3.01	< 2
644813	9413 9402	1.20	30	52	0.06	20	0.02	1715	6	< 0.01	10	140	24	7.87	8
644814	9413 9402	0.42	< 10	8	0.19	10	0.03	990	1	< 0.01	30	150	150	1.39	< 2
644815	9413 9402	0.36	< 10	3	0.14	10	0.03	155	1	< 0.01	17	120	8	0.60	< 2
644816	9413 9402	2.32	60	102	0.05	< 10	0.01	605	10	< 0.01	14	180	22	7.18	18
644817	9413 9402	2.38	60	111	0.04	10	0.01	1310	11	< 0.01	16	160	20	6.02	20
644818	9413 9402	0.50	< 10	2	< 0.01	90	0.03	6780	< 1	< 0.01	1	10	< 2	0.07	< 2
644819	9413 9402	0.60	< 10	9	0.16	10	0.03	770	1	< 0.01	16	550	14	1.80	< 2
644820	9400 225	12.85	< 10	5	0.18	< 10	0.66	>10000	4	0.01	32	900	8880	1.99	2
644821	9413 9402	1.09	20	38	0.11	< 10	0.01	455	6	< 0.01	18	150	18	6.32	6
644822	9413 9402	0.71	10	19	0.11	< 10	0.01	215	5	< 0.01	22	100	14	3.33	2
644823	9413 9402	1.12	30	46	0.09	< 10	0.01	100	8	0.01	11	140	14	7.45	6
644824	9413 9402	1.68	50	75	0.08	< 10	0.01	175	8	< 0.01	12	170	18	>10.00	12
644825	9413 9402	0.92	10	32	0.11	< 10	0.04	700	6	< 0.01	15	120	28	5.50	4
644826	9413 9402	0.50	< 10	3	< 0.01	80	0.03	5890	< 1	< 0.01	1	10	2	0.24	< 2
644827	9400 225	0.71	< 10	< 1	0.05	10	< 0.01	75	1	< 0.01	4	140	18	0.06	< 2
644828	9413 9402	2.24	60	107	0.08	< 10	0.01	595	10	< 0.01	17	210	22	8.30	18
644829	9413 9402	0.49	< 10	3	< 0.01	100	0.03	6500	< 1	< 0.01	4	10	< 2	0.10	< 2
644830	9413 9402	0.45	< 10	13	0.01	50	0.02	5150	1	< 0.01	5	30	22	0.79	< 2
644831	9413 9402	0.64	< 10	27	0.01	40	0.02	4100	1	< 0.01	5	50	6	1.31	2
644832	9413 9402	0.55	< 10	14	0.11	< 10	0.03	205	4	< 0.01	10	100	6	1.81	< 2
644833	9413 9402	0.59	< 10	5	0.27	30	0.03	325	< 1	< 0.01	32	360	404	1.10	4
644834	9413 9402	0.85	60	84	0.12	< 10	0.01	350	10	< 0.01	22	490	48	>10.00	28
644835	9413 9402	0.61	20	46	0.16	< 10	0.03	505	7	< 0.01	23	250	172	5.04	16
644836	9413 9402	0.91	50	118	0.10	< 10	0.01	545	11	< 0.01	19	230	34	7.33	40
644837	9413 9402	1.92	80	154	0.03	< 10	< 0.01	150	14	< 0.01	17	200	>10000	8.49	50
644838	9413 9402	0.56	< 10	7	0.07	10	0.06	3180	< 1	< 0.01	13	60	>10000	1.18	10
644839	9413 9402	1.01	60	61	0.09	< 10	0.02	970	7	< 0.01	12	170	94	7.03	10
644840	9413 9402	0.78	20	31	0.09	< 10	0.02	1415	6	< 0.01	10	120	4810	4.73	6
644841	9413 9402	0.52	10	22	0.09	< 10	0.02	795	3	< 0.01	12	130	1160	3.53	6
644842	9413 9402	0.38	< 10	1	0.04	10	0.04	3760	< 1	< 0.01	3	10	28	0.07	< 2
644843	9413 9402	0.44	< 10	1	0.07	20	0.04	3910	< 1	< 0.01	5	40	6	0.14	2

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-C
Total Pages :1
Certificate Date: 09-AUG-2001
Invoice No. :I0121578
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0121578

SAMPLE	PREP CODE	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Ag g/t	Pb %	Zn %
644812	94139402	2	375	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	9.88
644813	94139402	1	152	< 0.01	< 10	< 10	< 1	< 10	>10000	1	< 0.01	16.20
644814	94139402	3	73	< 0.01	< 10	< 10	1	< 10	>10000	< 1	0.01	2.48
644815	94139402	< 1	42	< 0.01	< 10	< 10	1	< 10	8430	< 1	< 0.01	0.84
644816	94139402	< 1	45	< 0.01	< 10	< 10	< 1	20	>10000	1	< 0.01	28.6
644817	94139402	1	97	< 0.01	< 10	< 10	< 1	20	>10000	2	< 0.01	34.3
644818	94139402	3	444	< 0.01	10	< 10	< 1	< 10	1785	< 1	< 0.01	0.24
644819	94139402	1	127	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	2.73
644820	9400 225	3	20	< 0.01	< 10	< 10	18	< 10	>10000	12	0.98	2.91
644821	94139402	< 1	52	< 0.01	< 10	< 10	< 1	< 10	>10000	1	< 0.01	11.55
644822	94139402	< 1	27	< 0.01	< 10	< 10	< 1	< 10	>10000	1	< 0.01	5.84
644823	94139402	< 1	31	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	13.05
644824	94139402	< 1	56	< 0.01	< 10	< 10	< 1	10	>10000	1	< 0.01	20.6
644825	94139402	< 1	182	< 0.01	< 10	< 10	< 1	< 10	>10000	1	< 0.01	8.55
644826	94139402	3	404	< 0.01	10	< 10	< 1	< 10	4260	< 1	< 0.01	0.56
644827	9400 225	< 1	6	< 0.01	< 10	< 10	1	< 10	450	< 1	< 0.01	0.04
644828	94139402	< 1	54	< 0.01	< 10	< 10	< 1	30	>10000	3	< 0.01	31.9
644829	94139402	3	305	< 0.01	10	< 10	< 1	< 10	4590	< 1	< 0.01	0.56
644830	94139402	8	260	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	3.58
644831	94139402	6	240	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	7.51
644832	94139402	< 1	32	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	3.79
644833	94139402	3	54	< 0.01	< 10	< 10	2	< 10	>10000	< 1	0.04	1.10
644834	94139402	1	33	< 0.01	< 10	< 10	< 1	10	>10000	4	< 0.01	24.8
644835	94139402	1	62	< 0.01	< 10	< 10	< 1	< 10	>10000	2	0.01	13.55
644836	94139402	< 1	55	< 0.01	< 10	< 10	< 1	30	>10000	6	< 0.01	32.0
644837	94139402	< 1	22	< 0.01	< 10	< 10	< 1	40	>10000	11	1.39	40.1
644838	94139402	3	1090	< 0.01	< 10	< 10	< 1	< 10	>10000	8	2.69	1.85
644839	94139402	2	268	< 0.01	< 10	< 10	< 1	10	>10000	3	0.01	18.15
644840	94139402	6	236	< 0.01	< 10	< 10	< 1	< 10	>10000	2	0.51	9.67
644841	94139402	4	155	< 0.01	< 10	< 10	< 1	< 10	>10000	1	0.12	6.56
644842	94139402	7	544	< 0.01	< 10	< 10	< 1	< 10	930	< 1	< 0.01	0.13
644843	94139402	6	523	< 0.01	< 10	< 10	< 1	< 10	1150	< 1	< 0.01	0.14

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG 1 5 2001

A0121579

Comments: ATTN: CLINT BARR

CERTIFICATE A0121579

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 08-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	6	Pulv. <250g to >85%/-75 micron
STO-21	6	Reject Storage-First 90 Days
LOG-22	6	Samples received without barcode
CRU-31	6	Crush to 70% minus 2mm
SPL-21	6	Splitting Charge
229	6	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1433	6	Weight of received sample	BALANCE	0.01	1000.0
Ag-ICP41	6	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	6	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	6	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	6	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	6	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	6	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	6	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	6	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	6	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	6	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	6	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	6	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	6	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	6	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	6	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	6	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	6	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	6	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	6	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	6	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	6	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	6	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	6	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	6	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	6	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	6	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	6	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	6	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	6	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	6	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	6	U ppm: 32 element, soil & rock	ICP-AES	10	10000
V-ICP41	6	V ppm: 32 element, soil & rock	ICP-AES	1	10000
W-ICP41	6	W ppm: 32 element, soil & rock	ICP-AES	10	10000

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The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Zn-ICP41	6	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

ALS Chemex

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CERTIFICATE OF ANALYSIS A0121579

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644463	94139402	0.64	< 0.2	0.58	< 2	< 10	130	1.5	< 2	0.09	< 0.5	8	14	74	1.96	< 10	< 1	0.31	20	0.05
644772	94139402	2.24	0.4	1.38	2890	< 10	50	1.0	< 2	0.13	< 0.5	22	21	60	4.50	< 10	< 1	0.35	30	0.68
644773	94139402	2.40	0.2	1.32	314	< 10	60	1.0	< 2	0.46	< 0.5	25	16	71	4.94	< 10	< 1	0.31	20	0.71
644774	94139402	2.58	0.2	1.42	58	< 10	70	1.0	< 2	0.71	< 0.5	25	16	82	4.68	< 10	< 1	0.35	20	0.74
644775	94139402	2.58	< 0.2	1.41	98	< 10	70	1.0	< 2	0.53	< 0.5	26	15	58	4.37	< 10	< 1	0.33	10	0.70
644776	94139402	2.84	0.2	1.42	106	< 10	110	1.0	< 2	0.70	< 0.5	27	22	53	3.86	< 10	< 1	0.30	10	0.68

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-B
Total Pages : 1
Certificate Date: 08-AUG-2001
Invoice No. : I0121579
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121579

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644463	94139402	130	< 1	< 0.01	17	680	4	< 0.01	< 2	4	10	< 0.01	< 10	< 10	10	< 10	68
644772	94139402	675	1	< 0.01	44	400	58	2.13	2	3	69	< 0.01	< 10	< 10	12	< 10	122
644773	94139402	875	1	< 0.01	49	380	18	2.13	< 2	2	77	< 0.01	< 10	< 10	11	< 10	112
644774	94139402	865	< 1	< 0.01	47	410	12	2.02	4	3	92	< 0.01	< 10	< 10	12	< 10	96
644775	94139402	805	< 1	< 0.01	51	370	16	1.95	2	3	91	< 0.01	< 10	< 10	12	< 10	108
644776	94139402	920	< 1	< 0.01	51	340	66	1.29	< 2	3	95	< 0.01	< 10	< 10	11	< 10	140

CERTIFICATION:

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Certificate Date: 08-AUG-2001
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Account : BUF

CERTIFICATE OF ANALYSIS A0121579

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644463	94139402	0.64	< 0.2	0.58	< 2	< 10	130	1.5	< 2	0.09	< 0.5	8	14	74	1.96	< 10	< 1	0.31	20	0.05
644772	94139402	2.24	0.4	1.38	2890	< 10	50	1.0	< 2	0.13	< 0.5	22	21	60	4.50	< 10	< 1	0.35	30	0.68
644773	94139402	2.40	0.2	1.32	314	< 10	60	1.0	< 2	0.46	< 0.5	25	16	71	4.94	< 10	< 1	0.31	20	0.71
644774	94139402	2.58	0.2	1.42	58	< 10	70	1.0	< 2	0.71	< 0.5	25	16	82	4.68	< 10	< 1	0.35	20	0.74
644775	94139402	2.58	< 0.2	1.41	98	< 10	70	1.0	< 2	0.53	< 0.5	26	15	58	4.37	< 10	< 1	0.33	10	0.70
644776	94139402	2.84	0.2	1.42	106	< 10	110	1.0	< 2	0.70	< 0.5	27	22	53	3.86	< 10	< 1	0.30	10	0.68

CERTIFICATION: _____

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P7B 6J3

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Certificate Date: 08-AUG-2001
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P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121579

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644463	94139402	130	< 1	< 0.01	17	680	4	< 0.01	< 2	4	10	< 0.01	< 10	< 10	10	< 10	68
644772	94139402	675	1	< 0.01	44	400	58	2.13	2	3	69	< 0.01	< 10	< 10	12	< 10	122
644773	94139402	875	1	< 0.01	49	380	18	2.13	< 2	2	77	< 0.01	< 10	< 10	11	< 10	112
644774	94139402	865	< 1	< 0.01	47	410	12	2.02	4	3	92	< 0.01	< 10	< 10	12	< 10	96
644775	94139402	805	< 1	< 0.01	51	370	16	1.95	2	3	91	< 0.01	< 10	< 10	12	< 10	108
644776	94139402	920	< 1	< 0.01	51	340	66	1.29	< 2	3	95	< 0.01	< 10	< 10	11	< 10	140

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG 2 0 2001

A0121580

Comments: ATTN: CLINT BARR

CERTIFICATE A0121580

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 09-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	33	Pulv. <250g to >85%/-75 micron
STO-21	33	Reject Storage-First 90 Days
LOG-22	34	Samples received without barcode
CRU-31	33	Crush to 70% minus 2mm
SPL-21	33	Splitting Charge
225	1	Run as received

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1433	34	Weight of received sample	BALANCE	0.01	1000.0
Au-AA23	34	Au-AA23 : Au ppb: Fuse 30 grams	FA-AAS	5	10000
Ag-AA46	34	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500
Cu-AA46	34	Cu %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Pb-AA46	34	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	34	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :1
Certificate Date: 09-AUG-2001
Invoice No. :I0121580
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0121580

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag g/t	Cu %	Pb %	Zn %				
644001	94139402	0.96	< 5	< 1	< 0.01	0.30	1.17				
644002	94139402	0.58	5	< 1	< 0.01	< 0.01	6.25				
644003	94139402	0.52	< 5	< 1	< 0.01	< 0.01	4.09				
644004	94139402	0.62	< 5	< 1	0.01	< 0.01	0.51				
644005	9400 225	0.04	10	10	< 0.01	1.38	27.2				
644087	94139402	1.28	< 5	< 1	< 0.01	< 0.01	12.10				
644088	94139402	1.24	< 5	< 1	< 0.01	0.01	17.00				
644089	94139402	0.92	< 5	1	< 0.01	< 0.01	6.31				
644090	94139402	0.92	< 5	< 1	< 0.01	< 0.01	3.93				
644091	94139402	0.82	< 5	2	0.02	< 0.01	24.3				
644092	94139402	0.64	< 5	< 1	< 0.01	< 0.01	5.19				
644093	94139402	0.80	< 5	< 1	< 0.01	< 0.01	8.46				
644094	94139402	0.60	< 5	< 1	< 0.01	< 0.01	6.59				
644095	94139402	0.68	< 5	< 1	< 0.01	< 0.01	5.25				
644096	94139402	0.86	10	< 1	0.03	< 0.01	37.2				
644097	94139402	0.56	< 5	< 1	< 0.01	< 0.01	5.79				
644098	94139402	0.84	< 5	< 1	< 0.01	< 0.01	4.48				
644099	94139402	0.50	< 5	< 1	< 0.01	< 0.01	0.56				
644100	94139402	1.32	< 5	< 1	< 0.01	< 0.01	18.70				
644105	94139402	0.92	< 5	< 1	< 0.01	< 0.01	11.25				
644106	94139402	1.48	< 5	< 1	< 0.01	< 0.01	2.42				
644107	94139402	0.88	< 5	< 1	< 0.01	< 0.01	2.08				
644108	94139402	0.60	< 5	< 1	< 0.01	< 0.01	0.08				
644109	94139402	1.38	< 5	< 1	< 0.01	< 0.01	3.60				
644110	94139402	0.52	5	< 1	0.03	0.01	5.91				
644111	94139402	0.44	< 5	< 1	0.01	< 0.01	0.07				
644112	94139402	1.08	15	11	< 0.01	2.96	3.37				
644113	94139402	0.94	< 5	< 1	< 0.01	< 0.01	1.37				
644114	94139402	0.94	< 5	< 1	0.04	< 0.01	0.21				
644115	94139402	0.80	< 5	< 1	< 0.01	< 0.01	0.91				
644116	94139402	0.64	< 5	< 1	< 0.01	0.06	0.66				
644117	94139402	0.56	< 5	< 1	0.01	0.09	1.44				
644118	94139402	0.62	< 5	3	< 0.01	1.30	0.32				
644119	94139402	0.40	< 5	< 1	< 0.01	0.01	0.01				

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :1
Certificate Date: 09-AUG-2001
Invoice No. :I0121580
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0121580

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag g/t	Cu %	Pb %	Zn %				
644001	9413 9402	0.96	< 5	< 1	< 0.01	0.30	1.17				
644002	9413 9402	0.58	5	< 1	< 0.01	< 0.01	6.25				
644003	9413 9402	0.52	< 5	< 1	< 0.01	< 0.01	4.09				
644004	9413 9402	0.62	< 5	< 1	0.01	< 0.01	0.51				
644005	9400 225	0.04	10	10	< 0.01	1.38	27.2				
644087	9413 9402	1.28	< 5	< 1	< 0.01	< 0.01	12.10				
644088	9413 9402	1.24	< 5	< 1	< 0.01	0.01	17.00				
644089	9413 9402	0.92	< 5	1	< 0.01	< 0.01	6.31				
644090	9413 9402	0.92	< 5	< 1	< 0.01	< 0.01	3.93				
644091	9413 9402	0.82	< 5	2	0.02	< 0.01	24.3				
644092	9413 9402	0.64	< 5	< 1	< 0.01	< 0.01	5.19				
644093	9413 9402	0.80	< 5	< 1	< 0.01	< 0.01	8.46				
644094	9413 9402	0.60	< 5	< 1	< 0.01	< 0.01	6.59				
644095	9413 9402	0.68	< 5	< 1	< 0.01	< 0.01	5.25				
644096	9413 9402	0.86	10	< 1	0.03	< 0.01	37.2				
644097	9413 9402	0.56	< 5	< 1	< 0.01	< 0.01	5.79				
644098	9413 9402	0.84	< 5	< 1	< 0.01	< 0.01	4.48				
644099	9413 9402	0.50	< 5	< 1	< 0.01	< 0.01	0.56				
644100	9413 9402	1.32	< 5	< 1	< 0.01	< 0.01	18.70				
644105	9413 9402	0.92	< 5	< 1	< 0.01	< 0.01	11.25				
644106	9413 9402	1.48	< 5	< 1	< 0.01	< 0.01	2.42				
644107	9413 9402	0.88	< 5	< 1	< 0.01	< 0.01	2.08				
644108	9413 9402	0.60	< 5	< 1	< 0.01	< 0.01	0.08				
644109	9413 9402	1.38	< 5	< 1	< 0.01	< 0.01	3.60				
644110	9413 9402	0.52	5	< 1	0.03	0.01	5.91				
644111	9413 9402	0.44	< 5	< 1	0.01	< 0.01	0.07				
644112	9413 9402	1.08	15	11	< 0.01	2.96	3.37				
644113	9413 9402	0.94	< 5	< 1	< 0.01	< 0.01	1.37				
644114	9413 9402	0.94	< 5	< 1	0.04	< 0.01	0.21				
644115	9413 9402	0.80	< 5	< 1	< 0.01	< 0.01	0.91				
644116	9413 9402	0.64	< 5	< 1	< 0.01	0.06	0.66				
644117	9413 9402	0.56	< 5	< 1	0.01	0.09	1.44				
644118	9413 9402	0.62	< 5	3	< 0.01	1.30	0.32				
644119	9413 9402	0.40	< 5	< 1	< 0.01	0.01	0.01				

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG 15 2001

A0121696

Comments: ATTN: CLINT BARR

CERTIFICATE A0121696

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 07-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	1	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Mn-AA62	1	MnO %: HClO4-HNO3-HF digestion	AAS	0.01	50.0
Zn-AA46	1	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

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Invoice No. : I0121696
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121696

SAMPLE	PREP CODE		MnO %	Zn %								
644770	212	--	3.20	3.02								

CERTIFICATION:

OVERLIMITS from A0121253

ALS Chemex

Aurora Laboratory Services Ltd.

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Account : BUF

CERTIFICATE OF ANALYSIS A0121696

SAMPLE	PREP CODE		MnO %	Zn %								
644770	212	--	3.20	3.02								

CERTIFICATION:

OVERLIMITS from A0121253

ALS Chemex
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5175 Timberlea Blvd., Mississauga
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
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P7B 6J3

RECEIVED AUG 15 2001

A0121697

Comments: ATTN: CLINT BARR

CERTIFICATE A0121697

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 07-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	2	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
As-AA46	1	As %: conc. Nitric-HCl digestion	AAS	0.01	30.0
Fe-AA62	1	Fe %: HClO4-HNO3-HF digestion	AAS	0.01	50.0
Mn-AA62	1	MnO %: HClO4-HNO3-HF digestion	AAS	0.01	50.0
Zn-AA46	1	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

ALS Chemex

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P7B 6J3

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Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :1
Certificate Date: 07-AUG-2001
Invoice No. : I0121697
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0121697

SAMPLE	PREP CODE		As %	Fe % tot.dig	MnO %	Zn %						
644244	212	--	>30.0	27.6	-----	-----						
644247	212	--	-----	-----	3.15	2.94						

CERTIFICATION: _____

OVERLIMITS from A0121260

ALS Chemex

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Ontario, Canada L4W 2S3
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Account : BUF

CERTIFICATE OF ANALYSIS A0121697

SAMPLE	PREP CODE		As %	Fe % tot.dig	MnO %	Zn %						
644244	212	--	>30.0	27.6	-----	-----						
644247	212	--	-----	-----	3.15	2.94						

CERTIFICATION: _____

OVERLIMITS from A0121260

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG 2 0 2001

A0121838

Comments: ATTN: CLINT BARR

CERTIFICATE A0121838

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 13-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	6	Pulv. <250g to >85%/-75 micron
STO-21	6	Reject Storage-First 90 Days
LOG-22	6	Samples received without barcode
CRU-31	6	Crush to 70% minus 2mm
SPL-21	6	Splitting Charge
225	1	Run as received
229	7	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1433	7	Weight of received sample	BALANCE	0.01	1000.0
Ag-ICP41	7	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	7	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	7	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	7	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	7	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	7	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	7	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	7	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	7	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	7	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	7	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	7	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	7	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	7	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	7	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	7	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	7	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	7	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	7	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	7	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	7	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	7	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	7	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	7	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	7	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	7	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	7	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	7	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	7	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	7	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	7	U ppm: 32 element, soil & rock	ICP-AES	10	10000
V-ICP41	7	V ppm: 32 element, soil & rock	ICP-AES	1	10000

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0121838

Comments: ATTN: CLINT BARR

CERTIFICATE A0121838

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 13-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	6	Pulv. <250g to >85%/-75 micron
STO-21	6	Reject Storage-First 90 Days
LOG-22	6	Samples received without barcode
CRU-31	6	Crush to 70% minus 2mm
SPL-21	6	Splitting Charge
225	1	Run as received
229	7	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
W-ICP41	7	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	7	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

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Account :BUF

CERTIFICATE OF ANALYSIS A0121838

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644844	9413 9402	3.80	< 0.2	0.78	8	< 10	190	0.5	< 2	1.52	< 0.5	11	28	64	2.96	< 10	< 1	0.25	< 10	0.90
644845	9413 9402	4.06	0.2	1.03	6	< 10	200	0.5	< 2	0.83	0.5	12	31	69	2.92	< 10	< 1	0.31	10	0.73
644846	9413 9402	4.16	< 0.2	0.99	6	< 10	210	0.5	< 2	0.86	0.5	12	29	65	3.05	< 10	< 1	0.31	10	0.78
644847	9413 9402	3.76	< 0.2	0.89	6	< 10	200	0.5	< 2	1.48	0.5	11	32	62	3.10	< 10	< 1	0.27	< 10	0.92
644848	9413 9402	3.98	< 0.2	0.81	6	< 10	210	0.5	< 2	1.20	0.5	11	31	62	2.60	< 10	< 1	0.29	10	0.75
644849	9413 9402	1.20	1.8	0.11	< 2	< 10	20	< 0.5	< 2	0.02	3.0	2	101	27	0.94	< 10	< 1	0.05	10	0.01
644850	225 229	0.04	11.2	0.45	12	< 10	10	1.0	< 2	0.40	59.5	8	14	118	12.30	< 10	5	0.18	< 10	0.69

CERTIFICATION:

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CERTIFICATE OF ANALYSIS A0121838

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644844	94139402	540	4	0.01	45	670	22	0.70	< 2	4	217	< 0.01	< 10	< 10	28	< 10	168
644845	94139402	460	4	0.01	49	730	20	0.70	< 2	4	126	< 0.01	< 10	< 10	36	< 10	208
644846	94139402	520	4	0.01	45	720	22	0.67	< 2	4	120	< 0.01	< 10	< 10	33	< 10	204
644847	94139402	615	3	0.01	43	690	18	0.63	< 2	4	199	< 0.01	< 10	< 10	29	< 10	178
644848	94139402	490	3	0.01	40	720	14	0.61	< 2	4	163	< 0.01	< 10	< 10	26	< 10	166
644849	94139402	215	1	< 0.01	4	140	168	0.12	< 2	< 1	4	< 0.01	< 10	< 10	< 1	< 10	304
644850	225 229	>10000	< 1	0.01	33	950	8550	1.94	< 2	3	14	< 0.01	< 10	< 10	15	20	>10000

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SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644844	94139402	3.80	< 0.2	0.78	8	< 10	190	0.5	< 2	1.52	< 0.5	11	28	64	2.96	< 10	< 1	0.25	< 10	0.90
644845	94139402	4.06	0.2	1.03	6	< 10	200	0.5	< 2	0.83	0.5	12	31	69	2.92	< 10	< 1	0.31	10	0.73
644846	94139402	4.16	< 0.2	0.99	6	< 10	210	0.5	< 2	0.86	0.5	12	29	65	3.05	< 10	< 1	0.31	10	0.78
644847	94139402	3.76	< 0.2	0.89	6	< 10	200	0.5	< 2	1.48	0.5	11	32	62	3.10	< 10	< 1	0.27	< 10	0.92
644848	94139402	3.98	< 0.2	0.81	6	< 10	210	0.5	< 2	1.20	0.5	11	31	62	2.60	< 10	< 1	0.29	10	0.75
644849	94139402	1.20	1.8	0.11	< 2	< 10	20	< 0.5	< 2	0.02	3.0	2	101	27	0.94	< 10	< 1	0.05	10	0.01
644850	225 229	0.04	11.2	0.45	12	< 10	10	1.0	< 2	0.40	59.5	8	14	118	12.30	< 10	5	0.18	< 10	0.69

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CERTIFICATE OF ANALYSIS A0121838

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644844	9413 9402	540	4	0.01	45	670	22	0.70	< 2	4	217	< 0.01	< 10	< 10	28	< 10	168
644845	9413 9402	460	4	0.01	49	730	20	0.70	< 2	4	126	< 0.01	< 10	< 10	36	< 10	208
644846	9413 9402	520	4	0.01	45	720	22	0.67	< 2	4	120	< 0.01	< 10	< 10	33	< 10	204
644847	9413 9402	615	3	0.01	43	690	18	0.63	< 2	4	199	< 0.01	< 10	< 10	29	< 10	178
644848	9413 9402	490	3	0.01	40	720	14	0.61	< 2	4	163	< 0.01	< 10	< 10	26	< 10	166
644849	9413 9402	215	1	< 0.01	4	140	168	0.12	< 2	< 1	4	< 0.01	< 10	< 10	< 1	< 10	304
644850	225 229	>10000	< 1	0.01	33	950	8550	1.94	< 2	3	14	< 0.01	< 10	< 10	15	20	>10000

CERTIFICATION: David Lee

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

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Comments: ATTN: CLINT BARR

CERTIFICATE A0121839

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 13-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	11	Pulv. <250g to >85%/-75 micron
STO-21	11	Reject Storage-First 90 Days
LOG-22	12	Samples received without barcode
CRU-31	11	Crush to 70% minus 2mm
SPL-21	11	Splitting Charge
225	1	Run as received
229	4	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1433	12	Weight of received sample	BALANCE	0.01	1000.0
Au-AA23	8	Au-AA23 : Au ppb: Fuse 30 grams	FA-AAS	5	10000
Ag-ICP41	4	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	4	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	4	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	4	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	4	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	4	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	4	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	4	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	4	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	4	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	4	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	4	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	4	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	4	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	4	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	4	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	4	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	4	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	4	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	4	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	4	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	4	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	4	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	4	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	4	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	4	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	4	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	4	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	4	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	4	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	4	U ppm: 32 element, soil & rock	ICP-AES	10	10000

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874 TUNGSTEN ST.
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P7B 6J3

A0121839

Comments: ATTN: CLINT BARR

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METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	11	Pulv. <250g to >85%/-75 micron
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* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
V-ICP41	4	V ppm: 32 element, soil & rock	ICP-AES	1	10000
W-ICP41	4	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	4	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000
Cu-AA46	8	Cu %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Pb-AA46	8	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	8	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Ag-AA46	8	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500

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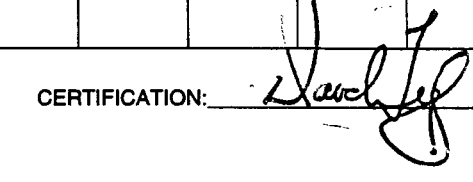
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SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm
644006	9413 9402	0.60	< 5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644007	9413 9402	0.54	< 5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644008	9413 9402	1.14	< 5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644009	9413 9402	0.72	-----	0.4	0.08	6	< 10	40	< 0.5	< 2	0.23	< 0.5	5	112	1670
644010	9413 9402	0.58	-----	< 0.2	0.44	6	< 10	40	< 0.5	< 2	0.09	< 0.5	6	90	28
644121	9413 9402	1.28	< 5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644122	9413 9402	0.76	< 5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644123	9413 9402	1.06	< 5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644124	9413 9402	0.88	< 5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644253	9400 225	0.04	295	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644254	9413 9402	0.50	-----	< 0.2	0.10	< 2	< 10	40	< 0.5	< 2	0.01	0.5	1	120	10
644464	9413 9402	0.44	-----	< 0.2	0.03	6	10	40	< 0.5	< 2	< 0.01	0.5	< 1	136	21

CERTIFICATION: 

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SAMPLE	PREP CODE	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm
644006	9413 9402	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644007	9413 9402	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644008	9413 9402	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644009	9413 9402	0.48	< 10	< 1	0.04	< 10	< 0.01	135	< 1	< 0.01	7	80	54	0.12	< 2
644010	9413 9402	1.91	< 10	< 1	0.04	< 10	0.19	360	3	< 0.01	15	360	50	0.37	< 2
644121	9413 9402	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644122	9413 9402	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644123	9413 9402	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644124	9413 9402	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644253	9400 225	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644254	9413 9402	0.65	< 10	< 1	0.06	< 10	< 0.01	45	1	< 0.01	3	120	38	0.01	< 2
644464	9413 9402	0.44	< 10	< 1	0.01	< 10	< 0.01	75	2	< 0.01	3	60	36	0.03	< 2

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SAMPLE	PREP CODE	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Cu %	Pb %	Zn %	Ag g/t		
644006	94139402	-----	-----	-----	-----	-----	-----	-----	-----	0.02	0.04	6.97	2		
644007	94139402	-----	-----	-----	-----	-----	-----	-----	-----	0.01	18.20	3.13	39		
644008	94139402	-----	-----	-----	-----	-----	-----	-----	-----	0.01	1.77	1.76	2		
644009	94139402	< 1	4	< 0.01	< 10	< 10	< 1	< 10	134	-----	-----	-----	-----		
644010	94139402	1	13	< 0.01	< 10	< 10	10	< 10	124	-----	-----	-----	-----		
644121	94139402	-----	-----	-----	-----	-----	-----	-----	-----	< 0.01	4.76	0.37	11		
644122	94139402	-----	-----	-----	-----	-----	-----	-----	-----	< 0.01	17.40	0.33	55		
644123	94139402	-----	-----	-----	-----	-----	-----	-----	-----	< 0.01	0.07	2.18	< 1		
644124	94139402	-----	-----	-----	-----	-----	-----	-----	-----	< 0.01	0.01	1.22	< 1		
644253	9400 225	-----	-----	-----	-----	-----	-----	-----	-----	0.01	0.98	2.97	13		
644254	94139402	< 1	3	< 0.01	< 10	< 10	1	< 10	180	-----	-----	-----	-----		
644464	94139402	< 1	5	< 0.01	< 10	< 10	18	< 10	308	-----	-----	-----	-----		

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-A
Total Pages :1
Certificate Date: 13-AUG-2001
Invoice No. :I0121839
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0121839

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm
644006	94139402	0.60	< 5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644007	94139402	0.54	< 5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644008	94139402	1.14	< 5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644009	94139402	0.72	-----	0.4	0.08	6	< 10	40	< 0.5	< 2	0.23	< 0.5	5	112	1670
644010	94139402	0.58	-----	< 0.2	0.44	6	< 10	40	< 0.5	< 2	0.09	< 0.5	6	90	28
644121	94139402	1.28	< 5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644122	94139402	0.76	< 5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644123	94139402	1.06	< 5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644124	94139402	0.88	< 5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644253	9400 225	0.04	295	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644254	94139402	0.50	-----	< 0.2	0.10	< 2	< 10	40	< 0.5	< 2	0.01	0.5	1	120	10
644464	94139402	0.44	-----	< 0.2	0.03	6	10	40	< 0.5	< 2	< 0.01	0.5	< 1	136	21

CERTIFICATION:

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Project : 2501
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Certificate Date: 13-AUG-2001
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P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0121839

SAMPLE	PREP CODE	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm
644006	94139402	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644007	94139402	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644008	94139402	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644009	94139402	0.48	< 10	< 1	0.04	< 10	< 0.01	135	< 1	< 0.01	7	80	54	0.12	< 2
644010	94139402	1.91	< 10	< 1	0.04	< 10	0.19	360	3	< 0.01	15	360	50	0.37	< 2
644121	94139402	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644122	94139402	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644123	94139402	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644124	94139402	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644253	9400 225	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
644254	94139402	0.65	< 10	< 1	0.06	< 10	< 0.01	45	1	< 0.01	3	120	38	0.01	< 2
644464	94139402	0.44	< 10	< 1	0.01	< 10	< 0.01	75	2	< 0.01	3	60	36	0.03	< 2

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CERTIFICATE OF ANALYSIS A0121839

SAMPLE	PREP CODE	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Cu %	Pb %	Zn %	Ag g/t		
644006	94139402	-----	-----	-----	-----	-----	-----	-----	-----	0.02	0.04	6.97	2		
644007	94139402	-----	-----	-----	-----	-----	-----	-----	-----	0.01	18.20	3.13	39		
644008	94139402	-----	-----	-----	-----	-----	-----	-----	-----	0.01	1.77	1.76	2		
644009	94139402	< 1	4	< 0.01	< 10	< 10	< 1	< 10	134	-----	-----	-----	-----		
644010	94139402	1	13	< 0.01	< 10	< 10	10	< 10	124	-----	-----	-----	-----		
644121	94139402	-----	-----	-----	-----	-----	-----	-----	-----	< 0.01	4.76	0.37	11		
644122	94139402	-----	-----	-----	-----	-----	-----	-----	-----	< 0.01	17.40	0.33	55		
644123	94139402	-----	-----	-----	-----	-----	-----	-----	-----	< 0.01	0.07	2.18	< 1		
644124	94139402	-----	-----	-----	-----	-----	-----	-----	-----	< 0.01	0.01	1.22	< 1		
644253	9400 225	-----	-----	-----	-----	-----	-----	-----	-----	0.01	0.98	2.97	13		
644254	94139402	< 1	3	< 0.01	< 10	< 10	1	< 10	180	-----	-----	-----	-----		
644464	94139402	< 1	5	< 0.01	< 10	< 10	18	< 10	308	-----	-----	-----	-----		

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG 2 1 2001

A0122420

Comments: ATTN: CLINT BARR

CERTIFICATE A0122420

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 14-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	1	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Zn-AA46	1	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

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Page Number : 1
Total Pages : 1
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Invoice No. : I0122420
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0122420

SAMPLE	PREP CODE	Zn %
644850	212 --	3.00

CERTIFICATION: _____

OVERLIMITS from A0121838

ALS Chemex

Aurora Laboratory Services Ltd.
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CERTIFICATE OF ANALYSIS A0122420

SAMPLE	PREP CODE	Zn %
644850	212 --	3.00

CERTIFICATION:

OVERLIMITS from A0121838

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG 3 1 2001 A0122568

Comments: ATTN: CLINT BARR

CERTIFICATE A0122568

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 24-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	29	Pulv. <250g to >85%/-75 micron
STO-21	29	Reject Storage-First 90 Days
LOG-22	30	Samples received without barcode
CRU-31	29	Crush to 70% minus 2mm
SPL-21	29	Splitting Charge
225	1	Run as received
229	30	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
WEI-21	30	Weight of received sample	BALANCE	0.01	1000.0
Ag-ICP41	30	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	30	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	30	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	30	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	30	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	30	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	30	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	30	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	30	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	30	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	30	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	30	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	30	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	30	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	30	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	30	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	30	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	30	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	30	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	30	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	30	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	30	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	30	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	30	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	30	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	30	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	30	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	30	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	30	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	30	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	30	U ppm: 32 element, soil & rock	ICP-AES	10	10000
V-ICP41	30	V ppm: 32 element, soil & rock	ICP-AES	1	10000

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0122568

Comments: ATTN: CLINT BARR

CERTIFICATE A0122568

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 24-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	29	Pulv. <250g to >85%/-75 micron
STO-21	29	Reject Storage-First 90 Days
LOG-22	30	Samples received without barcode
CRU-31	29	Crush to 70% minus 2mm
SPL-21	29	Splitting Charge
225	1	Run as received
229	30	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
W-ICP41	30	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	30	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

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CERTIFICATE OF ANALYSIS A0122568

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644255	94139402	2.84	0.8	0.37	210	< 10	50	0.5	< 2	1.78	< 0.5	12	22	33	3.76	< 10	< 1	0.25	< 10	0.30
644256	94139402	1.24	2.0	0.26	446	< 10	50	0.5	< 2	2.57	< 0.5	15	43	3	4.08	< 10	< 1	0.19	< 10	0.38
644257	94139402	2.00	7.6	0.19	214	< 10	60	< 0.5	< 2	5.18	6.5	5	30	5	2.00	< 10	1	0.13	< 10	0.38
644258	94139402	1.48	2.6	0.11	44	< 10	50	< 0.5	< 2	14.25	< 0.5	3	40	< 1	1.27	< 10	4	0.08	< 10	0.22
644259	94139402	3.76	2.2	0.16	74	< 10	50	< 0.5	< 2	11.35	1.5	3	32	< 1	1.33	< 10	1	0.11	< 10	0.32
644260	94139402	2.16	2.4	0.31	194	< 10	60	0.5	< 2	4.95	< 0.5	11	27	3	2.97	< 10	3	0.22	< 10	0.37
644261	94139402	2.08	10.4	0.15	152	< 10	50	< 0.5	< 2	>15.00	13.0	5	11	< 1	2.20	< 10	3	0.11	10	0.32
644262	94139402	2.46	22.4	0.21	96	< 10	50	< 0.5	< 2	8.27	18.0	6	48	1	2.03	< 10	3	0.15	< 10	0.27
644263	94139402	2.34	2.6	0.23	138	< 10	50	0.5	< 2	1.94	< 0.5	12	42	6	2.50	< 10	< 1	0.18	< 10	0.14
644264	94139402	1.30	< 0.2	0.32	< 2	< 10	60	< 0.5	4	1.68	< 0.5	4	106	16	0.71	< 10	1	0.09	< 10	0.11
644265	94139402	1.44	31.4	0.19	50	< 10	60	< 0.5	< 2	0.19	3.0	18	76	45	0.27	< 10	< 1	0.12	10	0.03
644266	94139402	1.06	< 0.2	0.47	20	< 10	130	1.0	2	0.48	0.5	17	16	47	0.55	< 10	< 1	0.26	40	0.07
644267	94139402	1.20	0.2	0.09	< 2	< 10	50	< 0.5	< 2	0.01	2.0	1	94	17	0.71	< 10	< 1	0.05	< 10	< 0.01
644268	94139402	2.92	< 0.2	0.82	10	< 10	110	0.5	2	0.91	< 0.5	15	23	40	1.88	< 10	< 1	0.25	30	0.23
644269	94139402	1.84	< 0.2	0.35	12	< 10	130	0.5	2	1.24	< 0.5	11	21	109	0.31	< 10	< 1	0.23	40	0.03
644270	94139402	1.62	< 0.2	0.36	24	< 10	90	0.5	8	2.50	< 0.5	14	18	139	0.41	< 10	< 1	0.25	40	0.04
644271	9400 225	0.06	12.6	0.49	8	< 10	< 10	1.0	< 2	0.42	66.5	8	5	116	12.45	10	5	0.17	< 10	0.69
644272	94139402	1.50	< 0.2	0.35	14	< 10	160	0.5	< 2	3.89	< 0.5	12	15	159	0.79	< 10	1	0.24	30	0.06
644273	94139402	1.04	63.0	0.16	8	< 10	20	< 0.5	< 2	7.22	0.5	6	20	31	0.38	< 10	< 1	0.11	< 10	0.03
644274	94139402	1.76	< 0.2	0.45	30	< 10	100	1.0	2	2.51	< 0.5	19	9	60	0.62	< 10	< 1	0.29	40	0.05
644275	94139402	2.16	< 0.2	0.55	10	< 10	170	1.5	< 2	4.22	< 0.5	21	20	173	0.74	< 10	< 1	0.37	50	0.06
644276	94139402	1.26	< 0.2	0.21	< 2	< 10	90	0.5	< 2	>15.00	< 0.5	7	20	< 1	0.82	< 10	4	0.12	< 10	0.33
644277	94139402	1.12	< 0.2	0.35	10	< 10	60	0.5	< 2	11.40	21.0	13	37	14	0.70	< 10	5	0.17	10	0.19
644278	94139402	3.34	< 0.2	0.11	< 2	< 10	40	< 0.5	< 2	>15.00	< 0.5	4	15	< 1	0.70	< 10	5	0.07	< 10	0.35
644279	94139402	3.50	< 0.2	0.21	6	< 10	60	0.5	< 2	14.60	2.0	6	25	3	0.84	< 10	4	0.14	< 10	0.34
644280	94139402	3.06	< 0.2	0.20	6	< 10	70	0.5	< 2	>15.00	< 0.5	6	7	< 1	1.12	< 10	1	0.14	< 10	0.52
644281	94139402	2.94	< 0.2	0.26	8	< 10	60	0.5	< 2	13.55	< 0.5	9	19	13	1.55	< 10	3	0.17	< 10	0.72
644282	94139402	3.16	< 0.2	0.09	< 2	< 10	60	< 0.5	< 2	>15.00	< 0.5	3	4	< 1	0.57	< 10	1	0.07	< 10	0.26
644283	94139402	2.20	< 0.2	0.06	< 2	< 10	60	< 0.5	< 2	>15.00	0.5	3	3	< 1	0.39	< 10	3	0.04	< 10	0.15
644284	94139402	1.16	< 0.2	0.07	< 2	< 10	60	< 0.5	< 2	>15.00	< 0.5	2	4	< 1	0.41	< 10	2	0.05	< 10	0.22

CERTIFICATION: _____

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SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644255	9413 9402	1280	5	< 0.01	21	350	150	3.93	4	4	154	< 0.01	< 10	< 10	4	< 10	168
644256	9413 9402	2120	7	< 0.01	28	290	328	4.31	6	2	206	< 0.01	< 10	< 10	2	< 10	122
644257	9413 9402	3800	3	< 0.01	12	190	2890	2.09	8	1	354	< 0.01	< 10	10	1	< 10	1450
644258	9413 9402	5550	< 1	< 0.01	8	140	300	1.14	6	1	1030	< 0.01	< 10	30	< 1	< 10	94
644259	9413 9402	4230	1	< 0.01	8	340	572	1.06	< 2	1	713	< 0.01	< 10	10	1	< 10	452
644260	9413 9402	1940	5	< 0.01	25	270	194	2.97	8	3	324	< 0.01	< 10	10	1	< 10	216
644261	9413 9402	>10000	3	< 0.01	10	230	2390	2.39	8	1	716	< 0.01	< 10	60	1	< 10	2840
644262	9413 9402	5220	3	< 0.01	14	230	6930	2.36	12	1	423	< 0.01	< 10	20	1	< 10	3600
644263	9413 9402	1235	4	< 0.01	27	150	90	2.79	8	1	157	< 0.01	< 10	< 10	1	< 10	42
644264	9413 9402	460	< 1	< 0.01	8	110	24	0.05	2	1	118	< 0.01	< 10	< 10	1	< 10	90
644265	9413 9402	60	2	< 0.01	30	190	>10000	1.85	44	< 1	30	< 0.01	< 10	< 10	1	< 10	748
644266	9413 9402	175	< 1	< 0.01	17	370	128	0.27	4	3	96	< 0.01	< 10	< 10	3	< 10	536
644267	9413 9402	105	1	< 0.01	3	100	150	0.08	2	< 1	3	< 0.01	< 10	< 10	< 1	< 10	168
644268	9413 9402	840	< 1	< 0.01	25	470	30	0.34	2	4	100	< 0.01	< 10	< 10	8	< 10	116
644269	9413 9402	230	< 1	< 0.01	10	410	616	0.21	2	2	84	< 0.01	< 10	< 10	2	< 10	18
644270	9413 9402	490	< 1	< 0.01	17	420	40	0.23	< 2	3	120	< 0.01	< 10	< 10	2	< 10	72
644271	9400 225	>10000	4	0.01	28	800	9120	1.96	< 2	3	10	< 0.01	< 10	130	21	< 10	>10000
644272	9413 9402	1075	1	< 0.01	10	450	938	0.32	6	4	136	< 0.01	< 10	< 10	2	< 10	84
644273	9413 9402	1255	9	< 0.01	7	100	>10000	7.08	230	10	201	< 0.01	< 10	< 10	1	10	12
644274	9413 9402	545	1	< 0.01	15	450	312	0.38	4	5	108	< 0.01	< 10	< 10	3	< 10	118
644275	9413 9402	845	< 1	0.01	34	830	574	0.42	2	5	149	< 0.01	< 10	< 10	4	< 10	4
644276	9413 9402	1285	1	< 0.01	13	1560	28	0.43	< 2	3	2010	< 0.01	< 10	< 10	3	< 10	114
644277	9413 9402	1270	1	< 0.01	19	3900	40	0.73	< 2	3	867	< 0.01	< 10	< 10	4	< 10	7600
644278	9413 9402	1020	< 1	< 0.01	7	780	18	0.25	< 2	1	1495	< 0.01	< 10	< 10	2	< 10	170
644279	9413 9402	2180	3	< 0.01	11	340	394	0.55	< 2	3	958	< 0.01	< 10	< 10	3	< 10	976
644280	9413 9402	4610	1	< 0.01	13	360	18	0.47	< 2	4	1145	< 0.01	< 10	10	3	< 10	6
644281	9413 9402	2080	8	< 0.01	18	510	26	0.56	2	4	1255	< 0.01	< 10	< 10	4	< 10	38
644282	9413 9402	460	< 1	< 0.01	7	60	10	0.33	< 2	2	2460	< 0.01	< 10	< 10	1	< 10	< 2
644283	9413 9402	510	< 1	< 0.01	5	90	18	0.33	< 2	1	2710	< 0.01	< 10	< 10	< 1	< 10	612
644284	9413 9402	560	< 1	< 0.01	4	50	6	0.22	< 2	1	2820	< 0.01	< 10	< 10	1	< 10	< 2

CERTIFICATION: _____*

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-A
Total Pages : 1
Certificate Date: 24-AUG-2001
Invoice No. : I0122568
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0122568

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644255	9413 9402	2.84	0.8	0.37	210	< 10	50	0.5	< 2	1.78	< 0.5	12	22	33	3.76	< 10	< 1	0.25	< 10	0.30
644256	9413 9402	1.24	2.0	0.26	446	< 10	50	0.5	< 2	2.57	< 0.5	15	43	3	4.08	< 10	< 1	0.19	< 10	0.38
644257	9413 9402	2.00	7.6	0.19	214	< 10	60	< 0.5	< 2	5.18	6.5	5	30	5	2.00	< 10	1	0.13	< 10	0.38
644258	9413 9402	1.48	2.6	0.11	44	< 10	50	< 0.5	< 2	14.25	< 0.5	3	40	< 1	1.27	< 10	4	0.08	< 10	0.22
644259	9413 9402	3.76	2.2	0.16	74	< 10	50	< 0.5	< 2	11.35	1.5	3	32	< 1	1.33	< 10	1	0.11	< 10	0.32
644260	9413 9402	2.16	2.4	0.31	194	< 10	60	0.5	< 2	4.95	< 0.5	11	27	3	2.97	< 10	3	0.22	< 10	0.37
644261	9413 9402	2.08	10.4	0.15	152	< 10	50	< 0.5	< 2	>15.00	13.0	5	11	< 1	2.20	< 10	3	0.11	10	0.32
644262	9413 9402	2.46	22.4	0.21	96	< 10	50	< 0.5	< 2	8.27	18.0	6	48	1	2.03	< 10	3	0.15	< 10	0.27
644263	9413 9402	2.34	2.6	0.23	138	< 10	50	0.5	< 2	1.94	< 0.5	12	42	6	2.50	< 10	< 1	0.18	< 10	0.14
644264	9413 9402	1.30	< 0.2	0.32	< 2	< 10	60	< 0.5	4	1.68	< 0.5	4	106	16	0.71	< 10	1	0.09	< 10	0.11
644265	9413 9402	1.44	31.4	0.19	50	< 10	60	< 0.5	< 2	0.19	3.0	18	76	45	0.27	< 10	< 1	0.12	10	0.03
644266	9413 9402	1.06	< 0.2	0.47	20	< 10	130	1.0	2	0.48	0.5	17	16	47	0.55	< 10	< 1	0.26	40	0.07
644267	9413 9402	1.20	0.2	0.09	< 2	< 10	50	< 0.5	< 2	0.01	2.0	1	94	17	0.71	< 10	< 1	0.05	< 10	< 0.01
644268	9413 9402	2.92	< 0.2	0.82	10	< 10	110	0.5	2	0.91	< 0.5	15	23	40	1.88	< 10	< 1	0.25	30	0.23
644269	9413 9402	1.84	< 0.2	0.35	12	< 10	130	0.5	2	1.24	< 0.5	11	21	109	0.31	< 10	< 1	0.23	40	0.03
644270	9413 9402	1.62	< 0.2	0.36	24	< 10	90	0.5	8	2.50	< 0.5	14	18	139	0.41	< 10	< 1	0.25	40	0.04
644271	9400 225	0.06	12.6	0.49	8	< 10	< 10	1.0	< 2	0.42	66.5	8	5	116	12.45	10	5	0.17	< 10	0.69
644272	9413 9402	1.50	< 0.2	0.35	14	< 10	160	0.5	< 2	3.89	< 0.5	12	15	159	0.79	< 10	1	0.24	30	0.06
644273	9413 9402	1.04	63.0	0.16	8	< 10	20	< 0.5	< 2	7.22	0.5	6	20	31	0.38	< 10	< 1	0.11	< 10	0.03
644274	9413 9402	1.76	< 0.2	0.45	30	< 10	100	1.0	2	2.51	< 0.5	19	9	60	0.62	< 10	< 1	0.29	40	0.05
644275	9413 9402	2.16	< 0.2	0.55	10	< 10	170	1.5	< 2	4.22	< 0.5	21	20	173	0.74	< 10	< 1	0.37	50	0.06
644276	9413 9402	1.26	< 0.2	0.21	< 2	< 10	90	0.5	< 2	>15.00	< 0.5	7	20	< 1	0.82	< 10	4	0.12	< 10	0.33
644277	9413 9402	1.12	< 0.2	0.35	10	< 10	60	0.5	< 2	11.40	21.0	13	37	14	0.70	< 10	5	0.17	10	0.19
644278	9413 9402	3.34	< 0.2	0.11	< 2	< 10	40	< 0.5	< 2	>15.00	< 0.5	4	15	< 1	0.70	< 10	5	0.07	< 10	0.35
644279	9413 9402	3.50	< 0.2	0.21	6	< 10	60	0.5	< 2	14.60	2.0	6	25	3	0.84	< 10	4	0.14	< 10	0.34
644280	9413 9402	3.06	< 0.2	0.20	6	< 10	70	0.5	< 2	>15.00	< 0.5	6	7	< 1	1.12	< 10	1	0.14	< 10	0.52
644281	9413 9402	2.94	< 0.2	0.26	8	< 10	60	0.5	< 2	13.55	< 0.5	9	19	13	1.55	< 10	3	0.17	< 10	0.72
644282	9413 9402	3.16	< 0.2	0.09	< 2	< 10	60	< 0.5	< 2	>15.00	< 0.5	3	4	< 1	0.57	< 10	1	0.07	< 10	0.26
644283	9413 9402	2.20	< 0.2	0.06	< 2	< 10	60	< 0.5	< 2	>15.00	0.5	3	3	< 1	0.39	< 10	3	0.04	< 10	0.15
644284	9413 9402	1.16	< 0.2	0.07	< 2	< 10	60	< 0.5	< 2	>15.00	< 0.5	2	4	< 1	0.41	< 10	2	0.05	< 10	0.22

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-B
Total Pages :1
Certificate Date: 24-AUG-2001
Invoice No. :10122568
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0122568

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644255	9413 9402	1280	5	< 0.01	21	350	150	3.93	4	4	154	< 0.01	< 10	< 10	4	< 10	168
644256	9413 9402	2120	7	< 0.01	28	290	328	4.31	6	2	206	< 0.01	< 10	< 10	2	< 10	122
644257	9413 9402	3800	3	< 0.01	12	190	2890	2.09	8	1	354	< 0.01	< 10	10	1	< 10	1450
644258	9413 9402	5550	< 1	< 0.01	8	140	300	1.14	6	1	1030	< 0.01	< 10	30	< 1	< 10	94
644259	9413 9402	4230	1	< 0.01	8	340	572	1.06	< 2	1	713	< 0.01	< 10	10	1	< 10	452
644260	9413 9402	1940	5	< 0.01	25	270	194	2.97	8	3	324	< 0.01	< 10	10	1	< 10	216
644261	9413 9402	>10000	3	< 0.01	10	230	2390	2.39	8	1	716	< 0.01	< 10	60	1	< 10	2840
644262	9413 9402	5220	3	< 0.01	14	230	6930	2.36	12	1	423	< 0.01	< 10	20	1	< 10	3600
644263	9413 9402	1235	4	< 0.01	27	150	90	2.79	8	1	157	< 0.01	< 10	< 10	1	< 10	42
644264	9413 9402	460	< 1	< 0.01	8	110	24	0.05	2	1	118	< 0.01	< 10	< 10	1	< 10	90
644265	9413 9402	60	2	< 0.01	30	190	>10000	1.85	44	< 1	30	< 0.01	< 10	< 10	1	< 10	748
644266	9413 9402	175	< 1	< 0.01	17	370	128	0.27	4	3	96	< 0.01	< 10	< 10	3	< 10	536
644267	9413 9402	105	1	< 0.01	3	100	150	0.08	2	< 1	3	< 0.01	< 10	< 10	< 1	< 10	168
644268	9413 9402	840	< 1	< 0.01	25	470	30	0.34	2	4	100	< 0.01	< 10	< 10	8	< 10	116
644269	9413 9402	230	< 1	< 0.01	10	410	616	0.21	2	2	84	< 0.01	< 10	< 10	2	< 10	18
644270	9413 9402	490	< 1	< 0.01	17	420	40	0.23	< 2	3	120	< 0.01	< 10	< 10	2	< 10	72
644271	9400 225	>10000	4	0.01	28	800	9120	1.96	< 2	3	10	< 0.01	< 10	130	21	< 10	>10000
644272	9413 9402	1075	1	< 0.01	10	450	938	0.32	6	4	136	< 0.01	< 10	< 10	2	< 10	84
644273	9413 9402	1255	9	< 0.01	7	100	>10000	7.08	230	10	201	< 0.01	< 10	< 10	1	10	12
644274	9413 9402	545	1	< 0.01	15	450	312	0.38	4	5	108	< 0.01	< 10	< 10	3	< 10	118
644275	9413 9402	845	< 1	0.01	34	830	574	0.42	2	5	149	< 0.01	< 10	< 10	4	< 10	4
644276	9413 9402	1285	1	< 0.01	13	1560	28	0.43	< 2	3	2010	< 0.01	< 10	< 10	3	< 10	114
644277	9413 9402	1270	1	< 0.01	19	3900	40	0.73	< 2	3	867	< 0.01	< 10	< 10	4	< 10	7600
644278	9413 9402	1020	< 1	< 0.01	7	780	18	0.25	< 2	1	1495	< 0.01	< 10	< 10	2	< 10	170
644279	9413 9402	2180	3	< 0.01	11	340	394	0.55	< 2	3	958	< 0.01	< 10	< 10	3	< 10	976
644280	9413 9402	4610	1	< 0.01	13	360	18	0.47	< 2	4	1145	< 0.01	< 10	10	3	< 10	6
644281	9413 9402	2080	8	< 0.01	18	510	26	0.56	2	4	1255	< 0.01	< 10	< 10	4	< 10	38
644282	9413 9402	460	< 1	< 0.01	7	60	10	0.33	< 2	2	2460	< 0.01	< 10	< 10	1	< 10	< 2
644283	9413 9402	510	< 1	< 0.01	5	90	18	0.33	< 2	1	2710	< 0.01	< 10	< 10	< 1	< 10	612
644284	9413 9402	560	< 1	< 0.01	4	50	6	0.22	< 2	1	2820	< 0.01	< 10	< 10	1	< 10	< 2

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG 3 1 2001 A0122659

Comments: ATTN: CLINT BARR

CERTIFICATE A0122659

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 24-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
SCR-42	8	-180 micron screen - Save Minus
SCR-01	8	Screen - Save Plus Charge
LOG-22	8	Samples received without barcode
229	8	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
WEI-21	8	Weight of received sample	BALANCE	0.01	1000.0
Ag-ICP41	8	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	8	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	8	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	8	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	8	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	8	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	8	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	8	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	8	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	8	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	8	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	8	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	8	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	8	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	8	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	8	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	8	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	8	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	8	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	8	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	8	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	8	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	8	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	8	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	8	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	8	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	8	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	8	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	8	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	8	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	8	U ppm: 32 element, soil & rock	ICP-AES	10	10000
V-ICP41	8	V ppm: 32 element, soil & rock	ICP-AES	1	10000
W-ICP41	8	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	8	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 24-AUG-2001
Invoice No. : I0122659
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Account : BUF

CERTIFICATE OF ANALYSIS A0122659

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644022	94069407	0.26	0.2	0.64	12	< 10	220	< 0.5	2	0.17	< 0.5	3	11	23	1.05	< 10	1	0.05	< 10	0.21
644501	94069407	0.32	< 0.2	1.15	20	< 10	370	0.5	6	0.08	< 0.5	13	16	39	3.24	< 10	< 1	0.06	10	0.22
644502	94069407	0.38	< 0.2	1.43	26	< 10	250	0.5	4	0.05	< 0.5	10	24	32	3.83	< 10	< 1	0.08	< 10	0.28
644503	94069407	0.32	0.4	1.29	32	< 10	230	0.5	6	0.04	0.5	17	21	56	3.09	< 10	< 1	0.07	< 10	0.27
644504	94069407	0.24	< 0.2	1.30	64	< 10	430	< 0.5	2	0.35	< 0.5	10	26	47	2.53	< 10	< 1	0.10	10	0.54
644505	94069407	0.14	1.4	1.05	160	< 10	350	< 0.5	2	1.07	5.0	6	18	106	1.33	< 10	< 1	0.06	< 10	0.25
644506	94069407	0.18	0.4	1.18	28	< 10	340	0.5	2	0.67	< 0.5	7	15	35	1.53	< 10	< 1	0.08	< 10	0.32
644507	94069407	0.20	0.2	0.49	14	< 10	140	< 0.5	< 2	0.31	< 0.5	3	5	15	0.64	< 10	< 1	0.03	< 10	0.08

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-B
Total Pages :1
Certificate Date: 24-AUG-2001
Invoice No. :I0122659
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0122659

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644022	9406 9407	170	1	0.02	11	250	12	0.01	< 2	< 1	18	0.01	< 10	< 10	32	< 10	42
644501	9406 9407	535	1	< 0.01	29	320	24	< 0.01	< 2	3	13	< 0.01	< 10	< 10	28	< 10	108
644502	9406 9407	295	3	< 0.01	28	550	22	< 0.01	2	3	15	< 0.01	< 10	< 10	58	< 10	162
644503	9406 9407	420	2	< 0.01	35	600	16	< 0.01	< 2	3	13	< 0.01	< 10	< 10	42	< 10	144
644504	9406 9407	350	2	0.01	32	630	34	0.01	6	4	23	0.04	< 10	< 10	38	< 10	112
644505	9406 9407	280	< 1	0.03	27	570	86	0.06	4	1	36	0.01	< 10	< 10	21	< 10	194
644506	9406 9407	630	1	0.02	24	690	24	0.05	< 2	2	61	0.01	< 10	< 10	25	< 10	108
644507	9406 9407	240	< 1	0.03	9	420	12	0.03	< 2	< 1	28	0.01	< 10	< 10	10	< 10	30

CERTIFICATION:

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CERTIFICATE OF ANALYSIS A0122659

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644022	94069407	0.26	0.2	0.64	12	< 10	220	< 0.5	2	0.17	< 0.5	3	11	23	1.05	< 10	1	0.05	< 10	0.21
644501	94069407	0.32	< 0.2	1.15	20	< 10	370	0.5	6	0.08	< 0.5	13	16	39	3.24	< 10	< 1	0.06	10	0.22
644502	94069407	0.38	< 0.2	1.43	26	< 10	250	0.5	4	0.05	< 0.5	10	24	32	3.83	< 10	< 1	0.08	< 10	0.28
644503	94069407	0.32	0.4	1.29	32	< 10	230	0.5	6	0.04	0.5	17	21	56	3.09	< 10	< 1	0.07	< 10	0.27
644504	94069407	0.24	< 0.2	1.30	64	< 10	430	< 0.5	2	0.35	< 0.5	10	26	47	2.53	< 10	< 1	0.10	10	0.54
644505	94069407	0.14	1.4	1.05	160	< 10	350	< 0.5	2	1.07	5.0	6	18	106	1.33	< 10	< 1	0.06	< 10	0.25
644506	94069407	0.18	0.4	1.18	28	< 10	340	0.5	2	0.67	< 0.5	7	15	35	1.53	< 10	< 1	0.08	< 10	0.32
644507	94069407	0.20	0.2	0.49	14	< 10	140	< 0.5	< 2	0.31	< 0.5	3	5	15	0.64	< 10	< 1	0.03	< 10	0.08

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CERTIFICATE OF ANALYSIS A0122659

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644022	9406 9407	170	1	0.02	11	250	12	0.01	< 2	< 1	18	0.01	< 10	< 10	32	< 10	42
644501	9406 9407	535	1	< 0.01	29	320	24	< 0.01	< 2	3	13	< 0.01	< 10	< 10	28	< 10	108
644502	9406 9407	295	3	< 0.01	28	550	22	< 0.01	2	3	15	< 0.01	< 10	< 10	58	< 10	162
644503	9406 9407	420	2	< 0.01	35	600	16	< 0.01	< 2	3	13	< 0.01	< 10	< 10	42	< 10	144
644504	9406 9407	350	2	0.01	32	630	34	0.01	6	4	23	0.04	< 10	< 10	38	< 10	112
644505	9406 9407	280	< 1	0.03	27	570	86	0.06	4	1	36	0.01	< 10	< 10	21	< 10	194
644506	9406 9407	630	1	0.02	24	690	24	0.05	< 2	2	61	0.01	< 10	< 10	25	< 10	108
644507	9406 9407	240	< 1	0.03	9	420	12	0.03	< 2	< 1	28	0.01	< 10	< 10	10	< 10	30

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

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A0122660

Comments: ATTN: CLINT BARR

CERTIFICATE A0122660

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 27-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	23	Pulv. <250g to >85%/-75 micron
STO-21	23	Reject Storage-First 90 Days
LOG-22	24	Samples received without barcode
CRU-31	23	Crush to 70% minus 2mm
SPL-21	23	Splitting Charge
225	1	Run as received
229	24	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
WEI-21	24	Weight of received sample	BALANCE	0.01	1000.0
Ag-ICP41	24	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	24	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	24	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	24	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	24	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	24	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	24	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	24	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	24	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	24	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	24	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	24	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	24	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	24	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	24	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	24	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	24	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	24	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	24	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	24	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	24	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	24	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	24	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	24	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	24	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	24	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	24	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	24	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	24	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	24	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	24	U ppm: 32 element, soil & rock	ICP-AES	10	10000
V-ICP41	24	V ppm: 32 element, soil & rock	ICP-AES	1	10000

ALS Chemex

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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0122660

Comments: ATTN: CLINT BARR

CERTIFICATE A0122660

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 27-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	23	Pulv. <250g to >85%/-75 micron
STO-21	23	Reject Storage-First 90 Days
LOG-22	24	Samples received without barcode
CRU-31	23	Crush to 70% minus 2mm
SPL-21	23	Splitting Charge
225	1	Run as received
229	24	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
W-ICP41	24	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	24	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

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CERTIFICATE OF ANALYSIS A0122660

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644011	9413 9402	0.60	0.6	0.06	16	< 10	30	< 0.5	< 2	3.77	101.0	16	104	34	0.51	< 10	15	0.03	< 10	0.01
644012	9413 9402	0.64	0.4	0.23	20	< 10	40	< 0.5	< 2	0.38	88.5	20	67	52	0.43	< 10	7	0.15	< 10	0.01
644013	9413 9402	1.48	0.6	0.10	10	< 10	50	< 0.5	< 2	7.75	141.0	21	65	48	0.62	< 10	11	0.07	< 10	0.02
644014	9413 9402	1.52	>100.0	< 0.01	< 2	< 10	30	< 0.5	< 2	8.48	89.5	10	10	40	0.42	< 10	7	< 0.01	< 10	0.01
644015	9413 9402	0.84	3.2	0.09	32	< 10	30	< 0.5	< 2	0.07	< 0.5	1	125	59	5.58	< 10	< 1	0.07	< 10	0.01
644016	9413 9402	0.90	16.6	0.09	16	< 10	10	< 0.5	12	0.03	0.5	< 1	83	162	8.96	< 10	3	0.04	< 10	< 0.01
644017	9413 9402	0.98	3.8	0.32	34	< 10	40	0.5	4	0.01	0.5	< 1	28	169	9.20	< 10	< 1	0.14	< 10	0.01
644018	9413 9402	1.10	1.0	0.08	20	< 10	10	< 0.5	< 2	0.39	57.5	9	106	46	0.61	< 10	8	0.05	< 10	< 0.01
644019	9413 9402	0.32	0.6	0.09	2	< 10	10	< 0.5	< 2	2.95	48.5	7	94	31	0.51	< 10	13	0.06	< 10	< 0.01
644020	9413 9402	1.06	< 0.2	0.07	8	< 10	30	< 0.5	< 2	6.19	< 0.5	2	71	2250	0.35	< 10	< 1	0.04	60	0.01
644021	9413 9402	1.06	2.2	0.08	< 2	< 10	50	< 0.5	< 2	0.72	215	25	67	136	0.64	20	32	0.04	< 10	< 0.01
644023	9413 9402	0.48	0.2	1.12	854	< 10	70	< 0.5	4	1.36	< 0.5	11	71	24	3.07	< 10	< 1	0.13	< 10	0.76
644080	9413 9402	0.36	0.2	0.14	6	< 10	80	< 0.5	< 2	0.59	< 0.5	2	101	21	0.87	< 10	< 1	0.07	< 10	0.23
644120	9413 9402	0.86	< 0.2	0.09	2	< 10	10	< 0.5	< 2	0.02	2.5	1	142	21	0.25	< 10	< 1	0.05	< 10	< 0.01
644125	9413 9402	0.72	< 0.2	0.10	18	< 10	20	< 0.5	< 2	0.29	2.0	7	110	10	0.23	< 10	1	0.07	< 10	< 0.01
644126	9413 9402	1.82	0.6	0.13	10	< 10	110	< 0.5	< 2	1.44	22.0	5	53	22	0.45	< 10	9	0.07	< 10	0.01
644127	9413 9402	1.18	0.8	0.15	10	< 10	120	< 0.5	< 2	0.55	17.0	6	94	21	0.41	< 10	5	0.08	< 10	< 0.01
644128	9413 9402	1.16	< 0.2	0.49	12	< 10	130	< 0.5	< 2	0.62	< 0.5	3	109	6	1.32	< 10	1	0.09	< 10	0.26
644129	9413 9402	1.50	57.0	0.06	10	< 10	30	< 0.5	< 2	0.18	< 0.5	2	68	243	0.20	< 10	< 1	0.03	< 10	< 0.01
644130	9413 9402	0.90	29.8	0.12	< 2	< 10	50	< 0.5	< 2	3.24	114.0	10	90	37	0.50	< 10	6	0.05	< 10	0.01
644131	9413 9402	1.08	0.2	0.23	< 2	< 10	350	< 0.5	< 2	0.53	1.5	2	116	65	0.27	< 10	< 1	0.14	10	0.01
644204	9413 9402	0.78	0.2	0.84	6	< 10	130	< 0.5	< 2	0.19	1.5	4	110	46	1.79	< 10	< 1	0.09	< 10	0.37
644465	9413 9402	0.54	0.2	0.13	2	< 10	30	< 0.5	< 2	0.01	0.5	1	132	16	0.85	< 10	< 1	0.05	< 10	< 0.01
644466	9400 225	0.02	12.6	0.55	10	< 10	10	1.5	< 2	0.45	66.5	8	11	127	13.50	< 10	4	0.20	< 10	0.75

CERTIFICATION: _____

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To: NORANDA MINING AND EXPLORATION INC.

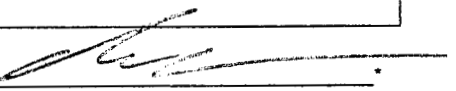
874 TUNGSTEN ST.
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CERTIFICATE OF ANALYSIS A0122660

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644011	94139402	355	< 1	0.01	5	170	30	2.82	< 2	< 1	120	< 0.01	< 10	< 10	< 1	< 10	>10000
644012	94139402	375	< 1	0.01	8	130	222	1.04	< 2	1	15	< 0.01	< 10	< 10	< 1	< 10	>10000
644013	94139402	1460	< 1	0.01	5	70	30	3.00	< 2	< 1	236	< 0.01	< 10	< 10	< 1	< 10	>10000
644014	94139402	1560	< 1	< 0.01	24	50	>10000	7.34	410	< 1	230	< 0.01	< 10	< 10	< 1	< 10	>10000
644015	94139402	80	< 1	< 0.01	4	50	598	0.16	10	< 1	2	< 0.01	< 10	< 10	1	< 10	348
644016	94139402	15	< 1	< 0.01	4	580	114	0.16	16	< 1	1	< 0.01	< 10	< 10	3	< 10	796
644017	94139402	25	1	< 0.01	4	540	62	0.08	6	1	3	< 0.01	< 10	< 10	7	< 10	1445
644018	94139402	115	< 1	< 0.01	10	310	46	1.12	< 2	< 1	16	< 0.01	< 10	< 10	< 1	< 10	>10000
644019	94139402	1325	< 1	< 0.01	6	40	98	0.54	< 2	< 1	42	< 0.01	< 10	< 10	< 1	< 10	>10000
644020	94139402	1410	< 1	< 0.01	4	50	622	0.05	< 2	6	328	< 0.01	30	< 10	< 1	< 10	390
644021	94139402	505	< 1	< 0.01	8	90	78	2.32	2	< 1	45	< 0.01	< 10	< 10	< 1	< 10	>10000
644023	94139402	1495	1	< 0.01	22	70	44	1.50	8	1	104	< 0.01	< 10	< 10	8	< 10	370
644080	94139402	215	< 1	< 0.01	12	220	62	0.28	2	< 1	44	< 0.01	< 10	< 10	4	< 10	138
644120	94139402	45	< 1	< 0.01	4	40	16	0.01	< 2	< 1	2	< 0.01	< 10	< 10	< 1	< 10	3290
644125	94139402	185	< 1	< 0.01	6	30	146	0.01	< 2	< 1	5	< 0.01	< 10	< 10	< 1	< 10	2190
644126	94139402	765	< 1	0.01	5	140	578	0.35	< 2	< 1	72	< 0.01	< 10	< 10	< 1	< 10	>10000
644127	94139402	475	< 1	0.01	8	160	1870	0.15	< 2	< 1	33	< 0.01	< 10	< 10	< 1	< 10	8500
644128	94139402	655	< 1	0.01	7	80	28	0.36	< 2	< 1	52	< 0.01	< 10	< 10	4	< 10	130
644129	94139402	120	1	< 0.01	6	120	>10000	4.07	144	< 1	14	< 0.01	< 10	< 10	< 1	< 10	46
644130	94139402	940	< 1	0.01	5	110	>10000	3.21	34	2	259	< 0.01	< 10	< 10	< 1	< 10	>10000
644131	94139402	300	< 1	0.01	3	80	72	0.03	< 2	< 1	17	< 0.01	< 10	< 10	1	< 10	846
644204	94139402	340	< 1	0.04	13	90	176	0.37	< 2	< 1	18	0.03	< 10	< 10	10	< 10	236
644465	94139402	190	1	< 0.01	4	140	86	0.08	< 2	< 1	3	< 0.01	< 10	< 10	1	< 10	150
644466	9400 225	>10000	< 1	0.02	36	930	9020	2.09	14	2	5	< 0.01	< 10	< 10	22	< 10	>10000

CERTIFICATION: 

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Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-A
Total Pages : 1
Certificate Date: 27-AUG-2001
Invoice No. : I0122660
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0122660

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644011	94139402	0.60	0.6	0.06	16	< 10	30	< 0.5	< 2	3.77	101.0	16	104	34	0.51	< 10	15	0.03	< 10	0.01
644012	94139402	0.64	0.4	0.23	20	< 10	40	< 0.5	< 2	0.38	88.5	20	67	52	0.43	< 10	7	0.15	< 10	0.01
644013	94139402	1.48	0.6	0.10	10	< 10	50	< 0.5	< 2	7.75	141.0	21	65	48	0.62	< 10	11	0.07	< 10	0.02
644014	94139402	1.52	>100.0	< 0.01	< 2	< 10	30	< 0.5	< 2	8.48	89.5	10	10	40	0.42	< 10	7	< 0.01	< 10	0.01
644015	94139402	0.84	3.2	0.09	32	< 10	30	< 0.5	< 2	0.07	< 0.5	1	125	59	5.58	< 10	< 1	0.07	< 10	0.01
644016	94139402	0.90	16.6	0.09	16	< 10	10	< 0.5	12	0.03	0.5	< 1	83	162	8.96	< 10	3	0.04	< 10	< 0.01
644017	94139402	0.98	3.8	0.32	34	< 10	40	0.5	4	0.01	0.5	< 1	28	169	9.20	< 10	< 1	0.14	< 10	0.01
644018	94139402	1.10	1.0	0.08	20	< 10	10	< 0.5	< 2	0.39	57.5	9	106	46	0.61	< 10	8	0.05	< 10	< 0.01
644019	94139402	0.32	0.6	0.09	2	< 10	10	< 0.5	< 2	2.95	48.5	7	94	31	0.51	< 10	13	0.06	< 10	< 0.01
644020	94139402	1.06	< 0.2	0.07	8	< 10	30	< 0.5	< 2	6.19	< 0.5	2	71	2250	0.35	< 10	< 1	0.04	60	0.01
644021	94139402	1.06	2.2	0.08	< 2	< 10	50	< 0.5	< 2	0.72	215	25	67	136	0.64	20	32	0.04	< 10	< 0.01
644023	94139402	0.48	0.2	1.12	854	< 10	70	< 0.5	4	1.36	< 0.5	11	71	24	3.07	< 10	< 1	0.13	< 10	0.76
644080	94139402	0.36	0.2	0.14	6	< 10	80	< 0.5	< 2	0.59	< 0.5	2	101	21	0.87	< 10	< 1	0.07	< 10	0.23
644120	94139402	0.86	< 0.2	0.09	2	< 10	10	< 0.5	< 2	0.02	2.5	1	142	21	0.25	< 10	< 1	0.05	< 10	< 0.01
644125	94139402	0.72	< 0.2	0.10	18	< 10	20	< 0.5	< 2	0.29	2.0	7	110	10	0.23	< 10	1	0.07	< 10	< 0.01
644126	94139402	1.82	0.6	0.13	10	< 10	110	< 0.5	< 2	1.44	22.0	5	53	22	0.45	< 10	9	0.07	< 10	0.01
644127	94139402	1.18	0.8	0.15	10	< 10	120	< 0.5	< 2	0.55	17.0	6	94	21	0.41	< 10	5	0.08	< 10	< 0.01
644128	94139402	1.16	< 0.2	0.49	12	< 10	130	< 0.5	< 2	0.62	< 0.5	3	109	6	1.32	< 10	1	0.09	< 10	0.26
644129	94139402	1.50	57.0	0.06	10	< 10	30	< 0.5	< 2	0.18	< 0.5	2	68	243	0.20	< 10	< 1	0.03	< 10	< 0.01
644130	94139402	0.90	29.8	0.12	< 2	< 10	50	< 0.5	< 2	3.24	114.0	10	90	37	0.50	< 10	6	0.05	< 10	0.01
644131	94139402	1.08	0.2	0.23	< 2	< 10	350	< 0.5	< 2	0.53	1.5	2	116	65	0.27	< 10	< 1	0.14	10	0.01
644204	94139402	0.78	0.2	0.84	6	< 10	130	< 0.5	< 2	0.19	1.5	4	110	46	1.79	< 10	< 1	0.09	< 10	0.37
644465	94139402	0.54	0.2	0.13	2	< 10	30	< 0.5	< 2	0.01	0.5	1	132	16	0.85	< 10	< 1	0.05	< 10	< 0.01
644466	9400 225	0.02	12.6	0.55	10	< 10	10	1.5	< 2	0.45	66.5	8	11	127	13.50	< 10	4	0.20	< 10	0.75

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-B
Total Pages :1
Certificate Date: 27-AUG-2001
Invoice No. :I0122660
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0122660

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644011	94139402	355	< 1	0.01	5	170	30	2.82	< 2	< 1	120	< 0.01	< 10	< 10	< 1	< 10	>10000
644012	94139402	375	< 1	0.01	8	130	222	1.04	< 2	1	15	< 0.01	< 10	< 10	< 1	< 10	>10000
644013	94139402	1460	< 1	0.01	5	70	30	3.00	< 2	< 1	236	< 0.01	< 10	< 10	< 1	< 10	>10000
644014	94139402	1560	< 1	< 0.01	24	50	>10000	7.34	410	< 1	230	< 0.01	< 10	< 10	< 1	< 10	>10000
644015	94139402	80	< 1	< 0.01	4	50	598	0.16	10	< 1	2	< 0.01	< 10	< 10	1	< 10	348
644016	94139402	15	< 1	< 0.01	4	580	114	0.16	16	< 1	1	< 0.01	< 10	< 10	3	< 10	796
644017	94139402	25	1	< 0.01	4	540	62	0.08	6	1	3	< 0.01	< 10	< 10	7	< 10	1445
644018	94139402	115	< 1	< 0.01	10	310	46	1.12	< 2	< 1	16	< 0.01	< 10	< 10	< 1	< 10	>10000
644019	94139402	1325	< 1	< 0.01	6	40	98	0.54	< 2	< 1	42	< 0.01	< 10	< 10	< 1	< 10	>10000
644020	94139402	1410	< 1	< 0.01	4	50	622	0.05	< 2	6	328	< 0.01	30	< 10	< 1	< 10	390
644021	94139402	505	< 1	< 0.01	8	90	78	2.32	2	< 1	45	< 0.01	< 10	< 10	< 1	< 10	>10000
644023	94139402	1495	1	< 0.01	22	70	44	1.50	8	1	104	< 0.01	< 10	< 10	8	< 10	370
644080	94139402	215	< 1	< 0.01	12	220	62	0.28	2	< 1	44	< 0.01	< 10	< 10	4	< 10	138
644120	94139402	45	< 1	< 0.01	4	40	16	0.01	< 2	< 1	2	< 0.01	< 10	< 10	< 1	< 10	3290
644125	94139402	185	< 1	< 0.01	6	30	146	0.01	< 2	< 1	5	< 0.01	< 10	< 10	< 1	< 10	2190
644126	94139402	765	< 1	0.01	5	140	578	0.35	< 2	< 1	72	< 0.01	< 10	< 10	< 1	< 10	>10000
644127	94139402	475	< 1	0.01	8	160	1870	0.15	< 2	< 1	33	< 0.01	< 10	< 10	< 1	< 10	8500
644128	94139402	655	< 1	0.01	7	80	28	0.36	< 2	< 1	52	< 0.01	< 10	< 10	4	< 10	130
644129	94139402	120	1	< 0.01	6	120	>10000	4.07	144	< 1	14	< 0.01	< 10	< 10	< 1	< 10	46
644130	94139402	940	< 1	0.01	5	110	>10000	3.21	34	2	259	< 0.01	< 10	< 10	< 1	< 10	>10000
644131	94139402	300	< 1	0.01	3	80	72	0.03	< 2	< 1	17	< 0.01	< 10	< 10	1	< 10	846
644204	94139402	340	< 1	0.04	13	90	176	0.37	< 2	< 1	18	0.03	< 10	< 10	10	< 10	236
644465	94139402	190	1	< 0.01	4	140	86	0.08	< 2	< 1	3	< 0.01	< 10	< 10	1	< 10	150
644466	9400 225	>10000	< 1	0.02	36	930	9020	2.09	14	2	5	< 0.01	< 10	< 10	22	< 10	>10000

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0122714

Comments: ATTN: CLINT BARR

CERTIFICATE A0122714

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 04-OCT-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
244	67	Pulp; prev. prepared at Chemex

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Ge-MS62	67	Ge ppm: Trace ICP-MS package	ICP-MS	0.10	2500
Se-MS62	67	Se ppm: Trace ICP-MS package	ICP-MS	1.0	2500

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :2
Certificate Date: 23-AUG-2001
Invoice No. : I0122714
P.O. Number :
Account : BUF

** CORRECTED COPY

CERTIFICATE OF ANALYSIS A0122714

SAMPLE	PREP CODE	Ge ppm	Se ppm
644777	244 --	3.00	< 10.0
644778	244 --	3.00	< 10.0
644779	244 --	7.00	< 10.0
644780	244 --	41.0	< 10.0
644781	244 --	6.00	< 10.0
644782	244 --	7.00	< 10.0
644783	244 --	27.0	< 10.0
644784	244 --	3.00	< 10.0
644785	244 --	3.00	< 10.0
644786	244 --	2.00	< 10.0
644787	244 --	3.00	< 10.0
644788	244 --	3.00	< 10.0
644789	244 --	21.0	< 10.0
644790	244 --	7.00	< 10.0
644791	244 --	59.0	< 10.0
644792	244 --	50.0	< 10.0
644793	244 --	6.00	< 10.0
644794	244 --	4.00	< 10.0
644795	244 --	60.0	< 10.0
644796	244 --	6.00	< 10.0
644797	244 --	44.0	< 10.0
644798	244 --	47.0	< 10.0
644799	244 --	3.00	< 10.0
644800	244 --	4.00	< 10.0
644801	244 --	36.0	< 10.0
644802	244 --	41.0	< 10.0
644803	244 --	8.00	< 10.0
644804	244 --	17.00	< 10.0
644805	244 --	1.00	< 10.0
644806	244 --	3.00	< 10.0
644807	244 --	3.00	< 10.0
644808	244 --	13.00	< 10.0
644809	244 --	4.00	< 10.0
644810	244 --	29.0	< 10.0
644811	244 --	37.0	< 10.0
644812	244 --	37.0	< 10.0
644813	244 --	53.0	< 10.0
644814	244 --	18.00	< 10.0
644815	244 --	10.00	< 10.0
644816	244 --	130.0	< 10.0

CERTIFICATION: _____

** FOR ALL ANALYSES.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 23-AUG-2001
Invoice No. : I0122714
P.O. Number :
Account : BUF

** CORRECTED COPY

CERTIFICATE OF ANALYSIS A0122714

SAMPLE	PREP CODE	Ge ppm	Se ppm
644817	244 --	161.0	< 10.0
644818	244 --	1.00	< 10.0
644819	244 --	15.00	< 10.0
644820	244 --	18.00	< 10.0
644821	244 --	43.0	< 10.0
644822	244 --	24.0	< 10.0
644823	244 --	51.0	< 10.0
644824	244 --	80.0	< 10.0
644825	244 --	34.0	< 10.0
644826	244 --	2.00	< 10.0
644827	244 --	1.00	< 10.0
644828	244 --	134.0	< 10.0
644829	244 --	1.00	< 10.0
644830	244 --	32.0	< 10.0
644831	244 --	38.0	< 10.0
644832	244 --	21.0	< 10.0
644833	244 --	12.00	< 10.0
644834	244 --	190.0	< 10.0
644835	244 --	107.0	< 10.0
644836	244 --	251	< 10.0
644837	244 --	159.0	< 10.0
644838	244 --	13.00	< 10.0
644839	244 --	44.0	< 10.0
644840	244 --	40.0	< 10.0
644841	244 --	28.0	< 10.0
644842	244 --	2.00	< 10.0
644843	244 --	1.00	< 10.0

CERTIFICATION: _____

** FOR ALL ANALYSES.

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
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Page Number :1
Total Pages :2
Certificate Date: 23-AUG-2001
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Account :BUF

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CERTIFICATE OF ANALYSIS A0122714

SAMPLE	PREP CODE	Ge ppm	Se ppm								
644777	244 --	3.00	< 10.0								
644778	244 --	3.00	< 10.0								
644779	244 --	7.00	< 10.0								
644780	244 --	41.0	< 10.0								
644781	244 --	6.00	< 10.0								
644782	244 --	7.00	< 10.0								
644783	244 --	27.0	< 10.0								
644784	244 --	3.00	< 10.0								
644785	244 --	3.00	< 10.0								
644786	244 --	2.00	< 10.0								
644787	244 --	3.00	< 10.0								
644788	244 --	3.00	< 10.0								
644789	244 --	21.0	< 10.0								
644790	244 --	7.00	< 10.0								
644791	244 --	59.0	< 10.0								
644792	244 --	50.0	< 10.0								
644793	244 --	6.00	< 10.0								
644794	244 --	4.00	< 10.0								
644795	244 --	60.0	< 10.0								
644796	244 --	6.00	< 10.0								
644797	244 --	44.0	< 10.0								
644798	244 --	47.0	< 10.0								
644799	244 --	3.00	< 10.0								
644800	244 --	4.00	< 10.0								
644801	244 --	36.0	< 10.0								
644802	244 --	41.0	< 10.0								
644803	244 --	8.00	< 10.0								
644804	244 --	17.00	< 10.0								
644805	244 --	1.00	< 10.0								
644806	244 --	3.00	< 10.0								
644807	244 --	3.00	< 10.0								
644808	244 --	13.00	< 10.0								
644809	244 --	4.00	< 10.0								
644810	244 --	29.0	< 10.0								
644811	244 --	37.0	< 10.0								
644812	244 --	37.0	< 10.0								
644813	244 --	53.0	< 10.0								
644814	244 --	18.00	< 10.0								
644815	244 --	10.00	< 10.0								
644816	244 --	130.0	< 10.0								

CERTIFICATION: _____

** FOR ALL ANALYSES.

ALS Chemex
Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :2
Total Pages :2
Certificate Date: 23-AUG-2001
Invoice No. :I0122714
P.O. Number :
Account :BUF

** CORRECTED COPY

CERTIFICATE OF ANALYSIS A0122714

SAMPLE	PREP CODE	Ge ppm	Se ppm
644817	244 --	161.0	< 10.0
644818	244 --	1.00	< 10.0
644819	244 --	15.00	< 10.0
644820	244 --	18.00	< 10.0
644821	244 --	43.0	< 10.0
644822	244 --	24.0	< 10.0
644823	244 --	51.0	< 10.0
644824	244 --	80.0	< 10.0
644825	244 --	34.0	< 10.0
644826	244 --	2.00	< 10.0
644827	244 --	1.00	< 10.0
644828	244 --	134.0	< 10.0
644829	244 --	1.00	< 10.0
644830	244 --	32.0	< 10.0
644831	244 --	38.0	< 10.0
644832	244 --	21.0	< 10.0
644833	244 --	12.00	< 10.0
644834	244 --	190.0	< 10.0
644835	244 --	107.0	< 10.0
644836	244 --	251	< 10.0
644837	244 --	159.0	< 10.0
644838	244 --	13.00	< 10.0
644839	244 --	44.0	< 10.0
644840	244 --	40.0	< 10.0
644841	244 --	28.0	< 10.0
644842	244 --	2.00	< 10.0
644843	244 --	1.00	< 10.0

CERTIFICATION: _____

** FOR ALL ANALYSES.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED SEP 1 0 2001

A0123153

Comments: ATTN: CLINT BARR

CERTIFICATE A0123153

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 30-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	32	Pulv. <250g to >85%/-75 micron
STO-21	34	Reject Storage-First 90 Days
LOG-22	34	Samples received without barcode
CRU-31	32	Crush to 70% minus 2mm
SPL-21	32	Splitting Charge
225	34	Run as received
229	34	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
WEI-21	34	Weight of received sample	BALANCE	0.01	1000.0
Au-AA23	34	Au-AA23 : Au ppb: Fuse 30 grams	FA-AAS	5	10000
Ag-ICP41	34	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	34	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	34	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	34	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	34	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	34	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	34	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	34	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	34	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	34	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	34	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	34	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	34	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	34	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	34	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	34	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	34	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	34	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	34	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	34	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	34	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	34	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	34	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	34	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	34	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	34	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	34	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	34	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	34	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	34	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	34	U ppm: 32 element, soil & rock	ICP-AES	10	10000

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0123153

Comments: ATTN: CLINT BARR

CERTIFICATE A0123153

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 30-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	32	Pulv. <250g to >85%/-75 micron
STO-21	34	Reject Storage-First 90 Days
LOG-22	34	Samples received without barcode
CRU-31	32	Crush to 70% minus 2mm
SPL-21	32	Splitting Charge
225	34	Run as received
229	34	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
V-ICP41	34	V ppm: 32 element, soil & rock	ICP-AES	1	10000
W-ICP41	34	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	34	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

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Page Number :1-A
Total Pages :1
Certificate Date: 30-AUG-2001
Invoice No. :I0123153
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Account :BUF

CERTIFICATE OF ANALYSIS A0123153

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm
644024	94139402	1.12	< 5	0.6	0.13	22	< 10	50	< 0.5	6	4.16	6.0	6	129	10	0.35	< 10	1	0.08	< 10
644025	94139402	1.42	< 5	0.6	0.60	40	< 10	140	0.5	< 2	3.94	4.5	18	118	36	0.66	< 10	< 1	0.37	10
644026	94139402	3.46	< 5	1.4	0.15	52	< 10	40	< 0.5	10	3.87	288	48	82	111	0.84	20	30	0.09	< 10
644027	94139402	1.66	15	3.4	0.14	32	< 10	30	< 0.5	26	4.20	>500	91	63	185	1.30	50	74	0.10	< 10
644028	94139402	2.34	15	2.6	0.11	32	< 10	40	< 0.5	< 2	8.60	>500	76	49	145	1.12	50	57	0.08	< 10
644029	94139402	3.00	15	4.4	0.15	40	< 10	20	< 0.5	38	1.44	>500	102	57	440	1.88	80	105	0.11	< 10
644030	94139402	1.98	< 5	< 0.2	0.01	< 2	< 10	60	< 0.5	< 2	>15.00	4.5	1	4	< 1	0.53	10	4	0.01	160
644031	94139402	2.36	15	2.4	0.09	36	< 10	30	< 0.5	18	7.08	>500	117	33	258	1.79	60	91	0.07	10
644032	94029400	1.14	< 10	10.8	0.47	52	< 10	< 10	1.0	< 2	0.34	464	10	4	155	3.04	10	11	0.16	< 10
644033	94139402	1.72	20	6.0	0.01	6	< 10	10	< 0.5	74	1.78	>500	217	18	622	3.49	180	199	0.02	< 10
644034	94139402	2.72	15	2.6	0.08	16	< 10	10	< 0.5	28	3.10	>500	103	77	256	1.61	60	87	0.06	50
644035	94139402	0.04	25	55.0	0.11	18	< 10	50	< 0.5	< 2	8.94	99.5	16	53	67	0.53	10	12	0.08	100
644036	94139402	2.64	155	>100.0	0.12	30	< 10	20	< 0.5	14	1.67	362	49	118	258	1.17	40	52	0.07	< 10
644037	94139402	3.28	10	11.2	0.12	8	< 10	40	< 0.5	< 2	7.68	3.5	5	78	1210	0.44	< 10	1	0.08	< 10
644038	94139402	2.42	< 5	0.8	0.12	2	< 10	40	< 0.5	< 2	9.14	0.5	3	102	1195	0.45	< 10	< 1	0.08	10
644039	94139402	2.66	10	0.6	0.17	6	< 10	40	< 0.5	8	1.43	95.5	18	133	172	0.42	10	7	0.10	< 10
644040	94139402	2.86	5	37.6	0.10	< 2	< 10	60	< 0.5	< 2	3.95	4.5	4	108	202	0.29	< 10	< 1	0.06	< 10
644041	94139402	3.64	5	1.6	0.28	40	< 10	180	0.5	< 2	2.19	< 0.5	13	58	51	0.41	< 10	< 1	0.19	30
644042	94139402	2.74	< 5	0.8	0.13	< 2	< 10	50	< 0.5	2	0.05	2.0	1	184	22	0.82	< 10	< 1	0.07	10
644043	94139402	2.58	< 5	0.2	0.48	44	< 10	140	0.5	< 2	1.85	< 0.5	22	23	56	0.42	< 10	1	0.29	50
644044	94139402	0.06	< 5	0.8	0.35	40	< 10	80	0.5	< 2	4.67	5.0	18	25	62	0.32	< 10	1	0.23	30
644045	94139402	3.08	< 5	1.8	0.24	36	< 10	60	< 0.5	< 2	7.68	< 0.5	14	49	66	0.39	< 10	< 1	0.16	10
644289	94139402	3.44	< 5	< 0.2	0.30	40	< 10	100	0.5	< 2	0.82	< 0.5	11	75	10	0.25	< 10	< 1	0.19	20
644290	94139402	3.04	< 5	0.8	0.19	20	< 10	50	< 0.5	12	1.91	124.0	11	108	68	0.37	< 10	12	0.12	< 10
644291	94139402	3.54	< 5	< 0.2	0.26	40	< 10	160	< 0.5	< 2	1.03	2.0	9	120	16	0.32	< 10	< 1	0.17	10
644292	94139402	4.46	5	2.2	0.11	26	< 10	50	< 0.5	< 2	10.05	280	25	32	197	0.53	10	39	0.08	< 10
644293	94139402	2.18	< 5	< 0.2	0.27	44	< 10	80	< 0.5	2	0.62	2.0	10	107	13	0.25	< 10	< 1	0.17	10
644294	94139402	2.66	15	2.0	0.09	24	< 10	60	< 0.5	< 2	12.25	212	18	28	161	0.51	10	33	0.07	< 10
644295	94139402	3.20	15	2.8	0.14	36	< 10	30	< 0.5	22	2.45	>500	45	58	415	0.98	30	73	0.10	< 10
644296	94139402	2.40	20	6.4	0.05	12	< 10	20	< 0.5	32	3.57	>500	64	27	471	1.39	60	122	0.05	< 10
644297	94139402	0.64	< 5	1.0	0.21	38	< 10	60	< 0.5	8	4.44	137.0	18	68	82	0.51	< 10	18	0.14	< 10
644298	94139402	4.08	10	3.6	0.05	14	< 10	30	< 0.5	22	4.61	>500	41	45	262	0.69	40	69	0.04	< 10
644299	94139402	4.18	< 5	0.2	0.21	38	< 10	80	< 0.5	8	2.15	70.0	12	127	48	0.33	< 10	8	0.14	< 10
644300	94029400	2.58	275	13.6	0.57	10	< 10	< 10	1.5	2	0.46	69.5	8	5	140	14.35	40	4	0.19	< 10

CERTIFICATION: _____*+

ALS Chemex

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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 30-AUG-2001
Invoice No. : I0123153
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0123153

SAMPLE	PREP CODE	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644024	94139402	0.02	930	4	0.01	17	220	2	0.19	< 2	3	157	< 0.01	< 10	< 10	1	< 10	2320
644025	94139402	0.06	905	1	< 0.01	35	340	112	0.39	< 2	4	159	< 0.01	< 10	< 10	5	< 10	1610
644026	94139402	0.05	770	4	< 0.01	40	350	22	4.57	< 2	2	214	< 0.01	< 10	< 10	< 1	< 10	>10000
644027	94139402	0.03	900	11	< 0.01	25	410	1645	>10.00	< 2	3	196	< 0.01	< 10	< 10	< 1	< 10	>10000
644028	94139402	0.03	1860	6	< 0.01	23	540	212	7.79	< 2	8	322	< 0.01	< 10	< 10	< 1	< 10	>10000
644029	94139402	0.01	330	10	< 0.01	29	310	90	>10.00	< 2	< 1	62	< 0.01	< 10	< 10	< 1	< 10	>10000
644030	94139402	0.03	6820	< 1	< 0.01	2	930	2	0.20	< 2	4	428	< 0.01	30	< 10	< 1	< 10	2320
644031	94139402	0.02	1510	5	< 0.01	30	440	28	7.16	< 2	5	158	< 0.01	< 10	< 10	< 1	< 10	>10000
644032	94029400	0.07	940	32	0.01	21	1580	>10000	>10.00	< 2	1	7	< 0.01	< 10	< 10	10	< 10	>10000
644033	94139402	0.01	390	10	< 0.01	26	350	50	7.51	< 2	< 1	59	< 0.01	< 10	< 10	< 1	40	>10000
644034	94139402	0.01	605	9	< 0.01	17	320	126	>10.00	< 2	1	85	< 0.01	< 10	< 10	< 1	< 10	>10000
644035	94139402	0.01	1945	4	< 0.01	16	470	>10000	4.44	106	9	169	< 0.01	10	< 10	< 1	< 10	>10000
644036	94139402	0.01	385	12	< 0.01	22	270	>10000	>10.00	224	1	50	< 0.01	< 10	< 10	< 1	< 10	>10000
644037	94139402	0.02	1790	2	< 0.01	10	280	>10000	0.86	28	5	200	< 0.01	< 10	< 10	< 1	< 10	1675
644038	94139402	0.02	1990	3	< 0.01	6	380	1555	0.21	< 2	3	169	< 0.01	< 10	< 10	1	< 10	632
644039	94139402	0.01	310	1	< 0.01	9	150	118	1.47	< 2	1	38	< 0.01	< 10	< 10	< 1	< 10	>10000
644040	94139402	0.01	955	6	< 0.01	6	180	>10000	3.02	116	3	105	< 0.01	< 10	< 10	< 1	< 10	2860
644041	94139402	0.03	475	< 1	< 0.01	24	310	6760	0.36	6	2	71	< 0.01	< 10	< 10	2	< 10	366
644042	94139402	< 0.01	145	6	< 0.01	5	130	378	0.07	< 2	< 1	3	< 0.01	< 10	< 10	1	< 10	300
644043	94139402	0.03	390	1	< 0.01	25	790	810	0.35	4	4	83	< 0.01	< 10	< 10	3	< 10	300
644044	94139402	0.04	1120	1	< 0.01	21	500	1870	0.25	10	4	97	< 0.01	< 10	< 10	2	< 10	1420
644045	94139402	0.04	1820	1	< 0.01	21	460	8350	0.29	< 2	5	155	< 0.01	< 10	< 10	1	< 10	108
644289	94139402	0.03	195	2	< 0.01	28	170	102	0.09	< 2	1	68	< 0.01	< 10	< 10	2	< 10	98
644290	94139402	0.01	480	< 1	< 0.01	15	150	30	2.40	< 2	1	68	< 0.01	< 10	< 10	< 1	< 10	>10000
644291	94139402	0.04	245	3	< 0.01	28	130	30	0.10	< 2	1	77	< 0.01	< 10	< 10	1	< 10	934
644292	94139402	0.03	2500	< 1	< 0.01	23	500	1195	4.31	< 2	6	274	< 0.01	< 10	10	< 1	< 10	>10000
644293	94139402	0.01	130	3	< 0.01	34	180	268	0.12	< 2	1	53	< 0.01	< 10	< 10	1	< 10	1925
644294	94139402	0.03	3210	1	< 0.01	18	570	3220	3.38	< 2	5	327	< 0.01	< 10	< 10	< 1	< 10	>10000
644295	94139402	0.01	555	9	< 0.01	29	350	716	9.83	< 2	1	123	< 0.01	< 10	< 10	< 1	< 10	>10000
644296	94139402	0.01	770	3	< 0.01	15	320	74	5.51	< 2	2	93	< 0.01	< 10	< 10	< 1	< 10	>10000
644297	94139402	0.03	1005	4	< 0.01	24	390	110	3.00	< 2	3	253	< 0.01	< 10	< 10	< 1	< 10	>10000
644298	94139402	0.01	1030	1	< 0.01	15	340	406	5.12	< 2	3	210	< 0.01	< 10	< 10	< 1	< 10	>10000
644299	94139402	0.01	465	4	0.01	25	200	12	1.45	< 2	1	91	< 0.01	< 10	< 10	< 1	< 10	>10000
644300	94029400	0.82	>10000	3	0.01	32	900	9540	2.21	< 2	4	10	< 0.01	< 10	130	25	< 10	>10000

CERTIFICATION:

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SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm
644024	94139402	1.12	< 5	0.6	0.13	22	< 10	50	< 0.5	6	4.16	6.0	6	129	10	0.35	< 10	1	0.08	< 10
644025	94139402	1.42	< 5	0.6	0.60	40	< 10	140	0.5	< 2	3.94	4.5	18	118	36	0.66	< 10	< 1	0.37	10
644026	94139402	3.46	< 5	1.4	0.15	52	< 10	40	< 0.5	10	3.87	288	48	82	111	0.84	20	30	0.09	< 10
644027	94139402	1.66	15	3.4	0.14	32	< 10	30	< 0.5	26	4.20	>500	91	63	185	1.30	50	74	0.10	< 10
644028	94139402	2.34	15	2.6	0.11	32	< 10	40	< 0.5	< 2	8.60	>500	76	49	145	1.12	50	57	0.08	< 10
644029	94139402	3.00	15	4.4	0.15	40	< 10	20	< 0.5	38	1.44	>500	102	57	440	1.88	80	105	0.11	< 10
644030	94139402	1.98	< 5	< 0.2	0.01	< 2	< 10	60	< 0.5	< 2	>15.00	4.5	1	4	< 1	0.53	10	4	0.01	160
644031	94139402	2.36	15	2.4	0.09	36	< 10	30	< 0.5	18	7.08	>500	117	33	258	1.79	60	91	0.07	10
644032	94029400	1.14	< 10	10.8	0.47	52	< 10	< 10	1.0	< 2	0.34	464	10	4	155	3.04	10	11	0.16	< 10
644033	94139402	1.72	20	6.0	0.01	6	< 10	10	< 0.5	74	1.78	>500	217	18	622	3.49	180	199	0.02	< 10
644034	94139402	2.72	15	2.6	0.08	16	< 10	10	< 0.5	28	3.10	>500	103	77	256	1.61	60	87	0.06	50
644035	94139402	0.04	25	55.0	0.11	18	< 10	50	< 0.5	< 2	8.94	99.5	16	53	67	0.53	10	12	0.08	100
644036	94139402	2.64	155	>100.0	0.12	30	< 10	20	< 0.5	14	1.67	362	49	118	258	1.17	40	52	0.07	< 10
644037	94139402	3.28	10	11.2	0.12	8	< 10	40	< 0.5	< 2	7.68	3.5	5	78	1210	0.44	< 10	1	0.08	< 10
644038	94139402	2.42	< 5	0.8	0.12	2	< 10	40	< 0.5	< 2	9.14	0.5	3	102	1195	0.45	< 10	< 1	0.08	10
644039	94139402	2.66	10	0.6	0.17	6	< 10	40	< 0.5	8	1.43	95.5	18	133	172	0.42	10	7	0.10	< 10
644040	94139402	2.86	5	37.6	0.10	< 2	< 10	60	< 0.5	< 2	3.95	4.5	4	108	202	0.29	< 10	< 1	0.06	< 10
644041	94139402	3.64	5	1.6	0.28	40	< 10	180	0.5	< 2	2.19	< 0.5	13	58	51	0.41	< 10	< 1	0.19	30
644042	94139402	2.74	< 5	0.8	0.13	< 2	< 10	50	< 0.5	2	0.05	2.0	1	184	22	0.82	< 10	< 1	0.07	10
644043	94139402	2.58	< 5	0.2	0.48	44	< 10	140	0.5	< 2	1.85	< 0.5	22	23	56	0.42	< 10	1	0.29	50
644044	94139402	0.06	< 5	0.8	0.35	40	< 10	80	0.5	< 2	4.67	5.0	18	25	62	0.32	< 10	1	0.23	30
644045	94139402	3.08	< 5	1.8	0.24	36	< 10	60	< 0.5	< 2	7.68	< 0.5	14	49	66	0.39	< 10	< 1	0.16	10
644289	94139402	3.44	< 5	< 0.2	0.30	40	< 10	100	0.5	< 2	0.82	< 0.5	11	75	10	0.25	< 10	< 1	0.19	20
644290	94139402	3.04	< 5	0.8	0.19	20	< 10	50	< 0.5	12	1.91	124.0	11	108	68	0.37	< 10	12	0.12	< 10
644291	94139402	3.54	< 5	< 0.2	0.26	40	< 10	160	< 0.5	< 2	1.03	2.0	9	120	16	0.32	< 10	< 1	0.17	10
644292	94139402	4.46	5	2.2	0.11	26	< 10	50	< 0.5	< 2	10.05	280	25	32	197	0.53	10	39	0.08	< 10
644293	94139402	2.18	< 5	< 0.2	0.27	44	< 10	80	< 0.5	2	0.62	2.0	10	107	13	0.25	< 10	< 1	0.17	10
644294	94139402	2.66	15	2.0	0.09	24	< 10	60	< 0.5	< 2	12.25	212	18	28	161	0.51	10	33	0.07	< 10
644295	94139402	3.20	15	2.8	0.14	36	< 10	30	< 0.5	22	2.45	>500	45	58	415	0.98	30	73	0.10	< 10
644296	94139402	2.40	20	6.4	0.05	12	< 10	20	< 0.5	32	3.57	>500	64	27	471	1.39	60	122	0.05	< 10
644297	94139402	0.64	< 5	1.0	0.21	38	< 10	60	< 0.5	8	4.44	137.0	18	68	82	0.51	< 10	18	0.14	< 10
644298	94139402	4.08	10	3.6	0.05	14	< 10	30	< 0.5	22	4.61	>500	41	45	262	0.69	40	69	0.04	< 10
644299	94139402	4.18	< 5	0.2	0.21	38	< 10	80	< 0.5	8	2.15	70.0	12	127	48	0.33	< 10	8	0.14	< 10
644300	94029400	2.58	275	13.6	0.57	10	< 10	< 10	1.5	2	0.46	69.5	8	5	140	14.35	40	4	0.19	< 10

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 30-AUG-2001
Invoice No. :I0123153
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0123153

SAMPLE	PREP CODE	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644024	94139402	0.02	930	4	0.01	17	220	2	0.19	< 2	3	157	< 0.01	< 10	< 10	1	< 10	2320
644025	94139402	0.06	905	1	< 0.01	35	340	112	0.39	< 2	4	159	< 0.01	< 10	< 10	5	< 10	1610
644026	94139402	0.05	770	4	< 0.01	40	350	22	4.57	< 2	2	214	< 0.01	< 10	< 10	< 1	< 10	>10000
644027	94139402	0.03	900	11	< 0.01	25	410	1645	>10.00	< 2	3	196	< 0.01	< 10	< 10	< 1	< 10	>10000
644028	94139402	0.03	1860	6	< 0.01	23	540	212	7.79	< 2	8	322	< 0.01	< 10	< 10	< 1	< 10	>10000
644029	94139402	0.01	330	10	< 0.01	29	310	90	>10.00	< 2	< 1	62	< 0.01	< 10	< 10	< 1	< 10	>10000
644030	94139402	0.03	6820	< 1	< 0.01	2	930	2	0.20	< 2	4	428	< 0.01	30	< 10	< 1	< 10	2320
644031	94139402	0.02	1510	5	< 0.01	30	440	28	7.16	< 2	5	158	< 0.01	< 10	< 10	< 1	< 10	>10000
644032	94029400	0.07	940	32	0.01	21	1580	>10000	>10.00	< 2	1	7	< 0.01	< 10	< 10	10	< 10	>10000
644033	94139402	0.01	390	10	< 0.01	26	350	50	7.51	< 2	< 1	59	< 0.01	< 10	< 10	< 1	40	>10000
644034	94139402	0.01	605	9	< 0.01	17	320	126	>10.00	< 2	1	85	< 0.01	< 10	< 10	< 1	< 10	>10000
644035	94139402	0.01	1945	4	< 0.01	16	470	>10000	4.44	106	9	169	< 0.01	10	< 10	< 1	< 10	>10000
644036	94139402	0.01	385	12	< 0.01	22	270	>10000	>10.00	224	1	50	< 0.01	< 10	< 10	< 1	< 10	>10000
644037	94139402	0.02	1790	2	< 0.01	10	280	>10000	0.86	28	5	200	< 0.01	< 10	< 10	< 1	< 10	1675
644038	94139402	0.02	1990	3	< 0.01	6	380	1555	0.21	< 2	3	169	< 0.01	< 10	< 10	1	< 10	632
644039	94139402	0.01	310	1	< 0.01	9	150	118	1.47	< 2	1	38	< 0.01	< 10	< 10	< 1	< 10	>10000
644040	94139402	0.01	955	6	< 0.01	6	180	>10000	3.02	116	3	105	< 0.01	< 10	< 10	< 1	< 10	2860
644041	94139402	0.03	475	< 1	< 0.01	24	310	6760	0.36	6	2	71	< 0.01	< 10	< 10	2	< 10	366
644042	94139402	< 0.01	145	6	< 0.01	5	130	378	0.07	< 2	< 1	3	< 0.01	< 10	< 10	1	< 10	300
644043	94139402	0.03	390	1	< 0.01	25	790	810	0.35	4	4	83	< 0.01	< 10	< 10	3	< 10	300
644044	94139402	0.04	1120	1	< 0.01	21	500	1870	0.25	10	4	97	< 0.01	< 10	< 10	2	< 10	1420
644045	94139402	0.04	1820	1	< 0.01	21	460	8350	0.29	< 2	5	155	< 0.01	< 10	< 10	1	< 10	108
644289	94139402	0.03	195	2	< 0.01	28	170	102	0.09	< 2	1	68	< 0.01	< 10	< 10	2	< 10	98
644290	94139402	0.01	480	< 1	< 0.01	15	150	30	2.40	< 2	1	68	< 0.01	< 10	< 10	< 1	< 10	>10000
644291	94139402	0.04	245	3	< 0.01	28	130	30	0.10	< 2	1	77	< 0.01	< 10	< 10	1	< 10	934
644292	94139402	0.03	2500	< 1	< 0.01	23	500	1195	4.31	< 2	6	274	< 0.01	< 10	10	< 1	< 10	>10000
644293	94139402	0.01	130	3	< 0.01	34	180	268	0.12	< 2	1	53	< 0.01	< 10	< 10	1	< 10	1925
644294	94139402	0.03	3210	1	< 0.01	18	570	3220	3.38	< 2	5	327	< 0.01	< 10	< 10	< 1	< 10	>10000
644295	94139402	0.01	555	9	< 0.01	29	350	716	9.83	< 2	1	123	< 0.01	< 10	< 10	< 1	< 10	>10000
644296	94139402	0.01	770	3	< 0.01	15	320	74	5.51	< 2	2	93	< 0.01	< 10	< 10	< 1	< 10	>10000
644297	94139402	0.03	1005	4	< 0.01	24	390	110	3.00	< 2	3	253	< 0.01	< 10	< 10	< 1	< 10	>10000
644298	94139402	0.01	1030	1	< 0.01	15	340	406	5.12	< 2	3	210	< 0.01	< 10	< 10	< 1	< 10	>10000
644299	94139402	0.01	465	4	0.01	25	200	12	1.45	< 2	1	91	< 0.01	< 10	< 10	< 1	< 10	>10000
644300	94029400	0.82	>10000	3	0.01	32	900	9540	2.21	< 2	4	10	< 0.01	< 10	130	25	< 10	>10000

CERTIFICATION: _____

ALS Chemex
Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED AUG 3 1 2001

A0123264

Comments: ATTN: CLINT BARR

CERTIFICATE A0123264

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 27-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	3	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Pb-AA46	2	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	1	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :1
Certificate Date: 27-AUG-2001
Invoice No. : I0123264
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0123264

SAMPLE	PREP CODE		Pb %	Zn %								
644265	212	--	12.70	-----								
644271	212	--	-----	3.05								
644273	212	--	45.7	-----								

CERTIFICATION:

OVERLIMITS from A0122568

ALS Chemex

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Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

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CERTIFICATE OF ANALYSIS A0123264

SAMPLE	PREP CODE	Pb %	Zn %
644265	212 --	12.70	-----
644271	212 --	-----	3.05
644273	212 --	45.7	-----

CERTIFICATION:

OVERLIMITS from A0122568

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED SEP 1 0 2001

A0123269

Comments: ATTN: CLINT BARR

CERTIFICATE A0123269

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 29-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	5	Pulv. <250g to >85%/-75 micron
STO-21	5	Reject Storage-First 90 Days
LOG-22	6	Samples received without barcode
CRU-31	5	Crush to 70% minus 2mm
SPL-21	5	Splitting Charge
225	1	Run as received
229	6	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
WEI-21	6	Weight of received sample	BALANCE	0.01	1000.0
Ag-ICP41	6	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	6	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	6	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	6	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	6	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	6	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	6	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	6	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	6	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	6	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	6	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	6	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	6	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	6	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	6	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	6	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	6	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	6	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	6	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	6	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	6	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	6	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	6	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	6	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	6	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	6	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	6	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	6	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	6	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	6	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	6	U ppm: 32 element, soil & rock	ICP-AES	10	10000
V-ICP41	6	V ppm: 32 element, soil & rock	ICP-AES	1	10000

ALS Chemex

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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0123269

Comments: ATTN: CLINT BARR

CERTIFICATE A0123269

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 29-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	5	Pulv. <250g to >85%/-75 micron
STO-21	5	Reject Storage-First 90 Days
LOG-22	6	Samples received without barcode
CRU-31	5	Crush to 70% minus 2mm
SPL-21	5	Splitting Charge
225	1	Run as received
229	6	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
W-ICP41	6	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	6	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-A
Total Pages : 1
Certificate Date: 29-AUG-2001
Invoice No. : I0123269
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0123269

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644285	9413 9402	2.82	< 0.2	0.21	12	< 10	50	< 0.5	< 2	2.68	< 0.5	4	90	19	1.23	< 10	< 1	0.17	< 10	0.29
644286	9413 9402	2.12	0.2	0.55	6	< 10	70	0.5	< 2	1.96	1.5	9	43	58	2.45	< 10	< 1	0.21	10	0.53
644287	9413 9402	1.38	1.2	0.41	< 2	< 10	50	< 0.5	< 2	10.80	6.5	6	27	114	1.96	< 10	< 1	0.14	< 10	0.50
644288	9413 9402	1.86	4.6	0.35	< 2	< 10	50	< 0.5	< 2	13.75	17.5	6	32	58	1.85	< 10	< 1	0.12	< 10	0.35
644046	9413 9402	0.68	< 0.2	0.10	< 2	< 10	80	< 0.5	< 2	0.10	< 0.5	1	103	13	0.61	< 10	< 1	0.06	10	< 0.01
644047	9400 225	0.04	8.4	0.40	8	< 10	10	1.0	< 2	0.37	56.0	7	7	100	10.55	< 10	< 1	0.14	< 10	0.60

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-B
Total Pages :1
Certificate Date: 29-AUG-2001
Invoice No. :I0123269
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0123269

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644285	9413 9402	2510	3	< 0.01	13	90	26	0.45	6	< 1	103	< 0.01	< 10	< 10	2	< 10	48
644286	9413 9402	1865	2	0.01	24	200	140	0.65	20	3	110	< 0.01	< 10	< 10	7	< 10	210
644287	9413 9402	2460	1	< 0.01	14	250	796	0.32	2	2	528	< 0.01	< 10	< 10	4	< 10	690
644288	9413 9402	4840	< 1	< 0.01	10	640	4470	0.48	4	1	557	< 0.01	< 10	10	3	< 10	1795
644046	9413 9402	70	3	< 0.01	3	130	40	0.02	4	< 1	9	< 0.01	< 10	< 10	1	< 10	72
644047	9400 225	>10000	2	< 0.01	25	780	7550	1.52	2	< 1	< 1	< 0.01	< 10	70	17	10	>10000

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.

Analytical Chemists * Geochemists * Registered Assayers

5175 Timberlea Blvd., Mississauga
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-A
Total Pages : 1
Certificate Date: 29-AUG-2001
Invoice No. : I0123269
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0123269

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644285	9413 9402	2.82	< 0.2	0.21	12	< 10	50	< 0.5	< 2	2.68	< 0.5	4	90	19	1.23	< 10	< 1	0.17	< 10	0.29
644286	9413 9402	2.12	0.2	0.55	6	< 10	70	0.5	< 2	1.96	1.5	9	43	58	2.45	< 10	< 1	0.21	10	0.53
644287	9413 9402	1.38	1.2	0.41	< 2	< 10	50	< 0.5	< 2	10.80	6.5	6	27	114	1.96	< 10	< 1	0.14	< 10	0.50
644288	9413 9402	1.86	4.6	0.35	< 2	< 10	50	< 0.5	< 2	13.75	17.5	6	32	58	1.85	< 10	< 1	0.12	< 10	0.35
644046	9413 9402	0.68	< 0.2	0.10	< 2	< 10	80	< 0.5	< 2	0.10	< 0.5	1	103	13	0.61	< 10	< 1	0.06	10	< 0.01
644047	9400 225	0.04	8.4	0.40	8	< 10	10	1.0	< 2	0.37	56.0	7	7	100	10.55	< 10	< 1	0.14	< 10	0.60

CERTIFICATION:

ALS Chemex

Aurora Laboratory Services Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-B
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P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0123269

SAMPLE	PREP CODE		Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644285	9413	9402	2510	3	< 0.01	13	90	26	0.45	6	< 1	103	< 0.01	< 10	< 10	2	< 10	48
644286	9413	9402	1865	2	0.01	24	200	140	0.65	20	3	110	< 0.01	< 10	< 10	7	< 10	210
644287	9413	9402	2460	1	< 0.01	14	250	796	0.32	2	2	528	< 0.01	< 10	< 10	4	< 10	690
644288	9413	9402	4840	< 1	< 0.01	10	640	4470	0.48	4	1	557	< 0.01	< 10	10	3	< 10	1795
644046	9413	9402	70	3	< 0.01	3	130	40	0.02	4	< 1	9	< 0.01	< 10	< 10	1	< 10	72
644047	9400	225	>10000	2	< 0.01	25	780	7550	1.52	2	< 1	< 1	< 0.01	< 10	70	17	10	>10000

CERTIFICATION:

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED SEP 10 2001 A0123377

Comments: ATTN: CLINT BARR

CERTIFICATE A0123377

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 29-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	11	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Ag-AA46	1	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500
Pb-AA46	3	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	10	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :1
Certificate Date: 29-AUG-2001
Invoice No. : I0123377
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0123377

SAMPLE	PREP CODE		Ag g/t	Pb %	Zn %
644011	212	--	-----	-----	4.98
644012	212	--	-----	-----	3.86
644013	212	--	-----	-----	7.90
644014	212	--	172	>50.0	4.30
644018	212	--	-----	-----	2.59
644019	212	--	-----	-----	3.36
644021	212	--	-----	-----	8.98
644126	212	--	-----	-----	1.30
644129	212	--	-----	31.4	-----
644130	212	--	-----	11.95	4.27
644466	212	--	-----	-----	2.97

CERTIFICATION:

OVERLIMITS from A0122660

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To: NORANDA MINING AND EXPLORATION INC.

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Project : 2501
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Page Number :1
Total Pages :1
Certificate Date: 29-AUG-2001
Invoice No. :I0123377
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0123377

SAMPLE	PREP CODE		Ag g/t	Pb %	Zn %							
644011	212	--	-----	-----	4.98							
644012	212	--	-----	-----	3.86							
644013	212	--	-----	-----	7.90							
644014	212	--	172	>50.0	4.30							
644018	212	--	-----	-----	2.59							
644019	212	--	-----	-----	3.36							
644021	212	--	-----	-----	8.98							
644126	212	--	-----	-----	1.30							
644129	212	--	-----	31.4	-----							
644130	212	--	-----	11.95	4.27							
644466	212	--	-----	-----	2.97							

CERTIFICATION: Sarah Leingo

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0123568

Comments: ATTN: CLINT BARR

CERTIFICATE A0123568

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 18-SEP-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	1	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Zn-AA46	1	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

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P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :1
Certificate Date: 31-AUG-2001
Invoice No. :I0123568
P.O. Number :
Account :BUF

** CORRECTED COPY

CERTIFICATE OF ANALYSIS A0123568

SAMPLE	PREP CODE	Zn %
644047	212 --	2.91

CERTIFICATION: _____

** FOR Zn ON SAMPLE 644047. OVERLIMITS FROM A0123269.

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Project : 2501
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Page Number :1
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Certificate Date: 31-AUG-2001
Invoice No. : I0123568
P.O. Number :
Account : BUF

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CERTIFICATE OF ANALYSIS A0123568

SAMPLE	PREP CODE	Zn %
644047	212 --	2.91

CERTIFICATION: _____

** FOR Zn ON SAMPLE 644047. OVERLIMITS FROM A0123269.

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Comments: ATTN: CLINT BARR

Page Number :1-A
Total Pages :1
Certificate Date: 29-AUG-2001
Invoice No. :I0123269
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0123269

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644285	9413 9402	2.82	< 0.2	0.21	12	< 10	50	< 0.5	< 2	2.68	< 0.5	4	90	19	1.23	< 10	< 1	0.17	< 10	0.29
644286	9413 9402	2.12	0.2	0.55	6	< 10	70	0.5	< 2	1.96	1.5	9	43	58	2.45	< 10	< 1	0.21	10	0.53
644287	9413 9402	1.38	1.2	0.41	< 2	< 10	50	< 0.5	< 2	10.80	6.5	6	27	114	1.96	< 10	< 1	0.14	< 10	0.50
644288	9413 9402	1.86	4.6	0.35	< 2	< 10	50	< 0.5	< 2	13.75	17.5	6	32	58	1.85	< 10	< 1	0.12	< 10	0.35
644046	9413 9402	0.68	< 0.2	0.10	< 2	< 10	80	< 0.5	< 2	0.10	< 0.5	1	103	13	0.61	< 10	< 1	0.06	10	< 0.01
644047	9400 225	0.04	8.4	0.40	8	< 10	10	1.0	< 2	0.37	56.0	7	7	100	10.55	< 10	< 1	0.14	< 10	0.60

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-B
Total Pages :1
Certificate Date: 29-AUG-2001
Invoice No. : I0123269
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0123269

SAMPLE	PREP CODE	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644285	9413 9402	2510	3	< 0.01	13	90	26	0.45	6	< 1	103	< 0.01	< 10	< 10	2	< 10	48
644286	9413 9402	1865	2	0.01	24	200	140	0.65	20	3	110	< 0.01	< 10	< 10	7	< 10	210
644287	9413 9402	2460	1	< 0.01	14	250	796	0.32	2	2	528	< 0.01	< 10	< 10	4	< 10	690
644288	9413 9402	4840	< 1	< 0.01	10	640	4470	0.48	4	1	557	< 0.01	< 10	10	3	< 10	1795
644046	9413 9402	70	3	< 0.01	3	130	40	0.02	4	< 1	9	< 0.01	< 10	< 10	1	< 10	72
644047	9400 225	>10000	2	< 0.01	25	780	7550	1.52	2	< 1	< 1	< 0.01	< 10	70	17	10	>10000

CERTIFICATION: _____

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To: NORANDA MINING AND EXPLORATION INC.

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Comments: ATTN: CLINT BARR

Page Number : 1-A
Total Pages : 1
Certificate Date: 29-AUG-2001
Invoice No. : 10123269
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0123269

SAMPLE	PREP CODE	Weight Kg	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
644285	94139402	2.82	< 0.2	0.21	12	< 10	50	< 0.5	< 2	2.68	< 0.5	4	90	19	1.23	< 10	< 1	0.17	< 10	0.29
644286	94139402	2.12	0.2	0.55	6	< 10	70	0.5	< 2	1.96	1.5	9	43	58	2.45	< 10	< 1	0.21	10	0.53
644287	94139402	1.38	1.2	0.41	< 2	< 10	50	< 0.5	< 2	10.80	6.5	6	27	114	1.96	< 10	< 1	0.14	< 10	0.50
644288	94139402	1.86	4.6	0.35	< 2	< 10	50	< 0.5	< 2	13.75	17.5	6	32	58	1.85	< 10	< 1	0.12	< 10	0.35
644046	94139402	0.68	< 0.2	0.10	< 2	< 10	80	< 0.5	< 2	0.10	< 0.5	1	103	13	0.61	< 10	< 1	0.06	10	< 0.01
644047	9400 225	0.04	8.4	0.40	8	< 10	10	1.0	< 2	0.37	56.0	7	7	100	10.55	< 10	< 1	0.14	< 10	0.60

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P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1-B
Total Pages :1
Certificate Date: 29-AUG-2001
Invoice No. :I0123269
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0123269

SAMPLE	PREP CODE		Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
644285	9413	9402	2510	3	< 0.01	13	90	26	0.45	6	< 1	103	< 0.01	< 10	< 10	2	< 10	48
644286	9413	9402	1865	2	0.01	24	200	140	0.65	20	3	110	< 0.01	< 10	< 10	7	< 10	210
644287	9413	9402	2460	1	< 0.01	14	250	796	0.32	2	2	528	< 0.01	< 10	< 10	4	< 10	690
644288	9413	9402	4840	< 1	< 0.01	10	640	4470	0.48	4	1	557	< 0.01	< 10	10	3	< 10	1795
644046	9413	9402	70	3	< 0.01	3	130	40	0.02	4	< 1	9	< 0.01	< 10	< 10	1	< 10	72
644047	9400	225	>10000	2	< 0.01	25	780	7550	1.52	2	< 1	< 1	< 0.01	< 10	70	17	10	>10000

CERTIFICATION:

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Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED SEP 10 2001

A0123377

Comments: ATTN: CLINT BARR

CERTIFICATE A0123377

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 29-AUG-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	11	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Ag-AA46	1	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500
Pb-AA46	3	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	10	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :1
Certificate Date: 29-AUG-2001
Invoice No. : I0123377
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0123377

SAMPLE	PREP CODE		Ag g/t	Pb %	Zn %							
644011	212	--	-----	-----	4.98							
644012	212	--	-----	-----	3.86							
644013	212	--	-----	-----	7.90							
644014	212	--	172	>50.0	4.30							
644018	212	--	-----	-----	2.59							
644019	212	--	-----	-----	3.36							
644021	212	--	-----	-----	8.98							
644126	212	--	-----	-----	1.30							
644129	212	--	-----	31.4	-----							
644130	212	--	-----	11.95	4.27							
644466	212	--	-----	-----	2.97							

CERTIFICATION: Said Leimd

OVERLIMITS from A0122660

ALS Chemex

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CERTIFICATE OF ANALYSIS A0123377

SAMPLE	PREP CODE		Ag g/t	Pb %	Zn %
644011	212	--	-----	-----	4.98
644012	212	--	-----	-----	3.86
644013	212	--	-----	-----	7.90
644014	212	--	172	>50.0	4.30
644018	212	--	-----	-----	2.59
644019	212	--	-----	-----	3.36
644021	212	--	-----	-----	8.98
644126	212	--	-----	-----	1.30
644129	212	--	-----	31.4	-----
644130	212	--	-----	11.95	4.27
644466	212	--	-----	-----	2.97

CERTIFICATION: _____

OVERLIMITS from A0122660

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0123568

Comments: ATTN: CLINT BARR

CERTIFICATE A0123568

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 18-SEP-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	1	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Zn-AA46	1	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

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Project : 2501
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Page Number :1
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Certificate Date: 31-AUG-2001
Invoice No. : I0123568
P.O. Number :
Account : BUF

** CORRECTED COPY

CERTIFICATE OF ANALYSIS A0123568

SAMPLE	PREP CODE	Zn %
644047	212 --	2.91

CERTIFICATION: _____

** FOR Zn ON SAMPLE 644047. OVERLIMITS FROM A0123269.

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CERTIFICATE OF ANALYSIS A0123568

SAMPLE	PREP CODE		Zn %
644047	212	--	2.91

CERTIFICATION: _____

** FOR Zn ON SAMPLE 644047. OVERLIMITS FROM A0123269.

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Samples submitted to our lab in Vancouver, BC.
This report was printed on 11-SEP-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	1	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Pb-VOL71	1	Pb %: Concentrate	TITRATION	0.01	100.00

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Total Pages :1
Certificate Date: 11-SEP-2001
Invoice No. : I0123570
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0123570

SAMPLE	PREP CODE		Pb % con									
644014	212	--	55.90									

CERTIFICATION: _____

OVERLIMITS from A0123377

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Page Number :1
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Certificate Date: 11-SEP-2001
Invoice No. :I0123570
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0123570

SAMPLE	PREP CODE		Pb % con									
644014	212	--	55.90									

CERTIFICATION:

OVERLIMITS from A0123377

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0123659

Comments: ATTN: CLINT BARR

CERTIFICATE A0123659

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 17-OCT-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	22	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Ag-AA46	1	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500
Pb-AA46	5	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	20	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

ALS Chemex

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Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :1
Certificate Date: 03-SEP-2001
Invoice No. : I0123659
P.O. Number :
Account : BUF

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CERTIFICATE OF ANALYSIS A0123659

SAMPLE	PREP CODE	Ag g/t	Pb %	Zn %
644026	212 --	-----	-----	8.24
644027	212 --	-----	-----	20.9
644028	212 --	-----	-----	15.75
644029	212 --	-----	-----	24.9
644031	212 --	-----	-----	27.3
644032	212 --	-----	1.57	26.6
644033	212 --	-----	-----	45.1
644034	212 --	-----	-----	22.5
644035	212 --	-----	16.45	4.07
644036	212 --	112	37.1	13.70
644037	212 --	-----	3.72	-----
644039	212 --	-----	-----	2.73
644040	212 --	-----	17.35	-----
644290	212 --	-----	-----	4.60
644292	212 --	-----	-----	13.90
644294	212 --	-----	-----	11.80
644295	212 --	-----	-----	23.2
644296	212 --	-----	-----	36.1
644297	212 --	-----	-----	5.82
644298	212 --	-----	-----	23.4
644299	212 --	-----	-----	2.28
644300	212 --	-----	-----	3.17

CERTIFICATION: _____

** FOR Zn ON SAMPLES '644031, 644032, 644033, 644295, 644296 & 644298 (OV fr A0123153)

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :1
Certificate Date: 03-SEP-2001
Invoice No. : I0123659
P.O. Number :
Account : BUF

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CERTIFICATE OF ANALYSIS A0123659

SAMPLE	PREP CODE	Ag g/t	Pb %	Zn %
644026	212 --	-----	-----	8.24
644027	212 --	-----	-----	20.9
644028	212 --	-----	-----	15.75
644029	212 --	-----	-----	24.9
644031	212 --	-----	-----	27.3
644032	212 --	-----	1.57	26.6
644033	212 --	-----	-----	45.1
644034	212 --	-----	-----	22.5
644035	212 --	-----	16.45	4.07
644036	212 --	112	37.1	13.70
644037	212 --	-----	3.72	-----
644039	212 --	-----	-----	2.73
644040	212 --	-----	17.35	-----
644290	212 --	-----	-----	4.60
644292	212 --	-----	-----	13.90
644294	212 --	-----	-----	11.80
644295	212 --	-----	-----	23.2
644296	212 --	-----	-----	36.1
644297	212 --	-----	-----	5.82
644298	212 --	-----	-----	23.4
644299	212 --	-----	-----	2.28
644300	212 --	-----	-----	3.17

CERTIFICATION: _____

** FOR Zn ON SAMPLES '644031, 644032, 644033, 644295, 644296 & 644298 (OV fr A0123153)

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0124189

Comments: ATTN: CLINT BARR

CERTIFICATE A0124189

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 09-OCT-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
244	101	Pulp; prev. prepared at Chemex

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
In-MS61	101	In ppm: ICP + ICP-MS package	ICP-MS/ICP	0.005	500
Sn-MS62	101	Sn ppm: Trace ICP-MS package	ICP-MS	0.5	2500
Tl-MS62	101	Tl ppm: Trace ICP-MS package	ICP-MS	0.05	2500
Ga-MS62	101	Ga ppm: Trace ICP-MS package	ICP-MS	0.1	2500
Se-MS62	101	Se ppm: Trace ICP-MS package	ICP-MS	1.0	2500
Ge-MS62	101	Ge ppm: Trace ICP-MS package	ICP-MS	0.10	2500
Cd-AA46	19	Cd %: Conc. Nitric-HCL dig'n	AAS	0.001	10.000

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Total Pages :3
Certificate Date: 20-SEP-2001
Invoice No. : I0124189
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Account : BUF

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CERTIFICATE OF ANALYSIS A0124189

SAMPLE	PREP CODE	In ppm	Sn ppm	Tl ppm	Ga ppm	Se ppm	Ge ppm	Cd %
644777	244 --	0.020	1.0	0.20	4.0	< 10.0	3.00	-----
644778	244 --	0.040	1.0	0.30	4.0	< 10.0	3.00	-----
644779	244 --	0.030	1.0	0.40	6.0	< 10.0	6.00	-----
644780	244 --	0.280	1.0	0.20	7.0	< 10.0	39.0	-----
644781	244 --	0.020	1.5	0.34	6.0	< 10.0	5.00	-----
644782	244 --	0.010	0.5	0.15	3.0	< 10.0	6.00	-----
644783	244 --	0.180	1.0	0.50	4.0	< 10.0	28.0	-----
644784	244 --	0.085	2.5	0.85	13.0	< 10.0	3.00	-----
644785	244 --	0.080	2.5	0.85	12.0	< 10.0	3.00	-----
644786	244 --	0.100	2.0	0.70	10.0	< 10.0	2.00	-----
644787	244 --	0.130	2.0	0.45	8.0	< 10.0	2.00	-----
644788	244 --	0.080	3.0	0.80	12.0	< 10.0	3.00	-----
644789	244 --	0.065	1.0	0.50	6.0	< 10.0	22.0	-----
644790	244 --	0.060	2.0	0.65	9.0	< 10.0	7.00	-----
644791	244 --	0.030	1.0	44.5	3.0	10.0	56.0	-----
644792	244 --	0.105	1.5	0.50	9.0	< 10.0	44.0	-----
644793	244 --	0.060	2.0	0.55	8.0	< 10.0	5.00	-----
644794	244 --	0.105	1.5	0.20	4.0	< 10.0	4.00	-----
644795	244 --	7.87	7.0	0.25	24.0	< 10.0	55.0	0.062
644796	244 --	1.075	2.0	0.25	6.0	< 10.0	5.00	-----
644797	244 --	3.82	4.0	0.15	16.0	< 10.0	41.0	-----
644798	244 --	7.65	8.0	0.20	19.0	< 10.0	46.0	-----
644799	244 --	0.220	0.5	0.05	2.0	< 10.0	4.00	-----
644800	244 --	0.045	1.0	0.20	5.0	< 10.0	3.00	-----
644801	244 --	2.49	3.0	0.15	25.0	< 10.0	36.0	0.066
644802	244 --	4.23	5.0	0.15	19.0	< 10.0	39.0	-----
644803	244 --	0.095	0.5	0.10	3.0	< 10.0	7.00	-----
644804	244 --	0.805	2.0	0.25	11.0	< 10.0	16.00	-----
644805	244 --	0.025	3.5	0.10	1.0	< 10.0	1.00	-----
644806	244 --	0.030	1.0	0.15	4.0	< 10.0	3.00	-----
644807	244 --	0.035	1.5	0.35	7.0	< 10.0	3.00	-----
644808	244 --	0.080	0.5	< 0.05	4.0	< 10.0	12.00	-----
644809	244 --	0.025	< 0.5	0.05	2.0	< 10.0	4.00	-----
644810	244 --	1.555	3.0	0.15	13.0	< 10.0	27.0	-----
644811	244 --	1.080	3.0	0.10	11.0	< 10.0	32.0	-----
644812	244 --	1.295	4.0	0.10	13.0	< 10.0	41.0	-----
644813	244 --	3.40	5.5	0.10	15.0	< 10.0	46.0	-----
644814	244 --	1.230	4.0	0.35	8.0	< 10.0	15.00	-----
644815	244 --	0.240	1.0	0.20	5.0	< 10.0	9.00	-----
644816	244 --	15.00	19.0	0.05	27.0	10.0	120.0	0.091

CERTIFICATION: _____

A0123153 RERUNS. ** FOR Ge, Ga, & Se ON ALL SAMPLES.

ALS Chemex

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Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :2
Total Pages :3
Certificate Date: 20-SEP-2001
Invoice No. : I0124189
P.O. Number :
Account : BUF

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CERTIFICATE OF ANALYSIS A0124189

SAMPLE	PREP CODE	In ppm	Sn ppm	Tl ppm	Ga ppm	Se ppm	Ge ppm	Cd %
644817	244 --	8.92	15.5	0.05	30.0	10.0	147.0	0.104
644818	244 --	0.060	< 0.5	< 0.05	1.0	< 10.0	2.00	-----
644819	244 --	0.540	2.0	0.25	8.0	< 10.0	14.00	-----
644820	244 --	0.065	1.5	5.07	3.0	< 10.0	16.00	-----
644821	244 --	0.735	2.5	0.20	11.0	< 10.0	37.0	-----
644822	244 --	2.16	4.0	0.15	7.0	< 10.0	20.0	-----
644823	244 --	0.510	2.0	0.10	12.0	< 10.0	46.0	-----
644824	244 --	11.55	14.0	0.10	24.0	< 10.0	75.0	0.066
644825	244 --	4.20	7.0	0.20	14.0	< 10.0	30.0	-----
644826	244 --	0.175	< 0.5	< 0.05	1.0	< 10.0	3.00	-----
644827	244 --	0.040	3.5	0.10	1.0	< 10.0	1.00	-----
644828	244 --	8.66	14.5	0.15	34.0	10.0	114.0	0.107
644829	244 --	0.090	0.5	< 0.05	1.0	< 10.0	2.00	-----
644830	244 --	0.825	1.0	0.05	3.0	< 10.0	35.0	-----
644831	244 --	2.05	4.5	< 0.05	8.0	< 10.0	41.0	-----
644832	244 --	0.070	1.0	0.15	5.0	< 10.0	20.0	-----
644833	244 --	0.075	3.0	0.60	12.0	< 10.0	11.00	-----
644834	244 --	2.71	3.5	0.20	31.0	< 10.0	193.0	0.090
644835	244 --	0.285	1.5	0.30	16.0	< 10.0	112.0	-----
644836	244 --	0.780	1.5	0.15	25.0	10.0	236	0.116
644837	244 --	6.65	17.0	0.05	41.0	10.0	168.0	0.137
644838	244 --	2.08	2.5	0.15	6.0	< 10.0	16.00	-----
644839	244 --	13.80	14.5	0.15	39.0	< 10.0	43.0	0.068
644840	244 --	7.72	11.0	0.15	15.0	< 10.0	39.0	-----
644841	244 --	5.30	6.5	0.20	12.0	< 10.0	28.0	-----
644842	244 --	0.350	< 0.5	0.05	1.0	< 10.0	3.00	-----
644843	244 --	0.365	0.5	0.10	2.0	< 10.0	2.00	-----
644024	244 --	0.020	0.5	0.10	2.0	< 10.0	8.00	-----
644025	244 --	0.055	1.5	0.30	6.0	< 10.0	10.00	-----
644026	244 --	4.28	3.5	0.15	13.0	< 10.0	22.0	-----
644027	244 --	6.17	7.0	0.15	30.0	< 10.0	36.0	0.071
644028	244 --	6.75	7.5	0.15	29.0	< 10.0	32.0	0.055
644029	244 --	16.35	19.0	0.25	47.0	< 10.0	137.0	0.083
644030	244 --	0.135	< 0.5	< 0.05	1.0	< 10.0	2.00	-----
644031	244 --	4.55	9.5	0.15	36.0	< 10.0	71.0	0.081
644032	244 --	0.045	1.5	51.6	5.0	10.0	51.0	-----
644033	244 --	8.83	21.0	0.15	86.0	10.0	140.0	0.185
644034	244 --	3.43	5.0	0.10	24.0	< 10.0	63.0	0.073
644035	244 --	1.315	2.5	0.50	8.0	< 10.0	22.0	-----
644036	244 --	13.05	21.5	0.90	16.0	< 10.0	42.0	-----

CERTIFICATION: _____

A0123153 RERUNS. ** FOR Ge, Ga, & Se ON ALL SAMPLES.

ALS Chemex

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5175 Timberlea Blvd., Mississauga
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 20-SEP-2001
Invoice No. : I0124189
P.O. Number :
Account : BUF

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CERTIFICATE OF ANALYSIS A0124189

SAMPLE	PREP CODE	In ppm	Sn ppm	Tl ppm	Ga ppm	Se ppm	Ge ppm	Cd %
644037	244 --	0.125	0.5	0.15	3.0	< 10.0	4.00	-----
644038	244 --	0.210	< 0.5	0.10	2.0	< 10.0	3.00	-----
644039	244 --	2.12	1.5	0.10	8.0	< 10.0	8.00	-----
644040	244 --	0.035	< 0.5	0.20	1.0	< 10.0	3.00	-----
644041	244 --	0.025	1.0	0.35	9.0	< 10.0	3.00	-----
644042	244 --	0.075	4.0	0.05	1.0	< 10.0	1.00	-----
644043	244 --	0.060	1.5	0.50	15.0	< 10.0	2.00	-----
644044	244 --	0.090	1.0	0.40	11.0	< 10.0	3.00	-----
644045	244 --	0.005	0.5	0.25	6.0	< 10.0	2.00	-----
644289	244 --	0.015	0.5	0.20	6.0	< 10.0	8.00	-----
644290	244 --	0.100	0.5	0.10	5.0	< 10.0	28.0	-----
644291	244 --	0.010	0.5	0.15	5.0	< 10.0	10.00	-----
644292	244 --	0.425	1.0	0.10	8.0	< 10.0	64.0	-----
644293	244 --	0.015	0.5	0.20	5.0	< 10.0	9.00	-----
644294	244 --	0.320	1.0	0.10	8.0	< 10.0	43.0	-----
644295	244 --	0.445	1.5	0.10	16.0	10.0	98.0	0.063
644296	244 --	0.825	2.0	0.10	23.0	10.0	181.0	0.108
644297	244 --	0.255	0.5	0.20	7.0	< 10.0	30.0	-----
644298	244 --	0.815	1.5	0.05	16.0	10.0	97.0	0.070
644299	244 --	0.080	0.5	0.15	5.0	< 10.0	24.0	-----
644300	244 --	0.040	0.5	4.10	4.0	< 10.0	16.00	-----

CERTIFICATION: _____

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874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
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CERTIFICATE OF ANALYSIS A0124189

SAMPLE	PREP CODE	In ppm	Sn ppm	Tl ppm	Ga ppm	Se ppm	Ge ppm	Cd %
644777	244 --	0.020	1.0	0.20	4.0	< 10.0	3.00	-----
644778	244 --	0.040	1.0	0.30	4.0	< 10.0	3.00	-----
644779	244 --	0.030	1.0	0.40	6.0	< 10.0	6.00	-----
644780	244 --	0.280	1.0	0.20	7.0	< 10.0	39.0	-----
644781	244 --	0.020	1.5	0.34	6.0	< 10.0	5.00	-----
644782	244 --	0.010	0.5	0.15	3.0	< 10.0	6.00	-----
644783	244 --	0.180	1.0	0.50	4.0	< 10.0	28.0	-----
644784	244 --	0.085	2.5	0.85	13.0	< 10.0	3.00	-----
644785	244 --	0.080	2.5	0.85	12.0	< 10.0	3.00	-----
644786	244 --	0.100	2.0	0.70	10.0	< 10.0	2.00	-----
644787	244 --	0.130	2.0	0.45	8.0	< 10.0	2.00	-----
644788	244 --	0.080	3.0	0.80	12.0	< 10.0	3.00	-----
644789	244 --	0.065	1.0	0.50	6.0	< 10.0	22.0	-----
644790	244 --	0.060	2.0	0.65	9.0	< 10.0	7.00	-----
644791	244 --	0.030	1.0	44.5	3.0	10.0	56.0	-----
644792	244 --	0.105	1.5	0.50	9.0	< 10.0	44.0	-----
644793	244 --	0.060	2.0	0.55	8.0	< 10.0	5.00	-----
644794	244 --	0.105	1.5	0.20	4.0	< 10.0	4.00	-----
644795	244 --	7.87	7.0	0.25	24.0	< 10.0	55.0	0.062
644796	244 --	1.075	2.0	0.25	6.0	< 10.0	5.00	-----
644797	244 --	3.82	4.0	0.15	16.0	< 10.0	41.0	-----
644798	244 --	7.65	8.0	0.20	19.0	< 10.0	46.0	-----
644799	244 --	0.220	0.5	0.05	2.0	< 10.0	4.00	-----
644800	244 --	0.045	1.0	0.20	5.0	< 10.0	3.00	-----
644801	244 --	2.49	3.0	0.15	25.0	< 10.0	36.0	0.066
644802	244 --	4.23	5.0	0.15	19.0	< 10.0	39.0	-----
644803	244 --	0.095	0.5	0.10	3.0	< 10.0	7.00	-----
644804	244 --	0.805	2.0	0.25	11.0	< 10.0	16.00	-----
644805	244 --	0.025	3.5	0.10	1.0	< 10.0	1.00	-----
644806	244 --	0.030	1.0	0.15	4.0	< 10.0	3.00	-----
644807	244 --	0.035	1.5	0.35	7.0	< 10.0	3.00	-----
644808	244 --	0.080	0.5	< 0.05	4.0	< 10.0	12.00	-----
644809	244 --	0.025	< 0.5	0.05	2.0	< 10.0	4.00	-----
644810	244 --	1.555	3.0	0.15	13.0	< 10.0	27.0	-----
644811	244 --	1.080	3.0	0.10	11.0	< 10.0	32.0	-----
644812	244 --	1.295	4.0	0.10	13.0	< 10.0	41.0	-----
644813	244 --	3.40	5.5	0.10	15.0	< 10.0	46.0	-----
644814	244 --	1.230	4.0	0.35	8.0	< 10.0	15.00	-----
644815	244 --	0.240	1.0	0.20	5.0	< 10.0	9.00	-----
644816	244 --	15.00	19.0	0.05	27.0	10.0	120.0	0.091

CERTIFICATION: _____

A0123153 RERUNS. ** FOR Ge, Ga, & Se ON ALL SAMPLES.

ALS Chemex

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SAMPLE	PREP CODE	In ppm	Sn ppm	Tl ppm	Ga ppm	Se ppm	Ge ppm	Cd %
644817	244 --	8.92	15.5	0.05	30.0	10.0	147.0	0.104
644818	244 --	0.060	< 0.5	< 0.05	1.0	< 10.0	2.00	-----
644819	244 --	0.540	2.0	0.25	8.0	< 10.0	14.00	-----
644820	244 --	0.065	1.5	5.07	3.0	< 10.0	16.00	-----
644821	244 --	0.735	2.5	0.20	11.0	< 10.0	37.0	-----
644822	244 --	2.16	4.0	0.15	7.0	< 10.0	20.0	-----
644823	244 --	0.510	2.0	0.10	12.0	< 10.0	46.0	-----
644824	244 --	11.55	14.0	0.10	24.0	< 10.0	75.0	0.066
644825	244 --	4.20	7.0	0.20	14.0	< 10.0	30.0	-----
644826	244 --	0.175	< 0.5	< 0.05	1.0	< 10.0	3.00	-----
644827	244 --	0.040	3.5	0.10	1.0	< 10.0	1.00	-----
644828	244 --	8.66	14.5	0.15	34.0	10.0	114.0	0.107
644829	244 --	0.090	0.5	< 0.05	1.0	< 10.0	2.00	-----
644830	244 --	0.825	1.0	0.05	3.0	< 10.0	35.0	-----
644831	244 --	2.05	4.5	< 0.05	8.0	< 10.0	41.0	-----
644832	244 --	0.070	1.0	0.15	5.0	< 10.0	20.0	-----
644833	244 --	0.075	3.0	0.60	12.0	< 10.0	11.00	-----
644834	244 --	2.71	3.5	0.20	31.0	< 10.0	193.0	0.090
644835	244 --	0.285	1.5	0.30	16.0	< 10.0	112.0	-----
644836	244 --	0.780	1.5	0.15	25.0	10.0	236	0.116
644837	244 --	6.65	17.0	0.05	41.0	10.0	168.0	0.137
644838	244 --	2.08	2.5	0.15	6.0	< 10.0	16.00	-----
644839	244 --	13.80	14.5	0.15	39.0	< 10.0	43.0	0.068
644840	244 --	7.72	11.0	0.15	15.0	< 10.0	39.0	-----
644841	244 --	5.30	6.5	0.20	12.0	< 10.0	28.0	-----
644842	244 --	0.350	< 0.5	0.05	1.0	< 10.0	3.00	-----
644843	244 --	0.365	0.5	0.10	2.0	< 10.0	2.00	-----
644024	244 --	0.020	0.5	0.10	2.0	< 10.0	8.00	-----
644025	244 --	0.055	1.5	0.30	6.0	< 10.0	10.00	-----
644026	244 --	4.28	3.5	0.15	13.0	< 10.0	22.0	-----
644027	244 --	6.17	7.0	0.15	30.0	< 10.0	36.0	0.071
644028	244 --	6.75	7.5	0.15	29.0	< 10.0	32.0	0.055
644029	244 --	16.35	19.0	0.25	47.0	< 10.0	137.0	0.083
644030	244 --	0.135	< 0.5	< 0.05	1.0	< 10.0	2.00	-----
644031	244 --	4.55	9.5	0.15	36.0	< 10.0	71.0	0.081
644032	244 --	0.045	1.5	51.6	5.0	10.0	51.0	-----
644033	244 --	8.83	21.0	0.15	86.0	10.0	140.0	0.185
644034	244 --	3.43	5.0	0.10	24.0	< 10.0	63.0	0.073
644035	244 --	1.315	2.5	0.50	8.0	< 10.0	22.0	-----
644036	244 --	13.05	21.5	0.90	16.0	< 10.0	42.0	-----

CERTIFICATION: _____

A0123153 RERUNS. ** FOR Ge, Ga, & Se ON ALL SAMPLES.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :3
Total Pages :3
Certificate Date: 20-SEP-2001
Invoice No. :I0124189
P.O. Number :
Account :BUF

** CORRECTED COPY

CERTIFICATE OF ANALYSIS A0124189

SAMPLE	PREP CODE	In ppm	Sn ppm	Tl ppm	Ga ppm	Se ppm	Ge ppm	Cd %
644037	244 --	0.125	0.5	0.15	3.0	< 10.0	4.00	-----
644038	244 --	0.210	< 0.5	0.10	2.0	< 10.0	3.00	-----
644039	244 --	2.12	1.5	0.10	8.0	< 10.0	8.00	-----
644040	244 --	0.035	< 0.5	0.20	1.0	< 10.0	3.00	-----
644041	244 --	0.025	1.0	0.35	9.0	< 10.0	3.00	-----
644042	244 --	0.075	4.0	0.05	1.0	< 10.0	1.00	-----
644043	244 --	0.060	1.5	0.50	15.0	< 10.0	2.00	-----
644044	244 --	0.090	1.0	0.40	11.0	< 10.0	3.00	-----
644045	244 --	0.005	0.5	0.25	6.0	< 10.0	2.00	-----
644289	244 --	0.015	0.5	0.20	6.0	< 10.0	8.00	-----
644290	244 --	0.100	0.5	0.10	5.0	< 10.0	28.0	-----
644291	244 --	0.010	0.5	0.15	5.0	< 10.0	10.00	-----
644292	244 --	0.425	1.0	0.10	8.0	< 10.0	64.0	-----
644293	244 --	0.015	0.5	0.20	5.0	< 10.0	9.00	-----
644294	244 --	0.320	1.0	0.10	8.0	< 10.0	43.0	-----
644295	244 --	0.445	1.5	0.10	16.0	10.0	98.0	0.063
644296	244 --	0.825	2.0	0.10	23.0	10.0	181.0	0.108
644297	244 --	0.255	0.5	0.20	7.0	< 10.0	30.0	-----
644298	244 --	0.815	1.5	0.05	16.0	10.0	97.0	0.070
644299	244 --	0.080	0.5	0.15	5.0	< 10.0	24.0	-----
644300	244 --	0.040	0.5	4.10	4.0	< 10.0	16.00	-----

CERTIFICATION: _____

A0123153 RERUNS. ** FOR Ge, Ga, & Se ON ALL SAMPLES.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED SEP 2 5 2001

A0123932

Comments: ATTN: CLINT BARR

CERTIFICATE A0123932

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 14-SEP-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	1	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Zn-VOL70	1	Zn %: Concentrate	TITRATION-EDTA	0.01	100.00

ALS Chemex
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 14-SEP-2001
Invoice No. : I0123932
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0123932

SAMPLE	PREP CODE		Zn % con									
644033	212	--	47.14									

CERTIFICATION:

OVERLIMITS from A0123659

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1
Total Pages : 1
Certificate Date: 14-SEP-2001
Invoice No. : I0123932
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0123932

SAMPLE	PREP CODE	Zn % con
644033	212 --	47.14

CERTIFICATION: _____

OVERLIMITS from A0123659

ALS Chemex

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5175 Timberlea Blvd., Mississauga
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED SEP 2 1 2001

A0124680

Comments: ATTN: CLINT BARR

CERTIFICATE A0124680

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 17-SEP-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
299	34	Pulp; prepped on other workorder

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Ag-AA46	34	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500
Pb-AA46	34	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	34	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :1
Certificate Date: 17-SEP-2001
Invoice No. :I0124680
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0124680

SAMPLE	PREP CODE	Ag g/t	Pb %	Zn %
644024	299 --	1	< 0.01	0.23
644025	299 --	1	0.01	0.16
644026	299 --	2	< 0.01	7.89
644027	299 --	4	0.18	20.6
644028	299 --	3	0.02	15.40
644029	299 --	5	< 0.01	25.1
644030	299 --	1	< 0.01	0.21
644031	299 --	4	< 0.01	26.1
644032	299 --	12	1.39	27.5
644033	299 --	6	< 0.01	45.7
644034	299 --	3	0.01	23.0
644035	299 --	53	14.20	3.67
644036	299 --	110	33.2	11.50
644037	299 --	10	3.31	0.14
644038	299 --	2	0.15	0.05
644039	299 --	2	0.01	2.45
644040	299 --	36	17.40	0.26
644041	299 --	3	0.72	0.03
644042	299 --	2	0.04	0.03
644043	299 --	2	0.09	0.03
644044	299 --	3	0.22	0.16
644045	299 --	3	0.93	< 0.01
644289	299 --	2	0.01	< 0.01
644290	299 --	3	< 0.01	4.48
644291	299 --	2	< 0.01	0.09
644292	299 --	4	0.15	13.55
644293	299 --	3	0.03	0.08
644294	299 --	4	0.40	10.45
644295	299 --	4	0.08	21.6
644296	299 --	8	< 0.01	35.2
644297	299 --	3	0.01	5.09
644298	299 --	5	0.04	22.5
644299	299 --	3	< 0.01	2.33
644300	299 --	14	0.97	2.97

CERTIFICATION:

RERUNS from A0123153

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :1
Certificate Date: 17-SEP-2001
Invoice No. :I0124680
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0124680

SAMPLE	PREP CODE	Ag g/t	Pb %	Zn %
644024	299 --	1	< 0.01	0.23
644025	299 --	1	0.01	0.16
644026	299 --	2	< 0.01	7.89
644027	299 --	4	0.18	20.6
644028	299 --	3	0.02	15.40
644029	299 --	5	< 0.01	25.1
644030	299 --	1	< 0.01	0.21
644031	299 --	4	< 0.01	26.1
644032	299 --	12	1.39	27.5
644033	299 --	6	< 0.01	45.7
644034	299 --	3	0.01	23.0
644035	299 --	53	14.20	3.67
644036	299 --	110	33.2	11.50
644037	299 --	10	3.31	0.14
644038	299 --	2	0.15	0.05
644039	299 --	2	0.01	2.45
644040	299 --	36	17.40	0.26
644041	299 --	3	0.72	0.03
644042	299 --	2	0.04	0.03
644043	299 --	2	0.09	0.03
644044	299 --	3	0.22	0.16
644045	299 --	3	0.93	< 0.01
644289	299 --	2	0.01	< 0.01
644290	299 --	3	< 0.01	4.48
644291	299 --	2	< 0.01	0.09
644292	299 --	4	0.15	13.55
644293	299 --	3	0.03	0.08
644294	299 --	4	0.40	10.45
644295	299 --	4	0.08	21.6
644296	299 --	8	< 0.01	35.2
644297	299 --	3	0.01	5.09
644298	299 --	5	0.04	22.5
644299	299 --	3	< 0.01	2.33
644300	299 --	14	0.97	2.97

CERTIFICATION:

RERUNS from A0123153

ALS Chemex

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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :2-A
Total Pages :3
Certificate Date: 12-OCT-01
Invoice No. : I0126030
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0126030

SAMPLE	PREP CODE	Spec Gr S.G.	Cd %								
644817	244 --	3.31	-----	0.104							
644818	244 --	2.75	< 0.001								
644819	244 --	2.71	0.009								
~~644820~~	~~244 --~~	~~not/ss~~	~~0.008~~	Standard							
644821	244 --	2.84	0.036								
644822	244 --	2.79	0.017								
644823	244 --	2.81	0.041								
644824	244 --	3.13	-----	0.066							
644825	244 --	2.89	0.031								
644826	244 --	2.80	0.002								
~~644827~~	~~244 --~~	~~2.69~~	~~< 0.001~~	Blank?							
644828	244 --	3.34	-----	0.107							
644829	244 --	2.76	0.001								
644830	244 --	2.79	0.012								
644831	244 --	2.83	0.023								
644832	244 --	2.71	0.012								
644833	244 --	2.78	0.004								
644834	244 --	3.20	-----	0.090							
644835	244 --	2.97	0.049								
644836	244 --	3.38	-----	0.116							
644837	244 --	3.47	-----	0.137							
644838	244 --	2.86	0.006								
644839	244 --	3.06	-----	0.068							
644840	244 --	2.89	0.032								
644841	244 --	2.74	0.021								
644842	244 --	2.81	< 0.001								
644843	244 --	2.79	< 0.001								
644024	244 --	2.74	< 0.001								
644025	244 --	2.70	< 0.001								
644026	244 --	2.84	0.030								
644027	244 --	3.08	-----	0.071							
644028	244 --	2.97	-----	0.055							
644029	244 --	3.17	-----	0.083							
644030	244 --	2.73	< 0.001								
644031	244 --	3.19	-----	0.081							
~~644032~~	~~244 --~~	~~not/ss~~	~~0.041~~		Standard						
644033	244 --	3.65	-----	0.185							
644034	244 --	3.10	-----	0.073							
644035	244 --	3.15	0.011								
644036	244 --	3.91	0.036								

CERTIFICATION: _____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :3-A
Total Pages :3
Certificate Date: 12-OCT-01
Invoice No. :I0126030
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0126030

SAMPLE	PREP CODE	Spec Gr S.G.	Cd %	
644037	244 --	2.80	< 0.001	
644038	244 --	2.73	< 0.001	
644039	244 --	2.78	0.010	
644040	244 --	3.08	< 0.001	
644041	244 --	2.69	< 0.001	
644042	244 --	2.77	< 0.001	
644043	244 --	2.80	< 0.001	
644044	244 --	2.78	< 0.001	
644045	244 --	2.74	< 0.001	
644289	244 --	2.72	< 0.001	
644290	244 --	2.75	0.014	
644291	244 --	2.66	< 0.001	
644292	244 --	2.95	0.036	
644293	244 --	2.64	< 0.001	
644294	244 --	2.89	0.029	
644295	244 --	3.06	-----	0.063
644296	244 --	3.36	-----	0.108
644297	244 --	2.76	0.015	
644298	244 --	3.05	-----	0.07
644299	244 --	2.70	0.007	
~~644300~~	~~244 --~~	~~not/ss~~	~~not/ss~~	

CERTIFICATION: _____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL: DAVE KING

Page Number :1-A
Total Pages :1
Certificate Date: 12-OCT-01
Invoice No. :I0126207
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0126207

SAMPLE	PREP CODE	Weight Kg	Bulk de g/mL								
644467	225 --	2.82	2.73								
644468	225 --	2.52	2.62								
644469	225 --	3.10	2.69								
644470	225 --	2.22	2.73								
644471	225 --	2.46	2.59								
644472	225 --	2.40	2.62								
644473	225 --	2.52	2.07								
644474	225 --	2.38	2.67								
644475	225 --	2.36	2.65								
644476	225 --	0.40	2.53								
644477	225 --	2.50	2.68								
644478	225 --	2.32	2.64								
644479	225 --	2.68	2.74								
644480	225 --	2.80	2.65								
644481	225 --	2.64	3.16								
644482	225 --	0.06	not/ss								
644483	225 --	3.70	2.86								
644484	225 --	2.76	2.69								
644485	225 --	1.62	2.64								
644486	225 --	2.08	2.66								
644487	225 --	2.58	2.63								
644488	225 --	3.14	2.78								
644489	225 --	2.04	2.59								
644490	225 --	2.92	2.73								
644491	225 --	2.38	2.62								
644492	225 --	2.78	2.67								
644493	225 --	3.16	2.83								
644494	225 --	1.92	2.49								
644495	225 --	2.32	2.63								
644496	225 --	1.94	2.61								
644497	225 --	2.00	2.74								
644498	225 --	2.78	2.62								
644499	225 --	3.04	2.68								
644500	225 --	2.92	2.71								
644551	225 --	2.56	3.02								
644552	225 --	2.42	2.62								
644553	225 --	2.60	2.60								
644554	225 --	2.44	2.60								

CERTIFICATION:_____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

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5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED OCT 3 1 2001

A0126410

Comments: ATTN: CLINT BARR

CERTIFICATE A0126410

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 24-OCT-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
244	67	Pulp; prev. prepared at Chemex

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
8082	65	Hg ppm: HNO3-HCl Digestion	AAS-BKGD CORR	0.1	100.0

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number :1
Total Pages :2
Certificate Date: 18-OCT-2001
Invoice No. :I0126410
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0126410

SAMPLE	PREP CODE	Hg ppm
644777	244 --	< 0.1
644778	244 --	< 0.1
644779	244 --	0.1
644780	244 --	16.9
644781	244 --	< 0.1
644782	244 --	< 0.1
644783	244 --	13.1
644784	244 --	0.2
644785	244 --	0.2
644786	244 --	< 0.1
644787	244 --	< 0.1
644788	244 --	< 0.1
644789	244 --	14.4
644790	244 --	2.1
644791	244 --	not/ss
644792	244 --	27.5
644793	244 --	0.6
644794	244 --	0.4
644795	244 --	58.4
644796	244 --	2.1
644797	244 --	51.1
644798	244 --	55.5
644799	244 --	1.8
644800	244 --	0.1
644801	244 --	57.6
644802	244 --	43.0
644803	244 --	0.5
644804	244 --	21.1
644805	244 --	< 0.1
644806	244 --	< 0.1
644807	244 --	< 0.1
644808	244 --	8.4
644809	244 --	0.3
644810	244 --	35.2
644811	244 --	31.7
644812	244 --	33.2
644813	244 --	50.4
644814	244 --	7.1
644815	244 --	2.4
644816	244 --	>100.0

CERTIFICATION: _____ *+

RERUNS from A0121577

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 18-OCT-2001
Invoice No. : I0126410
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0126410

SAMPLE	PREP CODE	Hg ppm
644817	244 --	>100.0
644818	244 --	0.7
644819	244 --	8.4
644820	244 --	not/ss
644821	244 --	37.8
644822	244 --	17.3
644823	244 --	44.7
644824	244 --	74.3
644825	244 --	33.9
644826	244 --	2.0
644827	244 --	0.1
644828	244 --	113.0
644829	244 --	0.9
644830	244 --	12.4
644831	244 --	27.8
644832	244 --	12.9
644833	244 --	4.1
644834	244 --	83.5
644835	244 --	42.9
644836	244 --	>100.0
644837	244 --	>100.0
644838	244 --	5.2
644839	244 --	58.3
644840	244 --	29.3
644841	244 --	22.5
644842	244 --	0.3
644843	244 --	0.5

CERTIFICATION: *+

RERUNS from A0121577

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Page Number :1
Total Pages :2
Certificate Date: 18-OCT-2001
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P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0126410

SAMPLE	PREP CODE	Hg ppm
644777	244 --	< 0.1
644778	244 --	< 0.1
644779	244 --	0.1
644780	244 --	16.9
644781	244 --	< 0.1
644782	244 --	< 0.1
644783	244 --	13.1
644784	244 --	0.2
644785	244 --	0.2
644786	244 --	< 0.1
644787	244 --	< 0.1
644788	244 --	< 0.1
644789	244 --	14.4
644790	244 --	2.1
644791	244 --	not/ss
644792	244 --	27.5
644793	244 --	0.6
644794	244 --	0.4
644795	244 --	58.4
644796	244 --	2.1
644797	244 --	51.1
644798	244 --	55.5
644799	244 --	1.8
644800	244 --	0.1
644801	244 --	57.6
644802	244 --	43.0
644803	244 --	0.5
644804	244 --	21.1
644805	244 --	< 0.1
644806	244 --	< 0.1
644807	244 --	< 0.1
644808	244 --	8.4
644809	244 --	0.3
644810	244 --	35.2
644811	244 --	31.7
644812	244 --	33.2
644813	244 --	50.4
644814	244 --	7.1
644815	244 --	2.4
644816	244 --	>100.0

CERTIFICATION: _____

RERUNS from A0121577

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Page Number :2
Total Pages :2
Certificate Date: 18-OCT-2001
Invoice No. : I0126410
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0126410

SAMPLE	PREP CODE	Hg ppm
644817	244 --	>100.0
644818	244 --	0.7
644819	244 --	8.4
644820	244 --	not/ss
644821	244 --	37.8
644822	244 --	17.3
644823	244 --	44.7
644824	244 --	74.3
644825	244 --	33.9
644826	244 --	2.0
644827	244 --	0.1
644828	244 --	113.0
644829	244 --	0.9
644830	244 --	12.4
644831	244 --	27.8
644832	244 --	12.9
644833	244 --	4.1
644834	244 --	83.5
644835	244 --	42.9
644836	244 --	>100.0
644837	244 --	>100.0
644838	244 --	5.2
644839	244 --	58.3
644840	244 --	29.3
644841	244 --	22.5
644842	244 --	0.3
644843	244 --	0.5

CERTIFICATION: _____*+

RERUNS from A0121577

ALS Chemex
AURORA LABORATORY SERVICES LTD.
212 Brooksbank Ave, North Vancouver BC Canada V7J 2C1
Phone: 604-984-0221 Fax: 604-984-0218 Website: www.alschemex.com

FAX DATA REPORT

COMPANY : NORANDA MINING AND EXPLORATION INC.

CONTACT : ATTN: CLINT BARR

FAX NUMBER : 1-807-623-0452

SENDER : DEAN **DATE SUBMITTED : 5-NOV-01 at 13:42 PDT**
NO OF PAGES : 4 INCL COVER
SUBJECT : Automated FAX data delivery

DESCRIPTION :

Results for workorder A0126813 - Project : 2501
38 samples received on 12-OCT-01 by our Vancouver office
This workorder has all data entered

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A Campbell Brothers Limited Company

ALS Chemex

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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL: DAVE KING

Page Number :1-A
Total Pages :1
Certificate Date: 02-NOV-01
Invoice No. :I0126813
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126813

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644467	94139402	< 5	1.84	7.00	809.6	1.50	0.13	1.86	0.10	52.7	14.3	169	6.15	21.0	5.03	18.15	2.20	1.6	0.070	1.72
644468	94139402	< 5	2.10	9.71	1249.0	2.95	0.28	0.54	0.02	108.0	53.7	122	13.25	63.2	5.65	25.45	2.60	2.9	0.075	3.16
644469	94139402	< 5	0.92	5.96	1002.0	1.70	0.15	9.61	8.26	98.7	21.6	105	7.40	38.6	1.04	15.30	4.90	1.7	0.145	2.71
644470	94139402	< 5	1.68	3.65	75.0	0.25	0.14	2.19	>500	21.3	80.1	155	2.50	280.0	1.27	40.25	35.60	1.5	0.560	1.10
644471	94139402	< 5	1.98	4.63	135.0	0.55	0.22	1.87	212	32.2	54.0	179	3.90	189.6	0.77	26.15	19.90	2.3	1.220	1.76
644472	94139402	< 5	1.72	5.39	582.3	1.15	0.23	1.87	78.3	33.1	16.9	203	4.60	51.4	0.62	21.50	8.55	2.0	0.190	2.05
644473	94139402	< 5	1.52	5.92	601.4	1.30	0.17	0.67	129.0	31.9	19.3	153	4.15	155.4	0.63	23.05	9.00	2.5	0.225	1.97
644474	94139402	< 5	1.54	6.22	668.0	1.85	0.21	1.03	99.9	35.7	19.8	172	4.50	41.8	0.63	25.70	8.90	2.6	0.335	1.95
644475	94139402	< 5	0.64	5.26	704.4	1.05	0.19	3.80	8.90	55.1	14.1	161	4.65	40.8	0.60	13.65	3.40	1.9	0.050	1.89
644476	94139402	< 5	0.32	1.20	155.0	0.20	1.20	0.06	0.74	44.7	1.5	232	1.05	16.4	0.85	3.40	1.60	2.1	0.055	0.46
644477	94139402	< 5	1.62	5.39	471.0	1.10	0.21	1.97	43.9	36.3	13.2	146	3.70	30.0	0.46	15.00	7.00	2.6	0.115	1.58
644478	94139402	< 5	1.22	4.39	393.0	0.70	0.20	1.23	96.0	25.4	18.3	178	2.85	28.2	0.46	15.95	8.75	2.2	0.050	1.41
644479	94139402	< 5	0.70	1.87	177.0	0.35	0.08	7.95	307	48.3	30.1	124	0.65	64.0	0.63	23.25	16.90	1.0	2.52	0.51
644480	94139402	< 5	0.82	3.44	323.5	0.45	0.15	3.44	53.3	28.1	11.5	162	1.85	24.6	0.36	12.45	10.15	1.5	0.080	1.02
644481	94139402	< 5	0.90	1.67	46.5	0.25	0.11	6.62	>500	51.1	128.3	64	0.95	259.0	2.00	87.85	86.50	0.7	6.60	0.54
644482	9400 225	10	4.50	2.85	72.5	2.90	0.27	0.32	406	26.4	8.5	35	9.40	136.4	2.82	9.70	57.55	2.7	0.035	1.19
644483	94139402	< 5	1.76	2.49	49.0	0.25	0.10	2.15	>500	16.05	73.7	140	1.30	137.0	1.10	26.50	51.80	0.5	0.855	0.70
644484	94139402	< 5	1.52	3.34	302.5	0.70	0.14	1.42	165.5	17.50	25.2	149	2.50	40.8	0.58	13.90	15.15	1.7	0.080	1.10
644485	94139402	< 5	1.88	10.00	1382.0	4.15	0.32	1.55	4.30	131.5	12.7	100	17.00	69.0	1.55	28.30	3.80	3.4	0.115	4.15
644486	94139402	< 5	1.82	9.23	1218.0	2.80	0.39	3.11	16.40	126.5	18.5	105	12.85	74.9	1.09	26.05	3.95	3.0	0.245	3.82
644487	94139402	< 5	0.70	3.87	509.4	0.65	0.11	6.94	2.10	50.4	7.6	134	3.50	19.8	0.43	9.55	3.05	1.8	0.055	1.49
644488	94139402	< 5	1.90	2.72	149.0	0.45	0.14	7.01	381	32.0	38.6	106	1.75	86.6	0.84	28.00	22.85	1.4	3.42	1.12
644489	94139402	< 5	1.66	4.83	265.0	0.80	0.18	4.31	149.0	38.7	27.7	139	3.25	54.2	0.66	23.45	13.95	1.5	0.280	1.86
644490	94139402	< 5	1.26	4.03	250.0	0.25	0.12	2.88	229	19.60	27.3	118	2.25	73.7	0.57	20.65	13.95	1.1	0.590	1.47
644491	94139402	< 5	0.98	6.18	863.6	1.65	0.19	2.77	41.5	60.7	19.7	160	6.50	61.4	0.60	19.35	5.05	2.0	0.215	2.18
644492	94139402	< 5	1.16	4.03	493.0	0.60	0.11	1.45	82.3	21.3	14.6	151	2.15	16.2	0.42	13.85	8.10	1.7	0.105	1.32
644493	94139402	< 5	1.06	1.99	159.0	0.50	0.11	12.00	488	45.4	52.2	95	1.40	103.4	0.95	39.15	29.90	0.8	1.680	0.80
644494	94139402	< 5	1.16	4.33	625.1	1.05	0.23	11.60	45.7	55.7	14.2	81	4.40	20.4	0.62	14.55	7.95	1.6	0.140	1.97
644495	94139402	< 5	0.94	3.01	405.5	0.70	0.11	11.80	46.9	44.7	11.8	118	2.30	12.4	0.46	12.30	9.05	1.0	0.420	1.22
644496	94139402	< 5	0.60	2.14	320.0	0.80	0.82	18.55	53.1	89.5	10.7	79	1.35	9.8	0.46	10.25	7.60	0.8	0.420	0.90
644497	94139402	< 5	0.60	2.75	184.5	0.60	0.16	4.82	333	25.6	33.8	122	1.70	75.8	0.71	26.70	19.65	0.7	0.655	1.08
644498	94139402	< 5	0.24	3.17	466.0	0.60	0.07	12.55	1.86	56.0	4.4	88	2.05	21.8	0.33	7.15	2.45	1.5	0.050	1.03
644499	94139402	< 5	1.28	4.11	752.4	0.90	0.13	12.55	14.55	76.0	13.1	84	3.95	18.2	0.55	11.90	4.65	1.8	0.670	1.77
644500	94139402	< 5	0.62	3.64	551.7	0.80	0.10	9.28	6.74	65.0	8.6	123	3.10	12.4	0.47	8.90	3.45	1.4	0.135	1.44
644551	94139402	30	3.32	2.15	82.5	0.55	0.16	4.14	>500	25.6	75.8	99	1.55	226.0	1.89	48.95	71.65	0.5	6.71	0.95
644552	94139402	< 5	0.56	4.68	759.6	1.05	0.21	4.28	1.28	55.4	19.1	131	4.20	27.6	0.63	11.85	5.15	1.4	0.040	1.90
644553	94139402	< 5	0.50	4.53	730.8	1.10	0.13	2.80	0.96	41.1	13.1	160	3.95	19.6	0.54	11.75	3.75	1.7	0.025	1.83
644554	94139402	< 5	0.62	5.23	720.0	1.20	0.15	1.14	0.26	41.7	10.8	151	4.75	18.8	0.61	12.70	3.35	1.8	0.025	1.83

CERTIFICATION:_____

ALSCHEMEX LABS Alpha-FAX2 PAGE 002

ALS Chemex

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874 TUNGSTEN ST.
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P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL: DAVE KING

Page Number : 1-B
Total Pages : 1
Certificate Date: 02-NOV-01
Invoice No. : I0126813
P.O. Number :
Account : BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126813

SAMPLE	PREP CODE	La ppm (ICP)	Li ppm (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Nb ppm (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm (ICP)	Rb ppm (ICP)	Re ppm	S %	Sb ppm (ICP)	Se ppm	Sn ppm	Sr ppm (ICP)	Ta ppm (ICP)	Te ppm (ICP)
644467	9413 9402	27.5	92.8	1.01	960	0.85	1.64	11.7	39.6	120	7.0	72.7<	0.002	0.04	0.50	< 1	1.6	160.0	0.85	0.05
644468	9413 9402	57.0	93.0	1.24	405	0.40	1.00	20.1	45.8	300	5.5	146.5<	0.002	0.03	0.70	< 1	2.4	121.5	1.60	0.10
644469	9413 9402	61.0	21.6	0.34	1860	1.30	0.16	9.2	46.4	220	12.0	116.5<	0.002	0.39	3.65	1	1.2	302	0.65	0.05
644470	9413 9402	13.5	15.0	0.13	520	1.45	0.82	5.2	24.0	160	7.5	42.5<	0.002	6.91	5.20	20	2.6	99.9	0.50	0.05
644471	9413 9402	20.0	24.2	0.18	430	3.60	0.67	7.5	60.8	180	50.5	60.0	0.004	2.67	4.25	< 10	2.0	60.2	0.90	< 0.05
644472	9413 9402	20.5	17.8	0.20	360	1.45	0.81	7.8	25.6	140	5.0	68.1<	0.002	0.93	1.80	< 10	1.4	59.2	0.90	< 0.05
644473	9413 9402	19.5	24.4	0.21	165	3.00	0.90	8.1	31.6	320	5.5	63.7<	0.002	1.35	2.75	< 10	1.4	51.2	0.95	0.25
644474	9413 9402	20.0	19.0	0.20	235	1.55	0.98	8.4	39.8	310	16.0	73.5<	0.002	1.30	2.10	< 10	2.0	61.5	0.80	< 0.05
644475	9413 9402	30.5	16.8	0.20	695	2.05	0.84	7.4	62.6	310	92.5	79.9	0.002	0.23	2.95	< 1	1.2	138.0	0.55	0.05
644476	9413 9402	22.0	17.2	0.04	70	2.25	0.06	3.0	46.6	220	39.0	21.4<	0.002	0.05	2.55	< 1	7.0	7.4	0.30	< 0.05
644477	9413 9402	21.0	19.4	0.17	430	2.45	1.20	8.8	18.2	240	17.5	61.2	0.002	0.75	1.70	< 10	1.6	85.6	0.85	0.20
644478	9413 9402	14.0	15.4	0.13	240	1.15	1.16	6.0	18.8	180	5.0	44.8<	0.002	1.36	2.30	< 10	1.0	61.6	0.60	< 0.05
644479	9413 9402	30.5	15.6	0.06	1565	2.25	0.69	2.3	19.6	130	5.0	17.3<	0.002	3.86	3.60	10	2.0	157.0	0.25	< 0.05
644480	9413 9402	16.0	24.4	0.10	600	1.40	0.89	3.5	18.4	110	13.0	32.7<	0.002	0.76	2.70	< 10	0.8	61.4	0.35	< 0.05
644481	9413 9402	29.5	10.8	0.05	1330	1.60	0.38	2.1	22.6	110	7.5	17.5	0.002	>10.00	7.75	40	6.0	73.9	0.20	0.15
644482	9400 225	15.0	11.2	0.18	760	15.85	0.06	5.5	47.8	1390	>10000	51.1<	0.002	>10.00	25.05	40	1.2	22.8	0.50	0.30
644483	9413 9402	9.0	27.2	0.07	450	1.20	0.71	2.3	32.8	110	14.5	25.9<	0.002	8.32	2.70	30	1.6	49.3	0.20	0.05
644484	9413 9402	10.0	22.6	0.10	275	2.60	0.80	3.7	62.0	130	18.5	35.2	0.002	2.49	1.70	< 10	0.8	42.2	0.40	0.05
644485	9413 9402	82.5	33.8	0.56	340	0.65	0.08	20.2	90.8	330	46.5	223 <	0.002	0.22	1.70	< 1	2.4	99.8	1.55	0.10
644486	9413 9402	79.0	24.6	0.38	515	1.25	0.11	20.0	46.0	420	55.5	189.0	0.002	0.51	3.20	1	3.4	101.0	1.45	0.05
644487	9413 9402	29.0	21.4	0.17	1050	0.50	0.38	4.8	19.4	220	5.0	65.5<	0.002	0.17	1.60	< 1	0.8	184.5	0.30	< 0.05
644488	9413 9402	19.5	24.6	0.13	1320	1.90	0.10	5.8	18.6	160	9.0	38.8<	0.002	5.08	2.95	10	2.4	147.5	0.40	0.05
644489	9413 9402	23.5	19.4	0.21	850	1.20	0.39	7.0	23.6	140	7.5	67.5<	0.002	2.17	3.75	< 10	1.4	127.0	0.65	0.15
644490	9413 9402	11.0	15.8	0.15	475	1.85	0.76	4.3	13.8	110	48.5	45.8	0.004	3.42	2.80	10	1.4	87.8	0.45	0.10
644491	9413 9402	36.0	25.4	0.26	440	0.75	0.55	9.9	20.4	230	28.0	112.0<	0.002	0.49	4.60	2	1.6	91.8	0.80	0.05
644492	9413 9402	12.0	26.6	0.15	260	2.85	0.68	4.9	13.2	160	5.5	50.2<	0.002	1.04	2.00	< 10	0.8	72.8	0.45	0.15
644493	9413 9402	26.0	19.8	0.10	2140	1.25	0.24	2.4	25.2	90	293	28.0	0.008	5.70	4.05	20	2.2	180.5	0.15	< 0.05
644494	9413 9402	35.0	26.2	0.25	1955	1.75	0.10	5.7	29.2	200	4.5	69.0<	0.002	0.76	1.85	< 10	1.2	226	0.55	0.25
644495	9413 9402	29.0	32.0	0.16	2010	1.25	0.24	3.7	29.0	120	33.5	44.1<	0.002	0.74	1.80	< 10	0.8	179.5	0.35	0.15
644496	9413 9402	45.5	26.6	0.12	3440	1.80	0.06	2.2	34.4	80	980	27.6	0.002	0.85	2.00	< 10	0.8	317	0.25	< 0.05
644497	9413 9402	15.0	32.4	0.14	815	1.10	0.12	2.6	16.4	120	9.5	34.2<	0.002	4.22	3.80	10	1.4	193.0	0.20	0.25
644498	9413 9402	31.5	13.2	0.14	1945	1.20	0.74	3.2	23.8	140	428	45.1	0.002	0.14	0.90	< 1	0.6	382	0.25	0.05
644499	9413 9402	48.0	19.8	0.23	1980	0.40	0.11	7.0	31.8	290	4200	81.8	0.002	0.48	7.15	1	1.2	346	0.50	0.05
644500	9413 9402	39.5	18.2	0.17	1310	1.70	0.32	4.8	22.6	130	854	61.1	0.002	0.32	3.70	< 1	0.8	365	0.35	< 0.05
644551	9413 9402	15.0	17.4	0.09	700	1.45	0.05	4.0	20.2	110	6170	34.3<	0.002	>10.00	12.65	40	12.8	184.0	0.30	0.10
644552	9413 9402	34.0	33.4	0.21	665	1.60	0.06	6.0	37.0	130	27.0	83.2<	0.002	0.37	6.40	< 1	1.2	165.5	0.50	< 0.05
644553	9413 9402	25.0	30.8	0.19	435	0.55	0.10	5.8	24.2	100	11.0	83.4<	0.002	0.25	5.35	< 1	1.0	97.1	0.50	< 0.05
644554	9413 9402	25.0	30.8	0.22	215	2.10	0.18	7.9	18.2	110	9.0	84.1<	0.002	0.26	3.95	< 1	1.0	75.8	0.70	< 0.05

CERTIFICATION:_____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-8163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL: DAVE KING

Page Number : 1-C
Total Pages : 1
Certificate Date: 02-NOV-01
Invoice No. : I0126813
P.O. Number :
Account : BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126813

SAMPLE	PREP CODE	Th ppm (ICP)	Ti % (ICP)	Tl ppm (ICP)	U ppm (ICP)	V ppm (ICP)	W ppm (ICP)	Y ppm (ICP)	Zn ppm (ICP)	Zr ppm	As ppm	Hg ppb	Ag g/t	Pb %	Zn %	Cd %	Spec Gr S.G.
644467	9413 9402	11.2	0.32	0.32	1.5	60	1.5	10.9	94	52.0	< 1	10	1	< 0.01	< 0.01	< 0.001	2.73
644468	9413 9402	17.0	0.51	0.78	2.2	87	2.2	16.9	94	102.0	1	10	< 1	< 0.01	< 0.01	< 0.001	2.78
644469	9413 9402	10.6	0.28	0.50	2.1	55	1.5	26.2	2120	66.5	33	820	< 1	< 0.01	0.29	0.001	2.73
644470	9413 9402	5.0	0.14	0.26	1.7	23	1.6	7.8	>10000	50.5	29	67400	< 1	< 0.01	15.35	0.072	2.90
644471	9413 9402	7.4	0.21	0.36	3.3	42	1.2	10.8	>10000	70.5	89	18740	< 1	< 0.01	5.60	0.022	2.75
644472	9413 9402	8.0	0.23	0.40	2.3	45	1.1	9.9	>10000	60.5	25	6260	1	< 0.01	1.80	0.009	2.69
644473	9413 9402	10.0	0.23	0.38	3.9	45	1.8	10.7	>10000	81.5	19	9850	< 1	< 0.01	2.71	0.014	2.75
644474	9413 9402	11.2	0.24	0.36	2.3	45	1.4	10.1	>10000	75.5	18	8030	1	< 0.01	2.55	0.012	2.77
644475	9413 9402	11.0	0.22	0.36	2.1	42	1.0	12.5	1690	59.0	20	630	< 1	0.01	0.24	0.001	2.74
644476	9413 9402	9.8	0.12	0.18	1.4	9	1.1	6.2	156	74.0	1	30	1	< 0.01	0.01	< 0.001	2.69
644477	9413 9402	16.0	0.17	0.38	1.9	38	1.6	9.2	>10000	79.5	11	4680	1	< 0.01	1.56	0.006	2.72
644478	9413 9402	10.6	0.15	0.26	1.5	30	1.2	7.4	>10000	57.0	21	9960	< 1	< 0.01	2.82	0.012	2.77
644479	9413 9402	5.0	0.08	0.08	0.8	11	0.8	18.0	>10000	28.5	9	29900	< 1	< 0.01	7.46	0.034	2.86
644480	9413 9402	8.4	0.12	0.16	1.7	22	0.5	11.5	>10000	48.5	8	4870	< 1	< 0.01	1.43	0.006	2.71
644481	9413 9402	3.4	0.06	0.08	0.6	9	0.7	19.9	>10000	21.5	10	>100000	1	< 0.01	1.30	0.144	3.27
644482	9400 225	10.2	0.11	52.5	6.0	102	1.8	16.7	>10000	75.5	43	11370	11	1.38	28.7	0.045	3.09
644483	9413 9402	3.4	0.08	0.52	0.8	12	0.4	8.1	>10000	22.5	8	57600	2	< 0.01	18.35	0.058	2.94
644484	9413 9402	8.2	0.11	0.28	1.3	20	0.7	7.0	>10000	52.5	11	15500	1	< 0.01	5.54	0.018	2.75
644485	9413 9402	25.4	0.46	1.06	3.9	88	2.6	18.3	1230	126.5	13	330	< 1	< 0.01	0.12	< 0.001	2.71
644486	9413 9402	21.8	0.40	0.84	4.7	76	2.2	21.9	3340	118.0	21	1190	1	< 0.01	0.42	0.002	2.69
644487	9413 9402	8.8	0.16	0.30	2.1	29	0.6	16.8	516	62.5	11	200	< 1	< 0.01	0.05	< 0.001	2.73
644488	9413 9402	6.2	0.11	0.24	0.9	20	1.2	14.8	>10000	41.0	11	28500	< 1	< 0.01	9.68	0.042	2.85
644489	9413 9402	8.8	0.17	0.38	1.6	36	1.0	12.2	>10000	52.0	22	14950	< 1	< 0.01	4.27	0.018	2.77
644490	9413 9402	5.2	0.13	0.30	1.1	26	0.9	6.4	>10000	28.5	11	23300	< 1	< 0.01	6.71	0.027	2.79
644491	9413 9402	15.0	0.22	0.54	2.6	50	1.1	11.8	8310	70.5	20	2120	< 1	< 0.01	0.57	0.003	2.75
644492	9413 9402	7.0	0.12	0.28	1.5	25	0.7	6.2	>10000	39.5	13	7200	1	< 0.01	2.21	0.010	2.74
644493	9413 9402	3.2	0.08	0.18	0.7	13	0.4	26.3	>10000	22.0	12	48200	1	0.04	11.55	0.054	2.95
644494	9413 9402	7.6	0.19	0.38	1.3	37	1.0	21.9	>10000	50.0	15	4070	< 1	< 0.01	1.43	0.006	2.79
644495	9413 9402	4.8	0.12	0.26	0.9	23	0.5	22.0	>10000	31.5	14	4570	1	< 0.01	1.37	0.006	2.71
644496	9413 9402	3.0	0.09	0.14	1.1	16	0.5	43.1	>10000	22.0	6	5540	< 1	0.09	1.63	0.007	2.74
644497	9413 9402	3.2	0.10	0.20	1.0	19	0.3	9.0	>10000	21.5	6	34700	1	< 0.01	9.07	0.039	2.84
644498	9413 9402	7.0	0.10	0.18	1.1	16	0.4	22.8	630	50.5	4	170	1	0.04	0.06	< 0.001	2.69
644499	9413 9402	11.4	0.19	0.36	1.9	32	0.9	26.7	3470	64.0	18	1580	4	0.42	0.39	0.001	2.73
644500	9413 9402	9.0	0.13	0.30	1.7	24	0.6	16.7	1765	44.5	11	830	1	0.09	0.22	< 0.001	2.69
644551	9413 9402	3.6	0.07	0.20	0.8	13	0.6	6.8	>10000	14.5	25	76300	5	0.64	27.4	0.070	3.12
644552	9413 9402	11.2	0.16	0.44	2.0	35	0.7	11.2	606	43.0	50	180	1	< 0.01	0.05	< 0.001	2.70
644553	9413 9402	10.8	0.15	0.40	1.9	33	0.7	9.3	384	53.0	24	90	1	< 0.01	0.03	< 0.001	2.69
644554	9413 9402	13.2	0.16	0.44	2.1	35	0.8	8.2	198	62.5	17	20	1	< 0.01	< 0.01	< 0.001	2.68

CERTIFICATION: _____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED OCT 3 1 2001

A0126815

Comments: ATTN: CLINT BARR EMAIL:DAVE KING

CERTIFICATE A0126815

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 22-OCT-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
225	10	Run as received

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
WEI-21	10	Weight of received sample	BALANCE	0.01	1000.0
OA-GRA09	7	Bulk density:Volume displacement	CALCULATION	0.01	20.00

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874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :1
Total Pages :1
Certificate Date: 22-OCT-2001
Invoice No. :I0126815
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0126815

SAMPLE	PREP CODE		Weight Kg	Bulk de g/mL
644610	225	--	2.30	2.69
644611	225	--	0.60	2.44
644612	225	--	1.38	2.56
644613	225	--	2.32	2.58
644614	225	--	2.16	3.41
644615	225	--	0.06	not/ss
644616	225	--	4.24	4.06
644617	225	--	1.58	not/ss
644618	225	--	0.80	not/ss
644619	225	--	2.38	2.59

CERTIFICATION: _____

ALS Chemex

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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
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Page Number :1
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CERTIFICATE OF ANALYSIS A0126815

SAMPLE	PREP CODE	Weight Kg	Bulk de g/mL
644610	225 --	2.30	2.69
644611	225 --	0.60	2.44
644612	225 --	1.38	2.56
644613	225 --	2.32	2.58
644614	225 --	2.16	3.41
644615	225 --	0.06	not/ss
644616	225 --	4.24	4.06
644617	225 --	1.58	not/ss
644618	225 --	0.80	not/ss
644619	225 --	2.38	2.59

CERTIFICATION:

ALS Chemex

AURORA LABORATORY SERVICES LTD.
212 Brooksbank Ave, North Vancouver BC Canada V7J 2C1
Phone: 604-984-0221 Fax: 604-984-0218 Website: www.alschemex.com

FAX DATA REPORT

COMPANY : NORANDA MINING AND EXPLORATION INC.

CONTACT : ATTN: CLINT BARR

FAX NUMBER : 1-807-623-0452

SENDER : DEAN **DATE SUBMITTED : 5-NOV-01 at 17:02 PDT**
NO OF PAGES : 4 INCL COVER
SUBJECT : Automated FAX data delivery

DESCRIPTION :

Results for workorder A0126816 - Project : 2501
10 samples received on 12-OCT-01 by our Vancouver office
This workorder has all data entered

FAX COPY ONLY - A certified copy will be sent through the mail

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A Campbell Brothers Limited Company

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
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Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project: 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :1-A
Total Pages :1
Certificate Date: 02-NOV-01
Invoice No. :I0126816
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126816

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644610	94139402	25	11.65	6.32	994.3	2.90	0.41	3.29	0.50	56.0	4.9	144	7.00	22.6	0.69	18.35	7.30	2.1	0.060	2.60
644611	94139402	< 5	0.48	1.14	163.5	0.30	0.32	0.03	1.94	37.8	2.4	470	0.85	18.8	0.91	3.10	1.35	1.8	0.035	0.48
644612	94139402	< 5	0.92	6.30	874.3	1.70	0.10	2.17	0.06	77.5	3.9	161	7.55	20.2	0.73	16.85	8.85	1.8	0.030	2.30
644613	94139402	< 5	1.02	8.10	1058.0	2.60	0.18	1.41	2.02	99.6	4.1	118	11.25	41.4	0.82	22.40	6.80	1.9	0.040	3.01
644614	94139402	25	84.4	3.04	102.0	0.65	0.29	0.13	172.0	17.90	14.8	162	2.80	114.8	0.60	14.65	45.30	1.1	0.455	1.26
644615	9400 225	120	5.82	2.72	62.5	1.75	0.27	0.30	397	26.6	7.6	31	9.90	135.4	2.68	9.20	55.15	1.6	0.040	1.18
644616	94139402	20	84.4	1.96	84.0	1.05	0.24	0.31	247	14.30	23.1	114	1.75	244.1	0.74	13.25	87.90	0.5	0.365	0.78
644617	94139402	15	32.4	2.93	119.5	1.00	0.24	0.72	188.5	18.15	28.7	252	3.90	95.0	1.46	17.45	22.45	0.9	1.835	1.08
644618	94139402	30	46.1	2.29	124.5	1.00	0.27	0.21	244	13.75	23.0	220	2.10	165.2	0.99	16.80	51.20	0.7	1.620	0.88
644619	94139402	< 5	1.22	6.10	831.2	1.45	0.12	6.91	0.58	58.3	16.8	137	4.25	22.8	2.25	15.20	1.65	1.9	0.040	1.89

CERTIFICATION:_____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project: 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number : 1-B
Total Pages : 1
Certificate Date: 02-NOV-01
Invoice No. : I0126816
P.O. Number :
Account : BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126816

SAMPLE	PREP CODE	La ppm (ICP)	Li ppm (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Nb ppm (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm (ICP)	Rb ppm (ICP)	Re ppm	S %	Sb ppm (ICP)	Se ppm	Sn ppm	Sr ppm (ICP)	Ta ppm (ICP)	Te ppm (ICP)
644610	94139402	34.5	20.8	0.28	620	1.20	0.08	8.6	18.8	200	>10000	101.0	< 0.002	0.43	21.55	5	1.4	171.0	0.90	0.35
644611	94139402	19.0	13.2	0.04	140	2.30	0.05	2.5	6.2	130	25.5	20.4	< 0.002	0.07	2.65	< 1	7.2	5.8	0.20	< 0.05
644612	94139402	47.5	25.0	0.28	355	0.50	0.08	10.1	13.8	210	32.5	111.5	< 0.002	0.04	7.40	< 1	1.4	132.0	0.80	< 0.05
644613	94139402	58.0	21.6	0.36	245	0.50	0.09	12.7	15.2	230	9.0	148.0	< 0.002	0.05	11.80	< 1	1.8	98.1	1.05	0.05
644614	94139402	11.5	13.0	0.12	35	1.85	0.06	3.5	22.2	140	>10000	46.7	< 0.002	15.05	500.6	10	1.2	24.0	0.40	< 0.05
644615	9400 225	17.0	9.8	0.17	765	16.95	0.06	4.9	39.4	1330	>10000	60.6	0.002	6.87	26.35	30	1.2	22.4	0.35	0.20
644616	94139402	10.0	13.4	0.09	55	1.05	0.05	2.8	48.8	100	>10000	27.8	< 0.002	>10.00	498.3	10	1.6	23.6	0.45	< 0.05
644617	94139402	12.0	34.4	0.22	260	1.50	0.06	3.4	38.2	240	>10000	38.7	< 0.002	3.69	68.80	10	3.2	49.6	0.35	0.20
644618	94139402	8.5	37.0	0.17	120	2.90	0.05	3.0	22.6	130	>10000	33.3	< 0.002	6.57	104.35	20	1.8	27.6	0.30	0.25
644619	94139402	32.0	36.6	0.58	885	0.70	0.35	7.9	34.4	190	290	90.1	0.002	0.85	5.40	< 1	1.2	376	0.60	< 0.05

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Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number : 1-C
Total Pages : 1
Certificate Date: 02-NOV-01
Invoice No. : I0126816
P.O. Number :
Account : BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126816

SAMPLE	PREP CODE	Th ppm (ICP)	Ti % (ICP)	Tl ppm (ICP)	U ppm (ICP)	V ppm (ICP)	W ppm (ICP)	Y ppm (ICP)	Zn ppm (ICP)	Zr ppm	As ppm	Hg ppb	Ag g/t	Pb %	Zn %	Cd %	Spec Gr S.G.
644610	9413 9402	7.6	0.28	0.58	1.6	63	2.5	17.6	182	91.0	5	70	13	2.89	0.01<	0.001	2.82
644611	9413 9402	7.0	0.12	0.16	1.2	10	1.3	5.9	152	119.0	1	< 10	< 1	< 0.01	< 0.01<	0.001	2.75
644612	9413 9402	14.6	0.27	0.50	2.0	63	1.7	8.8	88	70.0	3	< 10	< 1	< 0.01	< 0.01<	0.001	2.71
644613	9413 9402	15.6	0.35	0.66	2.3	79	2.0	10.9	756	81.0	3	280	< 1	< 0.01	0.09<	0.001	2.74
644614	9413 9402	4.8	0.12	2.42	0.6	30	1.0	3.6	>10000	37.5	18	20600	93	29.0	5.52	0.020	3.67
644615	9400 225	6.6	0.10	42.3	6.1	95	2.4	16.3	>10000	56.0	44	10080	11	1.40	28.4	0.046	3.15
644616	9413 9402	2.8	0.10	1.26	0.4	18	0.4	3.0	>10000	20.0	82	33500	89	43.0	8.60	0.028	4.22
644617	9413 9402	5.2	0.09	0.92	1.4	22	0.9	6.6	>10000	36.5	26	19540	36	8.92	4.87	0.022	2.92
644618	9413 9402	3.8	0.08	0.90	1.3	42	7.9	4.1	>10000	27.5	18	29600	48	19.25	7.35	0.027	3.27
644619	9413 9402	13.4	0.20	0.46	2.6	42	1.0	12.0	262	68.5	9	50	< 1	0.03	0.02<	0.001	2.78

CERTIFICATION:_____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists • Geochemists • Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED OCT 3 1 2001

A0126925

Comments: ATTN: CLINT BARR EMAIL:DAVE KING

CERTIFICATE A0126925

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 24-OCT-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
225	55	Run as received

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
WEI-21	55	Weight of received sample	BALANCE	0.01	1000.0
OA-GRA09	53	Bulk density:Volume displacement	CALCULATION	0.01	20.00

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874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Certificate Date: 24-OCT-2001
Invoice No. : I0126925
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0126925

SAMPLE	PREP CODE	Weight Kg	Bulk de g/mL
644555	225 --	2.14	2.75
644556	225 --	1.36	2.94
644557	225 --	2.62	2.71
644558	225 --	2.58	2.68
644559	225 --	2.64	2.74
644560	225 --	3.00	2.61
644561	225 --	2.84	2.70
644562	225 --	2.10	2.61
644563	225 --	2.28	2.67
644564	225 --	2.68	2.57
644565	225 --	2.50	2.70
644566	225 --	2.46	2.64
644567	225 --	0.60	2.37
644568	225 --	2.64	2.63
644569	225 --	2.60	2.74
644570	225 --	2.24	2.58
644571	225 --	2.32	2.61
644572	225 --	1.66	2.61
644573	225 --	2.62	2.66
644574	225 --	2.58	2.64
644575	225 --	1.66	2.67
644576	225 --	2.26	2.64
644577	225 --	2.00	2.65
644578	225 --	2.46	2.67
644579	225 --	2.24	2.66
644580	225 --	2.74	2.71
644581	225 --	2.40	2.67
644582	225 --	2.50	2.69
644583	225 --	2.46	2.64
644584	225 --	2.54	2.65
644585	225 --	2.48	2.65
644586	225 --	2.60	2.69
644587	225 --	2.46	2.62
644588	225 --	3.48	2.61
644589	225 --	0.04	not/ss
644590	225 --	2.22	2.76
644591	225 --	2.36	2.64
644592	225 --	1.78	2.63
644593	225 --	0.62	2.41
644594	225 --	2.48	2.65

CERTIFICATION:

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212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
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To: NORANDA MINING AND EXPLORATION INC.

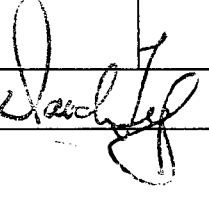
874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Certificate Date: 24-OCT-2001
Invoice No. : I0126925
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0126925

SAMPLE	PREP CODE		Weight Kg	Bulk de g/mL								
644595	225	--	1.48	2.60								
644596	225	--	2.26	2.62								
644597	225	--	2.44	2.62								
644598	225	--	2.26	2.63								
644599	225	--	2.36	2.61								
644600	225	--	3.10	2.99								
644601	225	--	2.62	2.68								
644602	225	--	1.50	2.63								
644603	225	--	2.00	2.59								
644604	225	--	3.00	2.96								
644605	225	--	0.06	not/ss								
644606	225	--	1.86	2.62								
644607	225	--	2.50	2.59								
644608	225	--	2.94	2.63								
644609	225	--	2.96	2.60								

CERTIFICATION: 

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874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :1
Total Pages :2
Certificate Date: 24-OCT-2001
Invoice No. : I0126925
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0126925

SAMPLE	PREP CODE	Weight Kg	Bulk de g/mL								
644555	225 --	2.14	2.75								
644556	225 --	1.36	2.94								
644557	225 --	2.62	2.71								
644558	225 --	2.58	2.68								
644559	225 --	2.64	2.74								
644560	225 --	3.00	2.61								
644561	225 --	2.84	2.70								
644562	225 --	2.10	2.61								
644563	225 --	2.28	2.67								
644564	225 --	2.68	2.57								
644565	225 --	2.50	2.70								
644566	225 --	2.46	2.64								
644567	225 --	0.60	2.37								
644568	225 --	2.64	2.63								
644569	225 --	2.60	2.74								
644570	225 --	2.24	2.58								
644571	225 --	2.32	2.61								
644572	225 --	1.66	2.61								
644573	225 --	2.62	2.66								
644574	225 --	2.58	2.64								
644575	225 --	1.66	2.67								
644576	225 --	2.26	2.64								
644577	225 --	2.00	2.65								
644578	225 --	2.46	2.67								
644579	225 --	2.24	2.66								
644580	225 --	2.74	2.71								
644581	225 --	2.40	2.67								
644582	225 --	2.50	2.69								
644583	225 --	2.46	2.64								
644584	225 --	2.54	2.65								
644585	225 --	2.48	2.65								
644586	225 --	2.60	2.69								
644587	225 --	2.46	2.62								
644588	225 --	3.48	2.61								
644589	225 --	0.04	not/ss								
644590	225 --	2.22	2.76								
644591	225 --	2.36	2.64								
644592	225 --	1.78	2.63								
644593	225 --	0.62	2.41								
644594	225 --	2.48	2.65								

CERTIFICATION: _____

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British Columbia, Canada V7J 2C1
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :2
Total Pages :2
Certificate Date: 24-OCT-2001
Invoice No. : I0126925
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0126925

SAMPLE	PREP CODE		Weight Kg	Bulk de g/mL								
644595	225	--	1.48	2.60								
644596	225	--	2.26	2.62								
644597	225	--	2.44	2.62								
644598	225	--	2.26	2.63								
644599	225	--	2.36	2.61								
644600	225	--	3.10	2.99								
644601	225	--	2.62	2.68								
644602	225	--	1.50	2.63								
644603	225	--	2.00	2.59								
644604	225	--	3.00	2.96								
644605	225	--	0.06	not/ss								
644606	225	--	1.86	2.62								
644607	225	--	2.50	2.59								
644608	225	--	2.94	2.63								
644609	225	--	2.96	2.60								

CERTIFICATION:

ALS Chemex

AURORA LABORATORY SERVICES LTD.
212 Brooksbank Ave, North Vancouver BC Canada V7J 2C1
Phone: 604-984-0221 Fax: 604-984-0218 Website: www.alschemex.com

FAX DATA REPORT

COMPANY : NORANDA MINING AND EXPLORATION INC.

CONTACT : ATTN: CLINT BARR

FAX NUMBER : 1-807-623-0452

SENDER : DEAN **DATE SUBMITTED : 5-NOV-01 at 13:43 PDT**
NO OF PAGES : 7 INCL COVER
SUBJECT : Automated FAX data delivery

DESCRIPTION :

Results for workorder A0126926 - Project : 2501
55 samples received on 16-OCT-01 by our Vancouver office
This workorder has all data entered

FAX COPY ONLY - A certified copy will be sent through the mail

If there are any problems with this transmission, please call our office immediately at 604 984 0221

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A Campbell Brothers Limited Company

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number : 1-A
Total Pages : 2
Certificate Date: 05-NOV-01
Invoice No. : I0126926
P.O. Number :
Account : BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126926

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644555	9413 9402	10	2.00	4.16	660.7	1.45	0.19	2.81	0.10	34.1	11.0	176	5.20	50.7	2.89	11.40	5.85	0.9	0.045	1.46
644556	9413 9402	15	34.1	3.54	140.0	1.15	0.99	0.30	231	24.0	28.1	146	3.95	203.5	0.89	22.35	30.25	1.4	1.370	1.44
644557	9413 9402	< 5	5.76	6.03	950.0	2.40	0.29	1.36	2.22	61.5	8.2	137	7.40	5.4	0.89	17.00	11.35	1.6	0.050	2.40
644558	9413 9402	< 5	1.48	7.50	1342.0	2.90	0.33	2.25	0.88	96.6	30.2	106	12.70	27.0	1.50	20.25	3.35	2.0	0.050	3.06
644559	9413 9402	< 5	3.68	2.84	421.5	1.20	0.14	15.30	60.6	152.5	10.3	123	1.70	19.0	0.58	13.00	9.10	1.5	0.470	0.87
644560	9413 9402	< 5	2.98	3.79	461.0	1.30	0.24	7.76	89.9	67.5	15.7	185	2.55	34.8	0.50	16.40	11.95	1.8	0.550	1.19
644561	9413 9402	< 5	2.66	4.39	587.0	0.60	0.23	12.50	70.8	90.5	21.4	182	3.95	35.8	0.66	18.30	13.50	1.7	1.595	1.61
644562	9413 9402	< 5	0.96	5.73	841.6	1.20	0.20	2.28	1.32	50.4	13.4	202	5.40	25.0	0.58	14.10	4.25	1.4	0.030	1.79
644563	9413 9402	< 5	1.84	3.36	330.0	0.60	0.08	2.58	99.8	21.6	15.7	230	2.05	41.8	0.47	15.00	13.55	0.9	0.860	0.94
644564	9413 9402	< 5	1.28	4.19	295.0	0.60	0.14	1.26	48.7	24.8	11.3	177	2.15	24.8	0.39	13.20	7.65	1.7	0.100	1.05
644565	9413 9402	< 5	1.40	3.78	147.5	0.75	0.12	2.03	273	35.1	26.3	198	2.40	61.3	0.59	20.00	14.50	1.4	0.140	1.16
644566	9413 9402	< 5	1.00	6.56	673.3	1.15	0.15	1.49	2.00	49.9	14.5	200	6.90	37.6	0.56	15.75	2.55	1.9	0.055	2.05
644567	9413 9402	< 5	0.16	1.24	175.5	0.30	0.24	0.04	0.88	42.2	1.4	221	1.00	15.4	0.68	3.25	1.30	1.8	0.030	0.49
644568	9413 9402	5	1.30	6.89	909.6	2.15	0.20	1.04	0.12	76.9	8.5	164	8.35	31.4	0.69	18.30	3.70	2.2	0.035	2.29
644569	9413 9402	< 5	2.84	1.66	235.0	0.35	0.22	15.80	1.42	117.5	4.9	139	1.15	0.6	0.43	7.95	5.50	0.8	0.240	0.59
644570	9413 9402	< 5	0.44	4.74	498.5	0.95	0.12	3.98	0.24	40.1	9.1	205	3.80	14.4	0.63	10.20	2.35	1.2	0.035	1.47
644571	9413 9402	< 5	0.32	4.24	477.5	0.75	0.12	1.44	< 0.02	45.6	7.7	182	3.75	18.0	0.38	9.40	2.40	1.5	0.015	1.33
644572	9413 9402	< 5	0.46	4.37	666.4	0.95	0.15	7.94	2.68	78.1	14.8	155	4.75	23.2	0.57	11.50	4.20	1.2	0.080	1.74
644573	9413 9402	5	1.04	6.41	816.0	1.55	0.21	5.97	5.00	83.1	15.5	156	7.25	35.2	0.61	16.40	3.85	1.9	0.065	2.45
644574	9413 9402	5	0.72	5.16	653.6	1.05	0.15	1.56	33.1	49.8	13.6	199	4.80	21.8	0.51	13.00	5.05	1.7	0.030	1.71
644575	9413 9402	15	2.08	5.29	230.5	1.20	0.20	1.36	221	30.4	21.5	184	4.25	35.2	1.00	22.35	14.10	1.7	1.130	1.80
644576	9413 9402	< 5	1.02	9.78	1627.0	3.10	0.20	1.24	0.20	107.0	10.8	114	13.95	29.0	1.56	26.55	2.80	2.2	0.060	4.19
644577	9413 9402	< 5	1.54	8.59	1448.5	2.65	0.26	4.95	0.12	110.0	27.1	105	12.70	25.0	1.43	22.55	2.80	1.9	0.080	3.67
644578	9413 9402	< 5	1.68	9.51	1433.0	3.55	0.75	1.93	0.02	119.0	251.0	95	16.45	35.8	1.81	26.00	3.20	2.1	0.075	4.16
644579	9413 9402	< 5	1.48	9.08	1393.5	2.70	0.40	1.73	0.02	121.5	15.6	105	14.50	23.2	1.91	24.00	3.55	2.1	0.055	3.90
644580	9413 9402	5	1.46	6.17	259.0	1.75	0.28	2.24	52.7	50.5	44.0	136	7.05	23.2	1.47	19.85	15.75	1.3	0.110	2.68
644581	9413 9402	5	1.46	9.11	1231.0	2.80	0.23	1.65	0.04	87.1	17.8	107	13.00	26.6	2.22	23.40	3.70	1.7	0.060	4.01
644582	9413 9402	< 5	0.88	5.97	983.8	1.75	0.18	3.19	0.24	71.4	37.2	142	8.45	29.6	1.50	16.00	5.00	1.2	0.055	2.61
644583	9413 9402	< 5	0.96	6.05	1032.5	1.80	0.26	6.24	9.62	88.7	30.4	137	8.25	68.4	0.97	16.65	7.35	1.7	0.105	2.70
644584	9413 9402	5	0.12	1.79	351.5	0.60	0.08	22.7	27.5	58.2	11.6	63	2.05	22.2	0.57	6.60	3.35	0.9	0.195	0.77
644585	9413 9402	< 5	0.66	3.86	600.0	0.75	0.14	17.60	2.86	119.5	13.6	124	4.50	17.4	0.62	9.85	2.95	1.6	0.140	1.67
644586	9413 9402	5	3.64	4.51	533.6	0.75	0.28	1.69	16.50	23.1	8.5	203	3.45	255.0	0.50	13.75	7.90	1.5	0.220	1.62
644587	9413 9402	< 5	0.20	2.98	454.5	0.45	0.08	3.26	38.9	19.40	7.9	215	2.30	68.1	0.43	9.00	6.80	0.9	0.180	1.06
644588	9413 9402	< 5	0.64	5.25	803.6	1.00	0.12	9.80	0.50	81.1	14.4	135	5.80	23.0	0.58	12.80	3.95	1.7	0.095	2.14
644589	9413 9402	275	8.88	2.07	84.0	1.45	0.40	0.48	70.8	22.9	9.1	38	6.25	120.2	14.20	10.50	20.30	1.0	0.095	0.85
644590	9413 9402	15	4.06	4.35	102.0	1.30	0.42	7.37	203	56.1	35.2	122	5.15	140.4	1.08	24.65	57.70	1.5	1.430	1.92
644591	9413 9402	< 5	1.48	7.14	1202.5	2.05	0.39	1.83	0.42	87.3	23.3	119	12.20	21.4	1.25	19.20	5.15	1.8	0.045	3.12
644592	9413 9402	5	1.20	6.83	1114.5	2.10	0.25	1.53	0.08	71.0	100.4	133	9.95	17.4	1.34	18.00	4.60	1.5	0.040	2.98
644593	9413 9402	< 5	0.16	0.59	89.5	0.10	0.16	0.06	0.16	17.85	1.0	90	0.55	7.4	0.34	1.85	0.85	0.9	0.020	0.24
644594	9413 9402	5	4.50	0.17	102.0	< 0.05	0.16	>25.0	1.60	182.5	5.5	33	0.25	< 0.2	0.45	5.15	4.40	0.4	0.275	0.07

CERTIFICATION: _____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :1-B
Total Pages :2
Certificate Date: 05-NOV-01
Invoice No. : I0126926
P.O. Number :
Account : BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126926

SAMPLE	PREP CODE	La ppm (ICP)	Li ppm (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Nb ppm (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm (ICP)	Rb ppm (ICP)	Re ppm	S %	Sb ppm (ICP)	Se ppm	Sn ppm	Sr ppm (ICP)	Ta ppm (ICP)	Te ppm (ICP)
644555	9413 9402	22.0	47.0	0.96	2680	0.95	0.13	5.7	36.2	540	35.0	70.2	0.002	0.20	13.70	< 1	1.0	208	0.35	0.20
644556	9413 9402	10.0	29.0	0.17	115	3.10	0.06	5.1	55.8	160	>10000	54.4	0.002	5.63	92.55	10	2.0	42.4	0.55	0.05
644557	9413 9402	33.5	26.4	0.28	260	1.30	0.07	7.6	24.8	680	>10000	97.3	< 0.002	0.91	27.25	4	1.2	74.4	0.80	0.10
644558	9413 9402	53.0	28.6	0.44	520	1.20	0.07	12.5	51.0	220	158.0	168.0	< 0.002	0.39	12.80	< 1	1.6	101.0	1.00	0.05
644559	9413 9402	93.0	15.4	0.14	2840	1.30	0.57	3.3	29.6	110	66.5	38.1	< 0.002	0.77	2.60	< 10	1.0	577	0.30	< 0.05
644560	9413 9402	40.5	19.6	0.15	1515	4.10	0.67	3.9	22.4	100	39.5	42.1	< 0.002	1.21	4.60	< 10	1.2	326	0.45	< 0.05
644561	9413 9402	53.5	17.4	0.18	2420	1.40	0.54	5.7	39.6	220	31.5	56.7	< 0.002	1.16	7.15	< 10	2.2	243	0.60	< 0.05
644562	9413 9402	30.0	23.8	0.23	490	3.00	0.69	7.4	21.2	190	232	82.3	< 0.002	0.11	6.40	< 1	1.4	113.0	0.60	< 0.05
644563	9413 9402	12.5	23.0	0.09	535	2.00	0.85	3.4	13.6	60	13.5	37.5	0.004	1.35	3.15	< 10	1.2	80.7	0.30	< 0.05
644564	9413 9402	14.0	14.2	0.11	305	2.65	1.25	3.8	11.0	70	13.0	35.8	< 0.002	0.71	3.30	< 10	0.8	60.9	0.45	0.10
644565	9413 9402	19.5	18.0	0.12	525	1.70	0.99	3.8	13.6	100	100.0	39.6	< 0.002	3.30	8.10	10	1.0	78.2	0.45	< 0.05
644566	9413 9402	29.0	17.8	0.22	340	4.05	1.02	8.7	19.6	160	66.5	92.1	< 0.002	0.14	7.45	< 1	1.4	82.4	0.70	< 0.05
644567	9413 9402	22.0	9.2	0.04	75	1.80	0.06	2.5	4.0	130	31.5	22.5	< 0.002	0.02	3.10	< 1	8.4	7.0	0.25	< 0.05
644568	9413 9402	47.5	31.6	0.31	210	2.20	0.44	12.2	16.4	190	73.0	119.5	< 0.002	0.08	6.35	< 1	1.6	74.4	1.00	0.05
644569	9413 9402	65.5	13.2	0.09	2600	1.35	0.28	2.0	31.4	40	>10000	28.2	0.002	0.34	11.55	< 10	0.8	267	0.25	< 0.05
644570	9413 9402	21.5	17.2	0.17	845	3.75	0.91	4.8	15.8	90	16.0	63.0	< 0.002	0.28	3.85	< 1	0.8	125.0	0.35	< 0.05
644571	9413 9402	24.0	20.0	0.14	260	0.90	0.83	4.9	14.0	720	17.0	58.4	< 0.002	0.12	5.35	< 1	0.8	78.9	0.45	< 0.05
644572	9413 9402	46.5	28.6	0.19	1460	2.10	0.27	5.3	34.2	90	69.0	79.3	0.002	0.19	8.60	< 1	1.0	165.0	0.40	0.05
644573	9413 9402	45.5	17.8	0.26	1080	0.60	0.52	8.9	25.8	160	180.0	108.5	< 0.002	0.26	7.00	< 1	1.4	139.5	0.65	0.05
644574	9413 9402	25.0	22.2	0.19	290	2.85	0.77	7.1	15.6	680	16.0	74.4	< 0.002	0.55	5.60	1	1.0	92.2	0.60	< 0.05
644575	9413 9402	17.5	24.2	0.21	270	1.40	0.36	9.7	21.8	130	2110	75.5	< 0.002	2.27	8.10	< 10	1.6	101.0	0.90	0.45
644576	9413 9402	61.0	25.0	0.44	305	1.10	0.10	15.5	29.0	290	18.0	207	< 0.002	0.34	2.65	< 1	2.0	130.0	1.25	0.10
644577	9413 9402	61.5	23.2	0.39	930	0.50	0.09	13.4	72.4	240	8.0	183.0	< 0.002	0.31	1.50	1	1.8	222	0.95	0.05
644578	9413 9402	65.5	28.0	0.44	430	0.70	0.10	14.8	219	280	7.0	223	< 0.002	0.60	1.20	< 1	2.2	121.5	1.15	0.05
644579	9413 9402	71.5	25.8	0.44	375	2.20	0.09	12.9	28.6	310	7.0	197.0	0.002	0.84	1.80	< 1	2.0	113.5	1.10	0.05
644580	9413 9402	35.5	26.4	0.27	415	2.60	0.08	6.6	92.8	210	12.5	115.5	0.002	1.54	2.90	< 10	1.4	99.0	0.65	< 0.05
644581	9413 9402	51.0	25.6	0.41	345	0.40	0.10	13.3	35.2	300	5.5	193.0	< 0.002	1.20	2.30	1	1.8	120.0	1.00	0.05
644582	9413 9402	45.5	26.4	0.28	565	1.75	0.07	8.0	71.8	230	522	127.0	< 0.002	0.70	4.60	< 1	1.2	136.5	0.60	0.05
644583	9413 9402	54.0	27.4	0.31	1095	0.65	0.15	8.9	61.9	170	43.5	126.0	0.002	0.37	2.90	1	1.4	148.0	0.65	< 0.05
644584	9413 9402	35.5	9.4	0.13	1845	0.35	0.06	2.9	41.0	130	17.0	35.4	0.006	0.52	4.65	1	0.4	616	0.15	0.10
644585	9413 9402	71.0	15.0	0.17	2690	0.60	0.24	6.5	38.6	140	42.0	71.6	0.002	0.18	3.55	1	0.8	246	0.50	0.05
644586	9413 9402	15.0	19.4	0.16	285	1.45	0.56	6.2	16.8	120	>10000	61.2	< 0.002	0.66	10.20	< 10	1.2	77.5	0.65	0.05
644587	9413 9402	12.0	27.4	0.10	500	0.60	0.43	2.4	15.0	50	192.0	45.9	0.002	0.48	3.05	1	0.8	101.0	0.20	< 0.05
644588	9413 9402	48.5	14.8	0.21	1505	0.50	0.36	6.6	29.8	170	78.0	91.0	0.002	0.15	4.60	< 1	1.0	238	0.50	< 0.05
644589	9413 9402	11.5	9.4	0.82	>10000	3.55	0.05	5.7	39.2	910	9590	45.2	0.002	not/ss	3.45	< 10	1.0	20.2	0.45	0.30
644590	9413 9402	37.0	16.6	0.19	1315	1.45	0.07	6.6	56.7	140	55.5	74.1	< 0.002	4.19	7.60	10	3.2	147.5	0.60	0.35
644591	9413 9402	53.0	24.6	0.31	345	0.65	0.09	11.4	42.8	170	15.5	157.5	< 0.002	0.44	2.40	< 1	1.4	99.6	0.85	0.05
644592	9413 9402	42.5	24.0	0.28	285	0.50	0.09	10.4	155.0	200	32.5	137.5	< 0.002	0.56	3.15	< 1	1.4	84.4	0.85	0.05
644593	9413 9402	9.0	10.6	0.02	45	0.85	0.04	1.1	2.2	50	7.5	10.7	< 0.002	0.05	1.15	< 1	2.2	4.4	0.05	< 0.05
644594	9413 9402	103.5	4.8	0.04	5170	0.95	0.02	1.1	4.0	< 10	>10000	6.7	0.006	0.30	7.85	< 10	0.6	350	0.10	0.10

CERTIFICATION:_____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
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Project : 2501
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CERTIFICATE OF ANALYSIS A0126926

SAMPLE	PREP CODE	Th ppm (ICP)	Ti % (ICP)	Tl ppm (ICP)	U ppm (ICP)	V ppm (ICP)	W ppm (ICP)	Y ppm (ICP)	Zn ppm (ICP)	Zr ppm	As ppm	Hg ppb	Spec Gr S.G.	Ag oz/ton	Pb %	Zn %	Cd %
644555	9413 9402	4.6	0.20	0.36	1.6	91	1.5	14.3	64	42.5	10	40	2.75	< 0.03	< 0.01	< 0.01	< 0.001
644556	9413 9402	5.0	0.14	0.80	1.2	34	1.1	4.6	>10000	44.0	76	22600	3.17	1.17	14.75	6.59	0.028
644557	9413 9402	8.2	0.25	0.74	1.9	53	1.6	12.2	524	61.5	16	270	2.81	0.15	4.64	0.07	< 0.001
644558	9413 9402	14.6	0.34	0.82	1.8	66	2.3	12.4	206	78.5	45	100	2.69	< 0.03	0.03	0.01	< 0.001
644559	9413 9402	4.6	0.11	0.22	1.1	19	0.9	40.6	>10000	46.5	9	5280	2.76	< 0.03	0.01	1.78	0.007
644560	9413 9402	5.8	0.13	0.26	1.2	24	0.6	22.4	>10000	57.5	9	8730	2.70	< 0.03	< 0.01	2.89	0.010
644561	9413 9402	7.0	0.18	0.28	1.6	35	1.2	29.8	>10000	56.5	25	7660	2.75	< 0.03	0.01	2.38	0.008
644562	9413 9402	10.2	0.20	0.40	2.1	45	1.0	9.7	414	60.5	28	130	2.71	< 0.03	0.03	0.04	< 0.001
644563	9413 9402	5.4	0.09	0.26	0.9	21	0.6	8.9	>10000	36.0	11	8720	2.71	< 0.03	< 0.01	2.78	0.012
644564	9413 9402	7.8	0.11	0.24	1.2	26	0.7	7.3	>10000	55.5	13	5310	2.71	< 0.03	< 0.01	1.46	0.005
644565	9413 9402	7.0	0.13	0.24	1.7	27	0.6	10.9	>10000	58.0	12	21800	2.75	< 0.03	< 0.01	6.47	0.032
644566	9413 9402	13.6	0.24	0.42	2.6	55	1.1	10.7	726	82.5	24	200	2.72	< 0.03	0.01	0.07	< 0.001
644567	9413 9402	8.6	0.11	0.18	1.2	10	1.4	6.0	232	74.0	3	20	2.67	< 0.03	< 0.01	0.01	< 0.001
644568	9413 9402	16.0	0.29	0.58	2.0	58	1.4	12.2	112	95.0	18	10	2.69	< 0.03	0.01	< 0.01	< 0.001
644569	9413 9402	3.4	0.06	0.22	0.7	12	0.5	40.6	362	23.0	13	220	2.71	0.09	1.87	0.04	< 0.001
644570	9413 9402	8.8	0.13	0.28	1.6	28	0.6	11.9	80	56.5	15	10	2.71	< 0.03	< 0.01	< 0.01	< 0.001
644571	9413 9402	11.4	0.12	0.28	2.2	29	0.7	12.7	60	59.5	15	10	2.70	< 0.03	< 0.01	< 0.01	< 0.001
644572	9413 9402	8.4	0.16	0.36	1.4	36	0.7	22.6	914	53.0	30	350	2.73	< 0.03	0.01	0.11	< 0.001
644573	9413 9402	14.2	0.24	0.46	2.4	51	0.9	16.8	1630	80.0	26	640	2.74	< 0.03	0.02	0.20	< 0.001
644574	9413 9402	11.0	0.17	0.32	2.6	38	0.8	11.6	7390	69.0	19	3110	2.67	< 0.03	< 0.01	0.87	0.004
644575	9413 9402	8.4	0.20	0.52	1.1	46	2.0	7.7	>10000	59.0	13	16540	2.86	< 0.03	0.22	4.23	0.026
644576	9413 9402	16.8	0.41	0.94	2.5	105	2.1	13.5	90	89.5	7	20	2.75	< 0.03	< 0.01	< 0.01	< 0.001
644577	9413 9402	14.4	0.36	0.78	2.7	96	1.8	20.3	66	80.5	8	10	2.82	< 0.03	< 0.01	< 0.01	< 0.001
644578	9413 9402	16.6	0.39	0.98	2.2	93	2.2	17.0	44	89.5	10	40	2.74	< 0.03	< 0.01	< 0.01	< 0.001
644579	9413 9402	16.0	0.37	0.88	3.9	100	2.1	14.2	44	88.0	14	100	2.77	< 0.03	< 0.01	< 0.01	< 0.001
644580	9413 9402	7.2	0.25	0.66	1.1	59	1.3	9.9	>10000	46.5	160	7260	2.74	< 0.03	< 0.01	1.97	0.006
644581	9413 9402	14.8	0.38	0.88	1.7	80	2.5	12.5	26	75.5	21	100	2.76	< 0.03	< 0.01	< 0.01	< 0.001
644582	9413 9402	9.0	0.26	0.58	1.7	54	1.5	13.8	70	54.0	93	100	2.74	< 0.03	0.06	< 0.01	< 0.001
644583	9413 9402	11.6	0.31	0.54	1.9	67	1.5	17.0	3100	72.0	89	1210	2.74	< 0.03	< 0.01	0.37	0.001
644584	9413 9402	4.0	0.07	0.16	1.3	13	0.3	20.5	5680	38.0	13	2920	2.77	< 0.03	< 0.01	0.71	0.003
644585	9413 9402	12.0	0.14	0.32	1.8	29	0.7	38.7	732	70.0	26	350	2.76	< 0.03	< 0.01	0.09	< 0.001
644586	9413 9402	9.0	0.13	0.42	1.5	31	0.6	6.9	4220	57.5	21	1780	2.70	0.12	1.95	0.48	0.002
644587	9413 9402	5.6	0.08	0.22	1.1	20	0.5	6.6	7130	34.5	18	3250	2.67	< 0.03	0.01	0.80	0.004
644588	9413 9402	13.2	0.17	0.44	2.2	39	0.8	22.7	90	72.5	30	50	2.73	< 0.03	0.01	0.01	< 0.001
644589	9413 9402	4.8	0.07	7.58	2.0	51	1.0	15.0	>10000	34.5	12	2490	not/ss	0.33	0.98	3.03	0.008
644590	9413 9402	8.4	0.18	0.46	1.8	40	0.7	15.6	>10000	54.0	77	25900	2.85	0.09	< 0.01	8.44	0.024
644591	9413 9402	14.6	0.30	0.70	1.5	64	1.7	10.7	166	68.0	53	100	2.76	< 0.03	< 0.01	0.02	< 0.001
644592	9413 9402	11.6	0.29	0.66	1.8	71	1.7	9.5	68	63.0	218	80	2.70	< 0.03	< 0.01	< 0.01	< 0.001
644593	9413 9402	3.6	0.05	0.06	0.6	5	0.4	3.0	40	39.5	3	< 10	2.63	< 0.03	< 0.01	< 0.01	< 0.001
644594	9413 9402	1.0	< 0.01	0.08	< 0.1	2	0.1	59.6	484	3.0	11	190	2.79	0.15	1.96	0.06	< 0.001

CERTIFICATION: _____

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874 TUNGSTEN ST.
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SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644595	94139402	15	0.54	0.77	216.0	0.05	0.04	>25.0	13.95	221	4.3	96	0.50	7.4	0.51	4.45	2.65	0.5	0.355	0.29
644596	94139402	5	1.08	5.26	788.4	1.20	0.18	2.65	11.10	57.7	9.6	228	5.05	18.4	0.64	12.30	3.80	1.5	0.175	2.00
644597	94139402	< 5	2.14	5.62	806.4	1.60	0.24	4.38	0.10	66.5	13.7	189	6.65	91.9	0.64	13.40	3.15	1.6	0.050	2.37
644598	94139402	< 5	1.92	8.63	1173.5	2.20	0.41	1.45	0.10	102.5	23.5	166	12.55	54.9	0.90	22.80	3.20	2.0	0.070	3.78
644599	94139402	< 5	1.20	6.46	939.2	1.40	0.24	2.90	0.04	62.9	19.0	230	7.95	34.2	0.75	16.05	3.00	1.8	0.055	2.69
644600	94139402	10	19.50	6.54	224.0	1.40	0.58	2.57	0.62	58.0	10.0	129	7.65	38.0	0.61	19.25	5.90	1.7	0.050	2.84
644601	94139402	< 5	1.06	3.57	601.5	0.85	0.12	12.80	0.12	88.7	9.3	152	3.80	19.2	0.51	8.85	3.50	1.1	0.085	1.54
644602	94139402	< 5	0.60	2.84	476.0	0.60	0.07	19.05	0.14	135.5	7.2	142	2.65	13.6	0.53	7.85	3.10	1.0	0.145	1.22
644603	94139402	< 5	0.26	2.06	380.0	0.55	0.04	7.78	34.9	37.3	7.4	193	1.45	32.4	0.43	8.20	8.60	0.6	2.21	0.85
644604	94139402	15	17.55	0.17	89.0	0.35	0.20	14.50	209	37.5	23.0	85	0.20	82.7	0.69	18.85	32.45	0.3	4.24	0.06
644605	94139402	25	10.80	2.92	45.5	2.00	0.23	0.33	412	25.3	7.9	32	10.65	140.2	2.97	9.55	54.60	1.6	0.035	1.21
644606	94139402	5	0.82	3.41	702.0	0.65	0.12	16.55	2.06	166.0	17.8	108	3.80	11.2	0.77	9.90	3.70	1.1	0.270	1.45
644607	94139402	< 5	0.48	3.78	501.6	0.80	0.31	4.85	0.32	45.0	10.0	201	3.55	68.0	0.60	8.85	3.65	1.1	0.070	1.36
644608	94139402	5	0.48	4.06	496.5	0.60	0.16	9.16	0.20	49.1	6.1	210	2.90	116.0	0.51	9.35	2.00	1.4	0.135	1.42
644609	94139402	< 5	0.38	2.54	522.8	0.50	0.11	18.45	< 0.02	102.5	6.5	100	2.25	160.0	0.51	6.80	2.25	1.2	0.290	1.07

CERTIFICATION: _____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :2-B
Total Pages :2
Certificate Date: 05-NOV-01
Invoice No. :I0126926
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126926

SAMPLE	PREP CODE	La ppm (ICP)	Li ppm (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Nb ppm (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm (ICP)	Rb ppm (ICP)	Re ppm	S %	Sb ppm (ICP)	Se ppm	Sn ppm	Sr ppm (ICP)	Ta ppm (ICP)	Te ppm (ICP)
644595	94139402	140.5	8.2	0.07	4460	0.40	0.06	1.0	39.2	30	456	12.4	0.004	0.25	1.65	1	0.2	453	0.05	0.15
644596	94139402	37.5	19.4	0.22	495	0.60	0.38	6.4	16.8	220	31.5	87.2	0.002	0.28	2.70	1	1.0	106.5	0.50	< 0.05
644597	94139402	41.0	22.2	0.25	745	0.60	0.21	8.2	22.2	190	8160	106.0	0.002	0.27	7.25	< 1	1.2	147.0	0.65	< 0.05
644598	94139402	64.0	24.4	0.41	265	0.65	0.09	15.7	38.2	470	13.0	181.5<	0.002	0.25	4.75	< 1	1.8	88.9	1.30	< 0.05
644599	94139402	40.0	22.2	0.28	500	0.65	0.31	9.9	29.2	210	28.0	118.5<	0.002	0.19	3.50	< 1	1.2	117.0	0.75	< 0.05
644600	94139402	38.5	21.8	0.30	445	1.30	0.08	11.0	24.0	370	>10000	122.0<	0.002	2.71	79.15	< 10	1.6	79.3	1.05	0.20
644601	94139402	56.0	24.6	0.16	2010	0.50	0.11	4.6	29.2	180	66.0	68.5	0.002	0.09	2.00	< 1	0.8	181.0	0.35	0.05
644602	94139402	80.5	17.0	0.14	3270	0.45	0.12	3.9	35.4	70	52.5	51.3	0.002	0.05	2.95	< 1	0.6	274	0.25	0.05
644603	94139402	22.5	35.8	0.09	1300	0.50	0.06	2.5	16.8	40	8.5	34.5<	0.002	0.52	2.20	1	2.2	141.5	0.20	< 0.05
644604	94139402	22.5	11.4	0.01	2350	1.20	0.04	2.0	26.4	10	>10000	5.7	0.002	5.62	54.50	20	5.2	173.5	0.05	0.20
644605	94139402	13.5	10.0	0.19	825	17.60	0.05	5.9	33.8	1400	>10000	55.2<	0.002	>10.00	25.70	40	1.2	22.6	0.40	0.40
644606	94139402	96.5	21.6	0.17	2800	0.40	0.04	4.3	46.4	130	38.0	69.1	0.004	0.23	2.40	< 1	0.8	297	0.30	0.05
644607	94139402	28.0	27.8	0.16	915	1.05	0.40	3.6	22.6	100	10.5	58.9	0.002	0.15	1.35	< 1	0.6	208	0.25	< 0.05
644608	94139402	24.5	12.2	0.16	1570	1.20	0.59	3.9	18.8	80	23.5	58.8<	0.002	0.08	1.30	< 1	0.8	332	0.30	< 0.05
644609	94139402	51.5	20.0	0.13	3190	0.65	0.15	3.9	30.4	60	8.0	47.3<	0.002	0.08	1.15	< 1	0.6	442	0.30	0.05

CERTIFICATION:_____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project: 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :2-C
Total Pages :2
Certificate Date: 05-NOV-01
Invoice No. :I0126926
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126926

SAMPLE	PREP CODE	Th ppm (ICP)	Ti % (ICP)	Tl ppm (ICP)	U ppm (ICP)	V ppm (ICP)	W ppm (ICP)	Y ppm (ICP)	Zn ppm (ICP)	Zr ppm	As ppm	Hg ppb	Spec Gr S.G.	Ag oz/ton	Pb %	Zn %	Cd %
644595	94139402	2.0	0.02	0.06	0.4	5	0.3	55.1	5230	11.0	7	1860	2.75	< 0.03	0.05	0.62	0.001
644596	94139402	12.2	0.15	0.38	2.3	36	1.0	10.7	4030	48.0	18	1460	2.68	< 0.03	< 0.01	0.46	0.001
644597	94139402	15.2	0.21	0.52	2.6	44	1.1	13.9	42	58.0	21	10	2.78	0.06	0.90	< 0.01	< 0.001
644598	94139402	20.6	0.29	0.84	4.3	69	1.5	14.8	48	78.5	50	10	2.71	< 0.03	< 0.01	< 0.01	< 0.001
644599	94139402	15.0	0.23	0.54	2.7	48	1.2	14.4	34	65.0	35	10	2.68	< 0.03	< 0.01	< 0.01	< 0.001
644600	94139402	14.2	0.22	0.84	2.6	52	1.4	13.6	30	54.5	24	130	3.06	0.69	16.20	< 0.01	< 0.001
644601	94139402	8.4	0.13	0.30	1.7	27	0.5	28.9	58	40.5	18	30	2.76	0.03	0.01	< 0.01	< 0.001
644602	94139402	6.2	0.11	0.22	1.1	23	0.5	43.8	40	35.0	15	10	2.71	< 0.03	0.01	< 0.01	< 0.001
644603	94139402	4.6	0.07	0.16	0.7	16	0.4	15.5	9930	22.0	9	3790	2.69	< 0.03	< 0.01	1.11	0.004
644604	94139402	1.2	< 0.01	0.16	< 0.1	< 1	< 0.1	22.6	>10000	2.5	9	22700	3.07	0.78	10.10	9.27	0.024
644605	94139402	8.0	0.11	46.2	5.8	102	1.3	16.2	>10000	59.5	43	9070	not/ss	0.30	1.51	28.7	0.045
644606	94139402	8.4	0.14	0.48	1.1	32	0.9	39.9	774	33.0	41	210	2.73	< 0.03	< 0.01	0.09	< 0.001
644607	94139402	7.6	0.14	0.38	1.5	30	0.7	11.0	134	42.5	20	40	2.66	< 0.03	< 0.01	0.01	< 0.001
644608	94139402	10.0	0.12	0.32	1.6	28	0.6	17.7	52	51.0	9	20	2.66	< 0.03	< 0.01	< 0.01	< 0.001
644609	94139402	7.8	0.11	0.24	1.1	19	0.4	32.2	18	38.0	10	< 10	2.78	< 0.03	< 0.01	< 0.01	< 0.001

CERTIFICATION: _____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED NOV - 9 2001

A0127050

Comments: ATTN: CLINT BARR EMAIL:DAVE KING

CERTIFICATE A0127050

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 30-OCT-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
LOG-22	42	Samples received without barcode
225	42	Run as received

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
WEI-21	42	Weight of received sample	BALANCE	0.01	1000.0
OA-GRA09	38	Bulk density:Volume displacement	CALCULATION	0.01	20.00

ALS Chemex
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Analytical Chemists * Geochemists * Registered Assayers
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British Columbia, Canada V7J 2C1
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :1
Total Pages :2
Certificate Date: 30-OCT-2001
Invoice No. : I0127050
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0127050

SAMPLE	PREP CODE		Weight Kg	Bulk de g/mL								
644620	9400	225	1.76	2.53								
644621	9400	225	0.78	2.84								
644622	9400	225	1.82	2.58								
644623	9400	225	1.36	2.62								
644624	9400	225	2.42	4.38								
644625	9400	225	1.70	2.63								
644626	9400	225	0.52	2.37								
644627	9400	225	1.68	2.67								
644628	9400	225	1.20	-----								
644629	9400	225	1.84	2.77								
644630	9400	225	2.08	2.79								
644631	9400	225	2.28	2.67								
644632	9400	225	2.66	2.67								
644633	9400	225	1.64	2.77								
644634	9400	225	1.64	2.30								
644635	9400	225	1.86	2.65								
644636	9400	225	2.46	2.74								
644637	9400	225	2.70	3.01								
644638	9400	225	4.98	5.84								
644639	9400	225	3.96	3.99								
644640	9400	225	0.06	-----								
644641	9400	225	2.68	2.84								
644642	9400	225	0.78	2.50								
644643	9400	225	3.62	3.12								
644644	9400	225	2.10	2.59								
644645	9400	225	2.26	-----								
644646	9400	225	2.04	2.56								
644647	9400	225	2.52	2.91								
644648	9400	225	3.42	3.57								
644649	9400	225	0.06	-----								
644650	9400	225	4.08	5.06								
644651	9400	225	2.84	3.53								
644652	9400	225	2.32	2.68								
644653	9400	225	2.30	2.66								
644654	9400	225	2.68	2.92								
644655	9400	225	1.58	3.79								
644656	9400	225	1.10	2.49								
644657	9400	225	3.10	3.90								
644658	9400	225	2.32	3.37								
644659	9400	225	2.10	2.98								

CERTIFICATION:

ALS Chemex
Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Certificate Date: 30-OCT-2001
Invoice No. : I0127050
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0127050

SAMPLE	PREP CODE		Weight Kg	Bulk de g/mL								
644660	9400	225	2.14	2.61								
644661	9400	225	0.42	2.17								

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
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Page Number :1
Total Pages :2
Certificate Date: 30-OCT-2001
Invoice No. :I0127050
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Account :BUF

CERTIFICATE OF ANALYSIS A0127050

SAMPLE	PREP CODE		Weight Kg	Bulk de g/mL
644620	9400	225	1.76	2.53
644621	9400	225	0.78	2.84
644622	9400	225	1.82	2.58
644623	9400	225	1.36	2.62
644624	9400	225	2.42	4.38
644625	9400	225	1.70	2.63
644626	9400	225	0.52	2.37
644627	9400	225	1.68	2.67
644628	9400	225	1.20	-----
644629	9400	225	1.84	2.77
644630	9400	225	2.08	2.79
644631	9400	225	2.28	2.67
644632	9400	225	2.66	2.67
644633	9400	225	1.64	2.77
644634	9400	225	1.64	2.30
644635	9400	225	1.86	2.65
644636	9400	225	2.46	2.74
644637	9400	225	2.70	3.01
644638	9400	225	4.98	5.84
644639	9400	225	3.96	3.99
644640	9400	225	0.06	-----
644641	9400	225	2.68	2.84
644642	9400	225	0.78	2.50
644643	9400	225	3.62	3.12
644644	9400	225	2.10	2.59
644645	9400	225	2.26	-----
644646	9400	225	2.04	2.56
644647	9400	225	2.52	2.91
644648	9400	225	3.42	3.57
644649	9400	225	0.06	-----
644650	9400	225	4.08	5.06
644651	9400	225	2.84	3.53
644652	9400	225	2.32	2.68
644653	9400	225	2.30	2.66
644654	9400	225	2.68	2.92
644655	9400	225	1.58	3.79
644656	9400	225	1.10	2.49
644657	9400	225	3.10	3.90
644658	9400	225	2.32	3.37
644659	9400	225	2.10	2.98

CERTIFICATION: _____

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Certificate Date: 30-OCT-2001
Invoice No. : I0127050
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0127050

SAMPLE	PREP CODE		Weight Kg	Bulk de g/mL								
644660	9400	225	2.14	2.61								
644661	9400	225	0.42	2.17								

CERTIFICATION:

ALS Chemex

AURORA LABORATORY SERVICES LTD.
212 Brooksbank Ave, North Vancouver BC Canada V7J 2C1
Phone: 604-984-0221 Fax: 604-984-0218 Website: www.alschemex.com

FAX DATA REPORT

COMPANY : NORANDA MINING AND EXPLORATION INC.

CONTACT : ATTN: CLINT BARR

FAX NUMBER : 1-807-623-0452

SENDER : RON **DATE SUBMITTED : 15-NOV-01 at 15:51 PDT**

NO OF PAGES : 7 INCL COVER

SUBJECT : Automated FAX data delivery

DESCRIPTION :

Results for workorder A0127055 - Project : 2501
42 samples received on 17-OCT-01 by our Vancouver office
This workorder has all data entered

FAX COPY ONLY - A certified copy will be sent through the mail

If there are any problems with this transmission, please call our office immediately at 604 984 0221

ALS Chemex charges clients $0.50 per page of analytical results faxed within North America and $2.00 per page faxed outside North America (billed monthly)

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A Campbell Brothers Limited Company

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number : 1-A
Total Pages : 2
Certificate Date: 07-NOV-01
Invoice No. : I0127055
P.O. Number :
Account : BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0127055

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644620	94139402	< 5	1.04	10.30	1362.5	2.70	0.36	3.10	0.22	120.5	13.5	95	12.45	38.0	1.04	24.25	4.20	6.0	0.100	4.67
644621	94139402	25	23.4	0.52	90.0	0.05	0.12	1.09	>500	7.07	25.6	183	0.75	126.7	0.58	8.10	79.90	0.4	0.045	0.19
644622	94139402	< 5	1.12	9.61	1396.5	2.75	0.30	1.45	0.44	130.0	15.9	91	12.20	45.0	0.98	25.25	6.00	5.9	0.070	4.33
644623	94139402	< 5	0.82	5.96	801.6	1.60	0.13	15.20	0.56	115.0	10.9	59	7.95	25.2	0.81	15.10	3.50	2.1	0.065	2.87
644624	94139402	15	96.1	1.06	40.0	0.25	0.37	4.07	185.0	18.80	11.1	37	1.05	487.0	0.64	6.60	24.85	0.4	0.130	0.44
644625	94139402	< 5	2.82	9.73	1442.0	2.95	0.41	1.32	0.78	108.0	32.8	106	8.45	87.1	4.03	25.25	10.55	4.9	0.080	3.68
644626	94139402	< 5	0.90	1.22	169.0	0.30	0.23	0.03	0.74	46.2	1.8	216	1.10	15.8	0.81	3.00	1.05	1.9	0.065	0.49
644627	94139402	< 5	0.80	7.73	963.4	2.15	0.42	2.87	0.10	91.7	16.2	113	8.15	40.6	3.14	18.45	2.40	2.5	0.080	2.96
644628	94139402	< 5	7.40	9.66	605.7	3.30	0.35	2.05	46.6	104.5	16.8	118	15.70	64.0	2.21	27.25	11.40	4.4	0.190	3.78
644629	94139402	10	13.15	3.58	453.5	1.20	0.18	5.28	88.5	34.0	24.8	112	3.45	36.6	0.91	12.15	9.20	1.4	0.430	1.46
644630	94139402	5	4.82	1.08	91.0	0.45	0.08	17.90	396	38.5	60.8	70	1.05	155.0	1.30	25.55	33.60	0.5	2.77	0.49
644631	94139402	< 5	3.28	0.94	176.0	0.30	0.06	18.25	221	25.8	31.0	41	0.80	71.5	0.71	16.70	16.75	0.5	1.925	0.42
644632	94139402	< 5	0.42	1.68	271.5	0.45	0.11	24.7	9.50	38.2	11.9	33	1.65	8.8	0.77	4.30	2.20	1.0	0.070	0.80
644633	94139402	10	2.72	3.18	46.0	0.75	0.10	2.09	>500	24.1	83.6	101	3.00	105.2	1.37	25.85	38.75	1.6	0.350	1.31
644634	94139402	< 5	0.20	7.59	87.5	0.20	0.03	2.58	0.54	8.53	1.7	129	0.95	0.8	0.70	1.90	0.40	0.4	0.005	2.97
644635	94139402	< 5	1.82	3.99	137.0	1.15	0.19	6.62	97.4	56.5	17.8	125	4.30	78.2	0.66	12.40	23.45	1.1	0.400	1.77
644636	94139402	5	1.72	5.69	277.5	1.20	0.26	1.76	94.9	65.6	20.9	134	5.30	49.0	0.83	18.10	16.95	3.0	0.565	2.12
644637	94139402	25	23.7	2.16	87.5	0.40	0.17	0.57	305	17.85	34.7	137	1.25	133.1	0.87	18.10	28.40	1.2	1.165	0.95
644638	94139402	25	>100.0	0.80	23.0	0.15	0.13	0.17	5.22	7.80	1.6	48	0.65	41.8	0.10	2.10	1.30	0.1	0.035	0.38
644639	94139402	45	>100.0	0.46	53.0	0.05	0.09	0.11	350	15.30	18.4	118	0.40	176.6	0.41	10.95	85.45	< 0.1	0.875	0.21
644640	94400 225	295	13.60	2.17	87.0	1.75	0.39	0.45	74.2	32.7	9.8	26	7.10	124.5	13.35	9.10	16.50	1.1	0.080	0.91
644641	94139402	< 5	4.90	3.82	45.0	1.00	0.14	0.08	445	50.2	30.7	129	3.55	287.0	0.73	24.15	120.95	1.2	0.830	1.59
644642	94139402	5	3.72	4.89	662.3	1.30	0.19	0.07	17.55	46.0	11.4	141	4.15	34.4	0.60	13.30	11.35	1.7	0.200	1.80
644643	94139402	45	23.1	1.41	34.0	0.35	0.12	1.14	>500	23.5	88.4	119	1.25	336.0	1.96	56.20	100.15	0.3	6.55	0.66
644644	94139402	< 5	0.90	3.09	433.5	0.55	0.08	10.55	1.02	37.2	4.8	101	2.50	187.5	0.58	6.65	3.80	1.1	0.115	1.23
644645	94139402	< 5	1.08	7.69	658.2	1.55	0.18	5.26	0.94	79.4	17.2	141	6.65	54.9	1.12	18.70	3.55	2.4	0.100	3.35
644646	94139402	< 5	1.98	6.05	1041.5	1.75	0.21	0.28	7.10	64.9	8.4	136	6.90	106.0	0.88	16.45	5.10	2.1	0.035	2.50
644647	94139402	5	22.6	3.21	136.5	1.20	0.14	0.07	166.5	17.65	4.6	139	3.45	191.2	0.63	13.65	9.10	1.4	0.110	1.35
644648	94139402	65	24.9	0.64	11.0	0.30	0.08	0.04	>500	6.30	133.5	72	0.70	313.0	2.40	79.20	82.10	< 0.1	25.9	0.28
644649	94400 225	< 10	10.65	2.80	39.5	1.75	0.21	0.29	428	33.8	7.7	29	10.35	123.0	2.96	7.15	51.50	1.8	0.035	1.31
644650	94139402	30	>100.0	0.33	17.0	0.20	0.07	0.02	180.0	6.12	14.8	45	0.30	87.0	0.49	11.10	18.70	< 0.1	4.06	0.15
644651	94139402	45	39.0	0.65	37.5	0.15	0.10	0.01	>500	5.79	151.7	72	0.45	403.0	2.55	72.95	89.05	0.1	8.36	0.30
644652	94139402	5	7.86	5.15	682.3	1.15	0.28	0.44	19.80	24.1	12.6	169	4.85	612.0	0.73	12.85	6.95	2.4	0.280	2.07
644653	94139402	< 5	1.06	4.70	615.6	1.00	0.13	0.33	18.70	32.5	9.0	161	4.20	92.9	0.66	11.20	6.95	2.2	0.055	1.61
644654	94139402	15	5.32	3.53	48.5	1.40	0.11	0.15	>500	30.0	87.7	122	3.40	224.0	1.84	58.45	55.35	1.6	9.34	1.54
644655	94139402	15	65.0	1.74	46.0	0.45	0.25	0.47	311	21.4	22.6	86	1.55	125.5	0.85	22.95	41.65	0.7	1.230	0.81
644656	94139402	< 5	2.22	6.64	1075.0	1.65	0.09	1.77	8.52	74.9	6.3	106	5.95	9.8	0.78	16.85	4.75	1.7	0.050	2.61
644657	94139402	60	99.9	3.32	71.5	0.75	0.14	0.26	26.5	17.15	3.3	69	3.15	19.4	0.83	8.30	4.10	1.0	0.305	1.53
644658	94139402	15	62.8	5.17	77.0	1.90	0.18	0.16	306	23.6	25.9	85	5.55	92.7	2.83	23.90	26.25	1.4	3.67	2.27
644659	94139402	20	61.7	3.36	105.0	1.00	0.24	0.13	159.0	23.9	17.1	121	3.25	75.5	1.95	13.80	17.35	1.2	0.890	1.36

CERTIFICATION:_____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number : 1-B
Total Pages : 2
Certificate Date: 07-NOV-01
Invoice No. : I0127055
P.O. Number :
Account : BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0127055

SAMPLE	PREP CODE	La ppm (ICP)	Li ppm (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Nb ppm (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm (ICP)	Rb ppm (ICP)	Re ppm	S %	Sb ppm (ICP)	Se ppm	Sn ppm	Sr ppm (ICP)	Ta ppm (ICP)	Te ppm (ICP)
644620	9413 9402	60.0	17.0	0.43	810	0.50	0.11	19.1	23.6	440	105.5	196.0<	0.002	0.02	3.90	< 1	2.2	179.5	2.15	0.15
644621	9413 9402	4.0	14.0	0.02	215	1.45	0.05	2.2	16.8	40>10000		12.7<	0.002	7.25	55.20	4	1.0	67.0	0.40	0.25
644622	9413 9402	61.5	15.8	0.45	485	0.65	0.09	16.9	24.0	380	127.5	198.5<	0.002	0.02	13.25	< 1	2.2	122.5	1.80	0.05
644623	9413 9402	51.5	10.0	0.29	4010	0.45	0.06	9.8	15.2	240	168.0	127.5<	0.002	0.03	6.25	1	1.4	399	0.90	0.05
644624	9413 9402	8.5	7.2	0.07	1010	1.05	0.04	2.6	11.6	60>10000		20.4	0.004	9.94	379.2	3	0.8	163.0	0.60	0.25
644625	9413 9402	53.0	43.4	0.58	1310	2.35	0.08	17.6	39.2	310	2100	170.5<	0.002	0.41	14.15	< 1	2.2	140.0	2.15	0.05
644626	9413 9402	22.0	27.6	0.04	135	1.95	0.06	2.6	5.8	180	522	22.6<	0.002	0.09	2.50	< 1	6.0	7.0	0.25	< 0.05
644627	9413 9402	42.5	42.2	0.51	1530	1.35	0.08	13.3	25.2	390	79.5	135.5	0.002	0.12	1.20	< 1	1.8	216	1.10	0.05
644628	9413 9402	53.5	47.8	0.45	610	1.45	0.09	18.0	27.6	370>10000		191.5	0.002	1.00	18.55	3	2.8	187.5	2.90	0.35
644629	9413 9402	18.0	19.6	0.16	885	1.25	0.08	4.5	29.2	210>10000		64.4<	0.002	2.11	43.10	3	1.4	268	0.65	< 0.05
644630	9413 9402	17.5	10.2	0.08	2300	1.45	0.01	2.3	34.6	170	118.0	21.8<	0.002	3.60	8.05	5	3.6	651	0.50	< 0.05
644631	9413 9402	10.5	9.2	0.07	2140	1.15	0.03	1.6	16.0	160	73.5	17.1	0.002	1.71	5.15	3	2.8	615	0.10	< 0.05
644632	9413 9402	19.5	6.6	0.13	1610	0.40	0.03	3.2	22.8	250	261	34.5	0.002	0.57	7.30	< 1	0.4	914	0.20	0.05
644633	9413 9402	13.0	19.0	0.13	405	1.15	0.11	5.9	14.6	100	74.0	56.3	0.002	5.76	10.60	6	1.4	78.1	0.80	< 0.05
644634	9413 9402	5.0	1.8	0.30	485	0.15	0.34	1.4	2.4	440	4.0	13.8<	0.002	0.20	0.70	< 1	< 0.2	11.4	0.15	< 0.05
644635	9413 9402	30.0	26.6	0.15	1235	1.15	0.08	5.7	18.4	290	129.5	74.9	0.002	1.75	7.80	3	1.4	211	0.50	< 0.05
644636	9413 9402	39.0	27.8	0.24	365	1.25	0.07	9.4	22.2	300	36.5	99.2<	0.002	1.23	13.20	2	2.2	105.5	1.10	0.15
644637	9413 9402	10.5	19.8	0.11	155	1.20	0.06	3.5	16.4	110>10000		40.5<	0.002	5.00	90.75	4	4.8	31.0	0.45	< 0.05
644638	9413 9402	4.5	4.0	0.03	35	0.95	0.08	1.2	13.8	60>10000		14.7	0.002	8.50	520.4	3	0.6	8.6	0.15	0.05
644639	9413 9402	7.5	11.4	0.01	30	1.20	0.04	0.9	18.8	10>10000		8.9	0.002	9.13	250.8	6	1.2	7.8	0.05	< 0.05
644640	9400 225	17.0	9.8	0.82	>10000	3.85	0.05	4.9	37.0	940	9590	58.9	0.002	1.94	4.00	5	1.2	22.2	0.55	0.40
644641	9413 9402	27.5	21.0	0.16	50	0.45	0.05	6.2	33.8	190	1085	78.2<	0.002	6.46	22.85	4	1.4	30.6	0.75	0.05
644642	9413 9402	26.5	28.4	0.20	65	0.45	0.07	7.3	20.0	170	5470	83.9<	0.002	0.40	17.70	< 1	1.2	37.8	0.85	0.05
644643	9413 9402	14.5	16.0	0.06	250	1.20	0.01	1.9	15.4	60>10000		28.9<	0.002	>10.00	44.80	9	8.6	39.2	0.30	0.30
644644	9413 9402	17.5	18.2	0.14	1910	0.40	0.12	3.3	9.6	90	99.0	50.6<	0.002	0.14	4.25	< 1	0.6	414	0.20	0.05
644645	9413 9402	43.0	26.4	0.33	1005	0.50	0.08	12.1	22.2	300	118.5	138.0<	0.002	0.57	10.40	< 1	1.6	319	0.90	0.05
644646	9413 9402	36.0	28.6	0.33	75	0.75	0.08	9.5	16.2	770	8410	122.0<	0.002	0.20	22.90	< 1	1.4	61.1	1.10	0.05
644647	9413 9402	10.5	27.8	0.18	30	1.35	0.07	4.3	2.6	90>10000		61.9<	0.002	3.54	60.65	4	0.8	29.0	0.80	0.15
644648	9413 9402	4.0	13.2	0.04	45	1.05	< 0.01	0.9	7.6	10>10000		12.8	0.002	>10.00	84.85	11	13.8	9.2	0.15	0.25
644649	9400 225	17.5	10.2	0.18	845	18.70	0.03	4.9	29.8	1310>10000		73.3<	0.002	>10.00	25.20	11	1.2	23.4	0.75	0.30
644650	9413 9402	3.0	5.2	0.01	15	1.10	0.04	0.5	1.0	20>10000		7.2<	0.002	>10.00	380.6	5	4.4	3.8	0.05	0.20
644651	9413 9402	3.5	15.4	0.03	35	1.05	0.02	0.8	4.2	40>10000		11.8	0.002	>10.00	80.95	13	8.6	7.6	0.10	0.25
644652	9413 9402	14.5	27.0	0.23	90	1.35	0.24	6.5	10.6	210>10000		86.7<	0.002	0.95	38.15	4	1.4	60.8	0.95	0.20
644653	9413 9402	19.0	25.4	0.20	80	0.55	0.59	6.5	12.0	180	690	72.7<	0.002	0.38	15.00	< 1	0.8	56.2	0.75	0.05
644654	9413 9402	17.0	23.2	0.16	65	1.30	0.07	5.9	3.2	120	1180	67.1<	0.002	7.93	27.65	8	8.4	35.2	0.95	0.20
644655	9413 9402	12.0	11.2	0.07	130	1.65	0.04	2.8	4.0	100>10000		32.4	0.002	9.50	442.2	7	2.8	32.4	0.45	0.25
644656	9413 9402	40.5	18.6	0.27	440	0.55	0.06	10.1	16.2	210	392	114.5<	0.002	0.07	12.20	< 1	1.2	91.3	0.80	0.05
644657	9413 9402	10.0	11.0	0.17	390	1.40	0.05	5.1	3.0	100>10000		61.5<	0.002	6.46	561.7	3	1.2	31.4	0.65	0.20
644658	9413 9402	11.0	19.0	0.34	1455	1.25	0.05	6.3	13.4	140>10000		98.6<	0.002	5.79	173.55	4	3.2	48.2	0.90	0.15
644659	9413 9402	13.0	19.8	0.21	1230	1.40	0.04	5.2	12.6	140>10000		63.0	0.002	3.65	172.95	3	1.8	35.4	0.70	0.15

CERTIFICATION:_____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number : 1-C
Total Pages : 2
Certificate Date: 07-NOV-01
Invoice No. : I0127055
P.O. Number :
Account : BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0127055

SAMPLE	PREP CODE	Th ppm (ICP)	Ti % (ICP)	Tl ppm (ICP)	U ppm (ICP)	V ppm (ICP)	W ppm (ICP)	Y ppm (ICP)	Zn ppm (ICP)	Zr ppm	As ppm	Hg ppb	Spec Gr S.G.	Ag oz/ton	Pb %	Zn %	Cd %
644620	9413 9402	26.0	0.43	0.80	2.3	91	2.4	20.2	76	114.5	4	40	2.75	< 0.03	< 0.01	< 0.01	< 0.001
644621	9413 9402	2.0	0.01	0.44	0.4	4	1.6	3.0	>10000	8.5	10	38300	3.13	0.96	8.88	13.35	0.048
644622	9413 9402	23.6	0.42	0.88	3.3	104	2.2	19.1	212	132.0	12	60	2.74	< 0.03	0.03	0.05	< 0.001
644623	9413 9402	12.8	0.27	0.48	1.3	57	1.4	45.1	180	56.5	1	70	2.73	< 0.03	0.02	0.02	< 0.001
644624	9413 9402	1.6	0.04	0.90	0.4	9	1.1	7.9	>10000	11.5	5	11750	4.76	4.08	>50.0	5.28	0.019
644625	9413 9402	23.4	0.43	1.02	4.2	89	2.1	21.3	122	141.5	30	80	2.76	< 0.03	0.22	0.03	< 0.001
644626	9413 9402	9.8	0.10	0.16	1.2	10	0.9	6.1	122	58.5	< 1	30	2.74	< 0.03	0.04	0.01	< 0.001
644627	9413 9402	16.0	0.36	0.64	3.7	78	1.8	18.7	44	73.0	5	10	2.78	< 0.03	0.02	< 0.01	< 0.001
644628	9413 9402	20.0	0.41	1.04	3.1	92	5.8	16.2	>10000	85.5	13	4530	2.80	0.12	1.59	1.37	0.004
644629	9413 9402	6.4	0.11	0.52	1.4	24	1.0	10.4	>10000	37.0	46	7970	2.91	0.48	7.82	2.20	0.009
644630	9413 9402	2.4	0.05	0.18	1.0	6	0.8	17.6	>10000	17.0	30	45000	2.91	0.03	0.02	9.67	0.043
644631	9413 9402	2.2	0.03	0.16	1.0	4	0.6	13.6	>10000	15.0	17	22300	2.89	0.03	0.01	5.08	0.025
644632	9413 9402	6.4	0.08	0.24	1.7	12	0.4	14.7	2290	34.5	21	830	2.81	< 0.03	0.01	0.19	< 0.001
644633	9413 9402	6.4	0.12	0.32	1.0	23	1.0	5.6	>10000	39.5	28	64700	3.01	0.03	< 0.01	15.05	0.066
644634	9413 9402	1.6	0.26	0.08	0.3	59	0.1	1.3	1640	7.5	41	770	2.79	< 0.03	< 0.01	0.20	< 0.001
644635	9413 9402	6.8	0.14	0.38	1.7	30	1.2	12.8	>10000	26.0	29	13860	2.81	< 0.03	0.01	3.65	0.011
644636	9413 9402	13.8	0.20	0.48	2.4	40	1.3	8.3	>10000	51.5	33	11430	2.80	< 0.03	< 0.01	2.80	0.011
644637	9413 9402	5.8	0.07	0.42	0.7	15	0.7	3.0	>10000	22.0	31	33400	3.25	1.26	15.25	8.64	0.032
644638	9413 9402	1.2	0.02	0.70	0.3	5	0.5	1.3	956	5.0	4	680	6.54	5.97	>50.0	0.10	< 0.001
644639	9413 9402	0.8	0.01	0.62	0.1	3	0.4	1.6	>10000	3.0	8	47000	4.16	3.21	36.6	13.40	0.037
644640	9400 225	6.0	0.08	7.22	2.1	44	1.8	15.2	>10000	37.5	11	2420	3.13	0.36	1.08	3.04	0.008
644641	9413 9402	8.2	0.12	0.38	1.3	29	0.7	6.8	>10000	38.0	42	49000	2.93	0.15	0.14	15.65	0.046
644642	9413 9402	11.2	0.16	0.42	1.9	36	0.8	5.9	5680	50.0	29	2010	2.76	0.03	0.59	0.60	0.001
644643	9413 9402	2.4	0.05	0.34	0.7	10	0.7	3.3	>10000	11.0	26	>100000	3.24	0.45	2.73	27.6	0.097
644644	9413 9402	6.4	0.11	0.26	1.1	20	0.5	15.1	158	37.5	5	100	2.79	< 0.03	0.02	0.09	< 0.001
644645	9413 9402	16.8	0.31	0.70	2.9	67	1.6	15.2	236	84.0	15	140	2.78	< 0.03	< 0.01	0.04	< 0.001
644646	9413 9402	15.6	0.24	0.56	3.5	62	1.4	13.6	1325	70.0	5	460	2.75	< 0.03	0.91	0.15	< 0.001
644647	9413 9402	6.8	0.12	0.62	1.0	33	1.4	4.7	>10000	36.0	6	7920	3.10	0.69	14.15	3.24	0.016
644648	9413 9402	0.8	0.01	0.30	0.3	5	0.5	1.2	>10000	5.5	22	>100000	3.78	0.75	11.80	36.0	0.177
644649	9400 225	7.2	0.10	47.4	5.7	100	1.8	16.4	>10000	50.5	47	9770	3.15	0.27	1.44	28.2	0.047
644650	9413 9402	0.6	0.01	1.98	0.1	3	0.4	0.8	>10000	3.5	9	18760	6.02	3.75	>50.0	4.81	0.019
644651	9413 9402	1.0	0.02	0.72	0.3	5	0.5	1.1	>10000	6.0	13	>100000	3.65	0.36	7.40	36.6	0.170
644652	9413 9402	10.0	0.17	0.82	1.8	41	1.2	6.8	5650	59.5	15	2370	2.86	0.15	4.41	0.62	0.002
644653	9413 9402	10.4	0.16	0.42	1.6	34	0.8	6.2	4520	62.5	10	1840	2.78	< 0.03	0.08	0.46	0.001
644654	9413 9402	8.8	0.17	0.50	1.0	35	1.2	4.9	>10000	42.5	8	88300	3.08	0.06	0.18	18.60	0.098
644655	9413 9402	3.8	0.08	0.94	0.6	17	0.7	3.7	>10000	21.5	11	30500	4.46	2.40	40.7	8.85	0.031
644656	9413 9402	11.4	0.29	0.52	1.8	72	1.2	12.3	1975	53.0	18	770	2.83	< 0.03	0.10	0.22	0.001
644657	9413 9402	5.4	0.13	1.02	0.8	32	0.9	5.2	6140	26.5	5	2320	4.18	3.45	45.2	0.66	0.003
644658	9413 9402	7.4	0.19	1.22	1.2	51	3.4	7.9	>10000	37.5	8	29200	3.57	1.26	24.0	6.48	0.032
644659	9413 9402	6.2	0.13	0.92	1.1	30	1.0	5.6	>10000	35.5	14	13230	3.19	1.32	17.65	4.25	0.019

CERTIFICATION:_____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :2-A
Total Pages :2
Certificate Date: 07-NOV-01
Invoice No. : I0127055
P.O. Number :
Account : BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0127055

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644660	9413 9402	< 5	1.10	6.75	1013.0	1.75	0.38	0.43	1.08	65.0	8.3	131	6.45	30.8	2.21	16.75	4.60	2.5	0.075	2.78
644661	9413 9402	< 5	0.58	1.15	155.5	0.25	0.07	0.02	0.52	47.7	1.1	281	1.15	8.6	0.79	2.90	1.00	2.3	0.015	0.44

CERTIFICATION:_____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

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Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :2-B
Total Pages :2
Certificate Date: 07-NOV-01
Invoice No. :I0127055
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0127055

SAMPLE	PREP CODE		La ppm (ICP)	Li ppm (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Nb ppm (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm (ICP)	Rb ppm (ICP)	Re ppm	S %	Sb ppm (ICP)	Se ppm	Sn ppm	Sr ppm (ICP)	Ta ppm (ICP)	Te ppm (ICP)
644660	9413	9402	34.0	33.4	0.44	1205	0.50	0.08	11.2	12.6	170	498	120.0<	0.002	0.10	10.20	< 1	1.4	69.7	1.05	0.05
644661	9413	9402	23.0	27.8	0.04	60	1.65	0.05	2.7	2.8	130	417	19.9<	0.002	0.01	2.15	< 1	1.4	7.8	0.20	< 0.05

CERTIFICATION:_____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

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874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project: 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :2-C
Total Pages :2
Certificate Date: 07-NOV-01
Invoice No. :I0127055
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0127055

SAMPLE	PREP CODE	Th ppm (ICP)	Ti % (ICP)	Tl ppm (ICP)	U ppm (ICP)	V ppm (ICP)	W ppm (ICP)	Y ppm (ICP)	Zn ppm (ICP)	Zr ppm	As ppm	Hg ppb	Spec Gr S.G.	Ag oz/ton	Pb %	Zn %	Cd %
644660	9413 9402	14.4	0.29	0.58	2.0	55	1.4	9.6	336	77.5	6	120	2.73	< 0.03	0.10	0.04	< 0.001
644661	9413 9402	8.4	0.11	0.14	1.4	10	1.0	6.9	134	77.0	4	30	2.70	< 0.03	0.04	0.01	< 0.001

CERTIFICATION:_____

ALSCHEMEX LABS Alpha-FAX2

ALS Chemex

Aurora Laboratory Services Ltd.
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5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED NOV 1 3 2001

A0127924

Comments: ATTN: CLINT BARR EMAIL:DAVE KING

CERTIFICATE A0127924

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. #:

Samples submitted to our lab in Vancouver, BC.
This report was printed on 02-NOV-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	18	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Pb-AA46	8	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	12	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :1
Total Pages :1
Certificate Date: 02-NOV-2001
Invoice No. : I0127924
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0127924

SAMPLE	PREP CODE		Pb %	Zn %								
644556	212	--	13.40	6.22								
644557	212	--	4.49	-----								
644559	212	--	-----	1.78								
644560	212	--	-----	2.71								
644561	212	--	-----	2.10								
644563	212	--	-----	2.42								
644564	212	--	-----	1.42								
644565	212	--	-----	6.52								
644569	212	--	1.84	-----								
644575	212	--	-----	3.52								
644580	212	--	-----	1.86								
644586	212	--	1.83	-----								
644589	212	--	-----	not/ss								
644590	212	--	-----	8.43								
644594	212	--	1.92	-----								
644600	212	--	15.10	-----								
644604	212	--	9.97	9.14								
644605	212	--	1.38	27.2								

CERTIFICATION:_____

OVERLIMITS from A0126926

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :1
Total Pages :1
Certificate Date: 02-NOV-2001
Invoice No. : I0127924
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0127924

SAMPLE	PREP CODE	Pb %	Zn %
644556	212 --	13.40	6.22
644557	212 --	4.49	-----
644559	212 --	-----	1.78
644560	212 --	-----	2.71
644561	212 --	-----	2.10
644563	212 --	-----	2.42
644564	212 --	-----	1.42
644565	212 --	-----	6.52
644569	212 --	1.84	-----
644575	212 --	-----	3.52
644580	212 --	-----	1.86
644586	212 --	1.83	-----
644589	212 --	-----	not/ss
644590	212 --	-----	8.43
644594	212 --	1.92	-----
644600	212 --	15.10	-----
644604	212 --	9.97	9.14
644605	212 --	1.38	27.2

CERTIFICATION: _____

OVERLIMITS from A0126926

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED NOV 2 7 2001

A0128299

Comments: ATTN: CLINT BARR EMAIL:DAVE KING

CERTIFICATE A0128299

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 19-NOV-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
212	3	Overlimit pulp, to be found

ANALYTICAL PROCEDURES

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Pb-VOL71	3	Pb %: Concentrate	TITRATION	0.01	100.00

ALS Chemex

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Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :1
Total Pages :1
Certificate Date: 19-NOV-2001
Invoice No. : I0128299
P.O. Number :
Account : BUF

CERTIFICATE OF ANALYSIS A0128299

SAMPLE	PREP CODE	Pb % con
644624	212 --	53.00
644638	212 --	53.06
644650	212 --	53.40

CERTIFICATION: _____

OVERLIMITS from A0127055

ALS Chemex

Aurora Laboratory Services Ltd.
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :1
Total Pages :1
Certificate Date: 19-NOV-2001
Invoice No. :I0128299
P.O. Number :
Account :BUF

CERTIFICATE OF ANALYSIS A0128299

SAMPLE	PREP CODE	Pb % con
644624	212 --	53.00
644638	212 --	53.06
644650	212 --	53.40

CERTIFICATION:

OVERLIMITS from A0127055

RECEIVED SEP 1 0 2001

ALS Chemex

August 30, 2001

Noranda Mining and Exploration Inc.
874 Tungsten Street
Thunder Bay, ON
P7B 6J3

ATTENTION: Clint Barr

Dear Mr. Barr,

RE: Certificate of Analysis A0121577
Corrected Copy for all data – samples 644782 and 644783

Our internal quality assurance program has found an error with some of the data originally reported to you on Certificate of Analysis A0121577. Please allow me to apologize for the inconvenience this error has caused you.

During the analysis of overlimit samples for Pb, we found that samples 644782 and 644783 were laid out incorrectly in the box used to transport the samples between departments. As a result, the data originally reported for both of these samples were incorrect for all elements. We have corrected the data and a new copy of the certificate is enclosed.

We are currently in the process of introducing a new LIM system that will require sample weighers to scan every sample they weigh. This system improvement will aid in avoiding errors such as these in the future. In the interim, we have reviewed sample order verification procedures with the staff involved.

On behalf of ALS Chemex please allow me to apologize for any inconvenience this may have caused your company. If you have any questions feel free to contact David Tye (Manager, Assay and Geochem Services).

Yours sincerely

Nona Navin
Quality Assurance Chemist

Enclosures: Certificate of Analysis A0121577
Corrected Copy for all data – samples 644782 and 644783

AURORA LABORATORY SERVICES LTD.
212 Brooksbank Avenue North Vancouver BC Canada V7J 2C1
Phone: 604 984 0221 Fax: 604 984 0218 Website: www.alschemex.com

A Campbell Brothers Limited Company

RECEIVED SEP 2 5 2001

ALS Chemex

September 19, 2001

Noranda Mining and Exploration Inc.
874 Tungsten St.
Thunder Bay, Ontario
P7B – 6J3

ATTENTION: Clint Barr

Dear Mr. Barr,

RE: Certificate of Analysis A0123568
Corrected Copy for Zn – Sample 644047

In response to your conversation with Donna Baylis we have re-run sample 644047 on Certificate of Analysis A0123568 for zinc. The re-analysis has shown that, regrettably, the original result of 3.46 % was high due to an error in the AA calibration. The enclosed revised copy of A0123568 contains the corrected result of 2.91%. Please allow me to apologize for any inconvenience this may have caused your company.

In order to minimize errors of this kind in the future we have made staff in the department aware of the problem and reviewed standard operating procedures with them.

If you have any questions or requests please do not hesitate to contact me.

Yours sincerely

Michele Ramshaw
Quality Assurance Chemist

Enclosures: Certificate of Analysis A0123568
Corrected Copy for Zn – Sample 644047

AURORA LABORATORY SERVICES LTD.
212 Brooksbank Avenue North Vancouver BC Canada V7J 2C1
Phone: 604 984 0221 Fax: 604 984 0218 Website: www.alschemex.com

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RECEIVED OCT 3 1 2001

ALS Chemex

October 9, 2001

Noranda Mining and Exploration Inc.
874 Tungsten Street
Thunder Bay, ON
P7B 6J3

ATTENTION: Clint Barr

Dear Mr. Barr,

RE: Certificate of Analysis A0122714
Corrected Copy for all data – all samples
Certificate of Analysis A0124189
Corrected Copy for Ge, Ga and Se – all samples

Please find enclosed new copies of Certificates of Analysis A0122714 and A0124189. As per your conversations with Geoff Woodfield and communications with Michele Ramshaw, we have corrected the data on these certificates for Ge, Se and, in the case of A0124189, Ga. On the following page, I have attached a comparison table with the Ge and Se results from both certificates.

Please allow me to apologize for the inconvenience this change in data has caused your company. Thank you for your patience as we sought to resolve this matter. If you have any questions feel free to contact Geoff Woodfield.

Yours sincerely

Nona Navin
Quality Assurance Chemist

Enclosures: Certificate of Analysis A0122714
Corrected Copy for all data – all samples
Certificate of Analysis A0124189
Corrected Copy for Ge, Ga and Se – all samples

AURORA LABORATORY SERVICES LTD.
212 Brooksbank Avenue North Vancouver BC Canada V7J 2C1
Phone: 604 984 0221 Fax: 604 984 0218 Website: www.alschemex.com

Sample description	Se ppm		Ge ppm	
	From A0122714	From A0124189	From A0122714	From A0124189
644777	<10.0	<10.0	3	3
644778	<10.0	<10.0	3	3
644779	<10.0	<10.0	7	6
644780	<10.0	<10.0	41	39
644781	<10.0	<10.0	6	5
644782	<10.0	<10.0	7	6
644783	<10.0	<10.0	27	28
644784	<10.0	<10.0	3	3
644785	<10.0	<10.0	3	3
644786	<10.0	<10.0	2	2
644787	<10.0	<10.0	3	2
644788	<10.0	<10.0	3	3
644789	<10.0	<10.0	21	22
644790	<10.0	<10.0	7	7
644791	<10.0	10	59	56
644792	<10.0	<10.0	50	44
644793	<10.0	<10.0	6	5
644794	<10.0	<10.0	4	4
644795	<10.0	<10.0	60	55
644796	<10.0	<10.0	6	5
644797	<10.0	<10.0	44	41
644798	<10.0	<10.0	47	46
644799	<10.0	<10.0	3	4
644800	<10.0	<10.0	4	3
644801	<10.0	<10.0	36	36
644802	<10.0	<10.0	41	39
644803	<10.0	<10.0	8	7
644804	<10.0	<10.0	17	16
644805	<10.0	<10.0	1	1
644806	<10.0	<10.0	3	3
644807	<10.0	<10.0	3	3
644808	<10.0	<10.0	13	12
644809	<10.0	<10.0	4	4
644810	<10.0	<10.0	29	27
644811	<10.0	<10.0	37	32
644812	<10.0	<10.0	37	41
644813	<10.0	<10.0	53	46
644814	<10.0	<10.0	18	15
644815	<10.0	<10.0	10	9
644816	<10.0	10	130	120
644817	<10.0	10	161	147
644818	<10.0	<10.0	1	2
644819	<10.0	<10.0	15	14
644820	<10.0	<10.0	18	16
644821	<10.0	<10.0	43	37
644822	<10.0	<10.0	24	20
644823	<10.0	<10.0	51	46
644824	<10.0	<10.0	80	75
644825	<10.0	<10.0	34	30
644826	<10.0	<10.0	2	3
644827	<10.0	<10.0	1	1
644828	<10.0	10	134	114
644829	<10.0	<10.0	1	2
644830	<10.0	<10.0	32	35
644831	<10.0	<10.0	38	41
644832	<10.0	<10.0	21	20
644833	<10.0	<10.0	12	11
644834	<10.0	<10.0	190	193
644835	<10.0	<10.0	107	112
644836	<10.0	10	251	236
644837	<10.0	10	159	168
644838	<10.0	<10.0	13	16
644839	<10.0	<10.0	44	43
644840	<10.0	<10.0	40	39
644841	<10.0	<10.0	28	28
644842	<10.0	<10.0	2	3
644843	<10.0	<10.0	1	2

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ALS Chemex

October 23, 2001

Noranda Mining and Exploration Inc.
874 Tungsten Street
Thunder Bay, Ontario
P7B – 6J3

ATTENTION: Michael Savell

Dear Mr. Savell,

RE: Certificate of Analysis A0123659
Corrected Copy for Zn – Samples 644031, 644032, 644033, 644295, 644296 & 644298

Please find enclosed a revised copy of Certificate of Analysis A0123659 which contains corrections to the zinc results for samples 644031, 644032, 644033, 644295, 644296 and 644298. Further to Clint Barr's conversation with Donna Baylis we have looked into the zinc results and found that, regrettably, the original results for the above mentioned samples were high by approximately 10%, likely due to dilution problems. On behalf of ALS Chemex please allow me to apologize for any inconvenience this may have caused.

In order to ensure this error does not recur we have audited our dilution procedures and made changes for samples reading >20%. If you have any questions please feel free to contact David Tye (Manager, Assay and Geochem Services).

Yours sincerely

Michele Ramshaw
Quality Assurance Chemist

Enclosures: Certificate of Analysis A0123659
Corrected Copy for Zn – Samples 644031, 644032, 644033, 644295, 644296 & 644298

AURORA LABORATORY SERVICES LTD.
212 Brooksbank Avenue North Vancouver BC Canada V7J 2C1
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ALS Chemex

November 15, 2001

Noranda Mining and Exploration Inc.
874 Tungsten Street
Thunder Bay, ON
P7B 6J3

ATTENTION: Allan Huard

Dear Mr. Huard,

RE: Certificate of Analysis A0121577
Corrected copy for Cd – samples 644797 and 644798

Please find enclosed another new copy of Certificate of Analysis A0121577. Unfortunately, further to the problems previously discussed in my letter of August 30 to Clint Barr, we have found an error with respect to some of the Cd data reported for this sample set.

After analyzing this set of samples for Cd on Certificate of Analysis A0126030, we compared these results against the original Cd results obtained using the ICP41 method on A0121577. We found that the ICP41 Cd results for samples 644797 and 644798 did not match the assay results. We reweighed these samples and, as the rerun Cd values have better correlation with the Cd assay results, suspect that the original ICP41 Cd values for these two samples were in error.

A new copy of the certificate is enclosed. Please allow me to apologize for the inconvenience this change in data has caused you. If you have any further concerns with respect to this matter, please contact me at nona.navin@alschemex.com

Yours sincerely

Nona Navin
Quality Assurance Chemist

Enclosures: Certificate of Analysis A0121577
Corrected copy for Cd – samples 644797 and 644798

AURORA LABORATORY SERVICES LTD.
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ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0121577

Comments: ATTN: CLINT BARR

CERTIFICATE A0121577

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 23-OCT-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	34	Pulv. <250g to >85%/-75 micron
STO-21	34	Reject Storage-First 90 Days
LOG-22	35	Samples received without barcode
CRU-31	34	Crush to 70% minus 2mm
SPL-21	34	Splitting Charge
225	1	Run as received
229	35	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
WEI-21	35	Weight of received sample	BALANCE	0.01	1000.0
Au-AA23	34	Au-AA23 : Au ppb: Fuse 30 grams	FA-AAS	5	10000
Ag-ICP41	35	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
Al-ICP41	35	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
As-ICP41	35	As ppm: 32 element, soil & rock	ICP-AES	2	10000
B-ICP41	35	B ppm: 32 element, rock & soil	ICP-AES	10	10000
Ba-ICP41	35	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
Be-ICP41	35	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
Bi-ICP41	35	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
Ca-ICP41	35	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
Cd-ICP41	35	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
Co-ICP41	35	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
Cr-ICP41	35	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
Cu-ICP41	35	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
Fe-ICP41	35	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
Ga-ICP41	35	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
Hg-ICP41	35	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
K-ICP41	35	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
La-ICP41	35	La ppm: 32 element, soil & rock	ICP-AES	10	10000
Mg-ICP41	35	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
Mn-ICP41	35	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
Mo-ICP41	35	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
Na-ICP41	35	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
Ni-ICP41	35	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
P-ICP41	35	P ppm: 32 element, soil & rock	ICP-AES	10	10000
Pb-ICP41	35	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
S-ICP41	35	S %: 32 element, rock & soil	ICP-AES	0.01	10.00
Sb-ICP41	35	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
Sc-ICP41	35	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
Sr-ICP41	35	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
Ti-ICP41	35	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
Tl-ICP41	35	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
U-ICP41	35	U ppm: 32 element, soil & rock	ICP-AES	10	10000

ALS Chemex

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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0121577

Comments: ATTN: CLINT BARR

CERTIFICATE A0121577

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 23-OCT-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	34	Pulv. <250g to >85%/-75 micron
STO-21	34	Reject Storage-First 90 Days
LOG-22	35	Samples received without barcode
CRU-31	34	Crush to 70% minus 2mm
SPL-21	34	Splitting Charge
225	1	Run as received
229	35	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
V-ICP41	35	V ppm: 32 element, soil & rock	ICP-AES	1	10000
W-ICP41	35	W ppm: 32 element, soil & rock	ICP-AES	10	10000
Zn-ICP41	35	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000
Ag-AA46	35	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500
Pb-AA46	35	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	35	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0

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Total Pages :1
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CERTIFICATE OF ANALYSIS A0121577

SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm
644777	94139402	2.62	< 5	0.2	0.29	6	< 10	110	< 0.5	6	1.32	< 0.5	8	108	29
644778	94139402	3.20	< 5	8.8	0.20	8	< 10	100	< 0.5	< 2	5.98	< 0.5	7	40	14
644779	94139402	3.04	< 5	< 0.2	0.48	24	< 10	150	0.5	2	1.34	< 0.5	24	70	18
644780	94139402	4.26	< 5	5.4	0.31	10	< 10	30	< 0.5	8	0.29	195.5	16	111	100
644781	94139402	2.20	< 5	< 0.2	0.68	14	< 10	90	0.5	< 2	0.12	< 0.5	7	97	7
644782	94139402	2.06	< 5	0.2	0.30	6	< 10	50	< 0.5	< 2	0.27	0.5	1	128	5
644783	94139402	0.94	15	>100.0	0.18	< 2	< 10	10	< 0.5	< 2	0.21	111.0	8	50	52
644784	94139402	2.88	< 5	0.2	0.62	2	< 10	170	1.5	< 2	1.75	< 0.5	5	21	5
644785	94139402	2.56	< 5	0.2	0.65	2	< 10	160	1.5	6	1.23	1.5	10	15	8
644786	94139402	2.20	< 5	< 0.2	0.50	< 2	< 10	140	1.0	< 2	7.17	< 0.5	8	15	1
644787	94139402	1.70	< 5	< 0.2	0.47	< 2	< 10	230	0.5	< 2	6.60	< 0.5	9	41	< 1
644788	94139402	2.12	< 5	< 0.2	0.58	24	< 10	140	1.5	6	2.51	< 0.5	14	28	5
644789	94139402	1.22	15	12.2	0.44	394	< 10	40	0.5	6	2.54	105.5	99	54	53
644790	94139402	1.72	< 5	0.2	0.51	124	< 10	80	1.0	4	1.20	15.5	45	43	14
644791	9400 225	0.04	not/ss	9.0	0.41	52	< 10	< 10	0.5	12	0.31	440	10	5	134
644792	94139402	2.42	5	1.8	0.39	182	< 10	10	0.5	10	2.32	202	60	41	135
644793	94139402	2.32	< 5	< 0.2	0.43	52	< 10	180	0.5	6	2.61	6.0	22	56	28
644794	94139402	2.42	< 5	< 0.2	0.43	28	< 10	80	< 0.5	2	1.24	4.5	13	136	8
644795	94139402	1.84	< 5	1.6	0.27	36	< 10	< 10	< 0.5	20	2.02	>500	78	56	145
644796	94139402	1.32	< 5	< 0.2	0.32	18	< 10	90	< 0.5	2	3.65	21.0	13	69	12
644797	94139402	2.02	< 5	0.8	0.12	10	< 10	< 10	< 0.5	< 2	7.09	432	36	29	73
644798	94139402	2.28	5	1.2	0.14	12	< 10	< 10	< 0.5	12	3.08	>500	37	29	99
644799	94139402	1.98	< 5	< 0.2	0.05	2	< 10	50	< 0.5	< 2	9.64	7.0	3	7	11
644800	94139402	2.06	< 5	< 0.2	0.29	18	< 10	70	< 0.5	< 2	2.67	0.5	9	98	15
644801	94139402	3.06	< 5	1.2	0.20	14	< 10	< 10	< 0.5	20	1.20	>500	64	52	89
644802	94139402	3.76	< 5	1.2	0.26	16	< 10	< 10	< 0.5	16	1.56	390	51	79	120
644803	94139402	1.06	< 5	< 0.2	0.25	10	< 10	50	< 0.5	2	0.61	5.0	7	118	24
644804	94139402	3.32	< 5	7.6	0.35	14	< 10	30	< 0.5	8	1.51	225	33	77	64
644805	94139402	0.50	< 5	< 0.2	0.18	2	< 10	60	< 0.5	< 2	0.03	1.5	1	115	9
644806	94139402	2.62	< 5	< 0.2	0.25	10	< 10	50	< 0.5	6	1.85	0.5	6	93	25
644807	94139402	3.74	< 5	< 0.2	0.38	12	< 10	90	0.5	< 2	2.84	< 0.5	7	96	22
644808	94139402	3.12	< 5	0.2	0.18	6	< 10	30	< 0.5	6	3.29	84.0	10	164	25
644809	94139402	2.88	< 5	< 0.2	0.19	18	< 10	60	< 0.5	< 2	2.69	4.0	9	103	7
644810	94139402	2.22	< 5	0.8	0.19	22	< 10	< 10	< 0.5	14	0.76	272	41	87	78
644811	94139402	2.54	< 5	0.8	0.12	12	< 10	20	< 0.5	< 2	11.30	231	33	33	76

CERTIFICATION: _____

** FOR Cd ON SAMPLES '644797' AND '644798'.

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
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CERTIFICATE OF ANALYSIS A0121577

SAMPLE	PREP CODE	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm
644777	94139402	0.30	< 10	< 1	0.20	10	0.03	290	5	0.02	9	90	544	0.06	2
644778	94139402	0.38	< 10	< 1	0.16	< 10	0.03	1305	1	0.01	14	190	>10000	0.70	10
644779	94139402	0.76	< 10	< 1	0.33	10	0.06	290	1	0.01	44	170	268	0.45	< 2
644780	94139402	0.61	10	18	0.17	< 10	0.03	75	< 1	0.01	15	120	>10000	4.24	< 2
644781	94139402	1.14	< 10	< 1	0.24	10	0.10	55	< 1	0.01	22	180	26	0.07	8
644782	94139402	0.51	< 10	< 1	0.14	< 10	0.04	60	1	0.01	10	80	112	0.04	6
644783	94139402	0.29	< 10	10	0.12	< 10	0.01	40	14	< 0.01	7	130	>10000	7.53	300
644784	94139402	1.28	< 10	< 1	0.44	10	0.08	395	< 1	< 0.01	14	350	714	0.81	8
644785	94139402	1.33	< 10	< 1	0.50	20	0.09	285	1	0.01	22	310	1320	0.73	< 2
644786	94139402	1.19	< 10	< 1	0.40	10	0.08	1420	1	0.01	15	350	26	0.52	< 2
644787	94139402	0.71	< 10	1	0.37	10	0.06	1235	< 1	0.01	11	280	52	0.28	< 2
644788	94139402	1.08	< 10	< 1	0.42	30	0.09	640	3	0.01	23	310	906	0.51	< 2
644789	94139402	1.31	< 10	12	0.28	< 10	0.07	460	< 1	0.01	215	210	>10000	3.77	4
644790	94139402	1.16	< 10	1	0.39	20	0.06	250	< 1	0.01	75	220	66	1.17	4
644791	9400 225	2.78	10	9	0.15	< 10	0.07	810	13	0.01	20	1490	>10000	>10.00	20
644792	94139402	1.18	< 10	25	0.31	< 10	0.06	445	< 1	0.01	121	280	108	4.70	< 2
644793	94139402	0.66	< 10	< 1	0.32	30	0.07	535	< 1	0.01	37	240	62	0.35	2
644794	94139402	0.58	< 10	< 1	0.19	10	0.09	310	< 1	0.02	20	130	16	0.16	< 2
644795	94139402	1.23	40	60	0.18	< 10	0.03	510	< 1	0.01	25	240	32	9.92	< 2
644796	94139402	0.33	< 10	3	0.20	< 10	0.05	875	1	0.03	13	140	6	0.43	< 2
644797	94139402	0.72	20	31	0.08	< 10	0.03	1570	< 1	< 0.01	9	30	14	5.07	< 2
644798	94139402	0.65	20	30	0.07	< 10	0.01	690	< 1	< 0.01	9	110	16	4.63	< 2
644799	94139402	0.24	< 10	2	0.04	< 10	0.02	2740	< 1	< 0.01	3	40	< 2	0.13	< 2
644800	94139402	0.26	< 10	1	0.18	10	0.02	695	< 1	0.02	11	100	10	0.07	6
644801	94139402	0.83	40	49	0.14	< 10	0.01	275	< 1	0.01	11	190	608	7.91	< 2
644802	94139402	0.84	30	39	0.16	< 10	0.03	380	< 1	0.01	12	190	32	5.80	< 2
644803	94139402	0.25	< 10	< 1	0.12	< 10	0.03	110	1	0.02	7	70	8	0.11	< 2
644804	94139402	0.52	10	20	0.20	< 10	0.03	375	< 1	0.01	9	160	>10000	4.16	< 2
644805	94139402	0.53	< 10	< 1	0.08	10	< 0.01	45	1	< 0.01	3	130	122	0.08	2
644806	94139402	0.24	< 10	1	0.15	10	0.02	435	< 1	0.01	8	100	36	0.06	< 2
644807	94139402	0.30	< 10	1	0.24	10	0.04	700	< 1	< 0.01	10	210	18	0.09	< 2
644808	94139402	0.42	< 10	9	0.07	< 10	0.03	810	< 1	0.01	5	180	10	1.49	< 2
644809	94139402	0.28	< 10	< 1	0.08	< 10	0.05	655	< 1	< 0.01	11	110	6	0.11	< 2
644810	94139402	0.64	20	32	0.12	< 10	0.01	155	< 1	0.01	13	130	18	4.32	< 2
644811	94139402	0.71	20	36	0.09	10	0.03	2240	< 1	< 0.01	9	150	14	4.01	< 2

CERTIFICATION: _____

** FOR Cd ON SAMPLES '644797' AND '644798'.

ALS Chemex

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SAMPLE	PREP CODE	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Ag g/t	Pb %	Zn %
644777	94139402	1	69	< 0.01	< 10	< 10	2	< 10	2	< 1	0.05	< 0.01
644778	94139402	4	157	< 0.01	< 10	< 10	1	< 10	84	9	3.47	0.01
644779	94139402	3	74	< 0.01	< 10	< 10	5	< 10	28	< 1	0.03	< 0.01
644780	94139402	< 1	20	< 0.01	< 10	< 10	< 1	< 10	>10000	4	1.89	7.37
644781	94139402	< 1	31	< 0.01	< 10	< 10	4	< 10	100	< 1	< 0.01	0.01
644782	94139402	< 1	27	< 0.01	< 10	< 10	1	< 10	228	< 1	0.01	0.02
644783	94139402	< 1	19	< 0.01	< 10	< 10	< 1	< 10	>10000	113	47.3	4.48
644784	94139402	4	113	< 0.01	< 10	< 10	6	< 10	160	< 1	0.01	< 0.01
644785	94139402	4	92	< 0.01	< 10	< 10	7	< 10	424	< 1	0.14	0.01
644786	94139402	4	231	< 0.01	< 10	< 10	5	< 10	22	< 1	< 0.01	< 0.01
644787	94139402	3	217	< 0.01	< 10	< 10	4	< 10	14	< 1	< 0.01	< 0.01
644788	94139402	4	138	< 0.01	< 10	< 10	5	< 10	20	< 1	0.09	< 0.01
644789	94139402	3	139	< 0.01	< 10	< 10	3	< 10	>10000	12	5.17	4.68
644790	94139402	3	82	< 0.01	< 10	< 10	5	< 10	6460	< 1	< 0.01	0.68
644791	94002 25	1	7	< 0.01	< 10	< 10	11	< 10	>10000	10	1.38	27.7
644792	94139402	3	131	< 0.01	< 10	< 10	1	< 10	>10000	1	0.01	8.87
644793	94139402	3	151	< 0.01	< 10	< 10	4	< 10	1775	< 1	< 0.01	0.20
644794	94139402	1	62	< 0.01	< 10	< 10	2	< 10	1765	< 1	< 0.01	0.16
644795	94139402	1	80	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	18.60
644796	94139402	3	178	< 0.01	< 10	< 10	2	< 10	6190	< 1	< 0.01	0.74
644797	94139402	1	197	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	14.00
644798	94139402	1	116	< 0.01	< 10	< 10	< 1	< 10	>10000	1	< 0.01	16.55
644799	94139402	3	275	< 0.01	< 10	< 10	< 1	< 10	2440	< 1	< 0.01	0.56
644800	94139402	1	75	< 0.01	< 10	< 10	2	< 10	330	< 1	< 0.01	0.03
644801	94139402	< 1	55	< 0.01	< 10	< 10	< 1	< 10	>10000	1	0.07	17.65
644802	94139402	< 1	63	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	11.00
644803	94139402	< 1	46	< 0.01	< 10	< 10	1	< 10	1940	< 1	< 0.01	0.13
644804	94139402	< 1	56	< 0.01	< 10	< 10	< 1	< 10	>10000	7	2.66	7.16
644805	94139402	< 1	3	< 0.01	< 10	< 10	1	< 10	966	< 1	< 0.01	0.04
644806	94139402	1	61	< 0.01	< 10	< 10	1	< 10	274	< 1	< 0.01	0.03
644807	94139402	2	93	< 0.01	< 10	< 10	3	< 10	200	< 1	< 0.01	0.02
644808	94139402	< 1	140	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	2.62
644809	94139402	1	97	< 0.01	< 10	< 10	1	< 10	1465	< 1	< 0.01	0.12
644810	94139402	< 1	51	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	10.15
644811	94139402	3	334	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	9.27

CERTIFICATION: _____

** FOR Cd ON SAMPLES '644797' AND '644798'.

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SAMPLE	PREP CODE	Weight Kg	Au ppb FA+AA	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm
644777	94139402	2.62	< 5	0.2	0.29	6	< 10	110	< 0.5	6	1.32	< 0.5	8	108	29
644778	94139402	3.20	< 5	8.8	0.20	8	< 10	100	< 0.5	< 2	5.98	< 0.5	7	40	14
644779	94139402	3.04	< 5	< 0.2	0.48	24	< 10	150	0.5	2	1.34	< 0.5	24	70	18
644780	94139402	4.26	< 5	5.4	0.31	10	< 10	30	< 0.5	8	0.29	195.5	16	111	100
644781	94139402	2.20	< 5	< 0.2	0.68	14	< 10	90	0.5	< 2	0.12	< 0.5	7	97	7
644782	94139402	2.06	< 5	0.2	0.30	6	< 10	50	< 0.5	< 2	0.27	0.5	1	128	5
644783	94139402	0.94	15	>100.0	0.18	< 2	< 10	10	< 0.5	< 2	0.21	111.0	8	50	52
644784	94139402	2.88	< 5	0.2	0.62	2	< 10	170	1.5	< 2	1.75	< 0.5	5	21	5
644785	94139402	2.56	< 5	0.2	0.65	2	< 10	160	1.5	6	1.23	1.5	10	15	8
644786	94139402	2.20	< 5	< 0.2	0.50	< 2	< 10	140	1.0	< 2	7.17	< 0.5	8	15	1
644787	94139402	1.70	< 5	< 0.2	0.47	< 2	< 10	230	0.5	< 2	6.60	< 0.5	9	41	< 1
644788	94139402	2.12	< 5	< 0.2	0.58	24	< 10	140	1.5	6	2.51	< 0.5	14	28	5
644789	94139402	1.22	15	12.2	0.44	394	< 10	40	0.5	6	2.54	105.5	99	54	53
644790	94139402	1.72	< 5	0.2	0.51	124	< 10	80	1.0	4	1.20	15.5	45	43	14
644791	9400 225	0.04	not/ss	9.0	0.41	52	< 10	< 10	0.5	12	0.31	440	10	5	134
644792	94139402	2.42	5	1.8	0.39	182	< 10	10	0.5	10	2.32	202	60	41	135
644793	94139402	2.32	< 5	< 0.2	0.43	52	< 10	180	0.5	6	2.61	6.0	22	56	28
644794	94139402	2.42	< 5	< 0.2	0.43	28	< 10	80	< 0.5	2	1.24	4.5	13	136	8
644795	94139402	1.84	< 5	1.6	0.27	36	< 10	< 10	< 0.5	20	2.02	>500	78	56	145
644796	94139402	1.32	< 5	< 0.2	0.32	18	< 10	90	< 0.5	2	3.65	21.0	13	69	12
644797	94139402	2.02	< 5	0.8	0.12	10	< 10	< 10	< 0.5	< 2	7.09	432	36	29	73
644798	94139402	2.28	5	1.2	0.14	12	< 10	< 10	< 0.5	12	3.08	>500	37	29	99
644799	94139402	1.98	< 5	< 0.2	0.05	2	< 10	50	< 0.5	< 2	9.64	7.0	3	7	11
644800	94139402	2.06	< 5	< 0.2	0.29	18	< 10	70	< 0.5	< 2	2.67	0.5	9	98	15
644801	94139402	3.06	< 5	1.2	0.20	14	< 10	< 10	< 0.5	20	1.20	>500	64	52	89
644802	94139402	3.76	< 5	1.2	0.26	16	< 10	< 10	< 0.5	16	1.56	390	51	79	120
644803	94139402	1.06	< 5	< 0.2	0.25	10	< 10	50	< 0.5	2	0.61	5.0	7	118	24
644804	94139402	3.32	< 5	7.6	0.35	14	< 10	30	< 0.5	8	1.51	225	33	77	64
644805	94139402	0.50	< 5	< 0.2	0.18	2	< 10	60	< 0.5	< 2	0.03	1.5	1	115	9
644806	94139402	2.62	< 5	< 0.2	0.25	10	< 10	50	< 0.5	6	1.85	0.5	6	93	25
644807	94139402	3.74	< 5	< 0.2	0.38	12	< 10	90	0.5	< 2	2.84	< 0.5	7	96	22
644808	94139402	3.12	< 5	0.2	0.18	6	< 10	30	< 0.5	6	3.29	84.0	10	164	25
644809	94139402	2.88	< 5	< 0.2	0.19	18	< 10	60	< 0.5	< 2	2.69	4.0	9	103	7
644810	94139402	2.22	< 5	0.8	0.19	22	< 10	< 10	< 0.5	14	0.76	272	41	87	78
644811	94139402	2.54	< 5	0.8	0.12	12	< 10	20	< 0.5	< 2	11.30	231	33	33	76

CERTIFICATION: _____

** FOR Cd ON SAMPLES '644797' AND '644798'.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Certificate Date: 10-AUG-2001
Invoice No. : I0121577
P.O. Number :
Account : BUF

** CORRECTED COPY

CERTIFICATE OF ANALYSIS A0121577

SAMPLE	PREP CODE	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm
644777	94139402	0.30	< 10	< 1	0.20	10	0.03	290	5	0.02	9	90	544	0.06	2
644778	94139402	0.38	< 10	< 1	0.16	< 10	0.03	1305	1	0.01	14	190	>10000	0.70	10
644779	94139402	0.76	< 10	< 1	0.33	10	0.06	290	1	0.01	44	170	268	0.45	< 2
644780	94139402	0.61	10	18	0.17	< 10	0.03	75	< 1	0.01	15	120	>10000	4.24	< 2
644781	94139402	1.14	< 10	< 1	0.24	10	0.10	55	< 1	0.01	22	180	26	0.07	8
644782	94139402	0.51	< 10	< 1	0.14	< 10	0.04	60	1	0.01	10	80	112	0.04	6
644783	94139402	0.29	< 10	10	0.12	< 10	0.01	40	14	< 0.01	7	130	>10000	7.53	300
644784	94139402	1.28	< 10	< 1	0.44	10	0.08	395	< 1	< 0.01	14	350	714	0.81	8
644785	94139402	1.33	< 10	< 1	0.50	20	0.09	285	1	0.01	22	310	1320	0.73	< 2
644786	94139402	1.19	< 10	< 1	0.40	10	0.08	1420	1	0.01	15	350	26	0.52	< 2
644787	94139402	0.71	< 10	1	0.37	10	0.06	1235	< 1	0.01	11	280	52	0.28	< 2
644788	94139402	1.08	< 10	< 1	0.42	30	0.09	640	3	0.01	23	310	906	0.51	< 2
644789	94139402	1.31	< 10	12	0.28	< 10	0.07	460	< 1	0.01	215	210	>10000	3.77	4
644790	94139402	1.16	< 10	1	0.39	20	0.06	250	< 1	0.01	75	220	66	1.17	4
644791	9400 225	2.78	10	9	0.15	< 10	0.07	810	13	0.01	20	1490	>10000	>10.00	20
644792	94139402	1.18	< 10	25	0.31	< 10	0.06	445	< 1	0.01	121	280	108	4.70	< 2
644793	94139402	0.66	< 10	< 1	0.32	30	0.07	535	< 1	0.01	37	240	62	0.35	2
644794	94139402	0.58	< 10	< 1	0.19	10	0.09	310	< 1	0.02	20	130	16	0.16	< 2
644795	94139402	1.23	40	60	0.18	< 10	0.03	510	< 1	0.01	25	240	32	9.92	< 2
644796	94139402	0.33	< 10	3	0.20	< 10	0.05	875	1	0.03	13	140	6	0.43	< 2
644797	94139402	0.72	20	31	0.08	< 10	0.03	1570	< 1	< 0.01	9	30	14	5.07	< 2
644798	94139402	0.65	20	30	0.07	< 10	0.01	690	< 1	< 0.01	9	110	16	4.63	< 2
644799	94139402	0.24	< 10	2	0.04	< 10	0.02	2740	< 1	< 0.01	3	40	< 2	0.13	< 2
644800	94139402	0.26	< 10	1	0.18	10	0.02	695	< 1	0.02	11	100	10	0.07	6
644801	94139402	0.83	40	49	0.14	< 10	0.01	275	< 1	0.01	11	190	608	7.91	< 2
644802	94139402	0.84	30	39	0.16	< 10	0.03	380	< 1	0.01	12	190	32	5.80	< 2
644803	94139402	0.25	< 10	< 1	0.12	< 10	0.03	110	1	0.02	7	70	8	0.11	< 2
644804	94139402	0.52	10	20	0.20	< 10	0.03	375	< 1	0.01	9	160	>10000	4.16	< 2
644805	94139402	0.53	< 10	< 1	0.08	10	< 0.01	45	1	< 0.01	3	130	122	0.08	2
644806	94139402	0.24	< 10	1	0.15	10	0.02	435	< 1	0.01	8	100	36	0.06	< 2
644807	94139402	0.30	< 10	1	0.24	10	0.04	700	< 1	< 0.01	10	210	18	0.09	< 2
644808	94139402	0.42	< 10	9	0.07	< 10	0.03	810	< 1	0.01	5	180	10	1.49	< 2
644809	94139402	0.28	< 10	< 1	0.08	< 10	0.05	655	< 1	< 0.01	11	110	6	0.11	< 2
644810	94139402	0.64	20	32	0.12	< 10	0.01	155	< 1	0.01	13	130	18	4.32	< 2
644811	94139402	0.71	20	36	0.09	10	0.03	2240	< 1	< 0.01	9	150	14	4.01	< 2

CERTIFICATION: _____

** FOR Cd ON SAMPLES '644797' AND '644798'.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR

Page Number : 1-C
Total Pages : 1
Certificate Date: 10-AUG-2001
Invoice No. : I0121577
P.O. Number :
Account : BUF

** CORRECTED COPY

CERTIFICATE OF ANALYSIS A0121577

SAMPLE	PREP CODE	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Ag g/t	Pb %	Zn %
644777	9413 9402	1	69	< 0.01	< 10	< 10	2	< 10	2	< 1	0.05	< 0.01
644778	9413 9402	4	157	< 0.01	< 10	< 10	1	< 10	84	9	3.47	0.01
644779	9413 9402	3	74	< 0.01	< 10	< 10	5	< 10	28	< 1	0.03	< 0.01
644780	9413 9402	< 1	20	< 0.01	< 10	< 10	< 1	< 10	>10000	4	1.89	7.37
644781	9413 9402	< 1	31	< 0.01	< 10	< 10	4	< 10	100	< 1	< 0.01	0.01
644782	9413 9402	< 1	27	< 0.01	< 10	< 10	1	< 10	228	< 1	0.01	0.02
644783	9413 9402	< 1	19	< 0.01	< 10	< 10	< 1	< 10	>10000	113	47.3	4.48
644784	9413 9402	4	113	< 0.01	< 10	< 10	6	< 10	160	< 1	0.01	< 0.01
644785	9413 9402	4	92	< 0.01	< 10	< 10	7	< 10	424	< 1	0.14	0.01
644786	9413 9402	4	231	< 0.01	< 10	< 10	5	< 10	22	< 1	< 0.01	< 0.01
644787	9413 9402	3	217	< 0.01	< 10	< 10	4	< 10	14	< 1	< 0.01	< 0.01
644788	9413 9402	4	138	< 0.01	< 10	< 10	5	< 10	20	< 1	0.09	< 0.01
644789	9413 9402	3	139	< 0.01	< 10	< 10	3	< 10	>10000	12	5.17	4.68
644790	9413 9402	3	82	< 0.01	< 10	< 10	5	< 10	6460	< 1	< 0.01	0.68
644791	9400 225	1	7	< 0.01	< 10	< 10	11	< 10	>10000	10	1.38	27.7
644792	9413 9402	3	131	< 0.01	< 10	< 10	1	< 10	>10000	1	0.01	8.87
644793	9413 9402	3	151	< 0.01	< 10	< 10	4	< 10	1775	< 1	< 0.01	0.20
644794	9413 9402	1	62	< 0.01	< 10	< 10	2	< 10	1765	< 1	< 0.01	0.16
644795	9413 9402	1	80	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	18.60
644796	9413 9402	3	178	< 0.01	< 10	< 10	2	< 10	6190	< 1	< 0.01	0.74
644797	9413 9402	1	197	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	14.00
644798	9413 9402	1	116	< 0.01	< 10	< 10	< 1	< 10	>10000	1	< 0.01	16.55
644799	9413 9402	3	275	< 0.01	< 10	< 10	< 1	< 10	2440	< 1	< 0.01	0.56
644800	9413 9402	1	75	< 0.01	< 10	< 10	2	< 10	330	< 1	< 0.01	0.03
644801	9413 9402	< 1	55	< 0.01	< 10	< 10	< 1	< 10	>10000	1	0.07	17.65
644802	9413 9402	< 1	63	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	11.00
644803	9413 9402	< 1	46	< 0.01	< 10	< 10	1	< 10	1940	< 1	< 0.01	0.13
644804	9413 9402	< 1	56	< 0.01	< 10	< 10	< 1	< 10	>10000	7	2.66	7.16
644805	9413 9402	< 1	3	< 0.01	< 10	< 10	1	< 10	966	< 1	< 0.01	0.04
644806	9413 9402	1	61	< 0.01	< 10	< 10	1	< 10	274	< 1	< 0.01	0.03
644807	9413 9402	2	93	< 0.01	< 10	< 10	3	< 10	200	< 1	< 0.01	0.02
644808	9413 9402	< 1	140	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	2.62
644809	9413 9402	1	97	< 0.01	< 10	< 10	1	< 10	1465	< 1	< 0.01	0.12
644810	9413 9402	< 1	51	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	10.15
644811	9413 9402	3	334	< 0.01	< 10	< 10	< 1	< 10	>10000	< 1	< 0.01	9.27

CERTIFICATION: _____

** FOR Cd ON SAMPLES '644797' AND '644798'.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED DEC 1 1 2001

A0127055

Comments: ATTN: CLINT BARR EMAIL:DAVE KING

CERTIFICATE A0127055

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 14-NOV-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	40	Pulv. <250g to >85%/-75 micron
STO-21	40	Reject Storage-First 90 Days
LOG-22	42	Samples received without barcode
CRU-31	40	Crush to 70% minus 2mm
SPL-21	40	Splitting Charge
225	2	Run as received
9300	42	T127 special code

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Au-AA23	42	Au-AA23 : Au ppb: Fuse 30 grams	FA-AAS	5	10000
Ag-MS61	42	Ag ppm: ICP + ICP-MS package	ICP-MS/ICP	0.02	100.0
Al-MS61	42	Al %: ICP + ICP-MS package	ICP	0.01	25.0
Ba-MS61	42	Ba ppm: ICP + ICP-MS package	ICP	0.5	10000
Be-MS61	42	Be ppm: ICP + ICP-MS package	ICP-MS/ICP	0.05	1000
Bi-MS61	42	Bi ppm: ICP + ICP-MS package	ICP-MS/ICP	0.01	10000
Ca-MS61	42	Ca %: ICP + ICP-MS package	ICP	0.01	25.0
Cd-MS61	42	Cd ppm: ICP + ICP-MS package	ICP-MS/ICP	0.02	500
Ce-MS61	42	Ce ppm: ICP + ICP-MS package	ICP-MS	0.01	500
Co-MS61	42	Co ppm: ICP + ICP-MS package	ICP-MS/ICP	0.1	10000
Cr-MS61	42	Cr ppm: ICP + ICP-MS package	ICP	1	10000
Cs-MS61	42	Cs ppm: ICP + ICP-MS package	ICP-MS	0.05	500
Cu-MS61	42	Cu ppm: ICP + ICP-MS package	ICP	0.2	10000
Fe-MS61	42	Fe %: ICP + ICP-MS package	ICP	0.01	25.0
Ga-MS61	42	Ga ppm: ICP + ICP-MS package	ICP-MS	0.05	500.0
Ge-MS61	42	Ge ppm: ICP + ICP-MS package	ICP-MS	0.05	500.0
Hf-MS61	42	Hf ppm: ICP + ICP-MS package	ICP-MS/ICP	0.1	500
In-MS61	42	In ppm: ICP + ICP-MS package	ICP-MS/ICP	0.005	500
K-MS61	42	K %: ICP + ICP-MS package	ICP	0.01	10.00
La-MS61	42	La ppm: ICP + ICP-MS package	ICP-MS	0.5	500
Li-MS61	42	Li ppm: ICP + ICP-MS package	ICP-MS	0.2	500
Mg-MS61	42	Mg %: ICP + ICP-MS package	ICP	0.01	15.00
Mn-MS61	42	Mn ppm: ICP + ICP-MS package	ICP	5	10000
Mo-MS61	42	Mo ppm: ICP + ICP-MS package	ICP	0.05	10000
Na-MS61	42	Na %: ICP + ICP-MS package	ICP	0.01	10.00
Nb-MS61	42	Nb ppm: ICP + ICP-MS package	ICP-MS	0.1	500
Ni-MS61	42	Ni ppm: ICP + ICP-MS package	ICP-MS/ICP	0.2	10000
P-MS61	42	P ppm: ICP + ICP-MS package	ICP	10	10000
Pb-MS61	42	Pb ppm: ICP + ICP-MS package	ICP-MS/ICP	0.5	10000
Rb-MS61	42	Rb ppm: ICP + ICP-MS package	ICP-MS	0.1	500
Re-MS61	42	Re ppm: ICP + ICP-MS package	ICP-MS/ICP	0.002	50.0
S-MS61	42	S %: ICP + ICP-MS package	ICP-MS/ICP	0.01	10.00
Sb-MS61	42	Sb ppm: ICP + ICP-MS package	ICP-MS	0.05	1000.0
Se-MS61	42	Se ppm: ICP + ICP-MS package	ICP-MS/ICP	1	1000

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
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Comments: ATTN: CLINT BARR EMAIL:DAVE KING

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(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
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Samples submitted to our lab in Vancouver, BC.
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SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	40	Pulv. <250g to >85%/-75 micron
STO-21	40	Reject Storage-First 90 Days
LOG-22	42	Samples received without barcode
CRU-31	40	Crush to 70% minus 2mm
SPL-21	40	Splitting Charge
225	2	Run as received
9300	42	T127 special code

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Sn-MS61	42	Sn ppm: ICP + ICP-MS package	ICP-MS/ICP	0.2	500
Sr-MS61	42	Sr ppm: ICP + ICP-MS package	ICP-MS/ICP	0.2	10000
Ta-MS61	42	Ta ppm: ICP + ICP-MS package	ICP-MS	0.05	100.0
Te-MS61	42	Te ppm: ICP + ICP-MS package	ICP-MS	0.05	500
Th-MS61	42	Th ppm: ICP + ICP-MS package	ICP-MS	0.2	500
Ti-MS61	42	Ti %: ICP + ICP-MS package	ICP	0.01	10.00
Tl-MS61	42	Tl ppm: ICP + ICP-MS package	ICP-MS	0.02	500
U-MS61	42	U ppm: ICP + ICP-MS package	ICP-MS	0.1	500
V-MS61	42	V ppm: ICP + ICP-MS package	ICP	1	10000
W-MS61	42	W ppm: ICP + ICP-MS package	ICP-MS/ICP	0.1	10000
Y-MS61	42	Y ppm: ICP + ICP-MS package	ICP-MS	0.1	500
Zn-MS61	42	Zn ppm: ICP + ICP-MS package	ICP	2	10000
Zr-MS61	42	Zr ppm: ICP + ICP-MS package	ICP-MS/ICP	0.5	500
As-AA45	42	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
Hg-CV41	42	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
OA-GRA08	42	Spec. grav. SG: pulv. material	PYCNOMETER	0.01	20.0
Ag-AA46	42	Ag oz/T: Conc. Nitric-HCl dig'n	AAS	0.03	50.0
Pb-AA46	42	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	42	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Cd-AA46	42	Cd %: Conc. Nitric-HCL dig'n	AAS	0.001	10.000

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Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Certificate Date: 07-NOV-2001
Invoice No. : I0127055
P.O. Number :
Account : BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0127055

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644620	9413 9402	< 5	1.04	10.30	1362.5	2.70	0.36	3.10	0.22	120.5	13.5	95	12.45	38.0	1.04	24.25	4.20	6.0	0.100	4.67
644621	9413 9402	25	23.4	0.52	90.0	0.05	0.12	1.09	>500	7.07	25.6	183	0.75	126.7	0.58	8.10	79.90	0.4	0.045	0.19
644622	9413 9402	< 5	1.12	9.61	1396.5	2.75	0.30	1.45	0.44	130.0	15.9	91	12.20	45.0	0.98	25.25	6.00	5.9	0.070	4.33
644623	9413 9402	< 5	0.82	5.96	801.6	1.60	0.13	15.20	0.56	115.0	10.9	59	7.95	25.2	0.81	15.10	3.50	2.1	0.065	2.87
644624	9413 9402	15	96.1	1.06	40.0	0.25	0.37	4.07	185.0	18.80	11.1	37	1.05	487.0	0.64	6.60	24.85	0.4	0.130	0.44
644625	9413 9402	< 5	2.82	9.73	1442.0	2.95	0.41	1.32	0.78	108.0	32.8	106	8.45	87.1	4.03	25.25	10.55	4.9	0.080	3.68
644626	9413 9402	< 5	0.90	1.22	169.0	0.30	0.23	0.03	0.74	46.2	1.8	216	1.10	15.8	0.81	3.00	1.05	1.9	0.065	0.49
644627	9413 9402	< 5	0.80	7.73	963.4	2.15	0.42	2.87	0.10	91.7	16.2	113	8.15	40.6	3.14	18.45	2.40	2.5	0.080	2.96
644628	9413 9402	< 5	7.40	9.66	605.7	3.30	0.35	2.05	46.6	104.5	16.8	118	15.70	64.0	2.21	27.25	11.40	4.4	0.190	3.78
644629	9413 9402	10	13.15	3.58	453.5	1.20	0.18	5.28	88.5	34.0	24.8	112	3.45	36.6	0.91	12.15	9.20	1.4	0.430	1.46
644630	9413 9402	5	4.82	1.08	91.0	0.45	0.08	17.90	396	38.5	60.8	70	1.05	155.0	1.30	25.55	33.60	0.5	2.77	0.49
644631	9413 9402	< 5	3.28	0.94	176.0	0.30	0.06	18.25	221	25.8	31.0	41	0.80	71.5	0.71	16.70	16.75	0.5	1.925	0.42
644632	9413 9402	< 5	0.42	1.68	271.5	0.45	0.11	24.7	9.50	38.2	11.9	33	1.65	8.8	0.77	4.30	2.20	1.0	0.070	0.80
644633	9413 9402	10	2.72	3.18	46.0	0.75	0.10	2.09	>500	24.1	83.6	101	3.00	105.2	1.37	25.85	38.75	1.6	0.350	1.31
644634	9413 9402	< 5	0.20	7.59	87.5	0.20	0.03	2.58	0.54	8.53	1.7	129	0.95	0.8	0.70	1.90	0.40	0.4	0.005	2.97
644635	9413 9402	< 5	1.82	3.99	137.0	1.15	0.19	6.62	97.4	56.5	17.8	125	4.30	78.2	0.66	12.40	23.45	1.1	0.400	1.77
644636	9413 9402	5	1.72	5.69	277.5	1.20	0.26	1.76	94.9	65.6	20.9	134	5.30	49.0	0.83	18.10	16.95	3.0	0.565	2.12
644637	9413 9402	25	23.7	2.16	87.5	0.40	0.17	0.57	305	17.85	34.7	137	1.25	133.1	0.87	18.10	28.40	1.2	1.165	0.95
644638	9413 9402	25	>100.0	0.80	23.0	0.15	0.13	0.17	5.22	7.80	1.6	48	0.65	41.8	0.10	2.10	1.30	0.1	0.035	0.38
644639	9413 9402	45	>100.0	0.46	53.0	0.05	0.09	0.11	350	15.30	18.4	118	0.40	176.6	0.41	10.95	85.45	< 0.1	0.875	0.21
644640	9400 225	295	13.60	2.17	87.0	1.75	0.39	0.45	74.2	32.7	9.8	26	7.10	124.5	13.35	9.10	16.50	1.1	0.080	0.91
644641	9413 9402	< 5	4.90	3.82	45.0	1.00	0.14	0.08	445	50.2	30.7	129	3.55	287.0	0.73	24.15	120.95	1.2	0.830	1.59
644642	9413 9402	5	3.72	4.89	662.3	1.30	0.19	0.07	17.55	46.0	11.4	141	4.15	34.4	0.60	13.30	11.35	1.7	0.200	1.80
644643	9413 9402	45	23.1	1.41	34.0	0.35	0.12	1.14	>500	23.5	88.4	119	1.25	336.0	1.96	56.20	100.15	0.3	6.55	0.66
644644	9413 9402	< 5	0.90	3.09	433.5	0.55	0.08	10.55	1.02	37.2	4.8	101	2.50	187.5	0.58	6.65	3.80	1.1	0.115	1.23
644645	9413 9402	< 5	1.08	7.69	658.2	1.55	0.18	5.26	0.94	79.4	17.2	141	6.65	54.9	1.12	18.70	3.55	2.4	0.100	3.35
644646	9413 9402	< 5	1.98	6.05	1041.5	1.75	0.21	0.28	7.10	64.9	8.4	136	6.90	106.0	0.88	16.45	5.10	2.1	0.035	2.50
644647	9413 9402	5	22.6	3.21	136.5	1.20	0.14	0.07	166.5	17.65	4.6	139	3.45	191.2	0.63	13.65	9.10	1.4	0.110	1.35
644648	9413 9402	65	24.9	0.64	11.0	0.30	0.08	0.04	>500	6.30	133.5	72	0.70	313.0	2.40	79.20	82.10	< 0.1	25.9	0.28
644649	9400 225	< 10	10.65	2.80	39.5	1.75	0.21	0.29	428	33.8	7.7	29	10.35	123.0	2.96	7.15	51.50	1.8	0.035	1.31
644650	9413 9402	30	>100.0	0.33	17.0	0.20	0.07	0.02	180.0	6.12	14.8	45	0.30	87.0	0.49	11.10	18.70	< 0.1	4.06	0.15
644651	9413 9402	45	39.0	0.65	37.5	0.15	0.10	0.01	>500	5.79	151.7	72	0.45	403.0	2.55	72.95	89.05	0.1	8.36	0.30
644652	9413 9402	5	7.86	5.15	682.3	1.15	0.28	0.44	19.80	24.1	12.6	169	4.85	612.0	0.73	12.85	6.95	2.4	0.280	2.07
644653	9413 9402	< 5	1.06	4.70	615.6	1.00	0.13	0.33	18.70	32.5	9.0	161	4.20	92.9	0.66	11.20	6.95	2.2	0.055	1.61
644654	9413 9402	15	5.32	3.53	48.5	1.40	0.11	0.15	>500	30.0	87.7	122	3.40	224.0	1.84	58.45	55.35	1.6	9.34	1.54
644655	9413 9402	15	65.0	1.74	46.0	0.45	0.25	0.47	311	21.4	22.6	86	1.55	125.5	0.85	22.95	41.65	0.7	1.230	0.81
644656	9413 9402	< 5	2.22	6.64	1075.0	1.65	0.09	1.77	8.52	74.9	6.3	106	5.95	9.8	0.78	16.85	4.75	1.7	0.050	2.61
644657	9413 9402	60	99.9	3.32	71.5	0.75	0.14	0.26	26.5	17.15	3.3	69	3.15	19.4	0.83	8.30	4.10	1.0	0.305	1.53
644658	9413 9402	15	62.8	5.17	77.0	1.90	0.18	0.16	306	23.6	25.9	85	5.55	92.7	2.83	23.90	26.25	1.4	3.67	2.27
644659	9413 9402	20	61.7	3.36	105.0	1.00	0.24	0.13	159.0	23.9	17.1	121	3.25	75.5	1.95	13.80	17.35	1.2	0.890	1.36

CERTIFICATION: _____*+

* RECOMMEND TITRATION FOR Pb AND Zn VALUES >30%.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

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CERTIFICATE OF ANALYSIS A0127055

SAMPLE	PREP CODE	La ppm (ICP)	Li ppm (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Nb ppm (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm (ICP)	Rb ppm (ICP)	Re ppm	S %	Sb ppm (ICP)	Se ppm	Sn ppm	Sr ppm (ICP)	Ta ppm (ICP)	Te ppm (ICP)
644620	9413 9402	60.0	17.0	0.43	810	0.50	0.11	19.1	23.6	440	105.5	196.0<	0.002	0.02	3.90	< 1	2.2	179.5	2.15	0.15
644621	9413 9402	4.0	14.0	0.02	215	1.45	0.05	2.2	16.8	40>10000		12.7<	0.002	7.25	55.20	4	1.0	67.0	0.40	0.25
644622	9413 9402	61.5	15.8	0.45	485	0.65	0.09	16.9	24.0	380	127.5	198.5<	0.002	0.02	13.25	< 1	2.2	122.5	1.80	0.05
644623	9413 9402	51.5	10.0	0.29	4010	0.45	0.06	9.8	15.2	240	168.0	127.5<	0.002	0.03	6.25	1	1.4	399	0.90	0.05
644624	9413 9402	8.5	7.2	0.07	1010	1.05	0.04	2.6	11.6	60>10000		20.4	0.004	9.94	379.2	3	0.8	163.0	0.60	0.25
644625	9413 9402	53.0	43.4	0.58	1310	2.35	0.08	17.6	39.2	310	2100	170.5<	0.002	0.41	14.15	< 1	2.2	140.0	2.15	0.05
644626	9413 9402	22.0	27.6	0.04	135	1.95	0.06	2.6	5.8	180	522	22.6<	0.002	0.09	2.50	< 1	6.0	7.0	0.25	< 0.05
644627	9413 9402	42.5	42.2	0.51	1530	1.35	0.08	13.3	25.2	390	79.5	135.5	0.002	0.12	1.20	< 1	1.8	216	1.10	0.05
644628	9413 9402	53.5	47.8	0.45	610	1.45	0.09	18.0	27.6	370>10000		191.5	0.002	1.00	18.55	3	2.8	187.5	2.90	0.35
644629	9413 9402	18.0	19.6	0.16	885	1.25	0.08	4.5	29.2	210>10000		64.4<	0.002	2.11	43.10	3	1.4	268	0.65	< 0.05
644630	9413 9402	17.5	10.2	0.08	2300	1.45	0.01	2.3	34.6	170	118.0	21.8<	0.002	3.60	8.05	5	3.6	651	0.50	< 0.05
644631	9413 9402	10.5	9.2	0.07	2140	1.15	0.03	1.6	16.0	160	73.5	17.1	0.002	1.71	5.15	3	2.8	615	0.10	< 0.05
644632	9413 9402	19.5	6.6	0.13	1610	0.40	0.03	3.2	22.8	250	261	34.5	0.002	0.57	7.30	< 1	0.4	914	0.20	0.05
644633	9413 9402	13.0	19.0	0.13	405	1.15	0.11	5.9	14.6	100	74.0	56.3	0.002	5.76	10.60	6	1.4	78.1	0.80	< 0.05
644634	9413 9402	5.0	1.8	0.30	485	0.15	0.34	1.4	2.4	440	4.0	13.8<	0.002	0.20	0.70	< 1	< 0.2	11.4	0.15	< 0.05
644635	9413 9402	30.0	26.6	0.15	1235	1.15	0.08	5.7	18.4	290	129.5	74.9	0.002	1.75	7.80	3	1.4	211	0.50	< 0.05
644636	9413 9402	39.0	27.8	0.24	365	1.25	0.07	9.4	22.2	300	36.5	99.2<	0.002	1.23	13.20	2	2.2	105.5	1.10	0.15
644637	9413 9402	10.5	19.8	0.11	155	1.20	0.06	3.5	16.4	110>10000		40.5<	0.002	5.00	90.75	4	4.8	31.0	0.45	< 0.05
644638	9413 9402	4.5	4.0	0.03	35	0.95	0.08	1.2	13.8	60>10000		14.7	0.002	8.50	520.4	3	0.6	8.6	0.15	0.05
644639	9413 9402	7.5	11.4	0.01	30	1.20	0.04	0.9	18.8	10>10000		8.9	0.002	9.13	250.8	6	1.2	7.8	0.05	< 0.05
644640	9400 225	17.0	9.8	0.82	>10000	3.85	0.05	4.9	37.0	940	9590	58.9	0.002	1.94	4.00	5	1.2	22.2	0.55	0.40
644641	9413 9402	27.5	21.0	0.16	50	0.45	0.05	6.2	33.8	190	1085	78.2<	0.002	6.46	22.85	4	1.4	30.6	0.75	0.05
644642	9413 9402	26.5	28.4	0.20	65	0.45	0.07	7.3	20.0	170	5470	83.9<	0.002	0.40	17.70	< 1	1.2	37.8	0.85	0.05
644643	9413 9402	14.5	16.0	0.06	250	1.20	0.01	1.9	15.4	60>10000		28.9<	0.002	>10.00	44.80	9	8.6	39.2	0.30	0.30
644644	9413 9402	17.5	18.2	0.14	1910	0.40	0.12	3.3	9.6	90	99.0	50.6<	0.002	0.14	4.25	< 1	0.6	414	0.20	0.05
644645	9413 9402	43.0	26.4	0.33	1005	0.50	0.08	12.1	22.2	300	118.5	138.0<	0.002	0.57	10.40	< 1	1.6	319	0.90	0.05
644646	9413 9402	36.0	28.6	0.33	75	0.75	0.08	9.5	16.2	770	8410	122.0<	0.002	0.20	22.90	< 1	1.4	61.1	1.10	0.05
644647	9413 9402	10.5	27.8	0.18	30	1.35	0.07	4.3	2.6	90>10000		61.9<	0.002	3.54	60.65	4	0.8	29.0	0.80	0.15
644648	9413 9402	4.0	13.2	0.04	45	1.05	< 0.01	0.9	7.6	10>10000		12.8	0.002	>10.00	84.85	11	13.8	9.2	0.15	0.25
644649	9400 225	17.5	10.2	0.18	845	18.70	0.03	4.9	29.8	1310>10000		73.3<	0.002	>10.00	25.20	11	1.2	23.4	0.75	0.30
644650	9413 9402	3.0	5.2	0.01	15	1.10	0.04	0.5	1.0	20>10000		7.2<	0.002	>10.00	380.6	5	4.4	3.8	0.05	0.20
644651	9413 9402	3.5	15.4	0.03	35	1.05	0.02	0.8	4.2	40>10000		11.8	0.002	>10.00	80.95	13	8.6	7.6	0.10	0.25
644652	9413 9402	14.5	27.0	0.23	90	1.35	0.24	6.5	10.6	210>10000		86.7<	0.002	0.95	38.15	4	1.4	60.8	0.95	0.20
644653	9413 9402	19.0	25.4	0.20	80	0.55	0.59	6.5	12.0	180	690	72.7<	0.002	0.38	15.00	< 1	0.8	56.2	0.75	0.05
644654	9413 9402	17.0	23.2	0.16	65	1.30	0.07	5.9	3.2	120	1180	67.1<	0.002	7.93	27.65	8	8.4	35.2	0.95	0.20
644655	9413 9402	12.0	11.2	0.07	130	1.65	0.04	2.8	4.0	100>10000		32.4	0.002	9.50	442.2	7	2.8	32.4	0.45	0.25
644656	9413 9402	40.5	18.6	0.27	440	0.55	0.06	10.1	16.2	210	392	114.5<	0.002	0.07	12.20	< 1	1.2	91.3	0.80	0.05
644657	9413 9402	10.0	11.0	0.17	390	1.40	0.05	5.1	3.0	100>10000		61.5<	0.002	6.46	561.7	3	1.2	31.4	0.65	0.20
644658	9413 9402	11.0	19.0	0.34	1455	1.25	0.05	6.3	13.4	140>10000		98.6<	0.002	5.79	173.55	4	3.2	48.2	0.90	0.15
644659	9413 9402	13.0	19.8	0.21	1230	1.40	0.04	5.2	12.6	140>10000		63.0	0.002	3.65	172.95	3	1.8	35.4	0.70	0.15

CERTIFICATION: _____

* RECOMMEND TITRATION FOR Pb AND Zn VALUES >30%.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

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CERTIFICATE OF ANALYSIS A0127055

SAMPLE	PREP CODE	Th ppm (ICP)	Ti % (ICP)	Tl ppm (ICP)	U ppm (ICP)	V ppm (ICP)	W ppm (ICP)	Y ppm (ICP)	Zn ppm (ICP)	Zr ppm	As ppm	Hg ppb	Spec Gr S.G.	Ag oz/ton	Pb %	Zn %	Cd %
644620	9413 9402	26.0	0.43	0.80	2.3	91	2.4	20.2	76	114.5	4	40	2.75	< 0.03	< 0.01	< 0.01	< 0.001
644621	9413 9402	2.0	0.01	0.44	0.4	4	1.6	3.0	>10000	8.5	10	38300	3.13	0.96	8.88	13.35	0.048
644622	9413 9402	23.6	0.42	0.88	3.3	104	2.2	19.1	212	132.0	12	60	2.74	< 0.03	0.03	0.05	< 0.001
644623	9413 9402	12.8	0.27	0.48	1.3	57	1.4	45.1	180	56.5	1	70	2.73	< 0.03	0.02	0.02	< 0.001
644624	9413 9402	1.6	0.04	0.90	0.4	9	1.1	7.9	>10000	11.5	5	11750	4.76	4.08	>50.0	5.28	0.019
644625	9413 9402	23.4	0.43	1.02	4.2	89	2.1	21.3	122	141.5	30	80	2.76	< 0.03	0.22	0.03	< 0.001
644626	9413 9402	9.8	0.10	0.16	1.2	10	0.9	6.1	122	58.5	< 1	30	2.74	< 0.03	0.04	0.01	< 0.001
644627	9413 9402	16.0	0.36	0.64	3.7	78	1.8	18.7	44	73.0	5	10	2.78	< 0.03	0.02	< 0.01	< 0.001
644628	9413 9402	20.0	0.41	1.04	3.1	92	5.8	16.2	>10000	85.5	13	4530	2.80	0.12	1.59	1.37	0.004
644629	9413 9402	6.4	0.11	0.52	1.4	24	1.0	10.4	>10000	37.0	46	7970	2.91	0.48	7.82	2.20	0.009
644630	9413 9402	2.4	0.05	0.18	1.0	6	0.8	17.6	>10000	17.0	30	45000	2.91	0.03	0.02	9.67	0.043
644631	9413 9402	2.2	0.03	0.16	1.0	4	0.6	13.6	>10000	15.0	17	22300	2.89	0.03	0.01	5.08	0.025
644632	9413 9402	6.4	0.08	0.24	1.7	12	0.4	14.7	2290	34.5	21	830	2.81	< 0.03	0.01	0.19	< 0.001
644633	9413 9402	6.4	0.12	0.32	1.0	23	1.0	5.6	>10000	39.5	28	64700	3.01	0.03	< 0.01	15.05	0.066
644634	9413 9402	1.6	0.26	0.08	0.3	59	0.1	1.3	1640	7.5	41	770	2.79	< 0.03	< 0.01	0.20	< 0.001
644635	9413 9402	6.8	0.14	0.38	1.7	30	1.2	12.8	>10000	26.0	29	13860	2.81	< 0.03	0.01	3.65	0.011
644636	9413 9402	13.8	0.20	0.48	2.4	40	1.3	8.3	>10000	51.5	33	11430	2.80	< 0.03	< 0.01	2.80	0.011
644637	9413 9402	5.8	0.07	0.42	0.7	15	0.7	3.0	>10000	22.0	31	33400	3.25	1.26	15.25	8.64	0.032
644638	9413 9402	1.2	0.02	0.70	0.3	5	0.5	1.3	956	5.0	4	680	6.54	5.97	>50.0	0.10	< 0.001
644639	9413 9402	0.8	0.01	0.62	0.1	3	0.4	1.6	>10000	3.0	8	47000	4.16	3.21	36.6	13.40	0.037
644640	9400 225	6.0	0.08	7.22	2.1	44	1.8	15.2	>10000	37.5	11	2420	3.13	0.36	1.08	3.04	0.008
644641	9413 9402	8.2	0.12	0.38	1.3	29	0.7	6.8	>10000	38.0	42	49000	2.93	0.15	0.14	15.65	0.046
644642	9413 9402	11.2	0.16	0.42	1.9	36	0.8	5.9	5680	50.0	29	2010	2.76	0.03	0.59	0.60	0.001
644643	9413 9402	2.4	0.05	0.34	0.7	10	0.7	3.3	>10000	11.0	26	>100000	3.24	0.45	2.73	27.6	0.097
644644	9413 9402	6.4	0.11	0.26	1.1	20	0.5	15.1	158	37.5	5	100	2.79	< 0.03	0.02	0.09	< 0.001
644645	9413 9402	16.8	0.31	0.70	2.9	67	1.6	15.2	236	84.0	15	140	2.78	< 0.03	< 0.01	0.04	< 0.001
644646	9413 9402	15.6	0.24	0.56	3.5	62	1.4	13.6	1325	70.0	5	460	2.75	< 0.03	0.91	0.15	< 0.001
644647	9413 9402	6.8	0.12	0.62	1.0	33	1.4	4.7	>10000	36.0	6	7920	3.10	0.69	14.15	3.24	0.016
644648	9413 9402	0.8	0.01	0.30	0.3	5	0.5	1.2	>10000	5.5	22	>100000	3.78	0.75	11.80	36.0	0.177
644649	9400 225	7.2	0.10	47.4	5.7	100	1.8	16.4	>10000	50.5	47	9770	3.15	0.27	1.44	28.2	0.047
644650	9413 9402	0.6	0.01	1.98	0.1	3	0.4	0.8	>10000	3.5	9	18760	6.02	3.75	>50.0	4.81	0.019
644651	9413 9402	1.0	0.02	0.72	0.3	5	0.5	1.1	>10000	6.0	13	>100000	3.65	0.36	7.40	36.6	0.170
644652	9413 9402	10.0	0.17	0.82	1.8	41	1.2	6.8	5650	59.5	15	2370	2.86	0.15	4.41	0.62	0.002
644653	9413 9402	10.4	0.16	0.42	1.6	34	0.8	6.2	4520	62.5	10	1840	2.78	< 0.03	0.08	0.46	0.001
644654	9413 9402	8.8	0.17	0.50	1.0	35	1.2	4.9	>10000	42.5	8	88300	3.08	0.06	0.18	18.60	0.098
644655	9413 9402	3.8	0.08	0.94	0.6	17	0.7	3.7	>10000	21.5	11	30500	4.46	2.40	40.7	8.85	0.031
644656	9413 9402	11.4	0.29	0.52	1.8	72	1.2	12.3	1975	53.0	18	770	2.83	< 0.03	0.10	0.22	0.001
644657	9413 9402	5.4	0.13	1.02	0.8	32	0.9	5.2	6140	26.5	5	2320	4.18	3.45	45.2	0.66	0.003
644658	9413 9402	7.4	0.19	1.22	1.2	51	3.4	7.9	>10000	37.5	8	29200	3.57	1.26	24.0	6.48	0.032
644659	9413 9402	6.2	0.13	0.92	1.1	30	1.0	5.6	>10000	35.5	14	13230	3.19	1.32	17.65	4.25	0.019

CERTIFICATION: _____*+

* RECOMMEND TITRATION FOR Pb AND Zn VALUES >30%.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :2-A
Total Pages :2
Certificate Date: 07-NOV-2001
Invoice No. : I0127055
P.O. Number :
Account : BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0127055

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644660	9413 9402	< 5	1.10	6.75	1013.0	1.75	0.38	0.43	1.08	65.0	8.3	131	6.45	30.8	2.21	16.75	4.60	2.5	0.075	2.78
644661	9413 9402	< 5	0.58	1.15	155.5	0.25	0.07	0.02	0.52	47.7	1.1	281	1.15	8.6	0.79	2.90	1.00	2.3	0.015	0.44

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644660	9413 9402	34.0	33.4	0.44	1205	0.50	0.08	11.2	12.6	170	498	120.0<	0.002	0.10	10.20	< 1	1.4	69.7	1.05	0.05
644661	9413 9402	23.0	27.8	0.04	60	1.65	0.05	2.7	2.8	130	417	19.9<	0.002	0.01	2.15	< 1	1.4	7.8	0.20	< 0.05

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644660	94139402	14.4	0.29	0.58	2.0	55	1.4	9.6	336	77.5	6	120	2.73	< 0.03	0.10	0.04<	0.001
644661	94139402	8.4	0.11	0.14	1.4	10	1.0	6.9	134	77.0	4	30	2.70	< 0.03	0.04	0.01<	0.001

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644620	9413 9402	< 5	1.04	10.30	1362.5	2.70	0.36	3.10	0.22	120.5	13.5	95	12.45	38.0	1.04	24.25	4.20	6.0	0.100	4.67
644621	9413 9402	25	23.4	0.52	90.0	0.05	0.12	1.09	>500	7.07	25.6	183	0.75	126.7	0.58	8.10	79.90	0.4	0.045	0.19
644622	9413 9402	< 5	1.12	9.61	1396.5	2.75	0.30	1.45	0.44	130.0	15.9	91	12.20	45.0	0.98	25.25	6.00	5.9	0.070	4.33
644623	9413 9402	< 5	0.82	5.96	801.6	1.60	0.13	15.20	0.56	115.0	10.9	59	7.95	25.2	0.81	15.10	3.50	2.1	0.065	2.87
644624	9413 9402	15	96.1	1.06	40.0	0.25	0.37	4.07	185.0	18.80	11.1	37	1.05	487.0	0.64	6.60	24.85	0.4	0.130	0.44
644625	9413 9402	< 5	2.82	9.73	1442.0	2.95	0.41	1.32	0.78	108.0	32.8	106	8.45	87.1	4.03	25.25	10.55	4.9	0.080	3.68
644626	9413 9402	< 5	0.90	1.22	169.0	0.30	0.23	0.03	0.74	46.2	1.8	216	1.10	15.8	0.81	3.00	1.05	1.9	0.065	0.49
644627	9413 9402	< 5	0.80	7.73	963.4	2.15	0.42	2.87	0.10	91.7	16.2	113	8.15	40.6	3.14	18.45	2.40	2.5	0.080	2.96
644628	9413 9402	< 5	7.40	9.66	605.7	3.30	0.35	2.05	46.6	104.5	16.8	118	15.70	64.0	2.21	27.25	11.40	4.4	0.190	3.78
644629	9413 9402	10	13.15	3.58	453.5	1.20	0.18	5.28	88.5	34.0	24.8	112	3.45	36.6	0.91	12.15	9.20	1.4	0.430	1.46
644630	9413 9402	5	4.82	1.08	91.0	0.45	0.08	17.90	396	38.5	60.8	70	1.05	155.0	1.30	25.55	33.60	0.5	2.77	0.49
644631	9413 9402	< 5	3.28	0.94	176.0	0.30	0.06	18.25	221	25.8	31.0	41	0.80	71.5	0.71	16.70	16.75	0.5	1.925	0.42
644632	9413 9402	< 5	0.42	1.68	271.5	0.45	0.11	24.7	9.50	38.2	11.9	33	1.65	8.8	0.77	4.30	2.20	1.0	0.070	0.80
644633	9413 9402	10	2.72	3.18	46.0	0.75	0.10	2.09	>500	24.1	83.6	101	3.00	105.2	1.37	25.85	38.75	1.6	0.350	1.31
644634	9413 9402	< 5	0.20	7.59	87.5	0.20	0.03	2.58	0.54	8.53	1.7	129	0.95	0.8	0.70	1.90	0.40	0.4	0.005	2.97
644635	9413 9402	< 5	1.82	3.99	137.0	1.15	0.19	6.62	97.4	56.5	17.8	125	4.30	78.2	0.66	12.40	23.45	1.1	0.400	1.77
644636	9413 9402	5	1.72	5.69	277.5	1.20	0.26	1.76	94.9	65.6	20.9	134	5.30	49.0	0.83	18.10	16.95	3.0	0.565	2.12
644637	9413 9402	25	23.7	2.16	87.5	0.40	0.17	0.57	305	17.85	34.7	137	1.25	133.1	0.87	18.10	28.40	1.2	1.165	0.95
644638	9413 9402	25	>100.0	0.80	23.0	0.15	0.13	0.17	5.22	7.80	1.6	48	0.65	41.8	0.10	2.10	1.30	0.1	0.035	0.38
644639	9413 9402	45	>100.0	0.46	53.0	0.05	0.09	0.11	350	15.30	18.4	118	0.40	176.6	0.41	10.95	85.45	< 0.1	0.875	0.21
644640	9400 225	295	13.60	2.17	87.0	1.75	0.39	0.45	74.2	32.7	9.8	26	7.10	124.5	13.35	9.10	16.50	1.1	0.080	0.91
644641	9413 9402	< 5	4.90	3.82	45.0	1.00	0.14	0.08	445	50.2	30.7	129	3.55	287.0	0.73	24.15	120.95	1.2	0.830	1.59
644642	9413 9402	5	3.72	4.89	662.3	1.30	0.19	0.07	17.55	46.0	11.4	141	4.15	34.4	0.60	13.30	11.35	1.7	0.200	1.80
644643	9413 9402	45	23.1	1.41	34.0	0.35	0.12	1.14	>500	23.5	88.4	119	1.25	336.0	1.96	56.20	100.15	0.3	6.55	0.66
644644	9413 9402	< 5	0.90	3.09	433.5	0.55	0.08	10.55	1.02	37.2	4.8	101	2.50	187.5	0.58	6.65	3.80	1.1	0.115	1.23
644645	9413 9402	< 5	1.08	7.69	658.2	1.55	0.18	5.26	0.94	79.4	17.2	141	6.65	54.9	1.12	18.70	3.55	2.4	0.100	3.35
644646	9413 9402	< 5	1.98	6.05	1041.5	1.75	0.21	0.28	7.10	64.9	8.4	136	6.90	106.0	0.88	16.45	5.10	2.1	0.035	2.50
644647	9413 9402	5	22.6	3.21	136.5	1.20	0.14	0.07	166.5	17.65	4.6	139	3.45	191.2	0.63	13.65	9.10	1.4	0.110	1.35
644648	9413 9402	65	24.9	0.64	11.0	0.30	0.08	0.04	>500	6.30	133.5	72	0.70	313.0	2.40	79.20	82.10	< 0.1	25.9	0.28
644649	9400 225	< 10	10.65	2.80	39.5	1.75	0.21	0.29	428	33.8	7.7	29	10.35	123.0	2.96	7.15	51.50	1.8	0.035	1.31
644650	9413 9402	30	>100.0	0.33	17.0	0.20	0.07	0.02	180.0	6.12	14.8	45	0.30	87.0	0.49	11.10	18.70	< 0.1	4.06	0.15
644651	9413 9402	45	39.0	0.65	37.5	0.15	0.10	0.01	>500	5.79	151.7	72	0.45	403.0	2.55	72.95	89.05	0.1	8.36	0.30
644652	9413 9402	5	7.86	5.15	682.3	1.15	0.28	0.44	19.80	24.1	12.6	169	4.85	612.0	0.73	12.85	6.95	2.4	0.280	2.07
644653	9413 9402	< 5	1.06	4.70	615.6	1.00	0.13	0.33	18.70	32.5	9.0	161	4.20	92.9	0.66	11.20	6.95	2.2	0.055	1.61
644654	9413 9402	15	5.32	3.53	48.5	1.40	0.11	0.15	>500	30.0	87.7	122	3.40	224.0	1.84	58.45	55.35	1.6	9.34	1.54
644655	9413 9402	15	65.0	1.74	46.0	0.45	0.25	0.47	311	21.4	22.6	86	1.55	125.5	0.85	22.95	41.65	0.7	1.230	0.81
644656	9413 9402	< 5	2.22	6.64	1075.0	1.65	0.09	1.77	8.52	74.9	6.3	106	5.95	9.8	0.78	16.85	4.75	1.7	0.050	2.61
644657	9413 9402	60	99.9	3.32	71.5	0.75	0.14	0.26	26.5	17.15	3.3	69	3.15	19.4	0.83	8.30	4.10	1.0	0.305	1.53
644658	9413 9402	15	62.8	5.17	77.0	1.90	0.18	0.16	306	23.6	25.9	85	5.55	92.7	2.83	23.90	26.25	1.4	3.67	2.27
644659	9413 9402	20	61.7	3.36	105.0	1.00	0.24	0.13	159.0	23.9	17.1	121	3.25	75.5	1.95	13.80	17.35	1.2	0.890	1.36

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644620	94139402	60.0	17.0	0.43	810	0.50	0.11	19.1	23.6	440	105.5	196.0<	0.002	0.02	3.90	< 1	2.2	179.5	2.15	0.15
644621	94139402	4.0	14.0	0.02	215	1.45	0.05	2.2	16.8	40>10000		12.7<	0.002	7.25	55.20	4	1.0	67.0	0.40	0.25
644622	94139402	61.5	15.8	0.45	485	0.65	0.09	16.9	24.0	380	127.5	198.5<	0.002	0.02	13.25	< 1	2.2	122.5	1.80	0.05
644623	94139402	51.5	10.0	0.29	4010	0.45	0.06	9.8	15.2	240	168.0	127.5<	0.002	0.03	6.25	1	1.4	399	0.90	0.05
644624	94139402	8.5	7.2	0.07	1010	1.05	0.04	2.6	11.6	60>10000		20.4	0.004	9.94	379.2	3	0.8	163.0	0.60	0.25
644625	94139402	53.0	43.4	0.58	1310	2.35	0.08	17.6	39.2	310	2100	170.5<	0.002	0.41	14.15	< 1	2.2	140.0	2.15	0.05
644626	94139402	22.0	27.6	0.04	135	1.95	0.06	2.6	5.8	180	522	22.6<	0.002	0.09	2.50	< 1	6.0	7.0	0.25	< 0.05
644627	94139402	42.5	42.2	0.51	1530	1.35	0.08	13.3	25.2	390	79.5	135.5	0.002	0.12	1.20	< 1	1.8	216	1.10	0.05
644628	94139402	53.5	47.8	0.45	610	1.45	0.09	18.0	27.6	370>10000		191.5	0.002	1.00	18.55	3	2.8	187.5	2.90	0.35
644629	94139402	18.0	19.6	0.16	885	1.25	0.08	4.5	29.2	210>10000		64.4<	0.002	2.11	43.10	3	1.4	268	0.65	< 0.05
644630	94139402	17.5	10.2	0.08	2300	1.45	0.01	2.3	34.6	170	118.0	21.8<	0.002	3.60	8.05	5	3.6	651	0.50	< 0.05
644631	94139402	10.5	9.2	0.07	2140	1.15	0.03	1.6	16.0	160	73.5	17.1	0.002	1.71	5.15	3	2.8	615	0.10	< 0.05
644632	94139402	19.5	6.6	0.13	1610	0.40	0.03	3.2	22.8	250	261	34.5	0.002	0.57	7.30	< 1	0.4	914	0.20	0.05
644633	94139402	13.0	19.0	0.13	405	1.15	0.11	5.9	14.6	100	74.0	56.3	0.002	5.76	10.60	6	1.4	78.1	0.80	< 0.05
644634	94139402	5.0	1.8	0.30	485	0.15	0.34	1.4	2.4	440	4.0	13.8<	0.002	0.20	0.70	< 1	< 0.2	11.4	0.15	< 0.05
644635	94139402	30.0	26.6	0.15	1235	1.15	0.08	5.7	18.4	290	129.5	74.9	0.002	1.75	7.80	3	1.4	211	0.50	< 0.05
644636	94139402	39.0	27.8	0.24	365	1.25	0.07	9.4	22.2	300	36.5	99.2<	0.002	1.23	13.20	2	2.2	105.5	1.10	0.15
644637	94139402	10.5	19.8	0.11	155	1.20	0.06	3.5	16.4	110>10000		40.5<	0.002	5.00	90.75	4	4.8	31.0	0.45	< 0.05
644638	94139402	4.5	4.0	0.03	35	0.95	0.08	1.2	13.8	60>10000		14.7	0.002	8.50	520.4	3	0.6	8.6	0.15	0.05
644639	94139402	7.5	11.4	0.01	30	1.20	0.04	0.9	18.8	10>10000		8.9	0.002	9.13	250.8	6	1.2	7.8	0.05	< 0.05
644640	9400 225	17.0	9.8	0.82	>10000	3.85	0.05	4.9	37.0	940	9590	58.9	0.002	1.94	4.00	5	1.2	22.2	0.55	0.40
644641	94139402	27.5	21.0	0.16	50	0.45	0.05	6.2	33.8	190	1085	78.2<	0.002	6.46	22.85	4	1.4	30.6	0.75	0.05
644642	94139402	26.5	28.4	0.20	65	0.45	0.07	7.3	20.0	170	5470	83.9<	0.002	0.40	17.70	< 1	1.2	37.8	0.85	0.05
644643	94139402	14.5	16.0	0.06	250	1.20	0.01	1.9	15.4	60>10000		28.9<	0.002	>10.00	44.80	9	8.6	39.2	0.30	0.30
644644	94139402	17.5	18.2	0.14	1910	0.40	0.12	3.3	9.6	90	99.0	50.6<	0.002	0.14	4.25	< 1	0.6	414	0.20	0.05
644645	94139402	43.0	26.4	0.33	1005	0.50	0.08	12.1	22.2	300	118.5	138.0<	0.002	0.57	10.40	< 1	1.6	319	0.90	0.05
644646	94139402	36.0	28.6	0.33	75	0.75	0.08	9.5	16.2	770	8410	122.0<	0.002	0.20	22.90	< 1	1.4	61.1	1.10	0.05
644647	94139402	10.5	27.8	0.18	30	1.35	0.07	4.3	2.6	90>10000		61.9<	0.002	3.54	60.65	4	0.8	29.0	0.80	0.15
644648	94139402	4.0	13.2	0.04	45	1.05	< 0.01	0.9	7.6	10>10000		12.8	0.002	>10.00	84.85	11	13.8	9.2	0.15	0.25
644649	9400 225	17.5	10.2	0.18	845	18.70	0.03	4.9	29.8	1310>10000		73.3<	0.002	>10.00	25.20	11	1.2	23.4	0.75	0.30
644650	94139402	3.0	5.2	0.01	15	1.10	0.04	0.5	1.0	20>10000		7.2<	0.002	>10.00	380.6	5	4.4	3.8	0.05	0.20
644651	94139402	3.5	15.4	0.03	35	1.05	0.02	0.8	4.2	40>10000		11.8	0.002	>10.00	80.95	13	8.6	7.6	0.10	0.25
644652	94139402	14.5	27.0	0.23	90	1.35	0.24	6.5	10.6	210>10000		86.7<	0.002	0.95	38.15	4	1.4	60.8	0.95	0.20
644653	94139402	19.0	25.4	0.20	80	0.55	0.59	6.5	12.0	180	690	72.7<	0.002	0.38	15.00	< 1	0.8	56.2	0.75	0.05
644654	94139402	17.0	23.2	0.16	65	1.30	0.07	5.9	3.2	120	1180	67.1<	0.002	7.93	27.65	8	8.4	35.2	0.95	0.20
644655	94139402	12.0	11.2	0.07	130	1.65	0.04	2.8	4.0	100>10000		32.4	0.002	9.50	442.2	7	2.8	32.4	0.45	0.25
644656	94139402	40.5	18.6	0.27	440	0.55	0.06	10.1	16.2	210	392	114.5<	0.002	0.07	12.20	< 1	1.2	91.3	0.80	0.05
644657	94139402	10.0	11.0	0.17	390	1.40	0.05	5.1	3.0	100>10000		61.5<	0.002	6.46	561.7	3	1.2	31.4	0.65	0.20
644658	94139402	11.0	19.0	0.34	1455	1.25	0.05	6.3	13.4	140>10000		98.6<	0.002	5.79	173.55	4	3.2	48.2	0.90	0.15
644659	94139402	13.0	19.8	0.21	1230	1.40	0.04	5.2	12.6	140>10000		63.0	0.002	3.65	172.95	3	1.8	35.4	0.70	0.15

CERTIFICATION:

* RECOMMEND TITRATION FOR Pb AND Zn VALUES >30%.

ALS Chemex

Aurora Laboratory Services Ltd.
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PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :1-C
Total Pages :2
Certificate Date: 07-NOV-2001
Invoice No. :I0127055
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0127055

SAMPLE	PREP CODE	Th ppm (ICP)	Ti % (ICP)	Tl ppm (ICP)	U ppm (ICP)	V ppm (ICP)	W ppm (ICP)	Y ppm (ICP)	Zn ppm (ICP)	Zr ppm	As ppm	Hg ppb	Spec Gr S.G.	Ag oz/ton	Pb %	Zn %	Cd %
644620	9413 9402	26.0	0.43	0.80	2.3	91	2.4	20.2	76	114.5	4	40	2.75	< 0.03	< 0.01	< 0.01<	0.001
644621	9413 9402	2.0	0.01	0.44	0.4	4	1.6	3.0	>10000	8.5	10	38300	3.13	0.96	8.88	13.35	0.048
644622	9413 9402	23.6	0.42	0.88	3.3	104	2.2	19.1	212	132.0	12	60	2.74	< 0.03	0.03	0.05<	0.001
644623	9413 9402	12.8	0.27	0.48	1.3	57	1.4	45.1	180	56.5	1	70	2.73	< 0.03	0.02	0.02<	0.001
644624	9413 9402	1.6	0.04	0.90	0.4	9	1.1	7.9	>10000	11.5	5	11750	4.76	4.08	>50.0	5.28	0.019
644625	9413 9402	23.4	0.43	1.02	4.2	89	2.1	21.3	122	141.5	30	80	2.76	< 0.03	0.22	0.03<	0.001
644626	9413 9402	9.8	0.10	0.16	1.2	10	0.9	6.1	122	58.5	< 1	30	2.74	< 0.03	0.04	0.01<	0.001
644627	9413 9402	16.0	0.36	0.64	3.7	78	1.8	18.7	44	73.0	5	10	2.78	< 0.03	0.02	< 0.01<	0.001
644628	9413 9402	20.0	0.41	1.04	3.1	92	5.8	16.2	>10000	85.5	13	4530	2.80	0.12	1.59	1.37	0.004
644629	9413 9402	6.4	0.11	0.52	1.4	24	1.0	10.4	>10000	37.0	46	7970	2.91	0.48	7.82	2.20	0.009
644630	9413 9402	2.4	0.05	0.18	1.0	6	0.8	17.6	>10000	17.0	30	45000	2.91	0.03	0.02	9.67	0.043
644631	9413 9402	2.2	0.03	0.16	1.0	4	0.6	13.6	>10000	15.0	17	22300	2.89	0.03	0.01	5.08	0.025
644632	9413 9402	6.4	0.08	0.24	1.7	12	0.4	14.7	2290	34.5	21	830	2.81	< 0.03	0.01	0.19<	0.001
644633	9413 9402	6.4	0.12	0.32	1.0	23	1.0	5.6	>10000	39.5	28	64700	3.01	0.03	< 0.01	15.05	0.066
644634	9413 9402	1.6	0.26	0.08	0.3	59	0.1	1.3	1640	7.5	41	770	2.79	< 0.03	< 0.01	0.20<	0.001
644635	9413 9402	6.8	0.14	0.38	1.7	30	1.2	12.8	>10000	26.0	29	13860	2.81	< 0.03	0.01	3.65	0.011
644636	9413 9402	13.8	0.20	0.48	2.4	40	1.3	8.3	>10000	51.5	33	11430	2.80	< 0.03	< 0.01	2.80	0.011
644637	9413 9402	5.8	0.07	0.42	0.7	15	0.7	3.0	>10000	22.0	31	33400	3.25	1.26	15.25	8.64	0.032
644638	9413 9402	1.2	0.02	0.70	0.3	5	0.5	1.3	956	5.0	4	680	6.54	5.97	>50.0	0.10<	0.001
644639	9413 9402	0.8	0.01	0.62	0.1	3	0.4	1.6	>10000	3.0	8	47000	4.16	3.21	36.6	13.40	0.037
644640	9400 225	6.0	0.08	7.22	2.1	44	1.8	15.2	>10000	37.5	11	2420	3.13	0.36	1.08	3.04	0.008
644641	9413 9402	8.2	0.12	0.38	1.3	29	0.7	6.8	>10000	38.0	42	49000	2.93	0.15	0.14	15.65	0.046
644642	9413 9402	11.2	0.16	0.42	1.9	36	0.8	5.9	5680	50.0	29	2010	2.76	0.03	0.59	0.60	0.001
644643	9413 9402	2.4	0.05	0.34	0.7	10	0.7	3.3	>10000	11.0	26	>100000	3.24	0.45	2.73	27.6	0.097
644644	9413 9402	6.4	0.11	0.26	1.1	20	0.5	15.1	158	37.5	5	100	2.79	< 0.03	0.02	0.09<	0.001
644645	9413 9402	16.8	0.31	0.70	2.9	67	1.6	15.2	236	84.0	15	140	2.78	< 0.03	< 0.01	0.04<	0.001
644646	9413 9402	15.6	0.24	0.56	3.5	62	1.4	13.6	1325	70.0	5	460	2.75	< 0.03	0.91	0.15<	0.001
644647	9413 9402	6.8	0.12	0.62	1.0	33	1.4	4.7	>10000	36.0	6	7920	3.10	0.69	14.15	3.24	0.016
644648	9413 9402	0.8	0.01	0.30	0.3	5	0.5	1.2	>10000	5.5	22	>100000	3.78	0.75	11.80	36.0	0.177
644649	9400 225	7.2	0.10	47.4	5.7	100	1.8	16.4	>10000	50.5	47	9770	3.15	0.27	1.44	28.2	0.047
644650	9413 9402	0.6	0.01	1.98	0.1	3	0.4	0.8	>10000	3.5	9	18760	6.02	3.75	>50.0	4.81	0.019
644651	9413 9402	1.0	0.02	0.72	0.3	5	0.5	1.1	>10000	6.0	13	>100000	3.65	0.36	7.40	36.6	0.170
644652	9413 9402	10.0	0.17	0.82	1.8	41	1.2	6.8	5650	59.5	15	2370	2.86	0.15	4.41	0.62	0.002
644653	9413 9402	10.4	0.16	0.42	1.6	34	0.8	6.2	4520	62.5	10	1840	2.78	< 0.03	0.08	0.46	0.001
644654	9413 9402	8.8	0.17	0.50	1.0	35	1.2	4.9	>10000	42.5	8	88300	3.08	0.06	0.18	18.60	0.098
644655	9413 9402	3.8	0.08	0.94	0.6	17	0.7	3.7	>10000	21.5	11	30500	4.46	2.40	40.7	8.85	0.031
644656	9413 9402	11.4	0.29	0.52	1.8	72	1.2	12.3	1975	53.0	18	770	2.83	< 0.03	0.10	0.22	0.001
644657	9413 9402	5.4	0.13	1.02	0.8	32	0.9	5.2	6140	26.5	5	2320	4.18	3.45	45.2	0.66	0.003
644658	9413 9402	7.4	0.19	1.22	1.2	51	3.4	7.9	>10000	37.5	8	29200	3.57	1.26	24.0	6.48	0.032
644659	9413 9402	6.2	0.13	0.92	1.1	30	1.0	5.6	>10000	35.5	14	13230	3.19	1.32	17.65	4.25	0.019

CERTIFICATION:

* RECOMMEND TITRATION FOR Pb AND Zn VALUES >30%.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :2-A
Total Pages :2
Certificate Date: 07-NOV-2001
Invoice No. :I0127055
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0127055

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644660	9413 9402	< 5	1.10	6.75	1013.0	1.75	0.38	0.43	1.08	65.0	8.3	131	6.45	30.8	2.21	16.75	4.60	2.5	0.075	2.78
644661	9413 9402	< 5	0.58	1.15	155.5	0.25	0.07	0.02	0.52	47.7	1.1	281	1.15	8.6	0.79	2.90	1.00	2.3	0.015	0.44

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Page Number :2-B
Total Pages :2
Certificate Date: 07-NOV-2001
Invoice No. :I0127055
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0127055

SAMPLE	PREP CODE	La ppm (ICP)	Li ppm (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Nb ppm (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm (ICP)	Rb ppm (ICP)	Re ppm	S %	Sb ppm (ICP)	Se ppm	Sn ppm	Sr ppm (ICP)	Ta ppm (ICP)	Te ppm (ICP)
644660	94139402	34.0	33.4	0.44	1205	0.50	0.08	11.2	12.6	170	498	120.0<	0.002	0.10	10.20	< 1	1.4	69.7	1.05	0.05
644661	94139402	23.0	27.8	0.04	60	1.65	0.05	2.7	2.8	130	417	19.9<	0.002	0.01	2.15	< 1	1.4	7.8	0.20	< 0.05

CERTIFICATION:

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :2-C
Total Pages :2
Certificate Date: 07-NOV-2001
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P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0127055

SAMPLE	PREP CODE	Th ppm (ICP)	Ti % (ICP)	Tl ppm (ICP)	U ppm (ICP)	V ppm (ICP)	W ppm (ICP)	Y ppm (ICP)	Zn ppm (ICP)	Zr ppm	As ppm	Hg ppb	Spec Gr S.G.	Ag oz/ton	Pb %	Zn %	Cd %
644660	9413 9402	14.4	0.29	0.58	2.0	55	1.4	9.6	336	77.5	6	120	2.73	< 0.03	0.10	0.04<	0.001
644661	9413 9402	8.4	0.11	0.14	1.4	10	1.0	6.9	134	77.0	4	30	2.70	< 0.03	0.04	0.01<	0.001

CERTIFICATION:

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ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED DEC 1 1 2001

A0126813

Comments: ATTN: CLINT BARR EMAIL: DAVE KING

CERTIFICATE A0126813

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 02-NOV-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	21	Pulv. <250g to >85%/-75 micron
STO-21	21	Reject Storage-First 90 Days
LOG-22	22	Samples received without barcode
CRU-31	21	Crush to 70% minus 2mm
SPL-21	21	Splitting Charge
225	22	Run as received
9300	22	T127 special code

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Au-AA23	22	Au-AA23 : Au ppb: Fuse 30 grams	FA-AAS	5	10000
Ag-MS61	22	Ag ppm: ICP + ICP-MS package	ICP-MS/ICP	0.02	100.0
Al-MS61	22	Al %: ICP + ICP-MS package	ICP	0.01	25.0
Ba-MS61	22	Ba ppm: ICP + ICP-MS package	ICP	0.5	10000
Be-MS61	22	Be ppm: ICP + ICP-MS package	ICP-MS/ICP	0.05	1000
Bi-MS61	22	Bi ppm: ICP + ICP-MS package	ICP-MS/ICP	0.01	10000
Ca-MS61	22	Ca %: ICP + ICP-MS package	ICP	0.01	25.0
Cd-MS61	22	Cd ppm: ICP + ICP-MS package	ICP-MS/ICP	0.02	500
Ce-MS61	22	Ce ppm: ICP + ICP-MS package	ICP-MS	0.01	500
Co-MS61	22	Co ppm: ICP + ICP-MS package	ICP-MS/ICP	0.1	10000
Cr-MS61	22	Cr ppm: ICP + ICP-MS package	ICP	1	10000
Cs-MS61	22	Cs ppm: ICP + ICP-MS package	ICP-MS	0.05	500
Cu-MS61	22	Cu ppm: ICP + ICP-MS package	ICP	0.2	10000
Fe-MS61	22	Fe %: ICP + ICP-MS package	ICP	0.01	25.0
Ga-MS61	22	Ga ppm: ICP + ICP-MS package	ICP-MS	0.05	500.0
Ge-MS61	22	Ge ppm: ICP + ICP-MS package	ICP-MS	0.05	500.0
Hf-MS61	22	Hf ppm: ICP + ICP-MS package	ICP-MS/ICP	0.1	500
In-MS61	22	In ppm: ICP + ICP-MS package	ICP-MS/ICP	0.005	500
K-MS61	22	K %: ICP + ICP-MS package	ICP	0.01	10.00
La-MS61	22	La ppm: ICP + ICP-MS package	ICP-MS	0.5	500
Li-MS61	22	Li ppm: ICP + ICP-MS package	ICP-MS	0.2	500
Mg-MS61	22	Mg %: ICP + ICP-MS package	ICP	0.01	15.00
Mn-MS61	22	Mn ppm: ICP + ICP-MS package	ICP	5	10000
Mo-MS61	22	Mo ppm: ICP + ICP-MS package	ICP	0.05	10000
Na-MS61	22	Na %: ICP + ICP-MS package	ICP	0.01	10.00
Nb-MS61	22	Nb ppm: ICP + ICP-MS package	ICP-MS	0.1	500
Ni-MS61	22	Ni ppm: ICP + ICP-MS package	ICP-MS/ICP	0.2	10000
P-MS61	22	P ppm: ICP + ICP-MS package	ICP	10	10000
Pb-MS61	22	Pb ppm: ICP + ICP-MS package	ICP-MS/ICP	0.5	10000
Rb-MS61	22	Rb ppm: ICP + ICP-MS package	ICP-MS	0.1	500
Re-MS61	22	Re ppm: ICP + ICP-MS package	ICP-MS/ICP	0.002	50.0
S-MS61	22	S %: ICP + ICP-MS package	ICP-MS/ICP	0.01	10.00
Sb-MS61	22	Sb ppm: ICP + ICP-MS package	ICP-MS	0.05	1000.0
Se-MS61	22	Se ppm: ICP + ICP-MS package	ICP-MS/ICP	1	1000

ALS Chemex

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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0126813

Comments: ATTN: CLINT BARR EMAIL: DAVE KING

CERTIFICATE A0126813

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 02-NOV-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	21	Pulv. <250g to >85%/-75 micron
STO-21	21	Reject Storage-First 90 Days
LOG-22	22	Samples received without barcode
CRU-31	21	Crush to 70% minus 2mm
SPL-21	21	Splitting Charge
225	22	Run as received
9300	22	T127 special code

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Sn-MS61	22	Sn ppm: ICP + ICP-MS package	ICP-MS/ICP	0.2	500
Sr-MS61	22	Sr ppm: ICP + ICP-MS package	ICP-MS/ICP	0.2	10000
Ta-MS61	22	Ta ppm: ICP + ICP-MS package	ICP-MS	0.05	100.0
Te-MS61	22	Te ppm: ICP + ICP-MS package	ICP-MS	0.05	500
Th-MS61	22	Th ppm: ICP + ICP-MS package	ICP-MS	0.2	500
Ti-MS61	22	Ti %: ICP + ICP-MS package	ICP	0.01	10.00
Tl-MS61	22	Tl ppm: ICP + ICP-MS package	ICP-MS	0.02	500
U-MS61	22	U ppm: ICP + ICP-MS package	ICP-MS	0.1	500
V-MS61	22	V ppm: ICP + ICP-MS package	ICP	1	10000
W-MS61	22	W ppm: ICP + ICP-MS package	ICP-MS/ICP	0.1	10000
Y-MS61	22	Y ppm: ICP + ICP-MS package	ICP-MS	0.1	500
Zn-MS61	22	Zn ppm: ICP + ICP-MS package	ICP	2	10000
Zr-MS61	22	Zr ppm: ICP + ICP-MS package	ICP-MS/ICP	0.5	500
As-AA45	22	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
Hg-CV41	22	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
Ag-AA46	22	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500
Pb-AA46	22	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	22	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Cd-AA46	22	Cd %: Conc. Nitric-HCL dig'n	AAS	0.001	10.000
OA-GRA08	22	Spec. grav. SG: pulv. material	PYCNOMETER	0.01	20.0

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL: DAVE KING

Certificate Date: 02-NOV-2001
Invoice No. :I0126813
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126813

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644467	9413 9402	< 5	1.84	7.00	809.6	1.50	0.13	1.86	0.10	52.7	14.3	169	6.15	21.0	5.03	18.15	2.20	1.6	0.070	1.72
644468	9413 9402	< 5	2.10	9.71	1249.0	2.95	0.28	0.54	0.02	108.0	53.7	122	13.25	63.2	5.65	25.45	2.60	2.9	0.075	3.16
644469	9413 9402	< 5	0.92	5.96	1002.0	1.70	0.15	9.61	8.26	98.7	21.6	105	7.40	38.6	1.04	15.30	4.90	1.7	0.145	2.71
644470	9413 9402	< 5	1.68	3.65	75.0	0.25	0.14	2.19	>500	21.3	80.1	155	2.50	280.0	1.27	40.25	35.60	1.5	0.560	1.10
644471	9413 9402	< 5	1.98	4.63	135.0	0.55	0.22	1.87	212	32.2	54.0	179	3.90	189.6	0.77	26.15	19.90	2.3	1.220	1.76
644472	9413 9402	< 5	1.72	5.39	582.3	1.15	0.23	1.87	78.3	33.1	16.9	203	4.60	51.4	0.62	21.50	8.55	2.0	0.190	2.05
644473	9413 9402	< 5	1.52	5.92	601.4	1.30	0.17	0.67	129.0	31.9	19.3	153	4.15	155.4	0.63	23.05	9.00	2.5	0.225	1.97
644474	9413 9402	< 5	1.54	6.22	668.0	1.85	0.21	1.03	99.9	35.7	19.8	172	4.50	41.8	0.63	25.70	8.90	2.6	0.335	1.95
644475	9413 9402	< 5	0.64	5.26	704.4	1.05	0.19	3.80	8.90	55.1	14.1	161	4.65	40.8	0.60	13.65	3.40	1.9	0.050	1.89
644476	9413 9402	< 5	0.32	1.20	155.0	0.20	1.20	0.06	0.74	44.7	1.5	232	1.05	16.4	0.85	3.40	1.60	2.1	0.055	0.46
644477	9413 9402	< 5	1.62	5.39	471.0	1.10	0.21	1.97	43.9	36.3	13.2	146	3.70	30.0	0.46	15.00	7.00	2.6	0.115	1.58
644478	9413 9402	< 5	1.22	4.39	393.0	0.70	0.20	1.23	96.0	25.4	18.3	178	2.85	28.2	0.46	15.95	8.75	2.2	0.050	1.41
644479	9413 9402	< 5	0.70	1.87	177.0	0.35	0.08	7.95	307	48.3	30.1	124	0.65	64.0	0.63	23.25	16.90	1.0	2.52	0.51
644480	9413 9402	< 5	0.82	3.44	323.5	0.45	0.15	3.44	53.3	28.1	11.5	162	1.85	24.6	0.36	12.45	10.15	1.5	0.080	1.02
644481	9413 9402	< 5	0.90	1.67	46.5	0.25	0.11	6.62	>500	51.1	128.3	64	0.95	259.0	2.00	87.85	86.50	0.7	6.60	0.54
644482	9400 225	10	4.50	2.85	72.5	2.90	0.27	0.32	406	26.4	8.5	35	9.40	136.4	2.82	9.70	57.55	2.7	0.035	1.19
644483	9413 9402	< 5	1.76	2.49	49.0	0.25	0.10	2.15	>500	16.05	73.7	140	1.30	137.0	1.10	26.50	51.80	0.5	0.855	0.70
644484	9413 9402	< 5	1.52	3.34	302.5	0.70	0.14	1.42	165.5	17.50	25.2	149	2.50	40.8	0.58	13.90	15.15	1.7	0.080	1.10
644485	9413 9402	< 5	1.88	10.00	1382.0	4.15	0.32	1.55	4.30	131.5	12.7	100	17.00	69.0	1.55	28.30	3.80	3.4	0.115	4.15
644486	9413 9402	< 5	1.82	9.23	1218.0	2.80	0.39	3.11	16.40	126.5	18.5	105	12.85	74.9	1.09	26.05	3.95	3.0	0.245	3.82
644487	9413 9402	< 5	0.70	3.87	509.4	0.65	0.11	6.94	2.10	50.4	7.6	134	3.50	19.8	0.43	9.55	3.05	1.8	0.055	1.49
644488	9413 9402	< 5	1.90	2.72	149.0	0.45	0.14	7.01	381	32.0	38.6	106	1.75	86.6	0.84	28.00	22.85	1.4	3.42	1.12

* ICP-MS DETECTION LIMITS MAY BE RAISED DUE TO SAMPLE DILUTION.

CERTIFICATION:

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
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P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL: DAVE KING

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CERTIFICATE OF ANALYSIS A0126813

SAMPLE	PREP CODE	La ppm (ICP)	Li ppm (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Nb ppm (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm (ICP)	Rb ppm (ICP)	Re ppm	S %	Sb ppm (ICP)	Se ppm	Sn ppm	Sr ppm (ICP)	Ta ppm (ICP)	Te ppm (ICP)
644467	94139402	27.5	92.8	1.01	960	0.85	1.64	11.7	39.6	120	7.0	72.7<	0.002	0.04	0.50	< 1	1.6	160.0	0.85	0.05
644468	94139402	57.0	93.0	1.24	405	0.40	1.00	20.1	45.8	300	5.5	146.5<	0.002	0.03	0.70	< 1	2.4	121.5	1.60	0.10
644469	94139402	61.0	21.6	0.34	1860	1.30	0.16	9.2	46.4	220	12.0	116.5<	0.002	0.39	3.65	1	1.2	302	0.65	0.05
644470	94139402	13.5	15.0	0.13	520	1.45	0.82	5.2	24.0	160	7.5	42.5<	0.002	6.91	5.20	20	2.6	99.9	0.50	0.05
644471	94139402	20.0	24.2	0.18	430	3.60	0.67	7.5	60.8	180	50.5	60.0	0.004	2.67	4.25	< 10	2.0	60.2	0.90	< 0.05
644472	94139402	20.5	17.8	0.20	360	1.45	0.81	7.8	25.6	140	5.0	68.1<	0.002	0.93	1.80	< 10	1.4	59.2	0.90	< 0.05
644473	94139402	19.5	24.4	0.21	165	3.00	0.90	8.1	31.6	320	5.5	63.7<	0.002	1.35	2.75	< 10	1.4	51.2	0.95	0.25
644474	94139402	20.0	19.0	0.20	235	1.55	0.98	8.4	39.8	310	16.0	73.5<	0.002	1.30	2.10	< 10	2.0	61.5	0.80	< 0.05
644475	94139402	30.5	16.8	0.20	695	2.05	0.84	7.4	62.6	310	92.5	79.9	0.002	0.23	2.95	< 1	1.2	138.0	0.55	0.05
644476	94139402	22.0	17.2	0.04	70	2.25	0.06	3.0	46.6	220	39.0	21.4<	0.002	0.05	2.55	< 1	7.0	7.4	0.30	< 0.05
644477	94139402	21.0	19.4	0.17	430	2.45	1.20	8.8	18.2	240	17.5	61.2	0.002	0.75	1.70	< 10	1.6	85.6	0.85	0.20
644478	94139402	14.0	15.4	0.13	240	1.15	1.16	6.0	18.8	180	5.0	44.8<	0.002	1.36	2.30	< 10	1.0	61.6	0.60	< 0.05
644479	94139402	30.5	15.6	0.06	1565	2.25	0.69	2.3	19.6	130	5.0	17.3<	0.002	3.86	3.60	10	2.0	157.0	0.25	< 0.05
644480	94139402	16.0	24.4	0.10	600	1.40	0.89	3.5	18.4	110	13.0	32.7<	0.002	0.76	2.70	< 10	0.8	61.4	0.35	< 0.05
644481	94139402	29.5	10.8	0.05	1330	1.60	0.38	2.1	22.6	110	7.5	17.5	0.002	>10.00	7.75	40	6.0	73.9	0.20	0.15
644482	9400 225	15.0	11.2	0.18	760	15.85	0.06	5.5	47.8	1390	>10000	51.1<	0.002	>10.00	25.05	40	1.2	22.8	0.50	0.30
644483	94139402	9.0	27.2	0.07	450	1.20	0.71	2.3	32.8	110	14.5	25.9<	0.002	8.32	2.70	30	1.6	49.3	0.20	0.05
644484	94139402	10.0	22.6	0.10	275	2.60	0.80	3.7	62.0	130	18.5	35.2	0.002	2.49	1.70	< 10	0.8	42.2	0.40	0.05
644485	94139402	82.5	33.8	0.56	340	0.65	0.08	20.2	90.8	330	46.5	223 <	0.002	0.22	1.70	< 1	2.4	99.8	1.55	0.10
644486	94139402	79.0	24.6	0.38	515	1.25	0.11	20.0	46.0	420	55.5	189.0	0.002	0.51	3.20	1	3.4	101.0	1.45	0.05
644487	94139402	29.0	21.4	0.17	1050	0.50	0.38	4.8	19.4	220	5.0	65.5<	0.002	0.17	1.60	< 1	0.8	184.5	0.30	< 0.05
644488	94139402	19.5	24.6	0.13	1320	1.90	0.10	5.8	18.6	160	9.0	38.8<	0.002	5.08	2.95	10	2.4	147.5	0.40	0.05

CERTIFICATION:

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SAMPLE	PREP CODE	Th ppm (ICP)	Ti % (ICP)	Tl ppm (ICP)	U ppm (ICP)	V ppm (ICP)	W ppm (ICP)	Y ppm (ICP)	Zn ppm (ICP)	Zr ppm	As ppm	Hg ppb	Ag g/t	Pb %	Zn %	CdSpec %	Gr S.G.
644467	94139402	11.2	0.32	0.32	1.5	60	1.5	10.9	94	52.0	< 1	10	1	< 0.01	< 0.01<	0.001	2.73
644468	94139402	17.0	0.51	0.78	2.2	87	2.2	16.9	94	102.0	1	10	< 1	< 0.01	< 0.01<	0.001	2.78
644469	94139402	10.6	0.28	0.50	2.1	55	1.5	26.2	2120	66.5	33	820	< 1	< 0.01	0.29	0.001	2.73
644470	94139402	5.0	0.14	0.26	1.7	23	1.6	7.8	>10000	50.5	29	67400	< 1	< 0.01	15.35	0.072	2.90
644471	94139402	7.4	0.21	0.36	3.3	42	1.2	10.8	>10000	70.5	89	18740	< 1	< 0.01	5.60	0.022	2.75
644472	94139402	8.0	0.23	0.40	2.3	45	1.1	9.9	>10000	60.5	25	6260	1	< 0.01	1.80	0.009	2.69
644473	94139402	10.0	0.23	0.38	3.9	45	1.8	10.7	>10000	81.5	19	9850	< 1	< 0.01	2.71	0.014	2.75
644474	94139402	11.2	0.24	0.36	2.3	45	1.4	10.1	>10000	75.5	18	8030	1	< 0.01	2.55	0.012	2.77
644475	94139402	11.0	0.22	0.36	2.1	42	1.0	12.5	1690	59.0	20	630	< 1	0.01	0.24	0.001	2.74
644476	94139402	9.8	0.12	0.18	1.4	9	1.1	6.2	156	74.0	1	30	1	< 0.01	0.01<	0.001	2.69
644477	94139402	16.0	0.17	0.38	1.9	38	1.6	9.2	>10000	79.5	11	4680	1	< 0.01	1.56	0.006	2.72
644478	94139402	10.6	0.15	0.26	1.5	30	1.2	7.4	>10000	57.0	21	9960	< 1	< 0.01	2.82	0.012	2.77
644479	94139402	5.0	0.08	0.08	0.8	11	0.8	18.0	>10000	28.5	9	29900	< 1	< 0.01	7.46	0.034	2.86
644480	94139402	8.4	0.12	0.16	1.7	22	0.5	11.5	>10000	48.5	8	4870	< 1	< 0.01	1.43	0.006	2.71
644481	94139402	3.4	0.06	0.08	0.6	9	0.7	19.9	>10000	21.5	10	>100000	1	< 0.01	1.30	0.144	3.27
644482	94400 225	10.2	0.11	52.5	6.0	102	1.8	16.7	>10000	75.5	43	11370	11	1.38	28.7	0.045	3.09
644483	94139402	3.4	0.08	0.52	0.8	12	0.4	8.1	>10000	22.5	8	57600	2	< 0.01	18.35	0.058	2.94
644484	94139402	8.2	0.11	0.28	1.3	20	0.7	7.0	>10000	52.5	11	15500	1	< 0.01	5.54	0.018	2.75
644485	94139402	25.4	0.46	1.06	3.9	88	2.6	18.3	1230	126.5	13	330	< 1	< 0.01	0.12<	0.001	2.71
644486	94139402	21.8	0.40	0.84	4.7	76	2.2	21.9	3340	118.0	21	1190	1	< 0.01	0.42	0.002	2.69
644487	94139402	8.8	0.16	0.30	2.1	29	0.6	16.8	516	62.5	11	200	< 1	< 0.01	0.05<	0.001	2.73
644488	94139402	6.2	0.11	0.24	0.9	20	1.2	14.8	>10000	41.0	11	28500	< 1	< 0.01	9.68	0.042	2.85

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SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644467	9413 9402	< 5	1.84	7.00	809.6	1.50	0.13	1.86	0.10	52.7	14.3	169	6.15	21.0	5.03	18.15	2.20	1.6	0.070	1.72
644468	9413 9402	< 5	2.10	9.71	1249.0	2.95	0.28	0.54	0.02	108.0	53.7	122	13.25	63.2	5.65	25.45	2.60	2.9	0.075	3.16
644469	9413 9402	< 5	0.92	5.96	1002.0	1.70	0.15	9.61	8.26	98.7	21.6	105	7.40	38.6	1.04	15.30	4.90	1.7	0.145	2.71
644470	9413 9402	< 5	1.68	3.65	75.0	0.25	0.14	2.19	>500		21.3	80.1	155	2.50	280.0	1.27	40.25	35.60	1.5	0.560	1.10
644471	9413 9402	< 5	1.98	4.63	135.0	0.55	0.22	1.87	212		32.2	54.0	179	3.90	189.6	0.77	26.15	19.90	2.3	1.220	1.76
644472	9413 9402	< 5	1.72	5.39	582.3	1.15	0.23	1.87	78.3		33.1	16.9	203	4.60	51.4	0.62	21.50	8.55	2.0	0.190	2.05
644473	9413 9402	< 5	1.52	5.92	601.4	1.30	0.17	0.67	129.0		31.9	19.3	153	4.15	155.4	0.63	23.05	9.00	2.5	0.225	1.97
644474	9413 9402	< 5	1.54	6.22	668.0	1.85	0.21	1.03	99.9		35.7	19.8	172	4.50	41.8	0.63	25.70	8.90	2.6	0.335	1.95
644475	9413 9402	< 5	0.64	5.26	704.4	1.05	0.19	3.80	8.90		55.1	14.1	161	4.65	40.8	0.60	13.65	3.40	1.9	0.050	1.89
644476	9413 9402	< 5	0.32	1.20	155.0	0.20	1.20	0.06	0.74		44.7	1.5	232	1.05	16.4	0.85	3.40	1.60	2.1	0.055	0.46
644477	9413 9402	< 5	1.62	5.39	471.0	1.10	0.21	1.97	43.9		36.3	13.2	146	3.70	30.0	0.46	15.00	7.00	2.6	0.115	1.58
644478	9413 9402	< 5	1.22	4.39	393.0	0.70	0.20	1.23	96.0		25.4	18.3	178	2.85	28.2	0.46	15.95	8.75	2.2	0.050	1.41
644479	9413 9402	< 5	0.70	1.87	177.0	0.35	0.08	7.95	307		48.3	30.1	124	0.65	64.0	0.63	23.25	16.90	1.0	2.52	0.51
644480	9413 9402	< 5	0.82	3.44	323.5	0.45	0.15	3.44	53.3		28.1	11.5	162	1.85	24.6	0.36	12.45	10.15	1.5	0.080	1.02
644481	9413 9402	< 5	0.90	1.67	46.5	0.25	0.11	6.62	>500		51.1	128.3	64	0.95	259.0	2.00	87.85	86.50	0.7	6.60	0.54
644482	9400 225	10	4.50	2.85	72.5	2.90	0.27	0.32	406		26.4	8.5	35	9.40	136.4	2.82	9.70	57.55	2.7	0.035	1.19
644483	9413 9402	< 5	1.76	2.49	49.0	0.25	0.10	2.15	>500		16.05	73.7	140	1.30	137.0	1.10	26.50	51.80	0.5	0.855	0.70
644484	9413 9402	< 5	1.52	3.34	302.5	0.70	0.14	1.42	165.5		17.50	25.2	149	2.50	40.8	0.58	13.90	15.15	1.7	0.080	1.10
644485	9413 9402	< 5	1.88	10.00	1382.0	4.15	0.32	1.55	4.30	131.5	12.7	100	17.00	69.0	1.55	28.30	3.80	3.4	0.115	4.15
644486	9413 9402	< 5	1.82	9.23	1218.0	2.80	0.39	3.11	16.40	126.5	18.5	105	12.85	74.9	1.09	26.05	3.95	3.0	0.245	3.82
644487	9413 9402	< 5	0.70	3.87	509.4	0.65	0.11	6.94	2.10	50.4	7.6	134	3.50	19.8	0.43	9.55	3.05	1.8	0.055	1.49
644488	9413 9402	< 5	1.90	2.72	149.0	0.45	0.14	7.01	381		32.0	38.6	106	1.75	86.6	0.84	28.00	22.85	1.4	3.42	1.12

CERTIFICATION: _____*+

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ALS Chemex

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5175 Timberlea Blvd., Mississauga
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL: DAVE KING

Certificate Date: 02-NOV-2001
Invoice No. :10126813
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126813

SAMPLE	PREP CODE	La ppm (ICP)	Li ppm (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Nb ppm (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm (ICP)	Rb ppm (ICP)	Re ppm	S %	Sb ppm (ICP)	Se ppm	Sn ppm	Sr ppm (ICP)	Ta ppm (ICP)	Te ppm (ICP)
644467	9413 9402	27.5	92.8	1.01	960	0.85	1.64	11.7	39.6	120	7.0	72.7<	0.002	0.04	0.50	< 1	1.6	160.0	0.85	0.05
644468	9413 9402	57.0	93.0	1.24	405	0.40	1.00	20.1	45.8	300	5.5	146.5<	0.002	0.03	0.70	< 1	2.4	121.5	1.60	0.10
644469	9413 9402	61.0	21.6	0.34	1860	1.30	0.16	9.2	46.4	220	12.0	116.5<	0.002	0.39	3.65	1	1.2	302	0.65	0.05
644470	9413 9402	13.5	15.0	0.13	520	1.45	0.82	5.2	24.0	160	7.5	42.5<	0.002	6.91	5.20	20	2.6	99.9	0.50	0.05
644471	9413 9402	20.0	24.2	0.18	430	3.60	0.67	7.5	60.8	180	50.5	60.0	0.004	2.67	4.25	< 10	2.0	60.2	0.90	< 0.05
644472	9413 9402	20.5	17.8	0.20	360	1.45	0.81	7.8	25.6	140	5.0	68.1<	0.002	0.93	1.80	< 10	1.4	59.2	0.90	< 0.05
644473	9413 9402	19.5	24.4	0.21	165	3.00	0.90	8.1	31.6	320	5.5	63.7<	0.002	1.35	2.75	< 10	1.4	51.2	0.95	0.25
644474	9413 9402	20.0	19.0	0.20	235	1.55	0.98	8.4	39.8	310	16.0	73.5<	0.002	1.30	2.10	< 10	2.0	61.5	0.80	< 0.05
644475	9413 9402	30.5	16.8	0.20	695	2.05	0.84	7.4	62.6	310	92.5	79.9	0.002	0.23	2.95	< 1	1.2	138.0	0.55	0.05
644476	9413 9402	22.0	17.2	0.04	70	2.25	0.06	3.0	46.6	220	39.0	21.4<	0.002	0.05	2.55	< 1	7.0	7.4	0.30	< 0.05
644477	9413 9402	21.0	19.4	0.17	430	2.45	1.20	8.8	18.2	240	17.5	61.2	0.002	0.75	1.70	< 10	1.6	85.6	0.85	0.20
644478	9413 9402	14.0	15.4	0.13	240	1.15	1.16	6.0	18.8	180	5.0	44.8<	0.002	1.36	2.30	< 10	1.0	61.6	0.60	< 0.05
644479	9413 9402	30.5	15.6	0.06	1565	2.25	0.69	2.3	19.6	130	5.0	17.3<	0.002	3.86	3.60	10	2.0	157.0	0.25	< 0.05
644480	9413 9402	16.0	24.4	0.10	600	1.40	0.89	3.5	18.4	110	13.0	32.7<	0.002	0.76	2.70	< 10	0.8	61.4	0.35	< 0.05
644481	9413 9402	29.5	10.8	0.05	1330	1.60	0.38	2.1	22.6	110	7.5	17.5	0.002	>10.00	7.75	40	6.0	73.9	0.20	0.15
644482	9400 225	15.0	11.2	0.18	760	15.85	0.06	5.5	47.8	1390	>10000	51.1<	0.002	>10.00	25.05	40	1.2	22.8	0.50	0.30
644483	9413 9402	9.0	27.2	0.07	450	1.20	0.71	2.3	32.8	110	14.5	25.9<	0.002	8.32	2.70	30	1.6	49.3	0.20	0.05
644484	9413 9402	10.0	22.6	0.10	275	2.60	0.80	3.7	62.0	130	18.5	35.2	0.002	2.49	1.70	< 10	0.8	42.2	0.40	0.05
644485	9413 9402	82.5	33.8	0.56	340	0.65	0.08	20.2	90.8	330	46.5	223 <	0.002	0.22	1.70	< 1	2.4	99.8	1.55	0.10
644486	9413 9402	79.0	24.6	0.38	515	1.25	0.11	20.0	46.0	420	55.5	189.0	0.002	0.51	3.20	1	3.4	101.0	1.45	0.05
644487	9413 9402	29.0	21.4	0.17	1050	0.50	0.38	4.8	19.4	220	5.0	65.5<	0.002	0.17	1.60	< 1	0.8	184.5	0.30	< 0.05
644488	9413 9402	19.5	24.6	0.13	1320	1.90	0.10	5.8	18.6	160	9.0	38.8<	0.002	5.08	2.95	10	2.4	147.5	0.40	0.05

CERTIFICATION: _____*+

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ALS Chemex

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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL: DAVE KING

Page Number :1-C
Total Pages :1
Certificate Date: 02-NOV-2001
Invoice No. :I0126813
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126813

SAMPLE	PREP CODE	Th ppm (ICP)	Ti % (ICP)	Tl ppm (ICP)	U ppm (ICP)	V ppm (ICP)	W ppm (ICP)	Y ppm (ICP)	Zn ppm (ICP)	Zr ppm	As ppm	Hg ppb	Ag g/t	Pb %	Zn %	CdSpec %	Gr S.G.
644467	9413 9402	11.2	0.32	0.32	1.5	60	1.5	10.9	94	52.0	< 1	10	1	< 0.01	< 0.01<	0.001	2.73
644468	9413 9402	17.0	0.51	0.78	2.2	87	2.2	16.9	94	102.0	1	10	< 1	< 0.01	< 0.01<	0.001	2.78
644469	9413 9402	10.6	0.28	0.50	2.1	55	1.5	26.2	2120	66.5	33	820	< 1	< 0.01	0.29	0.001	2.73
644470	9413 9402	5.0	0.14	0.26	1.7	23	1.6	7.8	>10000	50.5	29	67400	< 1	< 0.01	15.35	0.072	2.90
644471	9413 9402	7.4	0.21	0.36	3.3	42	1.2	10.8	>10000	70.5	89	18740	< 1	< 0.01	5.60	0.022	2.75
644472	9413 9402	8.0	0.23	0.40	2.3	45	1.1	9.9	>10000	60.5	25	6260	1	< 0.01	1.80	0.009	2.69
644473	9413 9402	10.0	0.23	0.38	3.9	45	1.8	10.7	>10000	81.5	19	9850	< 1	< 0.01	2.71	0.014	2.75
644474	9413 9402	11.2	0.24	0.36	2.3	45	1.4	10.1	>10000	75.5	18	8030	1	< 0.01	2.55	0.012	2.77
644475	9413 9402	11.0	0.22	0.36	2.1	42	1.0	12.5	1690	59.0	20	630	< 1	0.01	0.24	0.001	2.74
644476	9413 9402	9.8	0.12	0.18	1.4	9	1.1	6.2	156	74.0	1	30	1	< 0.01	0.01<	0.001	2.69
644477	9413 9402	16.0	0.17	0.38	1.9	38	1.6	9.2	>10000	79.5	11	4680	1	< 0.01	1.56	0.006	2.72
644478	9413 9402	10.6	0.15	0.26	1.5	30	1.2	7.4	>10000	57.0	21	9960	< 1	< 0.01	2.82	0.012	2.77
644479	9413 9402	5.0	0.08	0.08	0.8	11	0.8	18.0	>10000	28.5	9	29900	< 1	< 0.01	7.46	0.034	2.86
644480	9413 9402	8.4	0.12	0.16	1.7	22	0.5	11.5	>10000	48.5	8	4870	< 1	< 0.01	1.43	0.006	2.71
644481	9413 9402	3.4	0.06	0.08	0.6	9	0.7	19.9	>10000	21.5	10	>100000	1	< 0.01	1.30	0.144	3.27
644482	9400 225	10.2	0.11	52.5	6.0	102	1.8	16.7	>10000	75.5	43	11370	11	1.38	28.7	0.045	3.09
644483	9413 9402	3.4	0.08	0.52	0.8	12	0.4	8.1	>10000	22.5	8	57600	2	< 0.01	18.35	0.058	2.94
644484	9413 9402	8.2	0.11	0.28	1.3	20	0.7	7.0	>10000	52.5	11	15500	1	< 0.01	5.54	0.018	2.75
644485	9413 9402	25.4	0.46	1.06	3.9	88	2.6	18.3	1230	126.5	13	330	< 1	< 0.01	0.12<	0.001	2.71
644486	9413 9402	21.8	0.40	0.84	4.7	76	2.2	21.9	3340	118.0	21	1190	1	< 0.01	0.42	0.002	2.69
644487	9413 9402	8.8	0.16	0.30	2.1	29	0.6	16.8	516	62.5	11	200	< 1	< 0.01	0.05<	0.001	2.73
644488	9413 9402	6.2	0.11	0.24	0.9	20	1.2	14.8	>10000	41.0	11	28500	< 1	< 0.01	9.68	0.042	2.85

CERTIFICATION: _____

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

A0126926

Comments: ATTN: CLINT BARR EMAIL:DAVE KING

CERTIFICATE A0126926

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 05-NOV-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	55	Pulv. <250g to >85%/-75 micron
STO-21	55	Reject Storage-First 90 Days
LOG-22	55	Samples received without barcode
CRU-31	55	Crush to 70% minus 2mm
SPL-21	55	Splitting Charge
225	55	Run as received
9300	55	T127 special code

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Au-AA23	55	Au-AA23 : Au ppb: Fuse 30 grams	FA-AAS	5	10000
Ag-MS61	55	Ag ppm: ICP + ICP-MS package	ICP-MS/ICP	0.02	100.0
Al-MS61	55	Al %: ICP + ICP-MS package	ICP	0.01	25.0
Ba-MS61	55	Ba ppm: ICP + ICP-MS package	ICP	0.5	10000
Be-MS61	55	Be ppm: ICP + ICP-MS package	ICP-MS/ICP	0.05	1000
Bi-MS61	55	Bi ppm: ICP + ICP-MS package	ICP-MS/ICP	0.01	10000
Ca-MS61	55	Ca %: ICP + ICP-MS package	ICP	0.01	25.0
Cd-MS61	55	Cd ppm: ICP + ICP-MS package	ICP-MS/ICP	0.02	500
Ce-MS61	55	Ce ppm: ICP + ICP-MS package	ICP-MS	0.01	500
Co-MS61	55	Co ppm: ICP + ICP-MS package	ICP-MS/ICP	0.1	10000
Cr-MS61	55	Cr ppm: ICP + ICP-MS package	ICP	1	10000
Cs-MS61	55	Cs ppm: ICP + ICP-MS package	ICP-MS	0.05	500
Cu-MS61	55	Cu ppm: ICP + ICP-MS package	ICP	0.2	10000
Fe-MS61	55	Fe %: ICP + ICP-MS package	ICP	0.01	25.0
Ga-MS61	55	Ga ppm: ICP + ICP-MS package	ICP-MS	0.05	500.0
Ge-MS61	55	Ge ppm: ICP + ICP-MS package	ICP-MS	0.05	500.0
Hf-MS61	55	Hf ppm: ICP + ICP-MS package	ICP-MS/ICP	0.1	500
In-MS61	55	In ppm: ICP + ICP-MS package	ICP-MS/ICP	0.005	500
K-MS61	55	K %: ICP + ICP-MS package	ICP	0.01	10.00
La-MS61	55	La ppm: ICP + ICP-MS package	ICP-MS	0.5	500
Li-MS61	55	Li ppm: ICP + ICP-MS package	ICP-MS	0.2	500
Mg-MS61	55	Mg %: ICP + ICP-MS package	ICP	0.01	15.00
Mn-MS61	55	Mn ppm: ICP + ICP-MS package	ICP	5	10000
Mo-MS61	55	Mo ppm: ICP + ICP-MS package	ICP	0.05	10000
Na-MS61	55	Na %: ICP + ICP-MS package	ICP	0.01	10.00
Nb-MS61	55	Nb ppm: ICP + ICP-MS package	ICP-MS	0.1	500
Ni-MS61	55	Ni ppm: ICP + ICP-MS package	ICP-MS/ICP	0.2	10000
P-MS61	55	P ppm: ICP + ICP-MS package	ICP	10	10000
Pb-MS61	55	Pb ppm: ICP + ICP-MS package	ICP-MS/ICP	0.5	10000
Rb-MS61	55	Rb ppm: ICP + ICP-MS package	ICP-MS	0.1	500
Re-MS61	55	Re ppm: ICP + ICP-MS package	ICP-MS/ICP	0.002	50.0
S-MS61	54	S %: ICP + ICP-MS package	ICP-MS/ICP	0.01	10.00
Sb-MS61	55	Sb ppm: ICP + ICP-MS package	ICP-MS	0.05	1000.0
Se-MS61	55	Se ppm: ICP + ICP-MS package	ICP-MS/ICP	1	1000

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METHOD CODE	NUMBER SAMPLES	DESCRIPTION
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LOG-22	55	Samples received without barcode
CRU-31	55	Crush to 70% minus 2mm
SPL-21	55	Splitting Charge
225	55	Run as received
9300	55	T127 special code

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Sn-MS61	55	Sn ppm: ICP + ICP-MS package	ICP-MS/ICP	0.2	500
Sr-MS61	55	Sr ppm: ICP + ICP-MS package	ICP-MS/ICP	0.2	10000
Ta-MS61	55	Ta ppm: ICP + ICP-MS package	ICP-MS	0.05	100.0
Te-MS61	55	Te ppm: ICP + ICP-MS package	ICP-MS	0.05	500
Th-MS61	55	Th ppm: ICP + ICP-MS package	ICP-MS	0.2	500
Ti-MS61	55	Ti %: ICP + ICP-MS package	ICP	0.01	10.00
Tl-MS61	55	Tl ppm: ICP + ICP-MS package	ICP-MS	0.02	500
U-MS61	55	U ppm: ICP + ICP-MS package	ICP-MS	0.1	500
V-MS61	55	V ppm: ICP + ICP-MS package	ICP	1	10000
W-MS61	55	W ppm: ICP + ICP-MS package	ICP-MS/ICP	0.1	10000
Y-MS61	55	Y ppm: ICP + ICP-MS package	ICP-MS	0.1	500
Zn-MS61	55	Zn ppm: ICP + ICP-MS package	ICP	2	10000
Zr-MS61	55	Zr ppm: ICP + ICP-MS package	ICP-MS/ICP	0.5	500
As-AA45	55	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
Hg-CV41	55	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
OA-GRA08	53	Spec. grav. SG: pulv. material	PYCNOMETER	0.01	20.0
Ag-AA46	55	Ag oz/T: Conc. Nitric-HCl dig'n	AAS	0.03	50.0
Pb-AA46	55	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	55	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Cd-AA46	55	Cd %: Conc. Nitric-HCL dig'n	AAS	0.001	10.000

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :1-A
Total Pages :2
Certificate Date: 05-NOV-2001
Invoice No. :I0126926
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126926

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644555	94139402	10	2.00	4.16	660.7	1.45	0.19	2.81	0.10	34.1	11.0	176	5.20	50.7	2.89	11.40	5.85	0.9	0.045	1.46
644556	94139402	15	34.1	3.54	140.0	1.15	0.99	0.30	231	24.0	28.1	146	3.95	203.5	0.89	22.35	30.25	1.4	1.370	1.44
644557	94139402	< 5	5.76	6.03	950.0	2.40	0.29	1.36	2.22	61.5	8.2	137	7.40	5.4	0.89	17.00	11.35	1.6	0.050	2.40
644558	94139402	< 5	1.48	7.50	1342.0	2.90	0.33	2.25	0.88	96.6	30.2	106	12.70	27.0	1.50	20.25	3.35	2.0	0.050	3.06
644559	94139402	< 5	3.68	2.84	421.5	1.20	0.14	15.30	60.6	152.5	10.3	123	1.70	19.0	0.58	13.00	9.10	1.5	0.470	0.87
644560	94139402	< 5	2.98	3.79	461.0	1.30	0.24	7.76	89.9	67.5	15.7	185	2.55	34.8	0.50	16.40	11.95	1.8	0.550	1.19
644561	94139402	< 5	2.66	4.39	587.0	0.60	0.23	12.50	70.8	90.5	21.4	182	3.95	35.8	0.66	18.30	13.50	1.7	1.595	1.61
644562	94139402	< 5	0.96	5.73	841.6	1.20	0.20	2.28	1.32	50.4	13.4	202	5.40	25.0	0.58	14.10	4.25	1.4	0.030	1.79
644563	94139402	< 5	1.84	3.36	330.0	0.60	0.08	2.58	99.8	21.6	15.7	230	2.05	41.8	0.47	15.00	13.55	0.9	0.860	0.94
644564	94139402	< 5	1.28	4.19	295.0	0.60	0.14	1.26	48.7	24.8	11.3	177	2.15	24.8	0.39	13.20	7.65	1.7	0.100	1.05
644565	94139402	< 5	1.40	3.78	147.5	0.75	0.12	2.03	273	35.1	26.3	198	2.40	61.3	0.59	20.00	14.50	1.4	0.140	1.16
644566	94139402	< 5	1.00	6.56	673.3	1.15	0.15	1.49	2.00	49.9	14.5	200	6.90	37.6	0.56	15.75	2.55	1.9	0.055	2.05
644567	94139402	< 5	0.16	1.24	175.5	0.30	0.24	0.04	0.88	42.2	1.4	221	1.00	15.4	0.68	3.25	1.30	1.8	0.030	0.49
644568	94139402	5	1.30	6.89	909.6	2.15	0.20	1.04	0.12	76.9	8.5	164	8.35	31.4	0.69	18.30	3.70	2.2	0.035	2.29
644569	94139402	< 5	2.84	1.66	235.0	0.35	0.22	15.80	1.42	117.5	4.9	139	1.15	0.6	0.43	7.95	5.50	0.8	0.240	0.59
644570	94139402	< 5	0.44	4.74	498.5	0.95	0.12	3.98	0.24	40.1	9.1	205	3.80	14.4	0.63	10.20	2.35	1.2	0.035	1.47
644571	94139402	< 5	0.32	4.24	477.5	0.75	0.12	1.44	< 0.02	45.6	7.7	182	3.75	18.0	0.38	9.40	2.40	1.5	0.015	1.33
644572	94139402	< 5	0.46	4.37	666.4	0.95	0.15	7.94	2.68	78.1	14.8	155	4.75	23.2	0.57	11.50	4.20	1.2	0.080	1.74
644573	94139402	5	1.04	6.41	816.0	1.55	0.21	5.97	5.00	83.1	15.5	156	7.25	35.2	0.61	16.40	3.85	1.9	0.065	2.45
644574	94139402	5	0.72	5.16	653.6	1.05	0.15	1.56	33.1	49.8	13.6	199	4.80	21.8	0.51	13.00	5.05	1.7	0.030	1.71
644575	94139402	15	2.08	5.29	230.5	1.20	0.20	1.36	221	30.4	21.5	184	4.25	35.2	1.00	22.35	14.10	1.7	1.130	1.80
644576	94139402	< 5	1.02	9.78	1627.0	3.10	0.20	1.24	0.20	107.0	10.8	114	13.95	29.0	1.56	26.55	2.80	2.2	0.060	4.19
644577	94139402	< 5	1.54	8.59	1448.5	2.65	0.26	4.95	0.12	110.0	27.1	105	12.70	25.0	1.43	22.55	2.80	1.9	0.080	3.67
644578	94139402	< 5	1.68	9.51	1433.0	3.55	0.75	1.93	0.02	119.0	251.0	95	16.45	35.8	1.81	26.00	3.20	2.1	0.075	4.16
644579	94139402	< 5	1.48	9.08	1393.5	2.70	0.40	1.73	0.02	121.5	15.6	105	14.50	23.2	1.91	24.00	3.55	2.1	0.055	3.90
644580	94139402	5	1.46	6.17	259.0	1.75	0.28	2.24	52.7	50.5	44.0	136	7.05	23.2	1.47	19.85	15.75	1.3	0.110	2.68
644581	94139402	5	1.46	9.11	1231.0	2.80	0.23	1.65	0.04	87.1	17.8	107	13.00	26.6	2.22	23.40	3.70	1.7	0.060	4.01
644582	94139402	< 5	0.88	5.97	983.8	1.75	0.18	3.19	0.24	71.4	37.2	142	8.45	29.6	1.50	16.00	5.00	1.2	0.055	2.61
644583	94139402	< 5	0.96	6.05	1032.5	1.80	0.26	6.24	9.62	88.7	30.4	137	8.25	68.4	0.97	16.65	7.35	1.7	0.105	2.70
644584	94139402	5	0.12	1.79	351.5	0.60	0.08	22.7	27.5	58.2	11.6	63	2.05	22.2	0.57	6.60	3.35	0.9	0.195	0.77
644585	94139402	< 5	0.66	3.86	600.0	0.75	0.14	17.60	2.86	119.5	13.6	124	4.50	17.4	0.62	9.85	2.95	1.6	0.140	1.67
644586	94139402	5	3.64	4.51	533.6	0.75	0.28	1.69	16.50	23.1	8.5	203	3.45	255.0	0.50	13.75	7.90	1.5	0.220	1.62
644587	94139402	< 5	0.20	2.98	454.5	0.45	0.08	3.26	38.9	19.40	7.9	215	2.30	68.1	0.43	9.00	6.80	0.9	0.180	1.06
644588	94139402	< 5	0.64	5.25	803.6	1.00	0.12	9.80	0.50	81.1	14.4	135	5.80	23.0	0.58	12.80	3.95	1.7	0.095	2.14
644589	94139402	275	8.88	2.07	84.0	1.45	0.40	0.48	70.8	22.9	9.1	38	6.25	120.2	14.20	10.50	20.30	1.0	0.095	0.85
644590	94139402	15	4.06	4.35	102.0	1.30	0.42	7.37	203	56.1	35.2	122	5.15	140.4	1.08	24.65	57.70	1.5	1.430	1.92
644591	94139402	< 5	1.48	7.14	1202.5	2.05	0.39	1.83	0.42	87.3	23.3	119	12.20	21.4	1.25	19.20	5.15	1.8	0.045	3.12
644592	94139402	5	1.20	6.83	1114.5	2.10	0.25	1.53	0.08	71.0	100.4	133	9.95	17.4	1.34	18.00	4.60	1.5	0.040	2.98
644593	94139402	< 5	0.16	0.59	89.5	0.10	0.16	0.06	0.16	17.85	1.0	90	0.55	7.4	0.34	1.85	0.85	0.9	0.020	0.24
644594	94139402	5	4.50	0.17	102.0	< 0.05	0.16	>25.0	1.60	182.5	5.5	33	0.25	< 0.2	0.45	5.15	4.40	0.4	0.275	0.07

CERTIFICATION: _____*+

*ICP-MS DETECTION LIMITS MAY BE RAISED TO REFLECT DILUTION.

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Certificate Date: 05-NOV-2001
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CERTIFICATE OF ANALYSIS A0126926

SAMPLE	PREP CODE	La ppm (ICP)	Li ppm (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Nb ppm (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm (ICP)	Rb ppm (ICP)	Re ppm	S %	Sb ppm (ICP)	Se ppm	Sn ppm	Sr ppm (ICP)	Ta ppm (ICP)	Te ppm (ICP)
644555	94139402	22.0	47.0	0.96	2680	0.95	0.13	5.7	36.2	540	35.0	70.2	0.002	0.20	13.70	< 1	1.0	208	0.35	0.20
644556	94139402	10.0	29.0	0.17	115	3.10	0.06	5.1	55.8	160	>10000	54.4	0.002	5.63	92.55	10	2.0	42.4	0.55	0.05
644557	94139402	33.5	26.4	0.28	260	1.30	0.07	7.6	24.8	680	>10000	97.3<	0.002	0.91	27.25	4	1.2	74.4	0.80	0.10
644558	94139402	53.0	28.6	0.44	520	1.20	0.07	12.5	51.0	220	158.0	168.0<	0.002	0.39	12.80	< 1	1.6	101.0	1.00	0.05
644559	94139402	93.0	15.4	0.14	2840	1.30	0.57	3.3	29.6	110	66.5	38.1<	0.002	0.77	2.60	< 10	1.0	577	0.30	< 0.05
644560	94139402	40.5	19.6	0.15	1515	4.10	0.67	3.9	22.4	100	39.5	42.1<	0.002	1.21	4.60	< 10	1.2	326	0.45	< 0.05
644561	94139402	53.5	17.4	0.18	2420	1.40	0.54	5.7	39.6	220	31.5	56.7<	0.002	1.16	7.15	< 10	2.2	243	0.60	< 0.05
644562	94139402	30.0	23.8	0.23	490	3.00	0.69	7.4	21.2	190	232	82.3<	0.002	0.11	6.40	< 1	1.4	113.0	0.60	< 0.05
644563	94139402	12.5	23.0	0.09	535	2.00	0.85	3.4	13.6	60	13.5	37.5	0.004	1.35	3.15	< 10	1.2	80.7	0.30	< 0.05
644564	94139402	14.0	14.2	0.11	305	2.65	1.25	3.8	11.0	70	13.0	35.8<	0.002	0.71	3.30	< 10	0.8	60.9	0.45	0.10
644565	94139402	19.5	18.0	0.12	525	1.70	0.99	3.8	13.6	100	100.0	39.6<	0.002	3.30	8.10	10	1.0	78.2	0.45	< 0.05
644566	94139402	29.0	17.8	0.22	340	4.05	1.02	8.7	19.6	160	66.5	92.1<	0.002	0.14	7.45	< 1	1.4	82.4	0.70	< 0.05
644567	94139402	22.0	9.2	0.04	75	1.80	0.06	2.5	4.0	130	31.5	22.5<	0.002	0.02	3.10	< 1	8.4	7.0	0.25	< 0.05
644568	94139402	47.5	31.6	0.31	210	2.20	0.44	12.2	16.4	190	73.0	119.5<	0.002	0.08	6.35	< 1	1.6	74.4	1.00	0.05
644569	94139402	65.5	13.2	0.09	2600	1.35	0.28	2.0	31.4	40	>10000	28.2	0.002	0.34	11.55	< 10	0.8	267	0.25	< 0.05
644570	94139402	21.5	17.2	0.17	845	3.75	0.91	4.8	15.8	90	16.0	63.0<	0.002	0.28	3.85	< 1	0.8	125.0	0.35	< 0.05
644571	94139402	24.0	20.0	0.14	260	0.90	0.83	4.9	14.0	720	17.0	58.4<	0.002	0.12	5.35	< 1	0.8	78.9	0.45	< 0.05
644572	94139402	46.5	28.6	0.19	1460	2.10	0.27	5.3	34.2	90	69.0	79.3	0.002	0.19	8.60	< 1	1.0	165.0	0.40	0.05
644573	94139402	45.5	17.8	0.26	1080	0.60	0.52	8.9	25.8	160	180.0	108.5<	0.002	0.26	7.00	< 1	1.4	139.5	0.65	0.05
644574	94139402	25.0	22.2	0.19	290	2.85	0.77	7.1	15.6	680	16.0	74.4<	0.002	0.55	5.60	1	1.0	92.2	0.60	< 0.05
644575	94139402	17.5	24.2	0.21	270	1.40	0.36	9.7	21.8	130	2110	75.5<	0.002	2.27	8.10	< 10	1.6	101.0	0.90	0.45
644576	94139402	61.0	25.0	0.44	305	1.10	0.10	15.5	29.0	290	18.0	207 <	0.002	0.34	2.65	< 1	2.0	130.0	1.25	0.10
644577	94139402	61.5	23.2	0.39	930	0.50	0.09	13.4	72.4	240	8.0	183.0<	0.002	0.31	1.50	1	1.8	222	0.95	0.05
644578	94139402	65.5	28.0	0.44	430	0.70	0.10	14.8	219	280	7.0	223 <	0.002	0.60	1.20	< 1	2.2	121.5	1.15	0.05
644579	94139402	71.5	25.8	0.44	375	2.20	0.09	12.9	28.6	310	7.0	197.0	0.002	0.84	1.80	< 1	2.0	113.5	1.10	0.05
644580	94139402	35.5	26.4	0.27	415	2.60	0.08	6.6	92.8	210	12.5	115.5	0.002	1.54	2.90	< 10	1.4	99.0	0.65	< 0.05
644581	94139402	51.0	25.6	0.41	345	0.40	0.10	13.3	35.2	300	5.5	193.0<	0.002	1.20	2.30	1	1.8	120.0	1.00	0.05
644582	94139402	45.5	26.4	0.28	565	1.75	0.07	8.0	71.8	230	522	127.0<	0.002	0.70	4.60	< 1	1.2	136.5	0.60	0.05
644583	94139402	54.0	27.4	0.31	1095	0.65	0.15	8.9	61.9	170	43.5	126.0	0.002	0.37	2.90	1	1.4	148.0	0.65	< 0.05
644584	94139402	35.5	9.4	0.13	1845	0.35	0.06	2.9	41.0	130	17.0	35.4	0.006	0.52	4.65	1	0.4	616	0.15	0.10
644585	94139402	71.0	15.0	0.17	2690	0.60	0.24	6.5	38.6	140	42.0	71.6	0.002	0.18	3.55	1	0.8	246	0.50	0.05
644586	94139402	15.0	19.4	0.16	285	1.45	0.56	6.2	16.8	120	>10000	61.2<	0.002	0.66	10.20	< 10	1.2	77.5	0.65	0.05
644587	94139402	12.0	27.4	0.10	500	0.60	0.43	2.4	15.0	50	192.0	45.9	0.002	0.48	3.05	1	0.8	101.0	0.20	< 0.05
644588	94139402	48.5	14.8	0.21	1505	0.50	0.36	6.6	29.8	170	78.0	91.0	0.002	0.15	4.60	< 1	1.0	238	0.50	< 0.05
644589	94139402	11.5	9.4	0.82	>10000	3.55	0.05	5.7	39.2	910	9590	45.2	0.002	not/ss	3.45	< 10	1.0	20.2	0.45	0.30
644590	94139402	37.0	16.6	0.19	1315	1.45	0.07	6.6	56.7	140	55.5	74.1<	0.002	4.19	7.60	10	3.2	147.5	0.60	0.35
644591	94139402	53.0	24.6	0.31	345	0.65	0.09	11.4	42.8	170	15.5	157.5<	0.002	0.44	2.40	< 1	1.4	99.6	0.85	0.05
644592	94139402	42.5	24.0	0.28	285	0.50	0.09	10.4	155.0	200	32.5	137.5<	0.002	0.56	3.15	< 1	1.4	84.4	0.85	0.05
644593	94139402	9.0	10.6	0.02	45	0.85	0.04	1.1	2.2	50	7.5	10.7<	0.002	0.05	1.15	< 1	2.2	4.4	0.05	< 0.05
644594	94139402	103.5	4.8	0.04	5170	0.95	0.02	1.1	4.0	< 10	>10000	6.7	0.006	0.30	7.85	< 10	0.6	350	0.10	0.10

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SAMPLE	PREP CODE	Th ppm (ICP)	Ti % (ICP)	Tl ppm (ICP)	U ppm (ICP)	V ppm (ICP)	W ppm (ICP)	Y ppm (ICP)	Zn ppm (ICP)	Zr ppm	As ppm	Hg ppb	Spec Gr S.G.	Ag oz/ton	Pb %	Zn %	Cd %
644555	9413 9402	4.6	0.20	0.36	1.6	91	1.5	14.3	64	42.5	10	40	2.75	< 0.03	< 0.01	< 0.01	< 0.001
644556	9413 9402	5.0	0.14	0.80	1.2	34	1.1	4.6	>10000	44.0	76	22600	3.17	1.17	14.75	6.59	0.028
644557	9413 9402	8.2	0.25	0.74	1.9	53	1.6	12.2	524	61.5	16	270	2.81	0.15	4.64	0.07 <	0.001
644558	9413 9402	14.6	0.34	0.82	1.8	66	2.3	12.4	206	78.5	45	100	2.69	< 0.03	0.03	0.01 <	0.001
644559	9413 9402	4.6	0.11	0.22	1.1	19	0.9	40.6	>10000	46.5	9	5280	2.76	< 0.03	0.01	1.78	0.007
644560	9413 9402	5.8	0.13	0.26	1.2	24	0.6	22.4	>10000	57.5	9	8730	2.70	< 0.03	< 0.01	2.89	0.010
644561	9413 9402	7.0	0.18	0.28	1.6	35	1.2	29.8	>10000	56.5	25	7660	2.75	< 0.03	0.01	2.38	0.008
644562	9413 9402	10.2	0.20	0.40	2.1	45	1.0	9.7	414	60.5	28	130	2.71	< 0.03	0.03	0.04 <	0.001
644563	9413 9402	5.4	0.09	0.26	0.9	21	0.6	8.9	>10000	36.0	11	8720	2.71	< 0.03	< 0.01	2.78	0.012
644564	9413 9402	7.8	0.11	0.24	1.2	26	0.7	7.3	>10000	55.5	13	5310	2.71	< 0.03	< 0.01	1.46	0.005
644565	9413 9402	7.0	0.13	0.24	1.7	27	0.6	10.9	>10000	58.0	12	21800	2.75	< 0.03	< 0.01	6.47	0.032
644566	9413 9402	13.6	0.24	0.42	2.6	55	1.1	10.7	726	82.5	24	200	2.72	< 0.03	0.01	0.07 <	0.001
644567	9413 9402	8.6	0.11	0.18	1.2	10	1.4	6.0	232	74.0	3	20	2.67	< 0.03	< 0.01	0.01 <	0.001
644568	9413 9402	16.0	0.29	0.58	2.0	58	1.4	12.2	112	95.0	18	10	2.69	< 0.03	0.01 <	0.01 <	0.001
644569	9413 9402	3.4	0.06	0.22	0.7	12	0.5	40.6	362	23.0	13	220	2.71	0.09	1.87	0.04 <	0.001
644570	9413 9402	8.8	0.13	0.28	1.6	28	0.6	11.9	80	56.5	15	10	2.71	< 0.03	< 0.01	< 0.01 <	0.001
644571	9413 9402	11.4	0.12	0.28	2.2	29	0.7	12.7	60	59.5	15	10	2.70	< 0.03	< 0.01	< 0.01 <	0.001
644572	9413 9402	8.4	0.16	0.36	1.4	36	0.7	22.6	914	53.0	30	350	2.73	< 0.03	0.01	0.11 <	0.001
644573	9413 9402	14.2	0.24	0.46	2.4	51	0.9	16.8	1630	80.0	26	640	2.74	< 0.03	0.02	0.20 <	0.001
644574	9413 9402	11.0	0.17	0.32	2.6	38	0.8	11.6	7390	69.0	19	3110	2.67	< 0.03	< 0.01	0.87	0.004
644575	9413 9402	8.4	0.20	0.52	1.1	46	2.0	7.7	>10000	59.0	13	16540	2.86	< 0.03	0.22	4.23	0.026
644576	9413 9402	16.8	0.41	0.94	2.5	105	2.1	13.5	90	89.5	7	20	2.75	< 0.03	< 0.01	< 0.01 <	0.001
644577	9413 9402	14.4	0.36	0.78	2.7	96	1.8	20.3	66	80.5	8	10	2.82	< 0.03	< 0.01	< 0.01 <	0.001
644578	9413 9402	16.6	0.39	0.98	2.2	93	2.2	17.0	44	89.5	10	40	2.74	< 0.03	< 0.01	< 0.01 <	0.001
644579	9413 9402	16.0	0.37	0.88	3.9	100	2.1	14.2	44	88.0	14	100	2.77	< 0.03	< 0.01	< 0.01 <	0.001
644580	9413 9402	7.2	0.25	0.66	1.1	59	1.3	9.9	>10000	46.5	160	7260	2.74	< 0.03	< 0.01	1.97	0.006
644581	9413 9402	14.8	0.38	0.88	1.7	80	2.5	12.5	26	75.5	21	100	2.76	< 0.03	< 0.01	< 0.01 <	0.001
644582	9413 9402	9.0	0.26	0.58	1.7	54	1.5	13.8	70	54.0	93	100	2.74	< 0.03	0.06	< 0.01 <	0.001
644583	9413 9402	11.6	0.31	0.54	1.9	67	1.5	17.0	3100	72.0	89	1210	2.74	< 0.03	< 0.01	0.37	0.001
644584	9413 9402	4.0	0.07	0.16	1.3	13	0.3	20.5	5680	38.0	13	2920	2.77	< 0.03	< 0.01	0.71	0.003
644585	9413 9402	12.0	0.14	0.32	1.8	29	0.7	38.7	732	70.0	26	350	2.76	< 0.03	< 0.01	0.09 <	0.001
644586	9413 9402	9.0	0.13	0.42	1.5	31	0.6	6.9	4220	57.5	21	1780	2.70	0.12	1.95	0.48	0.002
644587	9413 9402	5.6	0.08	0.22	1.1	20	0.5	6.6	7130	34.5	18	3250	2.67	< 0.03	0.01	0.80	0.004
644588	9413 9402	13.2	0.17	0.44	2.2	39	0.8	22.7	90	72.5	30	50	2.73	< 0.03	0.01	0.01 <	0.001
644589	9413 9402	4.8	0.07	7.58	2.0	51	1.0	15.0	>10000	34.5	12	2490	not/ss	0.33	0.98	3.03	0.008
644590	9413 9402	8.4	0.18	0.46	1.8	40	0.7	15.6	>10000	54.0	77	25900	2.85	0.09	< 0.01	8.44	0.024
644591	9413 9402	14.6	0.30	0.70	1.5	64	1.7	10.7	166	68.0	53	100	2.76	< 0.03	< 0.01	0.02 <	0.001
644592	9413 9402	11.6	0.29	0.66	1.8	71	1.7	9.5	68	63.0	218	80	2.70	< 0.03	< 0.01	< 0.01 <	0.001
644593	9413 9402	3.6	0.05	0.06	0.6	5	0.4	3.0	40	39.5	3	< 10	2.63	< 0.03	< 0.01	< 0.01 <	0.001
644594	9413 9402	1.0	< 0.01	0.08	< 0.1	2	0.1	59.6	484	3.0	11	190	2.79	0.15	1.96	0.06 <	0.001

CERTIFICATION: _____ *+

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ALS Chemex

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5175 Timberlea Blvd., Mississauga
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :2-A
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Invoice No. : I0126926
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Account :BUF

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SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644595	94139402	15	0.54	0.77	216.0	0.05	0.04	>25.0	13.95	221	4.3	96	0.50	7.4	0.51	4.45	2.65	0.5	0.355	0.29
644596	94139402	5	1.08	5.26	788.4	1.20	0.18	2.65	11.10	57.7	9.6	228	5.05	18.4	0.64	12.30	3.80	1.5	0.175	2.00
644597	94139402	< 5	2.14	5.62	806.4	1.60	0.24	4.38	0.10	66.5	13.7	189	6.65	91.9	0.64	13.40	3.15	1.6	0.050	2.37
644598	94139402	< 5	1.92	8.63	1173.5	2.20	0.41	1.45	0.10	102.5	23.5	166	12.55	54.9	0.90	22.80	3.20	2.0	0.070	3.78
644599	94139402	< 5	1.20	6.46	939.2	1.40	0.24	2.90	0.04	62.9	19.0	230	7.95	34.2	0.75	16.05	3.00	1.8	0.055	2.69
644600	94139402	10	19.50	6.54	224.0	1.40	0.58	2.57	0.62	58.0	10.0	129	7.65	38.0	0.61	19.25	5.90	1.7	0.050	2.84
644601	94139402	< 5	1.06	3.57	601.5	0.85	0.12	12.80	0.12	88.7	9.3	152	3.80	19.2	0.51	8.85	3.50	1.1	0.085	1.54
644602	94139402	< 5	0.60	2.84	476.0	0.60	0.07	19.05	0.14	135.5	7.2	142	2.65	13.6	0.53	7.85	3.10	1.0	0.145	1.22
644603	94139402	< 5	0.26	2.06	380.0	0.55	0.04	7.78	34.9	37.3	7.4	193	1.45	32.4	0.43	8.20	8.60	0.6	2.21	0.85
644604	94139402	15	17.55	0.17	89.0	0.35	0.20	14.50	209	37.5	23.0	85	0.20	82.7	0.69	18.85	32.45	0.3	4.24	0.06
644605	94139402	25	10.80	2.92	45.5	2.00	0.23	0.33	412	25.3	7.9	32	10.65	140.2	2.97	9.55	54.60	1.6	0.035	1.21
644606	94139402	5	0.82	3.41	702.0	0.65	0.12	16.55	2.06	166.0	17.8	108	3.80	11.2	0.77	9.90	3.70	1.1	0.270	1.45
644607	94139402	< 5	0.48	3.78	501.6	0.80	0.31	4.85	0.32	45.0	10.0	201	3.55	68.0	0.60	8.85	3.65	1.1	0.070	1.36
644608	94139402	5	0.48	4.06	496.5	0.60	0.16	9.16	0.20	49.1	6.1	210	2.90	116.0	0.51	9.35	2.00	1.4	0.135	1.42
644609	94139402	< 5	0.38	2.54	522.8	0.50	0.11	18.45	< 0.02	102.5	6.5	100	2.25	160.0	0.51	6.80	2.25	1.2	0.290	1.07

CERTIFICATION: _____*+

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ALS Chemex

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Analytical Chemists * Geochemists * Registered Assayers
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
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Page Number :2-B
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SAMPLE	PREP CODE	La ppm (ICP)	Li ppm (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Nb ppm (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm (ICP)	Rb ppm (ICP)	Re ppm	S %	Sb ppm (ICP)	Se ppm	Sn ppm	Sr ppm (ICP)	Ta ppm (ICP)	Te ppm (ICP)
644595	94139402	140.5	8.2	0.07	4460	0.40	0.06	1.0	39.2	30	456	12.4	0.004	0.25	1.65	1	0.2	453	0.05	0.15
644596	94139402	37.5	19.4	0.22	495	0.60	0.38	6.4	16.8	220	31.5	87.2	0.002	0.28	2.70	1	1.0	106.5	0.50	< 0.05
644597	94139402	41.0	22.2	0.25	745	0.60	0.21	8.2	22.2	190	8160	106.0	0.002	0.27	7.25	< 1	1.2	147.0	0.65	< 0.05
644598	94139402	64.0	24.4	0.41	265	0.65	0.09	15.7	38.2	470	13.0	181.5<	0.002	0.25	4.75	< 1	1.8	88.9	1.30	< 0.05
644599	94139402	40.0	22.2	0.28	500	0.65	0.31	9.9	29.2	210	28.0	118.5<	0.002	0.19	3.50	< 1	1.2	117.0	0.75	< 0.05
644600	94139402	38.5	21.8	0.30	445	1.30	0.08	11.0	24.0	370	>10000	122.0<	0.002	2.71	79.15	< 10	1.6	79.3	1.05	0.20
644601	94139402	56.0	24.6	0.16	2010	0.50	0.11	4.6	29.2	180	66.0	68.5	0.002	0.09	2.00	< 1	0.8	181.0	0.35	0.05
644602	94139402	80.5	17.0	0.14	3270	0.45	0.12	3.9	35.4	70	52.5	51.3	0.002	0.05	2.95	< 1	0.6	274	0.25	0.05
644603	94139402	22.5	35.8	0.09	1300	0.50	0.06	2.5	16.8	40	8.5	34.5<	0.002	0.52	2.20	1	2.2	141.5	0.20	< 0.05
644604	94139402	22.5	11.4	0.01	2350	1.20	0.04	2.0	26.4	10	>10000	5.7	0.002	5.62	54.50	20	5.2	173.5	0.05	0.20
644605	94139402	13.5	10.0	0.19	825	17.60	0.05	5.9	33.8	1400	>10000	55.2<	0.002	>10.00	25.70	40	1.2	22.6	0.40	0.40
644606	94139402	96.5	21.6	0.17	2800	0.40	0.04	4.3	46.4	130	38.0	69.1	0.004	0.23	2.40	< 1	0.8	297	0.30	0.05
644607	94139402	28.0	27.8	0.16	915	1.05	0.40	3.6	22.6	100	10.5	58.9	0.002	0.15	1.35	< 1	0.6	208	0.25	< 0.05
644608	94139402	24.5	12.2	0.16	1570	1.20	0.59	3.9	18.8	80	23.5	58.8<	0.002	0.08	1.30	< 1	0.8	332	0.30	< 0.05
644609	94139402	51.5	20.0	0.13	3190	0.65	0.15	3.9	30.4	60	8.0	47.3<	0.002	0.08	1.15	< 1	0.6	442	0.30	0.05

CERTIFICATION: _____*+

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ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

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644595	94139402	2.0	0.02	0.06	0.4	5	0.3	55.1	5230	11.0	7	1860	2.75	< 0.03	0.05	0.62	0.001
644596	94139402	12.2	0.15	0.38	2.3	36	1.0	10.7	4030	48.0	18	1460	2.68	< 0.03	< 0.01	0.46	0.001
644597	94139402	15.2	0.21	0.52	2.6	44	1.1	13.9	42	58.0	21	10	2.78	0.06	0.90	< 0.01	< 0.001
644598	94139402	20.6	0.29	0.84	4.3	69	1.5	14.8	48	78.5	50	10	2.71	< 0.03	< 0.01	< 0.01	< 0.001
644599	94139402	15.0	0.23	0.54	2.7	48	1.2	14.4	34	65.0	35	10	2.68	< 0.03	< 0.01	< 0.01	< 0.001
644600	94139402	14.2	0.22	0.84	2.6	52	1.4	13.6	30	54.5	24	130	3.06	0.69	16.20	< 0.01	< 0.001
644601	94139402	8.4	0.13	0.30	1.7	27	0.5	28.9	58	40.5	18	30	2.76	0.03	0.01	< 0.01	< 0.001
644602	94139402	6.2	0.11	0.22	1.1	23	0.5	43.8	40	35.0	15	10	2.71	< 0.03	0.01	< 0.01	< 0.001
644603	94139402	4.6	0.07	0.16	0.7	16	0.4	15.5	9930	22.0	9	3790	2.69	< 0.03	< 0.01	1.11	0.004
644604	94139402	1.2	< 0.01	0.16	< 0.1	< 1	< 0.1	22.6	>10000	2.5	9	22700	3.07	0.78	10.10	9.27	0.024
644605	94139402	8.0	0.11	46.2	5.8	102	1.3	16.2	>10000	59.5	43	9070	not/ss	0.30	1.51	28.7	0.045
644606	94139402	8.4	0.14	0.48	1.1	32	0.9	39.9	774	33.0	41	210	2.73	< 0.03	< 0.01	0.09	< 0.001
644607	94139402	7.6	0.14	0.38	1.5	30	0.7	11.0	134	42.5	20	40	2.66	< 0.03	< 0.01	0.01	< 0.001
644608	94139402	10.0	0.12	0.32	1.6	28	0.6	17.7	52	51.0	9	20	2.66	< 0.03	< 0.01	< 0.01	< 0.001
644609	94139402	7.8	0.11	0.24	1.1	19	0.4	32.2	18	38.0	10	< 10	2.78	< 0.03	< 0.01	< 0.01	< 0.001

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644555	94139402	10	2.00	4.16	660.7	1.45	0.19	2.81	0.10	34.1	11.0	176	5.20	50.7	2.89	11.40	5.85	0.9	0.045	1.46
644556	94139402	15	34.1	3.54	140.0	1.15	0.99	0.30	231	24.0	28.1	146	3.95	203.5	0.89	22.35	30.25	1.4	1.370	1.44
644557	94139402	< 5	5.76	6.03	950.0	2.40	0.29	1.36	2.22	61.5	8.2	137	7.40	5.4	0.89	17.00	11.35	1.6	0.050	2.40
644558	94139402	< 5	1.48	7.50	1342.0	2.90	0.33	2.25	0.88	96.6	30.2	106	12.70	27.0	1.50	20.25	3.35	2.0	0.050	3.06
644559	94139402	< 5	3.68	2.84	421.5	1.20	0.14	15.30	60.6	152.5	10.3	123	1.70	19.0	0.58	13.00	9.10	1.5	0.470	0.87
644560	94139402	< 5	2.98	3.79	461.0	1.30	0.24	7.76	89.9	67.5	15.7	185	2.55	34.8	0.50	16.40	11.95	1.8	0.550	1.19
644561	94139402	< 5	2.66	4.39	587.0	0.60	0.23	12.50	70.8	90.5	21.4	182	3.95	35.8	0.66	18.30	13.50	1.7	1.595	1.61
644562	94139402	< 5	0.96	5.73	841.6	1.20	0.20	2.28	1.32	50.4	13.4	202	5.40	25.0	0.58	14.10	4.25	1.4	0.030	1.79
644563	94139402	< 5	1.84	3.36	330.0	0.60	0.08	2.58	99.8	21.6	15.7	230	2.05	41.8	0.47	15.00	13.55	0.9	0.860	0.94
644564	94139402	< 5	1.28	4.19	295.0	0.60	0.14	1.26	48.7	24.8	11.3	177	2.15	24.8	0.39	13.20	7.65	1.7	0.100	1.05
644565	94139402	< 5	1.40	3.78	147.5	0.75	0.12	2.03	273	35.1	26.3	198	2.40	61.3	0.59	20.00	14.50	1.4	0.140	1.16
644566	94139402	< 5	1.00	6.56	673.3	1.15	0.15	1.49	2.00	49.9	14.5	200	6.90	37.6	0.56	15.75	2.55	1.9	0.055	2.05
644567	94139402	< 5	0.16	1.24	175.5	0.30	0.24	0.04	0.88	42.2	1.4	221	1.00	15.4	0.68	3.25	1.30	1.8	0.030	0.49
644568	94139402	5	1.30	6.89	909.6	2.15	0.20	1.04	0.12	76.9	8.5	164	8.35	31.4	0.69	18.30	3.70	2.2	0.035	2.29
644569	94139402	< 5	2.84	1.66	235.0	0.35	0.22	15.80	1.42	117.5	4.9	139	1.15	0.6	0.43	7.95	5.50	0.8	0.240	0.59
644570	94139402	< 5	0.44	4.74	498.5	0.95	0.12	3.98	0.24	40.1	9.1	205	3.80	14.4	0.63	10.20	2.35	1.2	0.035	1.47
644571	94139402	< 5	0.32	4.24	477.5	0.75	0.12	1.44	< 0.02	45.6	7.7	182	3.75	18.0	0.38	9.40	2.40	1.5	0.015	1.33
644572	94139402	< 5	0.46	4.37	666.4	0.95	0.15	7.94	2.68	78.1	14.8	155	4.75	23.2	0.57	11.50	4.20	1.2	0.080	1.74
644573	94139402	5	1.04	6.41	816.0	1.55	0.21	5.97	5.00	83.1	15.5	156	7.25	35.2	0.61	16.40	3.85	1.9	0.065	2.45
644574	94139402	5	0.72	5.16	653.6	1.05	0.15	1.56	33.1	49.8	13.6	199	4.80	21.8	0.51	13.00	5.05	1.7	0.030	1.71
644575	94139402	15	2.08	5.29	230.5	1.20	0.20	1.36	221	30.4	21.5	184	4.25	35.2	1.00	22.35	14.10	1.7	1.130	1.80
644576	94139402	< 5	1.02	9.78	1627.0	3.10	0.20	1.24	0.20	107.0	10.8	114	13.95	29.0	1.56	26.55	2.80	2.2	0.060	4.19
644577	94139402	< 5	1.54	8.59	1448.5	2.65	0.26	4.95	0.12	110.0	27.1	105	12.70	25.0	1.43	22.55	2.80	1.9	0.080	3.67
644578	94139402	< 5	1.68	9.51	1433.0	3.55	0.75	1.93	0.02	119.0	251.0	95	16.45	35.8	1.81	26.00	3.20	2.1	0.075	4.16
644579	94139402	< 5	1.48	9.08	1393.5	2.70	0.40	1.73	0.02	121.5	15.6	105	14.50	23.2	1.91	24.00	3.55	2.1	0.055	3.90
644580	94139402	5	1.46	6.17	259.0	1.75	0.28	2.24	52.7	50.5	44.0	136	7.05	23.2	1.47	19.85	15.75	1.3	0.110	2.68
644581	94139402	5	1.46	9.11	1231.0	2.80	0.23	1.65	0.04	87.1	17.8	107	13.00	26.6	2.22	23.40	3.70	1.7	0.060	4.01
644582	94139402	< 5	0.88	5.97	983.8	1.75	0.18	3.19	0.24	71.4	37.2	142	8.45	29.6	1.50	16.00	5.00	1.2	0.055	2.61
644583	94139402	< 5	0.96	6.05	1032.5	1.80	0.26	6.24	9.62	88.7	30.4	137	8.25	68.4	0.97	16.65	7.35	1.7	0.105	2.70
644584	94139402	5	0.12	1.79	351.5	0.60	0.08	22.7	27.5	58.2	11.6	63	2.05	22.2	0.57	6.60	3.35	0.9	0.195	0.77
644585	94139402	< 5	0.66	3.86	600.0	0.75	0.14	17.60	2.86	119.5	13.6	124	4.50	17.4	0.62	9.85	2.95	1.6	0.140	1.67
644586	94139402	5	3.64	4.51	533.6	0.75	0.28	1.69	16.50	23.1	8.5	203	3.45	255.0	0.50	13.75	7.90	1.5	0.220	1.62
644587	94139402	< 5	0.20	2.98	454.5	0.45	0.08	3.26	38.9	19.40	7.9	215	2.30	68.1	0.43	9.00	6.80	0.9	0.180	1.06
644588	94139402	< 5	0.64	5.25	803.6	1.00	0.12	9.80	0.50	81.1	14.4	135	5.80	23.0	0.58	12.80	3.95	1.7	0.095	2.14
644589	94139402	275	8.88	2.07	84.0	1.45	0.40	0.48	70.8	22.9	9.1	38	6.25	120.2	14.20	10.50	20.30	1.0	0.095	0.85
644590	94139402	15	4.06	4.35	102.0	1.30	0.42	7.37	203	56.1	35.2	122	5.15	140.4	1.08	24.65	57.70	1.5	1.430	1.92
644591	94139402	< 5	1.48	7.14	1202.5	2.05	0.39	1.83	0.42	87.3	23.3	119	12.20	21.4	1.25	19.20	5.15	1.8	0.045	3.12
644592	94139402	5	1.20	6.83	1114.5	2.10	0.25	1.53	0.08	71.0	100.4	133	9.95	17.4	1.34	18.00	4.60	1.5	0.040	2.98
644593	94139402	< 5	0.16	0.59	89.5	0.10	0.16	0.06	0.16	17.85	1.0	90	0.55	7.4	0.34	1.85	0.85	0.9	0.020	0.24
644594	94139402	5	4.50	0.17	102.0	< 0.05	0.16	>25.0	1.60	182.5	5.5	33	0.25	< 0.2	0.45	5.15	4.40	0.4	0.275	0.07

CERTIFICATION: _____*+

*ICP-MS DETECTION LIMITS MAY BE RAISED TO REFLECT DILUTION.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :1-B
Total Pages :2
Certificate Date: 05-NOV-2001
Invoice No. :I0126926
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126926

SAMPLE	PREP CODE	La ppm (ICP)	Li ppm (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Nb ppm (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm (ICP)	Rb ppm (ICP)	Re ppm	S %	Sb ppm (ICP)	Se ppm	Sn ppm	Sr ppm (ICP)	Ta ppm (ICP)	Te ppm (ICP)
644555	9413 9402	22.0	47.0	0.96	2680	0.95	0.13	5.7	36.2	540	35.0	70.2	0.002	0.20	13.70	< 1	1.0	208	0.35	0.20
644556	9413 9402	10.0	29.0	0.17	115	3.10	0.06	5.1	55.8	160	>10000	54.4	0.002	5.63	92.55	10	2.0	42.4	0.55	0.05
644557	9413 9402	33.5	26.4	0.28	260	1.30	0.07	7.6	24.8	680	>10000	97.3	< 0.002	0.91	27.25	4	1.2	74.4	0.80	0.10
644558	9413 9402	53.0	28.6	0.44	520	1.20	0.07	12.5	51.0	220	158.0	168.0	< 0.002	0.39	12.80	< 1	1.6	101.0	1.00	0.05
644559	9413 9402	93.0	15.4	0.14	2840	1.30	0.57	3.3	29.6	110	66.5	38.1	< 0.002	0.77	2.60	< 10	1.0	577	0.30	< 0.05
644560	9413 9402	40.5	19.6	0.15	1515	4.10	0.67	3.9	22.4	100	39.5	42.1	< 0.002	1.21	4.60	< 10	1.2	326	0.45	< 0.05
644561	9413 9402	53.5	17.4	0.18	2420	1.40	0.54	5.7	39.6	220	31.5	56.7	< 0.002	1.16	7.15	< 10	2.2	243	0.60	< 0.05
644562	9413 9402	30.0	23.8	0.23	490	3.00	0.69	7.4	21.2	190	232	82.3	< 0.002	0.11	6.40	< 1	1.4	113.0	0.60	< 0.05
644563	9413 9402	12.5	23.0	0.09	535	2.00	0.85	3.4	13.6	60	13.5	37.5	0.004	1.35	3.15	< 10	1.2	80.7	0.30	< 0.05
644564	9413 9402	14.0	14.2	0.11	305	2.65	1.25	3.8	11.0	70	13.0	35.8	< 0.002	0.71	3.30	< 10	0.8	60.9	0.45	0.10
644565	9413 9402	19.5	18.0	0.12	525	1.70	0.99	3.8	13.6	100	100.0	39.6	< 0.002	3.30	8.10	10	1.0	78.2	0.45	< 0.05
644566	9413 9402	29.0	17.8	0.22	340	4.05	1.02	8.7	19.6	160	66.5	92.1	< 0.002	0.14	7.45	< 1	1.4	82.4	0.70	< 0.05
644567	9413 9402	22.0	9.2	0.04	75	1.80	0.06	2.5	4.0	130	31.5	22.5	< 0.002	0.02	3.10	< 1	8.4	7.0	0.25	< 0.05
644568	9413 9402	47.5	31.6	0.31	210	2.20	0.44	12.2	16.4	190	73.0	119.5	< 0.002	0.08	6.35	< 1	1.6	74.4	1.00	0.05
644569	9413 9402	65.5	13.2	0.09	2600	1.35	0.28	2.0	31.4	40	>10000	28.2	0.002	0.34	11.55	< 10	0.8	267	0.25	< 0.05
644570	9413 9402	21.5	17.2	0.17	845	3.75	0.91	4.8	15.8	90	16.0	63.0	< 0.002	0.28	3.85	< 1	0.8	125.0	0.35	< 0.05
644571	9413 9402	24.0	20.0	0.14	260	0.90	0.83	4.9	14.0	720	17.0	58.4	< 0.002	0.12	5.35	< 1	0.8	78.9	0.45	< 0.05
644572	9413 9402	46.5	28.6	0.19	1460	2.10	0.27	5.3	34.2	90	69.0	79.3	0.002	0.19	8.60	< 1	1.0	165.0	0.40	0.05
644573	9413 9402	45.5	17.8	0.26	1080	0.60	0.52	8.9	25.8	160	180.0	108.5	< 0.002	0.26	7.00	< 1	1.4	139.5	0.65	0.05
644574	9413 9402	25.0	22.2	0.19	290	2.85	0.77	7.1	15.6	680	16.0	74.4	< 0.002	0.55	5.60	1	1.0	92.2	0.60	< 0.05
644575	9413 9402	17.5	24.2	0.21	270	1.40	0.36	9.7	21.8	130	2110	75.5	< 0.002	2.27	8.10	< 10	1.6	101.0	0.90	0.45
644576	9413 9402	61.0	25.0	0.44	305	1.10	0.10	15.5	29.0	290	18.0	207	< 0.002	0.34	2.65	< 1	2.0	130.0	1.25	0.10
644577	9413 9402	61.5	23.2	0.39	930	0.50	0.09	13.4	72.4	240	8.0	183.0	< 0.002	0.31	1.50	1	1.8	222	0.95	0.05
644578	9413 9402	65.5	28.0	0.44	430	0.70	0.10	14.8	219	280	7.0	223	< 0.002	0.60	1.20	< 1	2.2	121.5	1.15	0.05
644579	9413 9402	71.5	25.8	0.44	375	2.20	0.09	12.9	28.6	310	7.0	197.0	0.002	0.84	1.80	< 1	2.0	113.5	1.10	0.05
644580	9413 9402	35.5	26.4	0.27	415	2.60	0.08	6.6	92.8	210	12.5	115.5	0.002	1.54	2.90	< 10	1.4	99.0	0.65	< 0.05
644581	9413 9402	51.0	25.6	0.41	345	0.40	0.10	13.3	35.2	300	5.5	193.0	< 0.002	1.20	2.30	1	1.8	120.0	1.00	0.05
644582	9413 9402	45.5	26.4	0.28	565	1.75	0.07	8.0	71.8	230	522	127.0	< 0.002	0.70	4.60	< 1	1.2	136.5	0.60	0.05
644583	9413 9402	54.0	27.4	0.31	1095	0.65	0.15	8.9	61.9	170	43.5	126.0	0.002	0.37	2.90	1	1.4	148.0	0.65	< 0.05
644584	9413 9402	35.5	9.4	0.13	1845	0.35	0.06	2.9	41.0	130	17.0	35.4	0.006	0.52	4.65	1	0.4	616	0.15	0.10
644585	9413 9402	71.0	15.0	0.17	2690	0.60	0.24	6.5	38.6	140	42.0	71.6	0.002	0.18	3.55	1	0.8	246	0.50	0.05
644586	9413 9402	15.0	19.4	0.16	285	1.45	0.56	6.2	16.8	120	>10000	61.2	< 0.002	0.66	10.20	< 10	1.2	77.5	0.65	0.05
644587	9413 9402	12.0	27.4	0.10	500	0.60	0.43	2.4	15.0	50	192.0	45.9	0.002	0.48	3.05	1	0.8	101.0	0.20	< 0.05
644588	9413 9402	48.5	14.8	0.21	1505	0.50	0.36	6.6	29.8	170	78.0	91.0	0.002	0.15	4.60	< 1	1.0	238	0.50	< 0.05
644589	9413 9402	11.5	9.4	0.82	>10000	3.55	0.05	5.7	39.2	910	9590	45.2	0.002	not/ss	3.45	< 10	1.0	20.2	0.45	0.30
644590	9413 9402	37.0	16.6	0.19	1315	1.45	0.07	6.6	56.7	140	55.5	74.1	< 0.002	4.19	7.60	10	3.2	147.5	0.60	0.35
644591	9413 9402	53.0	24.6	0.31	345	0.65	0.09	11.4	42.8	170	15.5	157.5	< 0.002	0.44	2.40	< 1	1.4	99.6	0.85	0.05
644592	9413 9402	42.5	24.0	0.28	285	0.50	0.09	10.4	155.0	200	32.5	137.5	< 0.002	0.56	3.15	< 1	1.4	84.4	0.85	0.05
644593	9413 9402	9.0	10.6	0.02	45	0.85	0.04	1.1	2.2	50	7.5	10.7	< 0.002	0.05	1.15	< 1	2.2	4.4	0.05	< 0.05
644594	9413 9402	103.5	4.8	0.04	5170	0.95	0.02	1.1	4.0	< 10	>10000	6.7	0.006	0.30	7.85	< 10	0.6	350	0.10	0.10

CERTIFICATION: *+

*ICP-MS DETECTION LIMITS MAY BE RAISED TO REFLECT DILUTION.

ALS Chemex

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :1-C
Total Pages :2
Certificate Date: 05-NOV-2001
Invoice No. : I0126926
P.O. Number :
Account : BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126926

SAMPLE	PREP CODE	Th ppm (ICP)	Ti % (ICP)	Tl ppm (ICP)	U ppm (ICP)	V ppm (ICP)	W ppm (ICP)	Y ppm (ICP)	Zn ppm (ICP)	Zr ppm	As ppm	Hg ppb	Spec Gr S.G.	Ag oz/ton	Pb %	Zn %	Cd %
644555	9413 9402	4.6	0.20	0.36	1.6	91	1.5	14.3	64	42.5	10	40	2.75	< 0.03	< 0.01	< 0.01	< 0.001
644556	9413 9402	5.0	0.14	0.80	1.2	34	1.1	4.6	>10000	44.0	76	22600	3.17	1.17	14.75	6.59	0.028
644557	9413 9402	8.2	0.25	0.74	1.9	53	1.6	12.2	524	61.5	16	270	2.81	0.15	4.64	0.07	< 0.001
644558	9413 9402	14.6	0.34	0.82	1.8	66	2.3	12.4	206	78.5	45	100	2.69	< 0.03	0.03	0.01	< 0.001
644559	9413 9402	4.6	0.11	0.22	1.1	19	0.9	40.6	>10000	46.5	9	5280	2.76	< 0.03	0.01	1.78	0.007
644560	9413 9402	5.8	0.13	0.26	1.2	24	0.6	22.4	>10000	57.5	9	8730	2.70	< 0.03	< 0.01	2.89	0.010
644561	9413 9402	7.0	0.18	0.28	1.6	35	1.2	29.8	>10000	56.5	25	7660	2.75	< 0.03	0.01	2.38	0.008
644562	9413 9402	10.2	0.20	0.40	2.1	45	1.0	9.7	414	60.5	28	130	2.71	< 0.03	0.03	0.04	< 0.001
644563	9413 9402	5.4	0.09	0.26	0.9	21	0.6	8.9	>10000	36.0	11	8720	2.71	< 0.03	< 0.01	2.78	0.012
644564	9413 9402	7.8	0.11	0.24	1.2	26	0.7	7.3	>10000	55.5	13	5310	2.71	< 0.03	< 0.01	1.46	0.005
644565	9413 9402	7.0	0.13	0.24	1.7	27	0.6	10.9	>10000	58.0	12	21800	2.75	< 0.03	< 0.01	6.47	0.032
644566	9413 9402	13.6	0.24	0.42	2.6	55	1.1	10.7	726	82.5	24	200	2.72	< 0.03	0.01	0.07	< 0.001
644567	9413 9402	8.6	0.11	0.18	1.2	10	1.4	6.0	232	74.0	3	20	2.67	< 0.03	< 0.01	0.01	< 0.001
644568	9413 9402	16.0	0.29	0.58	2.0	58	1.4	12.2	112	95.0	18	10	2.69	< 0.03	0.01	< 0.01	< 0.001
644569	9413 9402	3.4	0.06	0.22	0.7	12	0.5	40.6	362	23.0	13	220	2.71	0.09	1.87	0.04	< 0.001
644570	9413 9402	8.8	0.13	0.28	1.6	28	0.6	11.9	80	56.5	15	10	2.71	< 0.03	< 0.01	< 0.01	< 0.001
644571	9413 9402	11.4	0.12	0.28	2.2	29	0.7	12.7	60	59.5	15	10	2.70	< 0.03	< 0.01	< 0.01	< 0.001
644572	9413 9402	8.4	0.16	0.36	1.4	36	0.7	22.6	914	53.0	30	350	2.73	< 0.03	0.01	0.11	< 0.001
644573	9413 9402	14.2	0.24	0.46	2.4	51	0.9	16.8	1630	80.0	26	640	2.74	< 0.03	0.02	0.20	< 0.001
644574	9413 9402	11.0	0.17	0.32	2.6	38	0.8	11.6	7390	69.0	19	3110	2.67	< 0.03	< 0.01	0.87	0.004
644575	9413 9402	8.4	0.20	0.52	1.1	46	2.0	7.7	>10000	59.0	13	16540	2.86	< 0.03	0.22	4.23	0.026
644576	9413 9402	16.8	0.41	0.94	2.5	105	2.1	13.5	90	89.5	7	20	2.75	< 0.03	< 0.01	< 0.01	< 0.001
644577	9413 9402	14.4	0.36	0.78	2.7	96	1.8	20.3	66	80.5	8	10	2.82	< 0.03	< 0.01	< 0.01	< 0.001
644578	9413 9402	16.6	0.39	0.98	2.2	93	2.2	17.0	44	89.5	10	40	2.74	< 0.03	< 0.01	< 0.01	< 0.001
644579	9413 9402	16.0	0.37	0.88	3.9	100	2.1	14.2	44	88.0	14	100	2.77	< 0.03	< 0.01	< 0.01	< 0.001
644580	9413 9402	7.2	0.25	0.66	1.1	59	1.3	9.9	>10000	46.5	160	7260	2.74	< 0.03	< 0.01	1.97	0.006
644581	9413 9402	14.8	0.38	0.88	1.7	80	2.5	12.5	26	75.5	21	100	2.76	< 0.03	< 0.01	< 0.01	< 0.001
644582	9413 9402	9.0	0.26	0.58	1.7	54	1.5	13.8	70	54.0	93	100	2.74	< 0.03	0.06	< 0.01	< 0.001
644583	9413 9402	11.6	0.31	0.54	1.9	67	1.5	17.0	3100	72.0	89	1210	2.74	< 0.03	< 0.01	0.37	0.001
644584	9413 9402	4.0	0.07	0.16	1.3	13	0.3	20.5	5680	38.0	13	2920	2.77	< 0.03	< 0.01	0.71	0.003
644585	9413 9402	12.0	0.14	0.32	1.8	29	0.7	38.7	732	70.0	26	350	2.76	< 0.03	< 0.01	0.09	< 0.001
644586	9413 9402	9.0	0.13	0.42	1.5	31	0.6	6.9	4220	57.5	21	1780	2.70	0.12	1.95	0.48	0.002
644587	9413 9402	5.6	0.08	0.22	1.1	20	0.5	6.6	7130	34.5	18	3250	2.67	< 0.03	0.01	0.80	0.004
644588	9413 9402	13.2	0.17	0.44	2.2	39	0.8	22.7	90	72.5	30	50	2.73	< 0.03	0.01	0.01	< 0.001
644589	9413 9402	4.8	0.07	7.58	2.0	51	1.0	15.0	>10000	34.5	12	2490	not/ss	0.33	0.98	3.03	0.008
644590	9413 9402	8.4	0.18	0.46	1.8	40	0.7	15.6	>10000	54.0	77	25900	2.85	0.09	< 0.01	8.44	0.024
644591	9413 9402	14.6	0.30	0.70	1.5	64	1.7	10.7	166	68.0	53	100	2.76	< 0.03	< 0.01	0.02	< 0.001
644592	9413 9402	11.6	0.29	0.66	1.8	71	1.7	9.5	68	63.0	218	80	2.70	< 0.03	< 0.01	< 0.01	< 0.001
644593	9413 9402	3.6	0.05	0.06	0.6	5	0.4	3.0	40	39.5	3	< 10	2.63	< 0.03	< 0.01	< 0.01	< 0.001
644594	9413 9402	1.0	< 0.01	0.08	< 0.1	2	0.1	59.6	484	3.0	11	190	2.79	0.15	1.96	0.06	< 0.001

CERTIFICATION: *+

*ICP-MS DETECTION LIMITS MAY BE RAISED TO REFLECT DILUTION.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :2-A
Total Pages :2
Certificate Date: 05-NOV-2001
Invoice No. : I0126926
P.O. Number :
Account : BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126926

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644595	94139402	15	0.54	0.77	216.0	0.05	0.04	>25.0	13.95	221	4.3	96	0.50	7.4	0.51	4.45	2.65	0.5	0.355	0.29
644596	94139402	5	1.08	5.26	788.4	1.20	0.18	2.65	11.10	57.7	9.6	228	5.05	18.4	0.64	12.30	3.80	1.5	0.175	2.00
644597	94139402	< 5	2.14	5.62	806.4	1.60	0.24	4.38	0.10	66.5	13.7	189	6.65	91.9	0.64	13.40	3.15	1.6	0.050	2.37
644598	94139402	< 5	1.92	8.63	1173.5	2.20	0.41	1.45	0.10	102.5	23.5	166	12.55	54.9	0.90	22.80	3.20	2.0	0.070	3.78
644599	94139402	< 5	1.20	6.46	939.2	1.40	0.24	2.90	0.04	62.9	19.0	230	7.95	34.2	0.75	16.05	3.00	1.8	0.055	2.69
644600	94139402	10	19.50	6.54	224.0	1.40	0.58	2.57	0.62	58.0	10.0	129	7.65	38.0	0.61	19.25	5.90	1.7	0.050	2.84
644601	94139402	< 5	1.06	3.57	601.5	0.85	0.12	12.80	0.12	88.7	9.3	152	3.80	19.2	0.51	8.85	3.50	1.1	0.085	1.54
644602	94139402	< 5	0.60	2.84	476.0	0.60	0.07	19.05	0.14	135.5	7.2	142	2.65	13.6	0.53	7.85	3.10	1.0	0.145	1.22
644603	94139402	< 5	0.26	2.06	380.0	0.55	0.04	7.78	34.9	37.3	7.4	193	1.45	32.4	0.43	8.20	8.60	0.6	2.21	0.85
644604	94139402	15	17.55	0.17	89.0	0.35	0.20	14.50	209	37.5	23.0	85	0.20	82.7	0.69	18.85	32.45	0.3	4.24	0.06
644605	94139402	25	10.80	2.92	45.5	2.00	0.23	0.33	412	25.3	7.9	32	10.65	140.2	2.97	9.55	54.60	1.6	0.035	1.21
644606	94139402	5	0.82	3.41	702.0	0.65	0.12	16.55	2.06	166.0	17.8	108	3.80	11.2	0.77	9.90	3.70	1.1	0.270	1.45
644607	94139402	< 5	0.48	3.78	501.6	0.80	0.31	4.85	0.32	45.0	10.0	201	3.55	68.0	0.60	8.85	3.65	1.1	0.070	1.36
644608	94139402	5	0.48	4.06	496.5	0.60	0.16	9.16	0.20	49.1	6.1	210	2.90	116.0	0.51	9.35	2.00	1.4	0.135	1.42
644609	94139402	< 5	0.38	2.54	522.8	0.50	0.11	18.45	< 0.02	102.5	6.5	100	2.25	160.0	0.51	6.80	2.25	1.2	0.290	1.07

CERTIFICATION: _____*+

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ALS Chemex

Aurora Laboratory Services Ltd.
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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :2-B
Total Pages :2
Certificate Date: 05-NOV-2001
Invoice No. :I0126926
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126926

SAMPLE	PREP CODE	La ppm (ICP)	Li ppm (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Nb ppm (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm (ICP)	Rb ppm (ICP)	Re ppm	S %	Sb ppm (ICP)	Se ppm	Sn ppm	Sr ppm (ICP)	Ta ppm (ICP)	Te ppm (ICP)
644595	94139402	140.5	8.2	0.07	4460	0.40	0.06	1.0	39.2	30	456	12.4	0.004	0.25	1.65	1	0.2	453	0.05	0.15
644596	94139402	37.5	19.4	0.22	495	0.60	0.38	6.4	16.8	220	31.5	87.2	0.002	0.28	2.70	1	1.0	106.5	0.50	< 0.05
644597	94139402	41.0	22.2	0.25	745	0.60	0.21	8.2	22.2	190	8160	106.0	0.002	0.27	7.25	< 1	1.2	147.0	0.65	< 0.05
644598	94139402	64.0	24.4	0.41	265	0.65	0.09	15.7	38.2	470	13.0	181.5<	0.002	0.25	4.75	< 1	1.8	88.9	1.30	< 0.05
644599	94139402	40.0	22.2	0.28	500	0.65	0.31	9.9	29.2	210	28.0	118.5<	0.002	0.19	3.50	< 1	1.2	117.0	0.75	< 0.05
644600	94139402	38.5	21.8	0.30	445	1.30	0.08	11.0	24.0	370	>10000	122.0<	0.002	2.71	79.15	< 10	1.6	79.3	1.05	0.20
644601	94139402	56.0	24.6	0.16	2010	0.50	0.11	4.6	29.2	180	66.0	68.5	0.002	0.09	2.00	< 1	0.8	181.0	0.35	0.05
644602	94139402	80.5	17.0	0.14	3270	0.45	0.12	3.9	35.4	70	52.5	51.3	0.002	0.05	2.95	< 1	0.6	274	0.25	0.05
644603	94139402	22.5	35.8	0.09	1300	0.50	0.06	2.5	16.8	40	8.5	34.5<	0.002	0.52	2.20	1	2.2	141.5	0.20	< 0.05
644604	94139402	22.5	11.4	0.01	2350	1.20	0.04	2.0	26.4	10	>10000	5.7	0.002	5.62	54.50	20	5.2	173.5	0.05	0.20
644605	94139402	13.5	10.0	0.19	825	17.60	0.05	5.9	33.8	1400	>10000	55.2<	0.002	>10.00	25.70	40	1.2	22.6	0.40	0.40
644606	94139402	96.5	21.6	0.17	2800	0.40	0.04	4.3	46.4	130	38.0	69.1	0.004	0.23	2.40	< 1	0.8	297	0.30	0.05
644607	94139402	28.0	27.8	0.16	915	1.05	0.40	3.6	22.6	100	10.5	58.9	0.002	0.15	1.35	< 1	0.6	208	0.25	< 0.05
644608	94139402	24.5	12.2	0.16	1570	1.20	0.59	3.9	18.8	80	23.5	58.8<	0.002	0.08	1.30	< 1	0.8	332	0.30	< 0.05
644609	94139402	51.5	20.0	0.13	3190	0.65	0.15	3.9	30.4	60	8.0	47.3<	0.002	0.08	1.15	< 1	0.6	442	0.30	0.05

CERTIFICATION: _____ *+

*ICP-MS DETECTION LIMITS MAY BE RAISED TO REFLECT DILUTION.

ALS Chemex

Aurora Laboratory Services Ltd.
Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga
Ontario, Canada L4W 2S3
PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :2-C
Total Pages :2
Certificate Date: 05-NOV-2001
Invoice No. :I0126926
P.O. Number :
Account :BUF

* PLEASE NOTE

CERTIFICATE OF ANALYSIS A0126926

SAMPLE	PREP CODE	Th ppm (ICP)	Ti % (ICP)	Tl ppm (ICP)	U ppm (ICP)	V ppm (ICP)	W ppm (ICP)	Y ppm (ICP)	Zn ppm (ICP)	Zr ppm	As ppm	Hg ppb	Spec Gr S.G.	Ag oz/ton	Pb %	Zn %	Cd %
644595	94139402	2.0	0.02	0.06	0.4	5	0.3	55.1	5230	11.0	7	1860	2.75	< 0.03	0.05	0.62	0.001
644596	94139402	12.2	0.15	0.38	2.3	36	1.0	10.7	4030	48.0	18	1460	2.68	< 0.03	< 0.01	0.46	0.001
644597	94139402	15.2	0.21	0.52	2.6	44	1.1	13.9	42	58.0	21	10	2.78	0.06	0.90	< 0.01	< 0.001
644598	94139402	20.6	0.29	0.84	4.3	69	1.5	14.8	48	78.5	50	10	2.71	< 0.03	< 0.01	< 0.01	< 0.001
644599	94139402	15.0	0.23	0.54	2.7	48	1.2	14.4	34	65.0	35	10	2.68	< 0.03	< 0.01	< 0.01	< 0.001
644600	94139402	14.2	0.22	0.84	2.6	52	1.4	13.6	30	54.5	24	130	3.06	0.69	16.20	< 0.01	< 0.001
644601	94139402	8.4	0.13	0.30	1.7	27	0.5	28.9	58	40.5	18	30	2.76	0.03	0.01	< 0.01	< 0.001
644602	94139402	6.2	0.11	0.22	1.1	23	0.5	43.8	40	35.0	15	10	2.71	< 0.03	0.01	< 0.01	< 0.001
644603	94139402	4.6	0.07	0.16	0.7	16	0.4	15.5	9930	22.0	9	3790	2.69	< 0.03	< 0.01	1.11	0.004
644604	94139402	1.2	< 0.01	0.16	< 0.1	< 1	< 0.1	22.6	>10000	2.5	9	22700	3.07	0.78	10.10	9.27	0.024
644605	94139402	8.0	0.11	46.2	5.8	102	1.3	16.2	>10000	59.5	43	9070	not/as	0.30	1.51	28.7	0.045
644606	94139402	8.4	0.14	0.48	1.1	32	0.9	39.9	774	33.0	41	210	2.73	< 0.03	< 0.01	0.09	< 0.001
644607	94139402	7.6	0.14	0.38	1.5	30	0.7	11.0	134	42.5	20	40	2.66	< 0.03	< 0.01	0.01	< 0.001
644608	94139402	10.0	0.12	0.32	1.6	28	0.6	17.7	52	51.0	9	20	2.66	< 0.03	< 0.01	< 0.01	< 0.001
644609	94139402	7.8	0.11	0.24	1.1	19	0.4	32.2	18	38.0	10	< 10	2.78	< 0.03	< 0.01	< 0.01	< 0.001

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PHONE: 905-624-2806 FAX: 905-624-6163

To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
P7B 6J3

RECEIVED DEC 1 1 2001

A0126816

Comments: ATTN: CLINT BARR EMAIL:DAVE KING

CERTIFICATE A0126816

(BUF) - NORANDA MINING AND EXPLORATION INC.

Project: 2501
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 05-NOV-2001.

SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
PUL-31	9	Pulv. <250g to >85%/-75 micron
STO-21	9	Reject Storage-First 90 Days
LOG-22	10	Samples received without barcode
CRU-31	9	Crush to 70% minus 2mm
SPL-21	9	Splitting Charge
225	1	Run as received
9300	10	T127 special code

ANALYTICAL PROCEDURES 1 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Au-AA23	10	Au-AA23 : Au ppb: Fuse 30 grams	FA-AAS	5	10000
Ag-MS61	10	Ag ppm: ICP + ICP-MS package	ICP-MS/ICP	0.02	100.0
Al-MS61	10	Al %: ICP + ICP-MS package	ICP	0.01	25.0
Ba-MS61	10	Ba ppm: ICP + ICP-MS package	ICP	0.5	10000
Be-MS61	10	Be ppm: ICP + ICP-MS package	ICP-MS/ICP	0.05	1000
Bi-MS61	10	Bi ppm: ICP + ICP-MS package	ICP-MS/ICP	0.01	10000
Ca-MS61	10	Ca %: ICP + ICP-MS package	ICP	0.01	25.0
Cd-MS61	10	Cd ppm: ICP + ICP-MS package	ICP-MS/ICP	0.02	500
Ce-MS61	10	Ce ppm: ICP + ICP-MS package	ICP-MS	0.01	500
Co-MS61	10	Co ppm: ICP + ICP-MS package	ICP-MS/ICP	0.1	10000
Cr-MS61	10	Cr ppm: ICP + ICP-MS package	ICP	1	10000
Cs-MS61	10	Cs ppm: ICP + ICP-MS package	ICP-MS	0.05	500
Cu-MS61	10	Cu ppm: ICP + ICP-MS package	ICP	0.2	10000
Fe-MS61	10	Fe %: ICP + ICP-MS package	ICP	0.01	25.0
Ga-MS61	10	Ga ppm: ICP + ICP-MS package	ICP-MS	0.05	500.0
Ge-MS61	10	Ge ppm: ICP + ICP-MS package	ICP-MS	0.05	500.0
Hf-MS61	10	Hf ppm: ICP + ICP-MS package	ICP-MS/ICP	0.1	500
In-MS61	10	In ppm: ICP + ICP-MS package	ICP-MS/ICP	0.005	500
K-MS61	10	K %: ICP + ICP-MS package	ICP	0.01	10.00
La-MS61	10	La ppm: ICP + ICP-MS package	ICP-MS	0.5	500
Li-MS61	10	Li ppm: ICP + ICP-MS package	ICP-MS	0.2	500
Mg-MS61	10	Mg %: ICP + ICP-MS package	ICP	0.01	15.00
Mn-MS61	10	Mn ppm: ICP + ICP-MS package	ICP	5	10000
Mo-MS61	10	Mo ppm: ICP + ICP-MS package	ICP	0.05	10000
Na-MS61	10	Na %: ICP + ICP-MS package	ICP	0.01	10.00
Nb-MS61	10	Nb ppm: ICP + ICP-MS package	ICP-MS	0.1	500
Ni-MS61	10	Ni ppm: ICP + ICP-MS package	ICP-MS/ICP	0.2	10000
P-MS61	10	P ppm: ICP + ICP-MS package	ICP	10	10000
Pb-MS61	10	Pb ppm: ICP + ICP-MS package	ICP-MS/ICP	0.5	10000
Rb-MS61	10	Rb ppm: ICP + ICP-MS package	ICP-MS	0.1	500
Re-MS61	10	Re ppm: ICP + ICP-MS package	ICP-MS/ICP	0.002	50.0
S-MS61	10	S %: ICP + ICP-MS package	ICP-MS/ICP	0.01	10.00
Sb-MS61	10	Sb ppm: ICP + ICP-MS package	ICP-MS	0.05	1000.0
Se-MS61	10	Se ppm: ICP + ICP-MS package	ICP-MS/ICP	1	1000

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Samples submitted to our lab in Vancouver, BC.
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SAMPLE PREPARATION

METHOD CODE	NUMBER SAMPLES	DESCRIPTION
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CRU-31	9	Crush to 70% minus 2mm
SPL-21	9	Splitting Charge
225	1	Run as received
9300	10	T127 special code

ANALYTICAL PROCEDURES 2 of 2

METHOD CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
Sn-MS61	10	Sn ppm: ICP + ICP-MS package	ICP-MS/ICP	0.2	500
Sr-MS61	10	Sr ppm: ICP + ICP-MS package	ICP-MS/ICP	0.2	10000
Ta-MS61	10	Ta ppm: ICP + ICP-MS package	ICP-MS	0.05	100.0
Te-MS61	10	Te ppm: ICP + ICP-MS package	ICP-MS	0.05	500
Th-MS61	10	Th ppm: ICP + ICP-MS package	ICP-MS	0.2	500
Ti-MS61	10	Ti %: ICP + ICP-MS package	ICP	0.01	10.00
Tl-MS61	10	Tl ppm: ICP + ICP-MS package	ICP-MS	0.02	500
U-MS61	10	U ppm: ICP + ICP-MS package	ICP-MS	0.1	500
V-MS61	10	V ppm: ICP + ICP-MS package	ICP	1	10000
W-MS61	10	W ppm: ICP + ICP-MS package	ICP-MS/ICP	0.1	10000
Y-MS61	10	Y ppm: ICP + ICP-MS package	ICP-MS	0.1	500
Zn-MS61	10	Zn ppm: ICP + ICP-MS package	ICP	2	10000
Zr-MS61	10	Zr ppm: ICP + ICP-MS package	ICP-MS/ICP	0.5	500
As-AA45	10	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
Hg-CV41	10	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
Ag-AA46	10	Ag g/t: Conc. Nitric HCl dig'n	AAS	1	1500
Pb-AA46	10	Pb %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Zn-AA46	10	Zn %: Conc. Nitric-HCl dig'n	AAS	0.01	50.0
Cd-AA46	10	Cd %: Conc. Nitric-HCL dig'n	AAS	0.001	10.000
OA-GRA08	10	Spec. grav. SG: pulv. material	PYCNOMETER	0.01	20.0

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To: NORANDA MINING AND EXPLORATION INC.

874 TUNGSTEN ST.
THUNDER BAY, ON
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Project : 2501
Comments: ATTN: CLINT BARR EMAIL:DAVE KING

Page Number :1-A
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Account :BUF

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CERTIFICATE OF ANALYSIS A0126816

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm (ICP)	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Ce ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cs ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	Ga ppm (ICP)	Ge ppm (ICP)	Hf ppm	In ppm	K % (ICP)
644610	94139402	25	11.65	6.32	994.3	2.90	0.41	3.29	0.50	56.0	4.9	144	7.00	22.6	0.69	18.35	7.30	2.1	0.060	2.60
644611	94139402	< 5	0.48	1.14	163.5	0.30	0.32	0.03	1.94	37.8	2.4	470	0.85	18.8	0.91	3.10	1.35	1.8	0.035	0.48
644612	94139402	< 5	0.92	6.30	874.3	1.70	0.10	2.17	0.06	77.5	3.9	161	7.55	20.2	0.73	16.85	8.85	1.8	0.030	2.30
644613	94139402	< 5	1.02	8.10	1058.0	2.60	0.18	1.41	2.02	99.6	4.1	118	11.25	41.4	0.82	22.40	6.80	1.9	0.040	3.01
644614	94139402	25	84.4	3.04	102.0	0.65	0.29	0.13	172.0	17.90	14.8	162	2.80	114.8	0.60	14.65	45.30	1.1	0.455	1.26
644615	94400 225	120	5.82	2.72	62.5	1.75	0.27	0.30	397	26.6	7.6	31	9.90	135.4	2.68	9.20	55.15	1.6	0.040	1.18
644616	94139402	20	84.4	1.96	84.0	1.05	0.24	0.31	247	14.30	23.1	114	1.75	244.1	0.74	13.25	87.90	0.5	0.365	0.78
644617	94139402	15	32.4	2.93	119.5	1.00	0.24	0.72	188.5	18.15	28.7	252	3.90	95.0	1.46	17.45	22.45	0.9	1.835	1.08
644618	94139402	30	46.1	2.29	124.5	1.00	0.27	0.21	244	13.75	23.0	220	2.10	165.2	0.99	16.80	51.20	0.7	1.620	0.88
644619	94139402	< 5	1.22	6.10	831.2	1.45	0.12	6.91	0.58	58.3	16.8	137	4.25	22.8	2.25	15.20	1.65	1.9	0.040	1.89

CERTIFICATION: _____ *+

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644610	9413 9402	34.5	20.8	0.28	620	1.20	0.08	8.6	18.8	200	>10000	101.0	< 0.002	0.43	21.55	5	1.4	171.0	0.90	0.35
644611	9413 9402	19.0	13.2	0.04	140	2.30	0.05	2.5	6.2	130	25.5	20.4	< 0.002	0.07	2.65	< 1	7.2	5.8	0.20	< 0.05
644612	9413 9402	47.5	25.0	0.28	355	0.50	0.08	10.1	13.8	210	32.5	111.5	< 0.002	0.04	7.40	< 1	1.4	132.0	0.80	< 0.05
644613	9413 9402	58.0	21.6	0.36	245	0.50	0.09	12.7	15.2	230	9.0	148.0	< 0.002	0.05	11.80	< 1	1.8	98.1	1.05	0.05
644614	9413 9402	11.5	13.0	0.12	35	1.85	0.06	3.5	22.2	140	>10000	46.7	< 0.002	15.05	500.6	10	1.2	24.0	0.40	< 0.05
644615	9400 225	17.0	9.8	0.17	765	16.95	0.06	4.9	39.4	1330	>10000	60.6	0.002	6.87	26.35	30	1.2	22.4	0.35	0.20
644616	9413 9402	10.0	13.4	0.09	55	1.05	0.05	2.8	48.8	100	>10000	27.8	< 0.002	>10.00	498.3	10	1.6	23.6	0.45	< 0.05
644617	9413 9402	12.0	34.4	0.22	260	1.50	0.06	3.4	38.2	240	>10000	38.7	< 0.002	3.69	68.80	10	3.2	49.6	0.35	0.20
644618	9413 9402	8.5	37.0	0.17	120	2.90	0.05	3.0	22.6	130	>10000	33.3	< 0.002	6.57	104.35	20	1.8	27.6	0.30	0.25
644619	9413 9402	32.0	36.6	0.58	885	0.70	0.35	7.9	34.4	190	290	90.1	0.002	0.85	5.40	< 1	1.2	376	0.60	< 0.05

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644610	9413 9402	7.6	0.28	0.58	1.6	63	2.5	17.6	182	91.0	5	70	13	2.89	0.01<	0.001	2.82
644611	9413 9402	7.0	0.12	0.16	1.2	10	1.3	5.9	152	119.0	1	< 10	< 1	< 0.01	< 0.01<	0.001	2.75
644612	9413 9402	14.6	0.27	0.50	2.0	63	1.7	8.8	88	70.0	3	< 10	< 1	< 0.01	< 0.01<	0.001	2.71
644613	9413 9402	15.6	0.35	0.66	2.3	79	2.0	10.9	756	81.0	3	280	< 1	< 0.01	0.09<	0.001	2.74
644614	9413 9402	4.8	0.12	2.42	0.6	30	1.0	3.6	>10000	37.5	18	20600	93	29.0	5.52	0.020	3.67
644615	9400 225	6.6	0.10	42.3	6.1	95	2.4	16.3	>10000	56.0	44	10080	11	1.40	28.4	0.046	3.15
644616	9413 9402	2.8	0.10	1.26	0.4	18	0.4	3.0	>10000	20.0	82	33500	89	43.0	8.60	0.028	4.22
644617	9413 9402	5.2	0.09	0.92	1.4	22	0.9	6.6	>10000	36.5	26	19540	36	8.92	4.87	0.022	2.92
644618	9413 9402	3.8	0.08	0.90	1.3	42	7.9	4.1	>10000	27.5	18	29600	48	19.25	7.35	0.027	3.27
644619	9413 9402	13.4	0.20	0.46	2.6	42	1.0	12.0	262	68.5	9	50	< 1	0.03	0.02<	0.001	2.78

CERTIFICATION: *+

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644610	9413 9402	25	11.65	6.32	994.3	2.90	0.41	3.29	0.50	56.0	4.9	144	7.00	22.6	0.69	18.35	7.30	2.1	0.060	2.60
644611	9413 9402	< 5	0.48	1.14	163.5	0.30	0.32	0.03	1.94	37.8	2.4	470	0.85	18.8	0.91	3.10	1.35	1.8	0.035	0.48
644612	9413 9402	< 5	0.92	6.30	874.3	1.70	0.10	2.17	0.06	77.5	3.9	161	7.55	20.2	0.73	16.85	8.85	1.8	0.030	2.30
644613	9413 9402	< 5	1.02	8.10	1058.0	2.60	0.18	1.41	2.02	99.6	4.1	118	11.25	41.4	0.82	22.40	6.80	1.9	0.040	3.01
644614	9413 9402	25	84.4	3.04	102.0	0.65	0.29	0.13	172.0	17.90	14.8	162	2.80	114.8	0.60	14.65	45.30	1.1	0.455	1.26
644615	9400 225	120	5.82	2.72	62.5	1.75	0.27	0.30	397	26.6	7.6	31	9.90	135.4	2.68	9.20	55.15	1.6	0.040	1.18
644616	9413 9402	20	84.4	1.96	84.0	1.05	0.24	0.31	247	14.30	23.1	114	1.75	244.1	0.74	13.25	87.90	0.5	0.365	0.78
644617	9413 9402	15	32.4	2.93	119.5	1.00	0.24	0.72	188.5	18.15	28.7	252	3.90	95.0	1.46	17.45	22.45	0.9	1.835	1.08
644618	9413 9402	30	46.1	2.29	124.5	1.00	0.27	0.21	244	13.75	23.0	220	2.10	165.2	0.99	16.80	51.20	0.7	1.620	0.88
644619	9413 9402	< 5	1.22	6.10	831.2	1.45	0.12	6.91	0.58	58.3	16.8	137	4.25	22.8	2.25	15.20	1.65	1.9	0.040	1.89

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644610	94139402	34.5	20.8	0.28	620	1.20	0.08	8.6	18.8	200	>10000	101.0	< 0.002	0.43	21.55	5	1.4	171.0	0.90	0.35
644611	94139402	19.0	13.2	0.04	140	2.30	0.05	2.5	6.2	130	25.5	20.4	< 0.002	0.07	2.65	< 1	7.2	5.8	0.20	< 0.05
644612	94139402	47.5	25.0	0.28	355	0.50	0.08	10.1	13.8	210	32.5	111.5	< 0.002	0.04	7.40	< 1	1.4	132.0	0.80	< 0.05
644613	94139402	58.0	21.6	0.36	245	0.50	0.09	12.7	15.2	230	9.0	148.0	< 0.002	0.05	11.80	< 1	1.8	98.1	1.05	0.05
644614	94139402	11.5	13.0	0.12	35	1.85	0.06	3.5	22.2	140	>10000	46.7	< 0.002	15.05	500.6	10	1.2	24.0	0.40	< 0.05
644615	94400 225	17.0	9.8	0.17	765	16.95	0.06	4.9	39.4	1330	>10000	60.6	0.002	6.87	26.35	30	1.2	22.4	0.35	0.20
644616	94139402	10.0	13.4	0.09	55	1.05	0.05	2.8	48.8	100	>10000	27.8	< 0.002	>10.00	498.3	10	1.6	23.6	0.45	< 0.05
644617	94139402	12.0	34.4	0.22	260	1.50	0.06	3.4	38.2	240	>10000	38.7	< 0.002	3.69	68.80	10	3.2	49.6	0.35	0.20
644618	94139402	8.5	37.0	0.17	120	2.90	0.05	3.0	22.6	130	>10000	33.3	< 0.002	6.57	104.35	20	1.8	27.6	0.30	0.25
644619	94139402	32.0	36.6	0.58	885	0.70	0.35	7.9	34.4	190	290	90.1	0.002	0.85	5.40	< 1	1.2	376	0.60	< 0.05

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644610	9413 9402	7.6	0.28	0.58	1.6	63	2.5	17.6	182	91.0	5	70	13	2.89	0.01<	0.001	2.82
644611	9413 9402	7.0	0.12	0.16	1.2	10	1.3	5.9	152	119.0	1	< 10	< 1	< 0.01	< 0.01<	0.001	2.75
644612	9413 9402	14.6	0.27	0.50	2.0	63	1.7	8.8	88	70.0	3	< 10	< 1	< 0.01	< 0.01<	0.001	2.71
644613	9413 9402	15.6	0.35	0.66	2.3	79	2.0	10.9	756	81.0	3	280	< 1	< 0.01	0.09<	0.001	2.74
644614	9413 9402	4.8	0.12	2.42	0.6	30	1.0	3.6	>10000	37.5	18	20600	93	29.0	5.52	0.020	3.67
644615	9400 225	6.6	0.10	42.3	6.1	95	2.4	16.3	>10000	56.0	44	10080	11	1.40	28.4	0.046	3.15
644616	9413 9402	2.8	0.10	1.26	0.4	18	0.4	3.0	>10000	20.0	82	33500	89	43.0	8.60	0.028	4.22
644617	9413 9402	5.2	0.09	0.92	1.4	22	0.9	6.6	>10000	36.5	26	19540	36	8.92	4.87	0.022	2.92
644618	9413 9402	3.8	0.08	0.90	1.3	42	7.9	4.1	>10000	27.5	18	29600	48	19.25	7.35	0.027	3.27
644619	9413 9402	13.4	0.20	0.46	2.6	42	1.0	12.0	262	68.5	9	50	< 1	0.03	0.02<	0.001	2.78

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APPENDIX IV

SAMPLE DESCRIPTIONS

SAMPLE#	TYPE	REMARKS	ROCKTYPE	DESCRIPTION	STRUC-TURE	ALTERATION	MINERALIZATION	UTM_N	UTM_E	GEOCHEMICAL ANALYSIS				ASSAY				LAB RPT#
										Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ag g/t	Cu %	Pb %	Zn %	
644001	OUTCROP		MNQTZT	quartzite with calcite veins, minor gal, 1% sph			gal-sp	6978040	642440					0.5	0.01	0.30	1.17	a0121580
644002	OUTCROP		QUARTZITE				diss sp, gal	6977819	642217					0.5	0.01	0.01	6.25	a0121580
644003	OUTCROP		MNQTZT	quartzite with sp and carbonates			diss sp	6977977	642307					0.5	0.01	0.01	4.09	a0121580
644004	OUTCROP		CHERT	rusty chert			diss sp	6977712	643100					0.5	0.01	0.01	0.51	a0121580
644006	OUTCROP		MNQTZT	Quartzite with carb alteration and diss. Sp			diss. Sp	6977486	643094					2	0.02	0.04	6.97	a0121839
644007	OUTCROP		MNQTZT	Quartzite with carb alteration and diss. Pb, zinc zap reaction			diss Pb and zinc zap reaction	6977486	643094					39	0.01	18.20	3.13	a0121839
644008	OUTCROP		MNBRX	Brecciated quartzite			diss Pb and zinc zap reaction	6977466	643123					2	0.01	1.77	1.76	a0121839
644009	OUTCROP		MNBRX	Breciated quartzite, malachite staining			diss cpy, and malachite stain	6977680	643153	0.4	1670	54	134					a0121839
644010	OUTCROP		CHERT	Black to white chert, diss pyrite			diss py	6977728	641673	0.1	28	50	124					a0121839
644011	FLOAT		MNVN	cherty quartz vein with sp				6978362	642213	0.6	34	30	>10000				4.98	a0122660
644012	OUTCROP		MNVN	QTZ/CARB			1-2% sp	6978020	642212	0.4	52	222	>10000				3.86	a0122660
644013	OUTCROP		MNVN	grey quartzite with carbonate veins, 1-5% sp			sp	6978001	642224	0.6	48	30	>10000				7.90	a0122660
644014	OUTCROP		MNVN	grey quartzite with carbonate veins, gal			gal	6978001	642224	>100	40	>10000	>10000	172		55.90		a0122660
644015	OUTCROP		QUARTZITE	gossanous weathering pyritic quartzite				6982313	641815	3.2	59	598	348					a0122660
644016	OUTCROP		QUARTZITE	gossanous weathering pyritic quartzite				6982321	641829	16.6	162	114	796					a0122660
644017	OUTCROP		QUARTZITE	gossanous weathering pyritic quartzite				6982316	641831	3.8	169	62	1445					a0122660
644018	OUTCROP		QUARTZITE	silicified, qtz veined with sp			sp	6977451	643147	1.0	46	46	>10000				2.59	a0122660
644019	OUTCROP		QUARTZITE	silicified, qtz-carb veined with sp			sp	6977495	643204	0.6	31	98	>10000				3.36	a0122660
644020	OUTCROP		QUARTZITE	quartzite with 2% cpy, 2% gal, malachite, grab			cpy-gal	6978221	641773	0.1	2250	622	390					a0122660
644021	FLOAT		QUARTZITE	brecciated, silicified quartzite with 5-10% sp			sp	6978157	641926	2.2	136	78	>10000				8.98	a0122660
644023	OUTCROP		QUARTZITE	trace py				639820	6984363	0.2	24	44	370					a0122660
644051	FLOAT		MNVN	quartz vein with py, cpy, gal				6982489	639290	2.0	131	252	120					a0120654
644052	FLOAT		MNVN	quartz vein with cpy				6982491	639296					7	0.16	0.01	0.02	a0120653
644053	FLOAT		MNVN					6982760	639400					3	0.15	0.01	3.50	a0120653
644054	FLOAT		QUARTZITE	silicified quartzite, tr. Py-po			py-po	6983112	639733					19	0.01	1.66	0.22	a0120653

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										Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ag g/t	Cu %	Pb %	Zn %	
644055	FLOAT		MNVN	quartz vein with py, sph, gal				6983111	639736	0.2	33	152	302					a0120654
644056	FLOAT		MNVN	quartz vein with py, sph, gal				6983098	639750	0.1	46	96	106					a0120654
644057	FLOAT		MNVN	quartz vein with py, sph, gal				6983169	639689	0.1	6	40	52					a0120654
644058	FLOAT		MNVN	quartz vein with py, sph, gal				6983159	639693	0.1	60	34	28					a0120654
644059	FLOAT		MNVN	quartz vein with py, sph, gal				6983188	639709	0.1	38	16	58					a0120654
644060	FLOAT		MNVN	quartz vein with py, sph, gal				6983211	639723	0.8	39	864	424					a0120654
644061	FLOAT		MNVN	quartz vein with py, sph, gal				6983244	639749					34	0.08	2.29	4.36	a0120653
644062	FLOAT		MNVN	quartz vein with py, sph, gal				6983236	639747					53	0.39	8.66	7.24	a0120653
644063	FLOAT		MNVN	quartz vein with py, sph, gal				6983256	639748					28	0.15	1.85	2.72	a0120653
644064	Trench	Old Atlas showing "T"	MNQPC	QUARTZ PEBBLE CONGLOMERATE, Cherty pebbles up to 7mm, cut by black sil strs, mal staining, diss Cp			Rusty with minor diss Cp in matrix	6978488	641215					2	0.37	0.08	0.07	a0120653
644065	Outcrop		MNQPC	QUARTZ PEBBLE CONGLOMERATE		Silicified	Rusty with up to 3% diss Cp in matrix	6978656	641130	0.2	12	94	96					a0120654
644066	Trench	Old Atlas showing "U"	MNQTZT	Quartzite or possibly fine chert pebble congl.		Intense qtz-carb-pervasive and strs	stringer to semi-massive red-brown Sp	6978733	641129					1	0.01	0.02	21.90	a0120653
644067	TALUS		MNQTZT				diss cpy, sp	6983256	639748	0.4	254	7380	>10000				2.50	a0120654
644068	Outcrop		Breccia	Brecciated bleached shale		Qtz-carb	locally 2% disseminated Py	6986526	640238	0.4	11	6	10					a0120830
644069	Float		Chert Pebble Congl	Limonitic fine conglomerate (?)			minor Py	6980873	641753	2.4	5	8	6					a0120830
644070	Float		Chert Pebble Congl	Siliceous, grey, granular in appearance			5% Py, 1% Po	6980872	641780	0.2	31	34	56					a0120830
644071	ROCK SAMPLE			Fine-grained diss. Pyrite			diss. Py	6983561	639794	0.1	23	8	18					a0120830
644072	ROCK SAMPLE							6981506	645476	0.2	28	18	46					a0120830
644073	ROCK SAMPLE		MNQTZT	Quartzite with qtz vein with pyrite and galena			py-gal	6983336	640038	3.0	127	3760	1800					a0120830
644074	ROCK SAMPLE							6981120	640444	4.8	174	670	570					a0120830
644075	ROCK SAMPLE							6981033	640463	76.8	53	>10000	774			1.32		a0120830
644076	ROCK SAMPLE							6980652	640713	0.4	6	76	42					a0120830
644077	ROCK SAMPLE		Siltstone	cherty, rusty siltstone				6980650	640728	0.2	7	32	6					a0120830

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										Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ag g/t	Cu %	Pb %	Zn %	
644078	ROCK SAMPLE							6982512	641824	0.1	57	8	176					a0121260
644079	ROCK SAMPLE							6982313	641800	0.2	35	4	492					a0121260
644080	FLOAT	ANGULAR BOULDERS	QUARTZITE	large angular boulder, silicified quartzite, pyrite in qtz veinlets			py	6983161	639049	0.2	21	62	138					a0122660
644081	FLOAT	ANGULAR BOULDERS	MNQTZT	rusty weathered, silicified, with quartz veinlets with galena, pyrite, minor sphalerite			py-gal-sph	6983237	641928					46	0.01	1.08	2.32	a0121251
644082	FLOAT	ANGULAR BOULDERS	MNQTZT	rusty weathered, silicified, with quartz veinlets with galena, pyrite, minor sphalerite			py-gal-sph	6983211	641930					91	0.01	2.39	0.15	a0121251
644083	FLOAT	ANGULAR BOULDERS	MNQTZT	rusty weathered, silicified, with quartz veinlets with galena, pyrite, minor sphalerite			py-gal-sph	6983237	641928					270	0.02	6.99	1.04	a0121251
644084	FLOAT	ANGULAR BOULDERS	MNQTZT	rusty weathered, silicified, with quartz veinlets with galena, pyrite, minor sphalerite			py-gal-sph	6983237	641928					27	0.01	0.78	0.06	a0121251
644085	FLOAT	ANGULAR BOULDERS	MNQTZT	rusty weathered, silicified, with quartz veinlets with galena, pyrite, minor sphalerite			py-gal-sph	6983237	641928					203	0.01	4.62	0.43	a0121251
644086	ROCK SAMPLE							6978306	642149					3	0.03	0.01	31.50	a0121251
644087	ROCK SAMPLE		MNVN	Silicfied quartzite with calcite veins and 10% sp			10% sp	6978240	642148					0.5	0.01	0.01	12.10	a0121580
644088	FLOAT		MNQTZT	Quartzite with carb 20-30% sp			20-30 sp	6978208	642153					0.5	0.01	0.01	17.00	a0121580
644089	FLOAT		MNQTZT				1% sp	6978157	642133					1	0.01	0.01	6.31	a0121580
644090	ROCK SAMPLE		MNBRX	Quartzite breccia with calcite vein and 8-10% sp			8% sp	6978157	642133					0.5	0.01	0.01	3.93	a0121580
644091	ROCK SAMPLE		MNZN	Semi-massive sphalerite in qtz-carb breccia.			sms sp	6977965	642311					2	0.02	0.01	24.30	a0121580
644092	OUTCROP		BRECCIA	Weakly brecciated, silicified limstone. Qtz-carb-sp veins				6977962	642348					0.5	0.01	0.01	5.19	a0121580
644093	OUTCROP		MNBRX	Weakly brecciated, silicified limstone. Qtz-carb-sp veins			10% sp	6977962	642348					0.5	0.01	0.01	8.46	a0121580
644094	OUTCROP		MNBRX	Brecciated limestone with quartz-carb +/- sp veins.			30% sp	6977997	642341					0.5	0.01	0.01	6.59	a0121580
644095	OUTCROP		MNBRX	Brecciated and silicified limestone with quartz-carbonate filling between breccia fragments. Up to 5% sp in veins.			5% sp	6977995	642338					0.5	0.01	0.01	5.25	a0121580

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										Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ag g/t	Cu %	Pb %	Zn %	
644096	OUTCROP		MNBRX	Brecciated limestone with Qtz-carb-sp veins			5% sp	6977987	642350					0.5	0.03	0.01	37.20	a0121580
644097	ROCK SAMPLE		MNBRX	Brecciated limestone with 60% calcite 5% sp			5% sp	6977984	642348					0.5	0.01	0.01	5.79	a0121580
644098	OUTCROP		MNBRX	Brecciated limestone			15% sp	6977847	642377					0.5	0.01	0.01	4.48	a0121580
644099	OUTCROP		MNQTZT	quartzite with calcite veins, minor cpy, 1% sph			3-5% sp, tr cpy	6977987	642480					0.5	0.01	0.01	0.56	a0121580
644100	OUTCROP		MNBRX	Brecciated limestone with 20% calcite and 20% sp			20% sp	6977982	642484					0.5	0.01	0.01	18.70	a0121580
644101	OUTCROP		MNVN	quartz vein with some cpy, 15 cm wide			cpy	6980036	639764	1.0	31	384	26					a0120992
644102	OUTCROP		MNVN	quartz vein with gal-sph, 30 cm wide, in silicified quartzites			gal-sph	6980560	639000					95	0.13	7.44	3.79	a0120828
644103	OUTCROP		SILTSTONE-QUARTZITE	snake lake soil grid				6982063	641993	0.1	19	10	82					a0121260
644104	OUTCROP		MNBRX	Breccia with galena and sphalerite			sph-gal	6977986	642292					0.5	0.01	0.15	1.56	a0121251
644105	FLOAT		MNBRX	brecciated, silicified, veined quartzite with clots of sphalerite		silicified	sp	6978237	642152					0.5	0.01	0.01	11.25	a0121580
644106	FLOAT		MNBRX	brecciated, silicified, veined quartzite with clots of sphalerite		silicified	sp	6978170	642146					0.5	0.01	0.01	2.42	a0121580
644107	FLOAT		MNBRX	brecciated, silicified, veined quartzite with clots, disseminations of sphalerite		silicified	sp	6978134	642124					0.5	0.01	0.01	2.08	a0121580
644108	SUBCROP		MNBRX	brecciated, silicified, veined quartzite, +zn zap				6977844	642135					0.5	0.01	0.01	0.08	a0121580
644109	OUTCROP		BRECCIATED LIMESTONE	Weakly brecciated, silicified limestone. Quartz-carb +/- sp veins			sp	6977963	642342					0.5	0.01	0.01	3.60	a0121580
644110	OUTCROP	2 m above 644111	MNVN	mineralized quartz calcite vein , with sph in carbonates			sp	6977992	642481					0.5	0.03	0.01	5.91	a0121580
644111	OUTCROP		MNVN	mineralized quartz calcite vein , with Cu in carbonates			cu	6977995	642467					0.5	0.01	0.01	0.07	a0121580
644112	FLOAT			galena with sph in carbonate vein			gal-sp	6977872	642230					11	0.01	2.96	3.37	a0121580
644113	OUTCROP		MNVN	quartz vein positive zn zap reaction										0.5	0.01	0.01	1.37	a0121580
644114	SUBCROP		MNBRX	quartz calcite veining with chalcopyrite			cpy	6977829	642262					0.5	0.04	0.01	0.21	a0121580
644115	OUTCROP		MNBRX	Breccia with galena and sphalerite			sph-gal	6977993	642288					0.5	0.01	0.01	0.91	a0121580
644116	OUTCROP		MNBRX	Breccia with galena and sphalerite			sph-gal	6977994	642289					0.5	0.01	0.06	0.66	a0121580
644117	OUTCROP		MNBRX	Breccia with galena and sphalerite			sph-gal	6977994	642287					0.5	0.01	0.09	1.44	a0121580
644118	OUTCROP		MNBRX	Massive fine-grained quartzite with galena positive for zinc zap			zn zap	6977719	643098					3	0.01	1.30	0.32	a0121580
644120	FLOAT	Float train	MNBRX	Breccia with sphalerite, float train 30 metres long up small draw, not presently followed to source			sph	6977997	642021	0.1	21	16	3290					a0122660

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										Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ag g/t	Cu %	Pb %	Zn %	
644121	OUTCROP	East side of property	MNBRX	Cpy, gal, positive for zinc zap			Cpy, gal, zinc zap reaction	6977447	643070					11	0.01	4.76	0.37	a0121839
644122	OUTCROP	East side of property	MNBRX	Gal, positive for zinc zap			Galena and zinc zap reaction	6977482	643116					55	0.01	17.40	0.33	a0121839
644123	FLOAT	Small creekbed full of boulders	MNBRX	Brecciated boulders positive for zinc zap				6977809						0.5	0.01	0.07	2.18	a0121839
644124	FLOAT	Small creekbed full of boulders	MNBRX	Brecciated boulders positive for zinc zap			Zinc zap reaction	6977809	642135					0.5	0.01	0.01	1.22	a0121839
644125	OUTCROP		QUARTZITE	brecciated, oxidized, grey, green quartzite				6977797	642393	0.1	10	146	2190					a0122660
644126	OUTCROP		MNBRX	mineralized breccia with sph			sp	6977487	643103	0.6	22	578	>10000				1.30	a0122660
644127	OUTCROP		MNBRX	mineralized breccia with galena			gal	6977486	643105	0.8	21	1870	8500					a0122660
644128	FLOAT		QUARTZITE	pyrite in fresh quartzite between L4 and L3				6982278	641808	0.1	6	28	130					a0122660
644129	OUTCROP		QUARTZITE	dark grey, brecciated quartzite			malachite, galena, Zn zap	6978225	641787	57.0	243	>10000	46			31.40		a0122660
644130	FLOAT TRAIN		QUARTZITE	dark grey, brecciated quartzite very oxidized			massive galena, sphalerite	6978217	641851	29.8	37	>10000	>10000			11.95	4.27	a0122660
644131	OUTCROP		QUARTZITE	dark grey, brecciated quartzite			chalcopyrite, Zn zap	6978289	641914	0.2	65	72	846					a0122660
644201	OUTCROP		LIMESTONE	grey, fine grained, bedded silty limestone, sheared	140/65E			6983511	639694	0.1	9	24	62					a0120654
644202	OUTCROP		MNZN	silicified siltstone and silty limestone with 10% disseminated and 20% massive replacement pods of sulfides	115/85N	silicification, replacement by sulfides	py-cpy-sph-gal	6983579	639693					256	1.99	2.76	7.07	a0120653
644203	OUTCROP		MNZN	silicified siltstone and silty limestone with 10% disseminated and 20% massive replacement pods of sulfides, at faulted contact	006/85 W	silicification, replacement by sulfides	py-cpy-sph-gal	6983545	639705					167	1.82	3.63	3.32	a0120653
644204	OUTCROP		QUARTZITE	pale grey, massive quartzite		silicified	minor disseminated pyrite	6982431	639652	0.2	46	176	236					a0122660
644205	OUTCROP	FLOAT	FLOAT	silicified, pyritic quartzite		silicified	minor disseminated py po	6982215	639530	0.1	14	18	38					a0120654
644206	TRENCH	WEST END	BLACK PHYLLITE	subcrop of shaley, black phyllite				6981620	639742	0.1	57	20	368					a0120654
644207	OUTCROP	IN TRENCH	QUARTZITE	silicified, pyritic quartzite, with quartz veinlets and minor sulfides		silicification	minor py, cpy, gal. In quartz veins	6981655	639810					20	0.02	0.49	0.07	a0120653
644208	OUTCROP		QUARTZITE	silicified, quartz veined, gritty quartzite with dissem. Py		silicified	py	6982038	640061	0.1	33	8	30					a0120654
644209	OUTCROP		SHALE	rusty weathered, fissile, black-grey silty shale	130/85N			6982284	639820	0.1	34	16	44					a0120654
644210	OUTCROP		SILTSTONE-QUARTZITE	interbedded cherty siltstone and quartzite				6982280	639788	0.1	27	4	72					a0120654

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										Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ag g/t	Cu %	Pb %	Zn %	
644211	OUTCROP		SCHISTOSE QUARTZITE	rusty weathered, micaceous, weakly schistose quartzite	140/60E	quartz boudins	5% dissem py-po, tr. Cpy, gal	6982051	639043	0.1	63	30	62					a0120654
644212	OUTCROP		SCHIST	quartz-sericite-pyrite schist			20% py	6982098	639041	0.1	119	10	90					a0120654
644213	OUTCROP		SCHISTOSE QUARTZITE	fine grained, rusty weathered, phyllitic quartzite	135/85N	thin poddy qtz veins	minor py-po	6982064	638782	0.1	102	36	96					a0120654
644214	FLOAT		MNFLT	quartz or silicified rock, fragments of sedimentary rock, clots of cpy, 20x25cm subangular		silicified	20% cpy	6982057	638738					263	5.64	0.10	0.24	a0120653
644215	OUTCROP		SCHISTOSE QUARTZITE	grey-green, micaceous quartzite, folded	140/85E	silicified	dissem. Py-po, tr. Cpy	6982042	638671					4	0.04	0.01	0.01	a0120653
644216	OUTCROP		SCHISTOSE QUARTZITE	schistose, sericitic, quartzite		5% py		6981870	638755	0.8	50	510	76					a0120654
644217	OUTCROP		QUARTZITE	pyritic quartzite with silicified patches with py-po		5% py-po		6981837	638798	0.2	135	28	40					a0120654
644218	OUTCROP		MNVN	pale creamy-grey, hard, massive, grit to fine sized rounded quartz pebbles in fine quartz matrix	070/90	rare qtz veinlets	clots of gal in veinlets	6978193	641843					82	0.04	34.50	0.01	a0120653
644219	OUTCROP		SILTSTONE	grey siltstone and phyllitic siltstone				6979808	642657	0.1	27	6	58					a0120830
644222	OUTCROP		SILTSTONE	dark grey, fissile, rusty weathered, shaley siltstone	120/74n		py in dissem'd blebs, fractures	6979599	642810	0.1	26	64	84					a0120830
644223	OUTCROP		BLACK SHALE	black, carbonaceous, fissile, bedded, deformed, shale, siltstone, and grit				6979586	643152	0.2	52	12	124					a0120830
644226	OUTCROP	HILLSIDE GOSSAN	SILTSTONE	rusty orange limonitic weathered, sheared, phyllitic siltstone				6982823	637894	0.2	35	16	80					a0120830
644227	OUTCROP		BLACK CHERT	black bedded chert, with shaley partings. Py concretions up to 5 cm	160/76E			6985099	641025	1.2	57	66	30					a0120830
644228	MINERALIZED FLOAT	40x45 cm BOULDER MASSIVE PY-SPH		coarse dark sphalerite with fine pyrite, minor gal, cpy, late cross-cutting, fine pyrite or marcasite veinlets				6982244	641793					40	0.09	0.98	9.26	a0120828
644229	SUBCROP		QUARTZITE	grey quartzite, disseminations and veinlets of py			py	6982289	641816	0.1	12	14	34					a0120830
644230	OUTCROP		QUARTZITE	rusty weathered, silicified, veined quartzite, rare thin veinlets with py-sph		silicified	minor py-sph	6982045	641733	2.2	63	232	752					a0120830
644231	OUTCROP		QUARTZITE	grey, silicified quartzite, minor clots of py-gal-sph, interbedded with fissile, pale grey siltstone	120/78s		py-gal-sph	6982107	641865	2.0	63	228	798					a0120830
644232	OUTCROP		CHERT PEBBLE CONGLOMERATE	black, massive, chert pebble conglomerate and grit, exposure at edge of linear gully (fault?) trending 185				6980745	639996	0.2	20	6	44					a0120830
644233	FLOAT	RUSTY SOILS, STRONG MAGNETIC DEFLECTION		silicified, pyritic rock			5% py	6980458	639621	8.2	24	3680	40					a0120830
644235	FLOAT		LEACHED VEIN	intensely leached, oxidized quartz-breccia boulders, some remnant py-aspy-gal.		silicified	70% leached sulfides	6980480	639638	17.8	27	1540	102					a0120830

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										Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ag g/t	Cu %	Pb %	Zn %	
644236	OUTCROP		BLACK CLASTICS	rusty weathered, interbedded shale, siltstone, chert pebble grit and conglomerate	125/90			6980476	639500	0.1	13	34	106					a0120830
644237	OUTCROP	HUGO CREEK	MNVN	50 cm quart vein with 20-40% coarse py-po-cpy, exposed in creek bottom for 8 meters	032/74e		py-po-cpy	6980535	639015					153	3.76	0.10	0.50	a0120828
644238	OUTCROP	SHOWING B	MNVN	quartz-pyrite vein/breccia in silicified, pyritic metasiltstone-quartzite	015/60e		py	6980600	638980					4	0.02	0.01	0.02	a0120828
644239	OUTCROP		MNVN	sheared quartz-pyrite vein/breccia in silicified, pyritic metasiltstone-quartzite, up to 1.3 meters thick, on east side of creek vein branches into several thinner, sheared zones	045/45se		py-cpy-sph	6980770	638787					130	1.24	0.52	1.43	a0120828
644240	OUTCROP	HELIPAD	METASEDIMENTS	quartzites and metasiltstones, quartz vein subcrop with 1% py-sph				6979966	638828	0.2	14	14	10					a0120830
644241	OUTCROP		BLACK SHALE	fissile, black shale, some rusty orange weathering sandy horizons	310/80e			6978385	640735	0.2	14	4	8					a0120830
644244	FLOAT		MNVN	quartz-arsenopyrite vein float, 40 cm diameter, angular			aspy	6978337	643729	17.2	28	1180	434					a0121260
644245	OUTCROP		QUARTZITE	leached, rusty orange weathered, silicified quartzite, boxwork after leached pyrite			silicified	6982525	641908	0.6	30	28	384					a0121260
644246	OUTCROP		GREY-GREEN SHALE	rusty weathered, fissile, pale grey-green shale and siltstone	120/75n			6982290	641718	0.1	19	12	44					a0121260
644248	OUTCROP		BLACK SHALE	black chert shale, siltstone, rusty weathering, fissile, east side fault gully				6979545	639985	0.2	59	54	232					a0121253
644249	OUTCROP		BLACK SHALE	fissile, black shale, rusty weathered	115/75n			6979262	640277	0.2	69	44	156					a0121253
644250	OUTCROP	ALONG EDGE OF LINEAR GULLY (FAULT?) TRENDING 135	BLACK SHALE	black shale, grit, rusty weathered	132/76ne			6979871	640705	0.6	30	30	176					a0121253
644451	SAMPLE		MNZN	Weathered brown zinc rich rock			sp	6977842	642206					1	0.01	0.15	12.05	a0120653
644452	SAMPLE		MNZN	Black shale with cm scale galena vein			gal	6977867	642206					114	0.01	66.16	0.18	a0120653
644453	SAMPLE		Shale	Black shale, fissile, possibly graphitic				6978985	643475	0.6	41	16	152					a0120830
644454	Outcrop		Siltstone	Finely laminated siltstone with 3-5% disseminated pyrite along bedding planes	340/70		3-5% laminated pyrite	6982697	639631	0.1	23	18	66					a0120830
644455	Outcrop		Siltstone	Fine, grained dark grey siltstone and sandstone				6981549	641680	4.8	202	358	36					a0120830
644456	OUTCROP		Quartzite	Dolomitic? Quartzite with 2% diss pyrite. Malachite staining				6983862	639723	0.8	1405	192	9740					a0121260
644457	OUTCROP		MNZN	Limestone unit with 5% sp, tr cpy. Py along fractures.			5% sp	6983862	639723	33.8	639	9100	7650					a0121260
644458	OUTCROP		MNZN	Semi-massive sulphide in quartzite? With 15% cpy, 5% gal, 10% py. MM-scale banding.			15% cpy-5% gal-10% sp	6983862	639723					215	3.54	6.34	1.56	a0121259
644459	OUTCROP		MNZN	Massive sphalerite with 5% cpy			sp-cpy	6983862	639723					475	2.81	14.65	17.00	a0121259

SAMPLE#	TYPE	REMARKS	ROCKTYPE	DESCRIPTION	STRUC-TURE	ALTERATION	MINERALIZATION	UTM_N	UTM_E	GEOCHEMICAL ANALYSIS				ASSAY				LAB RPT#
										Ag ppm	Cu ppm	Pb ppm	Zn ppm	Ag g/t	Cu %	Pb %	Zn %	
644460	OUTCROP		MNZN	Dolomitic? Fine grained sandstone with 5% cpy, 7% sp on fractures. Dark green calc-silicates?			sp-cpy	6983862	639723					57	1.13	2.84	2.28	a0121259
644462	OUTCROP		SILTSTONE	Centimeter to mm-scale, well bedded siltstone, shale and thin sandstone. Dark grey coloured.				6982099	637927	0.1	245	2	112					a0121253
644464	OUTCROP		BLACK CHERT	Dark black chert or silicified shale. Millimeter to centimeter scale bedding.	125/85			6978262	641428	0.1	21	36	308					a0121839

SAMPLE# or GRID CO-ORD	Medium	UTM		Ag	As	Ba	Bi	Cd	Co	Cr	Cu	Fe	Ga	Hg	Mg	Mn	Mo	Ni	Pb	Zn	LAB RPT#
		easting	northing	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	
0E/300N	SOIL	642794	6979589	0.1	10	120	1	0.25	5	8	16	1.91	5	0.5	0.08	170	1	8	62	94	a0121249
0E/325N	SOIL	642815	6979603	0.8	84	580	1	7.5	12	12	104	2.72	5	0.5	0.13	3750	1	41	34	260	a0121249
0E/350N	SOIL	642836	6979616	0.2	1	100	1	0.25	1	3	16	0.51	5	0.5	0.03	250	0.5	6	18	24	a0121249
0E/375N	SOIL	642858	6979629	0.1	18	200	1	0.5	18	47	51	3.31	5	0.5	0.8	245	1	54	22	118	a0121249
0E/400N	SOIL	642879	6979642	0.1	6	200	1	0.25	11	21	40	2.02	5	0.5	0.44	135	1	32	18	102	a0121249
0E/425N	SOIL	642901	6979655	0.1	10	220	1	0.25	10	21	39	1.93	5	0.5	0.43	140	2	32	16	86	a0121249
0E/450N	SOIL	642922	6979668	0.1	22	200	1	0.25	14	23	33	2.71	5	0.5	0.46	480	1	33	16	96	a0121249
0E/475N	SOIL	642943	6979681	0.1	1	30	1	0.25	0.5	1	9	0.37	5	0.5	0.01	15	0.5	1	2	18	a0121249
0E/500N	SOIL	642965	6979694	0.1	1	10	1	0.25	0.5	1	2	0.26	5	0.5	0.01	10	1	0.5	1	10	a0121249
0E/525N	SOIL	642986	6979707	0.2	2	100	4	0.25	2	6	13	0.79	5	0.5	0.06	85	1	5	6	20	a0121249
0E/550N	SOIL	643008	6979721	0.1	16	90	1	0.25	7	13	22	3.67	5	0.5	0.14	290	3	12	14	74	a0121249
0E/575N	SOIL	643029	6979734	0.1	8	70	1	0.25	2	7	11	1.51	5	0.5	0.07	90	1	6	18	34	a0121249
0E/600N	SOIL	643050	6979747	0.2	8	110	1	1.5	5	9	29	2.73	5	0.5	0.08	135	4	18	14	144	a0121249
2E/300N	SOIL	642895	6979416	0.1	16	230	1	0.5	14	21	33	2.92	5	0.5	0.43	705	2	32	16	112	a0121249
2E/325N	SOIL	642916	6979429	0.1	14	210	1	0.5	14	22	38	3.11	5	0.5	0.47	685	2	36	18	96	a0121249
2E/350N	SOIL	642937	6979442	0.1	18	240	1	0.5	15	22	43	3.13	5	0.5	0.46	960	3	37	20	108	a0121249
2E/375N	SOIL	642959	6979455	0.1	16	230	1	0.5	15	22	39	3.14	5	0.5	0.49	875	2	36	20	110	a0121249
2E/400N	SOIL	642980	6979469	0.1	14	270	1	1	15	24	35	3.05	5	0.5	0.48	950	1	37	18	120	a0121249
2E/425N	SOIL	643001	6979482	0.1	16	270	4	0.5	15	24	40	3.12	5	0.5	0.49	910	2	39	22	112	a0121249
2E/450N	SOIL	643023	6979495	0.1	30	120	1	1	7	13	22	2.31	5	0.5	0.24	335	3	15	14	90	a0121249
2E/475N	SOIL	643044	6979508	0.1	14	150	2	0.5	6	8	13	1.97	5	0.5	0.14	400	2	11	26	72	a0121249
2E/500N	SOIL	643065	6979521	0.1	16	70	2	0.25	7	10	9	2.28	5	0.5	0.17	465	2	12	20	68	a0121249
2E/525N	SOIL	643087	6979534	0.1	10	110	1	0.25	4	7	11	1.54	5	0.5	0.07	100	1	9	8	38	a0121249
2E/550N	SOIL	643108	6979548	0.1	2	60	1	0.25	1	6	6	0.94	5	0.5	0.05	70	0.5	4	10	28	a0121249
2E/575N	SOIL	643130	6979561	0.1	1	60	1	0.25	0.5	2	13	0.35	5	0.5	0.01	25	0.5	3	4	18	a0121249
2E/600N	SOIL	643151	6979574	0.1	18	130	1	0.25	6	15	15	2.22	5	0.5	0.18	145	1	14	10	58	a0121249
4E/300N	SOIL	643003	6979256	0.1	14	190	1	0.25	15	18	26	2.46	5	0.5	0.24	1150	1	21	34	118	a0121249
4E/325N	SOIL	643024	6979270	0.1	12	100	1	0.25	12	17	24	2.71	5	0.5	0.29	605	3	23	24	82	a0121249
4E/350N	SOIL	643045	6979283	0.1	12	230	1	0.25	12	21	29	2.66	5	0.5	0.4	795	1	33	16	88	a0121249
4E/375N	SOIL	643066	6979297	0.1	12	210	1	0.25	12	21	31	2.73	5	0.5	0.39	785	1	30	20	112	a0121249
4E/400N	SOIL	643087	6979310	0.1	2	100	1	0.25	4	7	9	1.5	5	0.5	0.07	255	0.5	7	4	42	a0121249
4E/425N	SOIL	643108	6979324	0.1	1	100	1	0.25	1	3	7	0.56	5	0.5	0.03	140	0.5	3	1	28	a0121249
4E/450N	SOIL	643129	6979337	0.1	14	150	1	0.25	12	10	19	3.03	5	0.5	0.17	610	1	20	24	56	a0121249
4E/475N	SOIL	643151	6979351	0.1	12	110	1	0.25	4	6	14	1.36	5	0.5	0.07	150	0.5	7	6	32	a0121249
4E/500N	SOIL	643172	6979364	0.1	12	80	1	0.25	5	11	9	2.69	5	0.5	0.12	425	1	9	20	52	a0121249
4E/525N	SOIL	643193	6979378	0.1	6	40	2	0.25	2	2	6	0.6	5	0.5	0.03	110	0.5	3	2	16	a0121249
4E/550N	SOIL	643214	6979392	0.1	2	80	1	0.25	2	4	6	0.67	5	0.5	0.06	90	0.5	3	2	22	a0121249
4E/575N	SOIL	643235	6979405	0.1	28	200	2	0.25	9	17	16	2.56	5	0.5	0.3	395	1	16	18	58	a0121249
4E/600N	SOIL	643256	6979419	0.1	272	130	1	0.25	11	20	35	3.52	5	0.5	0.45	430	2	29	34	86	a0121249
6E/300N	SOIL	643118	6979093	0.1	14	110	1	0.25	3	10	23	2.19	5	0.5	0.1	115	3	12	8	72	a0121249
6E/325N	SOIL	643139	6979107	0.6	10	120	1	0.25	5	11	10	2.37	5	0.5	0.06	495	1	8	14	56	a0121249
6E/350N	SOIL	643160	6979121	0.1	1	40	2	0.25	0.5	0.5	3	0.26	5	0.5	0.01	25	0.5	1	1	12	a0121249
6E/375N	SOIL	643181	6979134	0.1	1	20	1	0.25	0.5	0.5	2	0.2	5	0.5	0.01	20	0.5	0.5	1	6	a0121249

SAMPLE# or GRID CO-ORD	Medium	UTM		Ag	As	Ba	Bi	Cd	Co	Cr	Cu	Fe	Ga	Hg	Mg	Mn	Mo	Ni	Pb	Zn	LAB RPT#
		easting	northing	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	
6E/400N	SOIL	643202	6979148	0.1	1	90	1	0.25	2	3	11	0.47	5	0.5	0.03	135	0.5	3	2	16	a0121249
6E/425N	SOIL	643223	6979162	0.1	12	120	1	0.25	5	8	16	2.23	5	0.5	0.07	225	1	12	16	60	a0121249
6E/450N	SOIL	643244	6979175	0.1	32	100	1	0.25	7	16	14	2.8	5	0.5	0.3	295	2	16	12	92	a0121249
6E/475N	SOIL	643265	6979189	0.1	38	200	1	0.25	9	13	25	3	5	0.5	0.17	385	2	17	16	84	a0121249
6E/500N	SOIL	643286	6979203	0.1	74	160	1	0.25	9	20	34	3.11	5	0.5	0.4	505	2	23	16	88	a0121249
6E/525N	SOIL	643307	6979217	0.1	24	110	1	0.25	6	13	18	2.5	5	0.5	0.22	220	1	16	20	88	a0121249
6E/550N	SOIL	643328	6979230	0.1	12	60	1	0.25	4	8	18	2.06	5	0.5	0.07	150	1	10	8	68	a0121249
6E/575N	SOIL	643348	6979244	0.1	1	20	1	0.25	0.5	0.5	1	0.27	5	0.5	0.005	10	0.5	0.5	1	6	a0121249
6E/600N	SOIL	643369	6979258	0.1	14	210	1	0.5	5	7	14	1.26	5	0.5	0.07	265	1	8	14	46	a0121249
8E/300N	SOIL	643195	6978913	0.2	28	140	2	2.5	14	14	36	2.93	5	0.5	0.27	845	1	29	68	774	a0121249
8E/325N	SOIL	643216	6978927	0.1	14	190	1	0.5	5	10	16	2.17	5	0.5	0.1	225	2	12	20	72	a0121249
8E/350N	SOIL	643238	6978940	0.2	34	130	1	0.25	12	16	35	2.82	5	0.5	0.31	710	3	24	16	80	a0121249
8E/375N	SOIL	643259	6978954	0.1	6	80	1	0.25	4	3	8	0.73	5	0.5	0.03	410	0.5	3	4	20	a0121249
8E/400N	SOIL	643280	6978967	0.1	30	230	1	0.25	10	9	14	2	5	0.5	0.11	1620	1	10	12	74	a0121249
8E/425N	SOIL	643301	6978980	0.1	12	160	4	0.5	13	8	25	1.67	5	0.5	0.07	1790	1	9	18	58	a0121249
8E/450N	SOIL	643323	6978994	0.1	8	100	2	0.25	4	4	7	0.86	5	0.5	0.04	205	0.5	4	6	22	a0121249
8E/475N	SOIL	643344	6979007	0.1	56	100	1	0.25	6	10	16	2.53	5	0.5	0.11	210	1	12	14	70	a0121249
8E/500N	SOIL	643365	6979021	0.1	64	90	1	0.25	6	11	13	1.68	5	0.5	0.12	545	2	9	10	64	a0121249
8E/525N	SOIL	643386	6979034	0.1	120	260	1	0.25	10	16	31	2.77	5	0.5	0.26	495	2	19	30	94	a0121249
8E/550N	SOIL	643407	6979048	0.1	66	100	1	0.25	10	20	23	3.73	5	0.5	0.37	415	3	23	20	96	a0121249
8E/575N	SOIL	643429	6979061	0.1	1	20	1	0.25	1	1	3	0.49	5	0.5	0.02	50	0.5	1	1	8	a0121249
8E/600N	SOIL	643450	6979074	0.1	88	180	1	0.25	11	21	31	3.3	5	0.5	0.41	315	1	25	16	74	a0121249
10E/300N	SOIL	643298	6978743	0.1	16	180	1	0.25	12	19	35	2.64	5	0.5	0.37	675	1	34	18	88	a0121249
10E/325N	SOIL	643319	6978757	0.1	10	180	2	0.25	12	14	38	2.4	5	0.5	0.29	680	1	32	14	94	a0121249
10E/350N	SOIL	643340	6978770	0.1	1	30	1	0.25	0.5	1	4	0.25	5	0.5	0.01	15	0.5	0.5	1	2	a0121249
10E/375N	SOIL	643361	6978784	0.1	40	190	1	0.25	12	15	33	2.68	5	0.5	0.32	730	2	28	20	110	a0121249
10E/400N	SOIL	643382	6978797	0.1	44	260	1	0.25	8	12	33	1.87	5	0.5	0.26	450	1	22	16	78	a0121249
10E/425N	SOIL	643403	6978811	0.1	42	220	1	0.25	7	12	29	1.77	5	0.5	0.24	420	1	20	14	84	a0121249
10E/450N	SOIL	643424	6978825	0.1	56	290	1	0.5	8	13	40	2.12	5	0.5	0.28	485	1	25	20	96	a0121249
10E/475N	SOIL	643445	6978838	0.1	60	250	2	0.25	8	13	34	2.23	5	0.5	0.28	385	1	23	16	82	a0121249
10E/500N	SOIL	643466	6978852	0.1	52	200	2	0.25	7	12	29	2.02	5	0.5	0.23	205	0.5	20	14	74	a0121249
10E/525N	SOIL	643488	6978865	0.1	72	200	1	0.25	9	13	35	2.1	5	0.5	0.27	415	0.5	23	16	100	a0121249
10E/550N	SOIL	643509	6978879	0.1	252	120	1	0.25	18	19	64	3.24	5	0.5	0.39	590	0.5	34	38	114	a0121249
10E/575N	SOIL	643530	6978892	0.1	244	120	1	0.25	16	18	55	3.13	5	0.5	0.36	400	0.5	31	44	96	a0121249
10E/600N	SOIL	643551	6978906	0.1	194	190	1	0.25	15	20	64	3.18	5	0.5	0.41	550	0.5	36	36	124	a0121249
0N/000E	SOIL	6981935	641975	0.1	52	140	1	0.25	8	24	17	3.5	5	0.5	0.43	1235	0.5	22	26	100	a0121249
0N/025E	SOIL	6981951	641995	0.1	24	330	1	0.25	9	16	15	2.13	5	0.5	0.3	440	1	18	20	64	a0121249
0N/050E	SOIL	6981967	642014	0.1	26	120	1	0.25	5	13	16	2.99	5	0.5	0.13	275	1	12	12	78	a0121249
0N/075E	SOIL	6981984	642034	0.1	1	30	1	0.25	1	3	6	0.78	5	0.5	0.02	30	0.5	1	2	10	a0121249
0N/100E	SOIL	6982000	642053	0.1	28	200	1	0.25	6	15	12	2.07	5	1	0.22	355	0.5	13	10	50	a0121249
0N/125E	SOIL	6982016	642073	0.1	22	140	1	0.25	4	15	11	2.66	5	0.5	0.19	325	1	11	10	48	a0121249
0N/150E	SOIL	6982032	642093	0.1	14	180	1	0.25	3	15	9	1.93	5	0.5	0.2	150	1	9	14	36	a0121249
0N/175E	SOIL	6982048	642112	0.1	34	210	1	0.25	9	19	22	2.49	5	0.5	0.34	405	1	24	20	58	a0121249

SAMPLE# or GRID CO-ORD	Medium	UTM		Ag	As	Ba	Bi	Cd	Co	Cr	Cu	Fe	Ga	Hg	Mg	Mn	Mo	Ni	Pb	Zn	LAB RPT#
		easting	northing	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	
0N/200E	SOIL	6982065	642132	0.1	22	280	1	0.25	8	22	21	3.14	5	0.5	0.33	335	2	21	14	64	a0121249
0N/225E	SOIL	6982081	642151	0.1	20	80	1	0.25	4	13	13	2.32	5	0.5	0.17	220	1	11	10	44	a0121249
0N/250E	SOIL	6982097	642171	0.1	4	60	1	0.25	1	5	6	0.73	5	0.5	0.05	70	1	3	4	16	a0121249
1N/000E	SOIL	6982022	641899	0.1	82	180	1	0.5	22	25	94	4.63	5	0.5	0.47	1315	1	52	60	216	a0121249
1N/025E	SOIL	6982035	641920	0.1	24	120	1	0.25	13	22	17	3.58	5	0.5	0.38	585	1	20	22	96	a0121249
1N/050E	SOIL	6982049	641941	0.1	20	240	1	0.25	5	10	15	1.73	5	0.5	0.1	225	1	9	14	54	a0121249
1N/075E	SOIL	6982062	641961	0.1	36	60	1	0.25	5	13	15	3.24	5	0.5	0.1	260	1	10	18	60	a0121249
1N/100E	SOIL	6982076	641982	0.1	2	20	1	0.25	1	1	2	0.35	5	0.5	0.01	85	0.5	1	2	20	a0121249
1N/125E	SOIL	6982089	642003	0.1	30	70	1	0.25	12	17	12	3.02	5	0.5	0.21	680	1	13	16	74	a0121249
1N/150E	SOIL	6982102	642024	0.1	26	50	1	0.25	4	8	12	1.95	5	0.5	0.04	190	1	8	10	52	a0121249
1N/175E	SOIL	6982116	642045	0.2	30	70	1	0.25	5	7	19	2.13	5	0.5	0.06	160	0.5	10	66	106	a0121249
1N/200E	SOIL	6982129	642065	0.1	14	100	1	0.25	3	11	10	2.11	5	0.5	0.14	150	0.5	8	12	48	a0121249
1N/225E	SOIL	6982143	642086	0.1	22	130	1	0.25	7	19	12	3.15	5	0.5	0.25	305	1	15	32	94	a0121249
1N/250E	SOIL	6982156	642107	0.1	8	50	1	0.25	1	5	3	0.67	5	0.5	0.03	200	1	2	8	26	a0121249
2N/000E	SOIL	6982071	641853	0.2	2	10	1	0.25	0.5	1	2	0.3	5	0.5	0.01	15	0.5	1	6	18	a0121249
2N/025E	SOIL	6982087	641872	0.1	1	30	1	0.5	2	4	6	0.51	5	0.5	0.01	85	0.5	2	44	28	a0121249
2N/050E	SOIL	6982103	641891	0.1	56	100	1	2.5	3	7	29	2.05	5	0.5	0.02	215	1	6	58	120	a0121249
2N/075E	SOIL	6982119	641910	0.2	16	60	1	0.25	1	4	6	1.04	5	0.5	0.02	55	1	4	10	52	a0121249
2N/100E	SOIL	6982135	641929	0.2	22	80	1	0.5	5	14	9	2.46	5	0.5	0.13	175	1	10	72	164	a0121249
2N/125E	SOIL	6982151	641948	0.2	18	70	1	0.25	2	6	13	1.74	5	0.5	0.03	155	1	4	68	102	a0121249
2N/150E	SOIL	6982167	641967	0.1	12	30	1	0.25	1	4	6	1.12	5	0.5	0.03	65	0.5	4	10	38	a0121249
2N/175E	SOIL	6982183	641987	0.1	2	20	1	0.25	0.5	1	2	0.35	5	0.5	0.01	40	0.5	0.5	10	14	a0121249
2N/200E	SOIL	6982199	642006	0.1	2	40	1	0.25	0.5	2	0.5	0.59	5	0.5	0.02	60	0.5	1	2	10	a0121249
2N/225E	SOIL	6982215	642025	0.1	2	20	1	0.25	0.5	0.5	0.5	0.38	5	0.5	0.01	25	0.5	0.5	1	6	a0121249
2N/250E	SOIL	6982231	642044	0.1	4	60	1	0.25	0.5	4	5	0.66	5	0.5	0.02	45	0.5	2	2	20	a0121249
3N/000E	SOIL	6982177	641796	0.1	40	110	1	0.5	6	15	39	4.22	5	0.5	0.19	200	1	16	34	160	a0121249
3N/025E	SOIL	6982190	641815	0.1	28	50	1	0.25	5	10	16	2.65	5	0.5	0.08	285	1	8	52	92	a0121249
3N/050E	SOIL	6982204	641834	0.1	4	20	1	0.25	0.5	1	0.5	0.59	5	0.5	0.01	65	0.5	0.5	10	26	a0121249
3N/075E	SOIL	6982217	641853	0.1	14	60	1	0.25	3	6	5	1.47	5	0.5	0.07	155	0.5	5	28	88	a0121249
3N/100E	SOIL	6982230	641872	0.1	16	30	1	0.25	1	6	5	1.49	5	0.5	0.05	145	0.5	5	26	72	a0121249
3N/125E	SOIL	6982244	641891	0.1	10	50	2	0.5	0.5	3	2	0.99	5	0.5	0.01	75	0.5	3	14	56	a0121249
3N/150E	SOIL	6982257	641910	0.1	50	30	1	0.25	8	14	20	3.44	5	0.5	0.2	360	1	13	64	134	a0121249
3N/175E	SOIL	6982271	641929	0.1	10	90	1	0.25	4	16	4	2.82	5	0.5	0.16	200	0.5	10	10	68	a0121249
3N/200E	SOIL	6982284	641948	0.1	18	40	1	0.25	1	6	5	1.64	5	0.5	0.05	105	0.5	6	6	44	a0121249
3N/225E	SOIL	6982297	641967	0.1	6	70	1	0.25	0.5	4	4	0.74	5	0.5	0.01	60	0.5	3	4	26	a0121249
3N/250E	SOIL	6982311	641986	0.1	10	40	1	0.25	1	5	6	1.29	5	0.5	0.02	85	1	5	6	36	a0121249
4N/000E	SOIL	6982294	641724	0.1	80	50	1	0.5	5	15	53	6.52	5	0.5	0.04	125	2	10	24	130	a0121249
4N/025E	SOIL	6982305	641744	0.2	46	60	1	0.25	5	14	95	7.24	5	0.5	0.05	130	5	10	68	66	a0121249
4N/050E	SOIL	6982315	641764	0.1	36	40	1	0.25	0.5	1	6	0.93	5	0.5	0.01	70	0.5	3	6	38	a0121249
4N/075E	SOIL	6982326	641785	0.4	14	40	1	4	3	3	23	1.04	5	0.5	0.02	290	0.5	3	8	226	a0121249
4N/100E	SOIL	6982336	641805	0.2	24	110	1	23	6	8	24	1.71	5	0.5	0.14	630	0.5	14	16	1350	a0121249
4N/125E	SOIL	6982347	641825	0.2	18	80	1	2	3	4	5	1.25	5	0.5	0.03	250	0.5	4	26	104	a0121249
4N/150E	SOIL	6982358	641845	0.1	60	60	1	0.25	12	20	35	4.12	5	0.5	0.27	450	1	19	72	252	a0121249

SAMPLE# or GRID CO-ORD	Medium	UTM		Ag	As	Ba	Bi	Cd	Co	Cr	Cu	Fe	Ga	Hg	Mg	Mn	Mo	Ni	Pb	Zn	LAB RPT#
		easting	northing	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	
4N/175E	SOIL	6982368	641865	0.1	24	90	1	1	4	13	8	2.93	5	0.5	0.12	185	1	10	26	164	a0121249
4N/200E	SOIL	6982379	641886	0.1	52	100	1	1.5	5	17	10	3.33	5	0.5	0.18	225	1	12	42	224	a0121249
4N/225E	SOIL	6982389	641906	0.1	34	90	2	0.5	4	13	15	3.72	5	0.5	0.12	255	2	10	24	102	a0121249
4N/250E	SOIL	6982400	641926	0.1	14	50	2	0.25	3	5	6	1.72	5	0.5	0.04	110	1	6	6	42	a0121249
5N/000E	SOIL	6982374	641699	0.1	18	30	1	0.5	5	8	25	4.21	5	0.5	0.04	435	1	17	6	252	a0121249
5N/025E	SOIL	6982385	641719	0.1	12	80	1	0.5	6	10	9	2.41	5	0.5	0.08	340	0.5	7	30	80	a0121249
5N/050E	SOIL	6982396	641739	0.1	1	40	2	0.25	0.5	0.5	0.5	0.24	5	0.5	0.005	5	0.5	0.5	1	12	a0121249
5N/075E	SOIL	6982406	641759	0.1	12	50	1	0.25	1	3	2	0.96	5	0.5	0.04	115	0.5	2	16	40	a0121249
5N/100E	SOIL	6982417	641779	0.1	28	120	1	0.25	5	7	9	1.92	5	0.5	0.1	440	0.5	6	72	90	a0121249
5N/125E	SOIL	6982428	641800	0.1	82	90	1	0.25	7	17	18	3.59	5	0.5	0.29	375	2	19	42	186	a0121249
5N/150E	SOIL	6982439	641820	0.1	4	20	1	0.25	0.5	1	0.5	0.41	5	0.5	0.01	20	0.5	0.5	1	14	a0121249
5N/175E	SOIL	6982450	641840	0.1	2	30	1	0.25	0.5	0.5	3	0.15	5	0.5	0.01	15	0.5	1	1	10	a0121249
5N/200E	SOIL	6982460	641860	0.1	22	130	1	0.25	4	10	7	1.76	5	0.5	0.08	150	1	8	18	62	a0121249
5N/225E	SOIL	6982471	641880	0.1	136	120	1	0.5	5	14	19	3.4	5	0.5	0.23	210	1	10	54	150	a0121249
5N/250E	SOIL	6982482	641900	0.1	36	150	1	4.5	9	13	29	3.66	5	0.5	0.1	580	1	16	34	178	a0121249
644234	SOIL	6980480	639638	82.6	76	60	54	23.5	10	18	937	12.1	5	0.5	0.18	1260	0.5	21	>10000	3120	a0120988
644022	SOIL	6984315	639796	0.2	12	220	2	0.25	3	11	23	1.05	5	1	0.21	170	1	11	12	42	a0122659
644220	SOIL	6979838	642684	0.2	24	140	1	0.25	7	20	24	4.48	5	0.5	0.19	295	3	17	52	138	a0120988
644221	SOIL	6979789	642709	0.2	14	80	1	0.25	3	7	14	1.3	5	1	0.04	165	1	6	78	58	a0120988
644224	SILT	6979380	643010	0.1	28	250	1	0.5	15	28	52	3.4	5	1	0.56	700	2	40	40	136	a0120988
644225	SILT	6978790	643320	0.1	16	190	2	0.25	11	14	36	2.52	5	2	0.3	530	0.5	28	34	118	a0120988
644226	SOIL	6982823	637894	0.2	8	40	1	0.25	9	63	35	7.04	5	0.5	1.23	265	0.5	17	16	80	a0120830
644501	SOIL	6975700	645150	0.1	20	370	6	0.25	13	16	39	3.24	5	0.5	0.22	535	1	29	24	108	a0122659
644502	SOIL	6975876	645025	0.1	26	250	4	0.25	10	24	32	3.83	5	0.5	0.28	295	3	28	22	162	a0122659
644503	SOIL	6975935	644901	0.4	32	230	6	0.5	17	21	56	3.09	5	0.5	0.27	420	2	35	16	144	a0122659
644504	SOIL	6982756	638792	0.1	64	430	2	0.25	10	26	47	2.53	5	0.5	0.54	350	2	32	34	112	a0122659
644505	SOIL	6982797	638746	1.4	160	350	2	5	6	18	106	1.33	5	0.5	0.25	280	0.5	27	86	194	a0122659
644506	SOIL	6983834	638873	0.4	28	340	2	0.25	7	15	35	1.53	5	0.5	0.32	630	1	24	24	108	a0122659
644507	SOIL	6983764	638952	0.2	14	140	1	0.25	3	5	15	0.64	5	0.5	0.08	240	0.5	9	12	30	a0122659

APPENDIX V

DRILL LOGS

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Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0101**	**Length:**	141.7	**Units:**	meters
Started	7/15/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	7/18/01	**Claim #:**	AMB 83	**Logged By:**	C. Barr
Drill Type:	JKS Boyles 2	**Case Pld:**	Yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	3	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	639596	**Easting:**	380.00	**Easting:**	639596	**Latitude:**	0
Northing:	6982428	**Northing:**	443.00	**Northing:**	6982428	**Longitude:**	0
Elevation:	1122	**Elevation:**	1122.00	**Elevation:**	1122		
Plot_Sys:	UTM Nad 83	**Grid Declin:**	-45.00	**UTM Declin:**	0		
NTS:	105K16	**Mag Declin:**	29	**UTM Zone:**	8		

Collar Survey: No
Target: Lad showing at -50m level
Geophysics: No
Remarks: No significant mineralization intersected. Lad showing has no continuity at depth.

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-50.00	196.00	225.00	COLLAR	NULL
50.29	-49.70	199.70	228.70	Reflex	NULL
96.01	-49.20	201.50	230.50	Reflex	Null
141.70	-47.40	196.50	225.50	Reflex	

Geology

Lithology

From / To	Code	Rock Name / Description
0.00	**Sst**	**Sandstone**
24.10		Grey coloured fine- to medium grained, with thin interbeds of dark grey to black argillite.
24.10	**Qtz**	**Quartzite**
27.40		Fine-grained light grey quartzite with up to 1% disseminated pyrrhotite locally.

Alteration

From / To	Code	Description

Mineralization

From / To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0101

Lithology

From	To	Code	Rock Name / Description
27.40		FLT	**Fault Breccia**
	28.70		Fault breccia with 1% stringer pyrite.
28.70		Bshl	**Black Shale**
	48.60		Dark grey-black shale, with thin siltstone interbeds. 1-2% disseminated po+py+sp+gal from 40-44.5m.
48.60		Qtz	**Quartzite**
	70.80		Light grey, fine-grained, massive quartzite with 2% disseminated po, py on fractures.
70.80		Gshl	**Green Shale**
	73.20		Pale green, silicified shale.
73.20		fl	**Felsic Dyke**
	77.50		Siliceous, light grey-white felsic dyke.
77.50		Shl	**Shale**
	141.70		Black to maroon, to light green-grey shale. Local silicificaltion. 100.5-118.6m fault zone, local trace po, cp, sp, gal.

Alteration

From	To	Code / Description

Mineralization

From	To	Code / Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

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NORANDA INC.

Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0102**	**Length:**	149.4	**Units:**	meters
Started	7/18/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	7/20/01	**Claim #:**	AMB 84	**Logged By:**	C. Barr
Drill Type:	JKS Boyles 2	**Case Pld:**	Yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	8	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	639818	**Easting:**	389.00	**Easting:**	639818	**Latitude:**	0
Northing:	6982654	**Northing:**	737.00	**Northing:**	6982654	**Longitude:**	0
Elevation:	1120	**Elevation:**	1120.00	**Elevation:**	1120		
Plot_Sys:	UTM Nad 83	**Grid Declin:**	-45.00	**UTM Declin:**	0		
NTS:	105K/16	**Mag Declin:**	29	**UTM Zone:**	8		

Collar Survey: No
Target: Coincident Mag-EM response
Geophysics: No
Remarks: NULL

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-50.00	196.00	225.00	COLLAR	NULL
45.73	-49.10	198.90	227.90	Reflex	
91.40	-48.60	197.30	226.30	Reflex	NULL
137.20	-46.90	196.00	225.00	Reflex	

Geology

Lithology

From / To	Code	Rock Name / Description
0.00		**Overburden**
7.70		Large boulders or possibly bedrock, intensely broken core.
7.70		**Shale**
25.50		Dark grey, silica, carb altered shale and siltstone.

Alteration

From / To	Code	Description

Mineralization

From / To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0102

Lithology

From	To	Code	Rock Name / Description
25.50			**Fault Breccia**
	37.00		Fault brecciated clasts of quartzite, siltstone and black shale in a silica, carbonate healed matrix. Locally graphitic.
37.00			**Shale**
	67.20		Shale as above. Local trace po.
67.20			**Fault Breccia**
	93.00		Brecciated blacke shale and siltstone. Locally graphitic.
93.00			**Quartzite**
	103.40		Massively bedded fine-grained quartzite to local siltstone.
103.40			**Shale**
	112.60		Grey to black shale.
112.60			**Fault Zone**
	118.60		Fault zone, intensely sheared with quartz-carb stringers, 1% po, py and local graphite.
118.60			**Shale**
	149.40		Interbedded dark shale and siltstone.

Alteration

From	To	Code / Description

Mineralization

From	To	Code / Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

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NORANDA INC.

Drill Hole Log

Drillhole Collar

Hole-ID: AN0103 **Length:** 160.3 **Units:** meters

Started	7/20/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	7/22/01	**Claim #:**		**Logged By:**	C. Barr
Drill Type:	JKS Boyles 2	**Case Pld:**	Yes	**Contractor:**	Advanced
Core Size:	NQ2	**Case Dep:**	9.14	**Core Location:**	Andrew camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	640830	**Easting:**	1825.00	**Easting:**	640830	**Latitude:**	
Northing:	6981602	**Northing:**	513.00	**Northing:**	6981602	**Longitude:**	
Elevation:	1182	**Elevation:**	1202.00	**Elevation:**	1202		
Plot_Sys:	UTM Nad 83	**Grid Declin:**	-45.00	**UTM Declin:**			
NTS:	106K/16	**Mag Declin:**	29	**UTM Zone:**	8		

Collar Survey: No
Target: Coincident Mag-Gravity anomaly
Geophysics: No
Remarks:

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-50.00	191.00	220.00	COLLAR	
45.70	-51.80	190.90	219.90	Reflex	
126.80	-50.10	191.30	220.30	Reflex	
160.00	-49.90	191.80	220.80	Reflex	

Geology

Lithology

From	To	Code	Rock Name / Description
0.00	10.00	OB	Overburden
10.00	24.70	Lst	Limestone Massive, pale grey limestone.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0103

Lithology

From	To	Code	Rock Name / Description
24.70	46.50	GRshl	**Grey Shale** Grey to black well bedded shale with pervasive silica, carbonate alteration.
46.50	57.20	Qtz	**Quartzite** Massive quartzite and sandstone.
57.20	74.50	GRshl	**Grey Shale** Grey to black shale with local pale green bleached zones.
74.50	80.50	FLT	**Fault** Blocky core with clay filled fault gauge in mixed shale, quartzite.
80.50	96.60	GRshl	**Grey Shale** Shale as above. Local po associated with quartz-carb veinlets.
96.60	121.70	Lst	**Limestone** Massive, crystaline limestone with cm scale black shale interbeds.
121.70	134.00	Gshl	**Green Shale** Grey-green to black shale
134.00	137.20	Lst	**Limestone** Massive limestone as above. Local trace pyrite.
137.20	149.70	Qtz	**Quartzite** Massive medium grained quartzite. Fault from 139-143m. Graphitic and 1% po.
149.70	160.30	Gshl	**Green Shale** Green to buff coloured shale. 150.8-154.9m fault with 1-2% po stringers.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

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NORANDA INC.

Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0104**	**Length:**	171.6	**Units:**	meters
Started	7/23/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	7/25/01	**Claim #:**	NULL	**Logged By:**	C. Barr
Drill Type:	JKS Boyles 2	**Case Pld:**	Yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	9.1	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641590	**Easting:**	1080.00	**Easting:**	641590	**Latitude:**	0
Northing:	6978292	**Northing:**	412.00	**Northing:**	6978292	**Longitude:**	0
Elevation:	1302	**Elevation:**	1302.00	**Elevation:**	1302		
Plot_Sys:	UTM NAD 83	**Grid Declin:**	-45.00	**UTM Declin:**	0		
NTS:	105K16	**Mag Declin:**	29	**UTM Zone:**	8		

Collar Survey: No
Target: Andrew Kill Zone Showing at -75m vertical
Geophysics: No
Remarks: Intensely carbonatized zone with extensive sphalerite mineralization from disseminated to massive.

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-50.00	189.00	218.00	COLLAR	
43.43	-52.30	191.90	220.90	Reflex	
86.89	-53.00	189.20	218.20	Reflex	
138.72	-52.70	189.90	218.90	Reflex	
165.55	-53.40	191.00	220.00	Reflex	

Geology

Lithology

From	To	Code	Rock Name / Description
0.00	1.50	**OB**	
1.50	24.10	**Mshl**	**Maroon Shale** Fine grained maroon coloured shale.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0104

Lithology

From	To	Code	Rock Name / Description
24.10	37.90	**Gshl**	**Green Shale** Green shale.
37.90	43.80	**Bshl**	**Black Shale** Black shale.
43.80	52.90	**Shl**	**Shale** Green, black and maroon shale. Fault gauge at base of unit.
52.90	87.90	**Qtz**	**Quartzite** Medium-grained massive, light grey quartzite. Local sp, gal beginning 84.4m..
87.90	95.60	**GRshl**	**Grey-green Shale** Grey-green shale cut by calcite stringers and veinlets with associated local sphalerite.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
80.70	81.75	644777		0.05	0.00	0.50	0.00
81.75	83.00	644778		3.47	0.01	9.00	0.00
83.00	84.40	644779		0.03	0.00	0.50	0.00
84.40	85.90	644780		1.89	7.37	4.00	0.00
85.90	86.80	644781		0.00	0.01	0.50	0.00
86.80	87.60	644782		0.01	0.02	0.50	0.00
87.60	87.90	644783		47.30	4.48	113.00	0.01
87.90	89.00	644784		0.01	0.00	0.50	0.00
89.00	90.00	644785		0.14	0.01	0.50	0.00
90.00	91.00	644786		0.00	0.00	0.50	0.00
91.00	91.80	644787		0.00	0.00	0.50	0.00
91.80	92.60	644788		0.09	0.00	0.50	0.00
92.60	93.10	644789		5.17	4.68	12.00	0.01
93.10	93.80	644790		0.00	0.68	0.50	0.00
93.80	94.60	644792		0.01	8.87	1.00	0.00
94.60	95.60	644793		0.00	0.20	0.50	0.00

AN0104

Lithology

From	To	Code	Rock Name / Description
95.60		MNZN	Mineralized Breccia
	138.50		Brecciated, silicified, intensely carbonatized with altered quartzite clasts. Content of dark brown sphalerite varies from disseminated to massive and appears to both be cut by later calcite veining and to be replacing the calcite. Overall sphalerite content approximately 20%.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
95.60	96.60	644794		0.00	0.16	0.50	0.00
96.60	97.30	644795		0.00	18.60	0.50	0.00
97.30	97.80	644796		0.00	0.74	0.50	0.00
97.80	98.60	644797		0.00	14.00	0.50	0.00
98.60	99.40	644798		0.00	16.55	1.00	0.00
99.40	100.20	644799		0.00	0.56	0.50	0.00
100.20	101.00	644800		0.00	0.03	0.50	0.00
101.00	102.00	644801		0.07	17.65	1.00	0.00
102.00	103.40	644802		0.00	11.00	0.50	0.00
103.40	103.90	644803		0.00	0.13	0.50	0.00
103.90	105.10	644804		2.66	7.16	7.00	0.00
105.10	106.30	644806		0.00	0.03	0.50	0.00
106.30	107.70	644807		0.00	0.02	0.50	0.00
107.70	108.90	644808		0.00	2.62	0.50	0.00
108.90	110.10	644809		0.00	0.12	0.50	0.00
110.10	111.00	644810		0.00	10.15	0.50	0.00
111.00	112.00	644811		0.00	9.27	0.50	0.00
112.00	112.90	644812		0.00	9.88	0.50	0.00
112.90	113.90	644813		0.00	16.20	1.00	0.00
113.90	115.00	644814		0.01	2.48	0.50	0.00
115.00	116.00	644815		0.00	0.84	0.50	0.00
116.00	116.90	644816		0.00	28.60	1.00	0.01
116.90	117.80	644817		0.00	34.30	2.00	0.01
117.80	118.50	644818		0.00	0.24	0.50	0.00
118.50	119.50	644819		0.00	2.73	0.50	0.00
119.50	120.50	644821		0.00	11.55	1.00	0.01
120.50	121.50	644822		0.00	5.84	1.00	0.01
121.50	122.50	644823		0.00	13.05	0.50	0.01
122.50	123.50	644824		0.00	20.60	1.00	0.01
123.50	124.65	644825		0.00	8.55	1.00	0.01
124.65	125.55	644826		0.00	0.56	0.50	0.00
125.55	126.40	644828		0.00	31.90	3.00	0.02
126.40	127.70	644829		0.00	0.56	0.50	0.00
127.70	129.00	644830		0.00	3.58	0.50	0.00
129.00	130.40	644831		0.00	7.51	0.50	0.00
130.40	131.00	644832		0.00	3.79	0.50	0.00
131.00	132.00	644833		0.04	1.10	0.50	0.00
132.00	133.00	644834		0.00	24.80	4.00	0.01
133.00	133.75	644835		0.01	13.55	2.00	0.00
133.75	134.70	644836		0.00	32.00	6.00	0.01
134.70	135.50	644837		1.39	40.10	11.00	0.08
135.50	136.00	644838		2.69	1.85	8.00	0.00
136.00	136.50	644839		0.01	18.15	3.00	0.01
136.50	137.60	644840		0.51	9.67	2.00	0.01
137.60	138.50	644841		0.12	6.56	1.00	0.00

AN0104

Lithology

From	To	Code	Rock Name / Description
138.50	166.60	**Qtz**	**Quartzite** Quartzite with calcite veins.
166.60	171.60	**Bshl**	**Dark grey to Black Shale** Dark grey to black shale with local fault gauge.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
138.50	139.50	644842		0.00	0.13	0.50	0.00
139.50	140.10	644843		0.00	0.14	0.50	0.00

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Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0105**	**Length:**	195.1	**Units:**	meters
Started	7/26/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	7/28/01	**Claim #:**		**Logged By:**	C. Barr
Drill Type:	JKS Boyles 2	**Case Pld:**	Yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	5.2	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641604	**Easting:**	990.00	**Easting:**	641604	**Latitude:**	
Northing:	6978472	**Northing:**	577.00	**Northing:**	6978472	**Longitude:**	
Elevation:	1297	**Elevation:**	1297.00	**Elevation:**	1297		
Plot_Sys:	UTM Nad 83	**Grid Declin:**	-45.00	**UTM Declin:**			
NTS:	105K/16	**Mag Declin:**	29	**UTM Zone:**	8		

Collar Survey: No
Target: Gravity high on L1000E/500N
Geophysics: No
Remarks:

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-51.00	189.00	218.00	COLLAR	
41.16	-51.20	190.70	219.70	Reflex	
86.89	-51.30	189.90	218.90	Reflex	
132.62	-51.10	187.00	216.00	Reflex	
189.94	-51.50	187.60	216.60	Reflex	NULL

Geology

Lithology

From / To	Code	Rock Name / Description
0.00 / 5.20	OB	Overburden

Alteration

From / To	Code	Description

Mineralization

From / To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0105

Lithology

From	To	Code	Rock Name / Description
5.20		**Qtz**	**Quartzite**
73.00			Interbedded quartzite and fine-grained sandstone/siltstone.
73.00		**Mshl**	**Maroon Shale**
126.70			Well bedded fine-grained maroon shale interbedded with short intervals of green-grey shale..
126.70		**Bshl**	**Grey to Black Shale**
132.10			Dark grey to black coloured shale. Minor disseminated pyrite within the black shale.
132.10		**FLT**	**Possible fault**
138.70			Possible fault zone.
138.70		**Bshl**	**Grey to Black Shale**
143.20			Dark grey to black coloured shale. Minor disseminated pyrite within the black shale.
143.20		**FLT**	**Possible fault**
153.70			Possible fault zone.
153.70		**Bshl**	**Grey to Black Shale**
195.00			Dark grey to black coloured shale. Minor disseminated pyrite within the black shale.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

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Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0106**	**Length:**	159.7	**Units:**	meters
Started	7/29/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	7/31/01	**Claim #:**		**Logged By:**	C. Barr
Drill Type:	JKS Boyles 2	**Case Pld:**	No	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	26.8	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641393	**Easting:**	895.00	**Easting:**	641393	**Latitude:**	
Northing:	6978349	**Northing:**	350.00	**Northing:**	6978349	**Longitude:**	
Elevation:	1342	**Elevation:**	1342.00	**Elevation:**	1342		
Plot_Sys:	UTM Nad 83	**Grid Declin:**	-45.00	**UTM Declin:**			
NTS:	105K/16	**Mag Declin:**	29	**UTM Zone:**	8		

Collar Survey: No
Target: Andrew Breccia Zone 180m west of AN0104
Geophysics: No
Remarks: 22.9m of casing and casing shoe lost in hole.

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-50.00	189.00	218.00	COLLAR	
46.00	-52.20	188.80	217.80	Reflex	
91.40	-52.50	189.70	218.70	Reflex	
140.20	-51.60	189.20	218.20	Reflex	

Geology

Lithology

From / To	Code	Rock Name / Description
0.00 / 3.10	**OB**	**Overburden**
3.10 / 19.80	**Mshl**	**Maroon Shale** Well bedded at 35-55 deg to c.a. (ave 40 deg), thin 5-20cm think interbeds of grey-green shale.

Alteration

From / To	Code	Description

Mineralization

From / To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0106

Lithology

From	To	Code	Rock Name / Description
19.80		GRshl	**Grey to Grey-green Shale**
72.00			Locally brecciated with minor graphite, minor narrow coarse sandstone and quartzite, bedding at 40 deg to core axis
72.00		Qtz	**Quartzite**
85.80			Massive, minor c.g. sandstone, local breccia with minor graphite
85.80		FLT	**Fault Zone/Black Shale**
89.90			Clay fault gouge intervals up to 1m thick, 2-3% Py
89.90		MNZN	**Mineralized Breccia**
97.00			Intense calcite veining/flooding with local minor Sp-Gal-Py and quartzite clasts, blocky core, 85% recovery.
97.00		Qtz	**Quartzite**
106.00			As 72-85.8m, minor silty and shale beds <0.5m thick, bedding 40 deg to c.a., lower 2m contains moderate carb and 1-2% Py
106.00		GRshl	**Grey Shale**
131.10			Dark grey to green shale, minor beds of thin <1m limestone beds with shale partings defining bedding at 40 degrees to c.a., qtz-carb stringers common and decrease downhole
131.10		Lst	**Limestone**
159.70			Grey and m.g., locally silty, sandy, and microcrystalline, shale partings at 40 degrees to c.a., minor calcite veinlets and stringers.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

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Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0107**	**Length:**	176.8	**Units:**	meters
Started	8/1/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	8/1/04	**Claim #:**	NULL	**Logged By:**	C. Barr
Drill Type:	JKS Boyles 2	**Case Pld:**	NULL	**Contractor:**	NULL
Core Size:	NQ2	**Case Dep:**	NULL	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641704	**Easting:**	1184.00	**Easting:**	641704	**Latitude:**	0
Northing:	6978272	**Northing:**	465.00	**Northing:**	6978272	**Longitude:**	0
Elevation:	1282	**Elevation:**	1282.00	**Elevation:**	1282		
Plot_Sys:	UTM Nad 83	**Grid Declin:**	-45.00	**UTM Declin:**	0		
NTS:	105K/16	**Mag Declin:**	29	**UTM Zone:**	8		

Collar Survey: No
Target: Andrew Breccia Zone 150m east of AN0104
Geophysics: No
Remarks: NULL

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-52.00	171.00	200.00	Reflex	
49.70	-51.70	169.30	198.30	Reflex	
92.40	-52.10	167.40	196.40	Reflex	
140.00	-51.30	168.40	197.40	Reflex	
176.80	-50.00	172.30	201.30	Reflex	

Geology

Lithology

From / To	Code	Rock Name / Description
0.00 / 6.10	OB	Overburden

Alteration

From / To	Code / Description

Mineralization

From / To	Code / Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0107

Lithology

From	To	Code	Rock Name / Description
6.10		GRshl	**Grey-Green Shale**
17.70			F.g., minor silty beds, bedding 30-45 degrees to c.a.
17.70		Mshl	**Maroon Shale**
33.00			F.g., maroon coloured shale with bedding at 40-45 degrees to c.a.
33.00		GRshl	**Grey Shale**
58.70			Soft, f.g., in general grey coloured but gradational change in colour to narrow green and maroon beds, minor quartzite beds <1m thick.
58.70		Lst	**Limestone**
62.60			Grey, microcrystalline, dark shale partings give unit a stylolitic appearance at 45 degrees to c.a., 5-10cm clay fault gouge at 62.1m
62.60		GRshl	**Grey Shale**
68.60			Locally greenish, gradational change in colours
68.60		FLT	**Fault Breccia**
72.20			Fault breccia
72.20		GRshl	**Grey Shale**
111.60			Locally greenish, gradational change in colours, local Gal within 75.3-76.2m, lost 1m core from 74.3-75.3m, locally 50% Gal concentrated from 80.8-81.2m in badly broken core.
111.60		Qtz	**Quartzite**
143.00			Light grey, local sandstone and minor thin 1-2m beds of very coarse quartzite to quartz pebble conglomerate, unit is massive in general but thin shale partings define bedding at 45-50 degrees to c.a., unit cut by fine dark quartz stringers and minor white calcite veinlets/stringers 1-2% Sp / 20cm in qtz-carb from 123.8-124.3m
143.00		GRshl	**Grey Shale**
176.80			Dominated by greyish colour but local gradational changes to green and black, thinly bedded at 45-50 degrees to c.a., single 1cm of massive sphalerite at 167.7m

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description
84.40	85.90	NULL	NULL

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

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Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0108**	**Length:**	146.3	**Units:**	meters
Started	8/4/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	8/6/01	**Claim #:**		**Logged By:**	C. Barr
Drill Type:	Boyles JKS 2	**Case Pld:**	Yes	**Contractor:**	Advanced Drilling
Core Size:	BQ2	**Case Dep:**	4.6m	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	642337	**Easting:**	1802.00	**Easting:**	642337	**Latitude:**	
Northing:	6978040	**Northing:**	700.00	**Northing:**	6978040	**Longitude:**	
Elevation:	1195	**Elevation:**	1195.00	**Elevation:**	1195		
Plot_Sys:	UTM NAD 83	**Grid Declin:**	45.00	**UTM Declin:**	0		
NTS:	105K/16	**Mag Declin:**	29	**UTM Zone:**	8		

Collar Survey: No
Target: Widespread Zn and Pb mineralization
Geophysics: No
Remarks: Only minor sphalerite mineralization encountered.

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-50.00	176.00	205.00		
45.70	-53.40	174.50	203.50	Reflex	
93.00	-54.40	172.20	201.20	Reflex	
144.80	-54.50	170.60	199.60	Reflex	

Geology

Lithology

From	To	Code	Rock Name / Description
0.00	4.60	OB	Overburden

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0108

Lithology

From	To	Code	Rock Name / Description
	4.60	GRshl	Grey Shale
4.60	18.50		Primarily dark grey shale with gradational changes to black, much is brecciated with subrounded mixed clasts of quartzite, siltstone, and shale up to several centimeters across, cut by minor calcite stringers/veinlets, bottom 1.5m contains thin 0.5cm bedded pyrite which is locally broken and boudinaged.
18.50		FLT	Fault Breccia
	42.70		Brecciated dark grey to black shale with rounded clasts of quartzite, siltstone, shale and limestone, lower 1-1.5m is partially washed out clay fault gouge.
42.70		Gshl	Green-Grey Shale
	59.90		Top few meters is clay gouge and bleached, locally pale green to maroon in colour, bedding as defined by narrow siltstone and fine quartzite ranges from 30-50 degrees to c.a.
59.90		Lst	Limestone Breccia
	92.70		Grey brecciated limestone with intense carbonatization (calcite) and rare isolated sphalerite clots/stringers at 63.9m and 72.6m with rare small blebs in between. Thin mm to dc scale dark grey to black shale and siltstone beds intermixed with the commonly massive f.g. to microcrystalline limestone, bedding varies from 40-80 degrees to c.a.
92.70		GRshl	Grey Shale
	146.30		Well laminated to thinly bedded alternating grey to black shale at 40-85 degrees to c.a.(ave 80 deg), local thin dc scale limestone beds, top of unit is highly calcareous decreasing downhole, calcite stringers and veinlets are generally restricted to more brittle limestone beds, small <1cm minor pyrite clots/nodules, disseminations and thin mm scale beds of pyrite common in black shale, isolated sphalerite bleb/clot associated with quartz stringer at 141.6m.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

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Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0109**	**Length:**	239.3	**Units:**	meters
Started	8/7/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	8/9/01	**Claim #:**		**Logged By:**	C. Barr
Drill Type:	Boyles JKS 2	**Case Pld:**	Yes	**Contractor:**	Advanced Drilling
Core Size:	BQ2	**Case Dep:**	10.4	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641569	**Easting:**	1167.00	**Easting:**	641569	**Latitude:**	
Northing:	6978138	**Northing:**	276.00	**Northing:**	6978138	**Longitude:**	
Elevation:	1250	**Elevation:**	1250.00	**Elevation:**	1250		
Plot_Sys:	UTM NAD 83	**Grid Declin:**	-45.00	**UTM Declin:**			
NTS:	105K/16	**Mag Declin:**	29	**UTM Zone:**	8		

Collar Survey: No
Target: 100m vertically below AN0104
Geophysics: No
Remarks: No mineralization intersected. Faulting occurred throughout most of the hole from top to bottom.

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-52.00	314.00	343.00	Reflex	
47.00	-50.80	315.40	344.40	Reflex	
93.00	-50.50	313.50	342.50	Reflex	
138.70	-50.60	313.40	342.40	Reflex	
184.70	-50.10	315.50	344.50	Reflex	
232.60	-48.00	319.00	348.00	Reflex	

Geology

Lithology

From / To	Code	Rock Name / Description
0.00 / 6.10	OB	Overburden

Alteration

From / To	Code	Description

Mineralization

From / To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0109

Lithology

From	To	Code	Rock Name / Description
	6.10	FLT	**Fault Zone**
6.10	28.80		Intensely faulted and altered limestone with quartz-calcite stringers/veinlets/flooding. Poor core recovery, about 70% overall but most is lost closer to the top where clay gouge material is washed out, core is commonly fractured and broken parallel to subparallel to c.a.
28.80	41.40	Lst	**Limestone** *Predominantly f.g. grey limestone commonly with* grains of sand, silt and clay. Some narrow thin beds are either calcareous clastics or sandy limestones which grade into thicker beds of limestone, bedding averages 20 degrees to c.a.
41.40	52.40	GRshl	**Grey Shale** Cherty grey shale interbedded with thin siltstone units, bedding 15-20 degrees to c.a., black shale bed from 45-48.7m is highly deformed with bedding varying from 30 degrees to parallel to c.a., lower contact is black clay-rich fault gouge mixed with calcareous quartzite.
52.40	56.10	FLT	**Fault Zone** Intensely sheared, 70% quartz-carbonate with black clay-rich fault gouge infill, weakly graphitic, lower contact sharp to c.a. at 45 degrees
56.10	190.10	Qtz	**Quartzite** Calcareous quartzite and sandstone with well laminated/thinly bedded light grey chert and shale, bedding varies 35-40 degrees to c.a.near the top but gradually changes to 45 degrees by 190.5m, 60.1-67.2m is faulted black shale unit, most of unit is faulted throughout to varying degrees although thin shale beds exhibit it mostly and commonly show bedding to be parallel/subparallel to c.a., thin <0.5m limestone units are minor and often sandy, highest concentration of faulting occurs between 60.1-136m, bedding 35 degrees to c.a. at 169m, rare speck pyrite in quartzite, isolated elongated pyrite bleb at 112.5m, trace py in black shale fault zones
190.10	206.80	GRshl	**Grey Shale** Grey shale and interbedded siltstone, significant change in bedding from above quartzite, bedding ranges from 0-15 degrees to c.a. which is typical of the shale units

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0109

Lithology

From	Code	Rock Name
To	Description	
206.80	FLT	Fault Zone
218.10	oor recovery of about 70% of highly deformed (broken, sheared, and folded) dark shale beds with black clay gouge material, locally graphitic, mixed at bottom with faulted calcareous quartzite.	
218.10	Qtz	Quartzite
229.60	Calcareous quartzite cut by weak to moderate quartz-calcite stringers and veinlets, local silty limestone or calcareous siltstone (take your pick) with thin black shale partings defining bedding at 25 degrees to c.a., unit changes to dark grey sandstone by bottom of unit	
229.60	FLT	Fault Zone
239.30	Faulted shale with siltstone beds, bedding parallel to subparallel to c.a. but also up to 25-30 degrees and wavy, minor quartz-calcite stringers at low angle to bedding, bottom meter or so appears to be more like the grey sandstone again with minor cross-cutting quartz-calcite stringers at various angles to c.a.	

Alteration

From	Code
To	Description

Mineralization

From	Code
To	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

noranda

NORANDA INC.

Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0110**	**Length:**	98.5	**Units:**	meters
Started	8/10/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	8/11/01	**Claim #:**		**Logged By:**	C. Barr
Drill Type:	Boyles JKS 2	**Case Pld:**	Yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	12.8	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	639695	**Easting:**		**Easting:**	639652	**Latitude:**	
Northing:	6983921	**Northing:**		**Northing:**	6983927	**Longitude:**	
Elevation:	1005	**Elevation:**	1005.00	**Elevation:**	1025		
Plot_Sys:	UTM NAD 83	**Grid Declin:**		**UTM Declin:**			
NTS:	105K16	**Mag Declin:**	29	**UTM Zone:**	8		

Collar Survey: No
Target: Pinnacle Showing at -75m vertical
Geophysics: No
Remarks: Massive sulphide pods at surface do not appear to extend to depth.

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-50.00	129.00	158.00		
44.20	-48.00	122.20	151.20		
92.40	-48.10	125.20	154.20		

Geology

Lithology

From	To	Code	Rock Name / Description
0.00	18.90	OB	**Overburden** Casing driven down to 18.9m and appears to be just barely in the outcrop.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

Lithology

From	To	Code	Rock Name / Description
18.90		FLT	**Fault Zone**
29.40			Faulted f.g. grey quartzite, poor recovery of about 60% rubble, what's left of the host is silicified with minor calcite stringers, the silicification occurs as crosscutting grey quartz along fractures and locally as matrix fill but also as a milky white quartz veining and flooding, the latter is probably related to the faulting, veinlets are predominantly 25-30 degrees to c.a.
29.40		GRshl	**Grey Shale**
41.00			Top of unit is broken and silicified and a bleached pale green, recovery is about 70% down to 36.9m, bedding ranges from 30-45 degrees to c.a., core becoming green again towards lower contact.
41.00		Qtz	**Quartzite**
48.40			Unit is grey to grey-green, f.g., top 1.5m is silicified and carbonatized (calcite), quartzite commonly grades into narrow sandstone or siltstone beds, bedding 35-40 degrees to c.a., fine dark grey silica along fractures as usual, 46.2-47.5 is highly fractured approximately 25 degrees to c.a. with intense qtz-carb.
48.40		MNZN	**Mineralized Zone**
62.10			Zone is altered quartzite with intense silica flooding, veinlets, and stringers, locally has crackle breccia texture with fine dark grey silica surrounding grey quartzite fragments over short intervals (best example is from 56.8-58.8m), overall less than 1% fine pyrite cubes and disseminations (seems to be ubiquitous throughout unit) with local minor concentrations of sphalerite and galena at 48.8m and 53.9-60.2 and 55m, local pale yellow-green concentrations of sericite (?), 59.4-62.1 is light grey very f.g. quartzite that is intensely silicified with few coarse quartz veins +/- calcite and pervasive moderate fine sericite and pyrite
62.10		Qtz	**Quartzite**
98.50			Light grey, local fine dark grey silicification, massive unless mixed with thin silty beds (20-40 deg to c.a.), dark grey silicification intensifies from 68.1-76.5m and contains minor pyrite and galena disseminations and smears along fractures, the hole also started tp make tremendous water somewhere around 70- 75m, locally the quartzite is weakly calcareous with trace pyrite throughout lower section of unit, also local minor pervasive white feldspar (?) crystals up to 1-2mm stand out in more sandstone-rich beds.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

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Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0111**	**Length:**	126.5	**Units:**	meters
Started	8/12/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	8/14/01	**Claim #:**		**Logged By:**	C. Barr
Drill Type:	Boyles JKS 2	**Case Pld:**	No	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	18m	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641591	**Easting:**	1080.00	**Easting:**	641591	**Latitude:**	
Northing:	6978293	**Northing:**	414.00	**Northing:**	6978293	**Longitude:**	
Elevation:	1302	**Elevation:**	1302.00	**Elevation:**	1302		
Plot_Sys:	UTM NAD 83	**Grid Declin:**	-45.00	**UTM Declin:**			
NTS:	105K16	**Mag Declin:**	29	**UTM Zone:**	8		

Collar Survey: No

Target: Stepout between ddh 4 and 7 at the Andrew Kill Zone

Geophysics: No

Remarks: Mineralized breccia with intense calcite alteration intersected over 25m with sphalerite, galena, and trace chalcopyrite.
Drill left on site.

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-50.00	126.00	155.00		
120.40	-46.40	121.20	150.20		

Geology

Lithology

From / To	Code	Rock Name / Description
0.00 / 12.80	**OB**	**Overburden**
12.80 / 24.70	**Mshl**	**Maroon Shale** Maroon coloured, soft, poor recovery to 16.8m (30%), bedding 40 degrees to c.a.

Alteration

From / To	Code	Description

Mineralization

From / To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0111

Lithology

From	To	Code	Rock Name / Description
	24.70	Gshl	**Grey to Green Shale**
24.70	47.50		locally dark grey to black, bedding ranges from 60 degrees near top of unit to 85-90 degrees to c.a. near bottom, minor calcite stringers, 43.6-46.1m is 5cm thick deep mauve coloured shale interbedded with 0.2-1cm green shale beds, bedding now 75-90 degrees to c.a.
	47.50	Qtz	**Quartzite**
47.50	54.80		F.g., grey, moderate dark grey quartz along fractures - typical silicification of the quartzite, increase in calcite stringers compared to above shale, few thin 5-20cm limestone beds at 80 degrees to c.a., minor grey-green shale beds.
	54.80	GRshl	**Grey Shale**
54.80	58.70		Minor silty lenses, blocky core with minor fault gouge at 56.4-58.7m, local calcite veining
	58.70	Mshi	**Maroon Shale**
58.70	70.40		Maroon shale changing to deep mauve colour near upper and lower contacts and is interbedded with thin 1cm average green shale, maroon shale generally >10cm thick beds at 40-45 degrees to core axis, 30cm light grey microcrystalline limestone near lower contact.
	70.40	GRshl	**Grey Shale**
70.40	72.80		Grey shale with numerous thin 2-20cm limestone beds accounting for approximately 30% of the unit, bedding averages 45 degrees to c.a but up to 65 degrees, limestone is cut by weak to moderate calcite stringers.
	72.80	Qtz	**Quartzite**
72.80	87.10		Light to moderate grey, cut by calcite stringers/veinlets that intensifies downhole, moderate dark grey quartz alteration along fractures, local blocky core with good recovery of 90-100%, minor thin dark grey shale beds with fault gouge at contacts.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
86.60	87.10	644289		0.01	0.00	2.00	0.00

AN0111

Lithology

From	To	Code	Rock Name / Description
	87.10	MNZN	**Mineralized Breccia**
112.00			Brecciated quartzite with intense calcite flooding/veining/stringers, top of unit is intensely silicified with white quartz, approximately 15% sphalerite ranging from disseminated to massive, galena is relatively spotty and occurs as blebs, clots and veins up to 10cm thick in lower half of unit where it accounts for 5-7% in the lower 7m, chalcopyrite is minor and occurs along fractures near lower contact as well.
	112.00	Cbx	**Carbonatized Breccia**
124.50			Breccia consists of quartzite, shale, and limestone clasts floating in a calcite matrix, calcite alteration is intense but decreases downhole and grades into a carbonatized quartzite, minor amounts of galena occur as clots along fractures with calcite veinlets, 1% sphalerite with 2-3% galena over 10cm at 121.5m
	124.50	FLT	**Fault Zone**
126.50			Sheared and blocky green to green-grey shale, moderate calcite stringers, 70-80% recovery, fault gouge 124.6-124.8m

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description
	89.00	NULL	
107.50		NULL	

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
87.10	87.60	644290		0.00	4.60	3.00	0.00
87.60	89.00	644291		0.00	0.09	2.00	0.00
89.00	89.80	644292		0.15	13.90	4.00	0.00
89.80	90.70	644293		0.03	0.08	3.00	0.00
90.70	91.80	644294		0.40	11.80	4.00	0.01
91.80	92.60	644295		0.08	23.20	4.00	0.01
92.60	93.40	644296		0.00	36.10	8.00	0.02
93.40	93.80	644297		0.01	5.82	3.00	0.00
93.80	94.40	644298		0.04	23.40	5.00	0.01
94.40	95.80	644299		0.00	2.28	3.00	0.00
95.80	96.75	644024		0.00	0.23	1.00	0.00
96.75	98.00	644025		0.01	0.16	1.00	0.00
98.00	99.00	644026		0.00	8.24	2.00	0.00
99.00	100.00	644027		0.18	20.90	4.00	0.01
100.00	101.00	644028		0.02	15.75	3.00	0.01
101.00	102.10	644029		0.00	24.90	5.00	0.01
102.10	103.10	644030		0.00	0.21	1.00	0.00
103.10	103.80	644031		0.00	27.30	4.00	0.01
103.80	104.60	644033		0.00	45.10	6.00	0.02
104.60	105.70	644034		0.01	22.50	3.00	0.01
105.70	106.65	644035		16.45	4.07	53.00	0.03
106.65	107.50	644036		37.10	13.70	112.00	0.16
107.50	109.10	644037		3.72	0.14	10.00	0.01
109.10	110.00	644038		0.15	0.05	2.00	0.00
110.00	111.00	644039		0.01	2.73	2.00	0.01
111.00	112.00	644040		17.35	0.26	36.00	0.00
112.00	113.00	644041		0.72	0.03	3.00	0.00
113.00	114.50	644043		0.09	0.03	2.00	0.00
114.50	116.00	644044		0.22	0.16	3.00	0.00
116.00	117.00	644045		0.93	0.00	3.00	0.00

noranda

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Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0112**	**Length:**	215.5	**Units:**	meters
Started	9/21/00	**Proj. #:**	2501	**Project:**	Andrew
Finished:	9/26/01	**Claim #:**		**Logged By:**	D. King
Drill Type:		**Case Pld:**	Yes	**Contractor:**	Advanced
Core Size:	NQ2	**Case Dep:**	4.6	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641591	**Easting:**		**Easting:**	641591	**Latitude:**	
Northing:	6978293	**Northing:**		**Northing:**	6978293	**Longitude:**	
Elevation:	1302	**Elevation:**		**Elevation:**	1302		
Plot_Sys:		**Grid Declin:**	-45.00	**UTM Declin:**			
NTS:		**Mag Declin:**	29	**UTM Zone:**			

Collar Survey:
Target: 75m down-dip below AN01-11
Geophysics:
Remarks:

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-80.00	126.00	155.00	COLLAR	
41.75	-79.50	126.00	155.00	Reflex	
87.20	-79.60	127.00	156.00	Reflex	
133.20	-78.90	125.50	154.50	Reflex	
176.80	-78.30	130.00	159.00	Reflex	

Geology

Lithology

From / To	Code	Rock Name / Description
0.00	OB	Overburden
7.70		Overburden

Alteration

From / To	Code	Description

Mineralization

From / To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0112

Lithology

From	To	Code	Rock Name / Description
	7.70	Mshl	**Maroon Shale**
7.70	26.85		Soft, maroon shale with thin, <1 to 20cm thich, green shale interbeds. Bedding/weak foliation is commonly 40-43 degrees to c.a. Green shale interbeds commonly have irregular, wispy contacts with the maroon shale beds. Rare sandy interbeds up to 20cm thick. 20.0-20.3m Faulted, broken core within sandstone unit. Lower contact is gradational from maroon, to brown, to green shale.
26.85		Gshl	**Green Shale**
26.85	51.60		Dominated by grey to greenish tinted shale. Local deep purple to black coloured intervals are gradational, up to approx. 1m thick. Bedding is commonly 40-43 degrees to ca., but locally shallower, 30 degrees to c.a. Contains several thin, sandy interbeds up to 30cm thick. These have sharp, commonly broken contacts, and are often fractured with numerous calcite-quartz veins. 28.9-28.95 Fault guage 22.0-29.35m Sandstone 49.1-50.2m Sandstone 51.1-51.3m Sandstone
51.60		Bshl	**Black Shale**
51.60	62.85		Black to dark grey shale, with local thin sandstone interbeds. Massive, with unclear bedding. Lower contact is broken core - Faulted?
62.85		Qtz	**Quartzite**
62.85	66.15		Quartzite dominated interval. Locally well laminated with thin shaley interbeds. Brecciated with calcite matrix within last 10cm of unit.
66.15		GRshl	**Grey Shale**
66.15	68.45		Interbedded dark mauve to grey shale with <1cm, well laminated grey-green shale and local quartzite interbeds. Quartzite as above - siliceous, fine-grained dark grey coloured. Lower contact is sheared and broken at approx. 20 degrees to ca., opposite the bedding in the underlying shale. Bedding is 45-50 degrees to c.a., and is well developed between grey and mauve coloured shale.
68.45		Mshl	**Maroon Shale**
68.45	74.40		Dominated by maroon shale with 20%, <1-20 cm green shale interbeds. Green shales are well laminated on a mm-scale. Bedding is average 45 degrees to c.a, but low angle and folded from 73-74m.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

Lithology

From	To	Code	Description
74.40	83.00	Qtz	Quartzite Quartzite dominated interval with local 20-30 cm dark grey shale interbeds. Quartzite is medium grained, pale to dark grey coloured. Often highly fractured to brecciated with thin quartz-calcite veinlets. 75.3m 5cm fault gouge.
83.00	86.30	Bshl	Black to Grey Shale Black to dark grey coloured shale. Contacts are sharp but broken core.
86.30	90.00	Qtz	Quartzite Medium- to locally course-grained, light to dark grey coloured quartzite. Most commonly massively bedded with local decimeter scale intervals of siltstone. These intervals are finely laminated on a mm to cm-scale, siltstone and fine-grained sandstone. Where visible bedding is 35 degrees or less. Carbonate veinlets are commona at various angles to c.a., <-1 to 2cm thick.
90.00	92.00	FLT	Possible fault Highly fractured core. Possible fault zone.
92.00	95.00	Qtz	Quartzite As 86.3 - 90.0
95.00	95.90	FLT	Possible fault Highly fractured core. Possible fault zone.
95.90	132.90	Qtz	Quartzite As 86.3 - 90.0 121.55m carbonate-galena vein, 2cm. 105.75-106.85m Course-grained felsic intrusive? Sharp UC and LC at 55 and 20 degrees to c.a.
132.90	137.30	GRshl	Grey Shale Grey shale and fine-grained sandstone. Sharp contact at 10 degrees to c.a. into interbedded fine-grained quartzite and well laminated dark grey shale. Bedding averages 10-15 degrees to c.a. Locally pale brown tint to fine-grained sandstone beds.
137.30	139.40	Qtz	Quartzite Medium-grained, grey coloured quartzite as above units. UC is brecciated, irregular contact.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
133.90	135.00	644467		0.00	0.00	1.00	0.00
135.00	136.00	644468		0.00	0.00	0.50	0.00

AN0112

Lithology

From	To	Code	Rock Name / Description
139.40		GRshl	**Grey Shale**
146.70			Grey coloured to locally black shale. Bedding is only locally visible, 25-30 degrees to c.a. Contacts with black shale are irregular but sharp. Carbonate veinlets are common throughout ussually 1-2mm thick. 140.85-141.75m Carbonatized breccia with angular shlae fragments up to approx. 1cm in size. Contains local galena (2-3%) and trace sphalerite.
146.70		Cbx	**Carbonatized Breccia**
151.15			Intensely brecciated and carbonaltized grey to black shale breccia. Angulr shale fragments within 80-85% calcite. From 150-151.15m dominated by dark black shale with calcite veinlets. Core is highly fractured.
151.15		MNZN	**Mineralized Breccia**
164.20			Mineralized breccia. Grey to dark grey coloured, medium grained, brecciated quartzite. Angular quartzite fragments brecciated by calcite +/- silica and sphalerite veins. Calcite veins range from <1-20cm thick, commonly at 40 degrees to c.a. in opposite, high angle to bedding. Best mineralization is from 161.05-163.15m, approx. 40% sphaletite.
164.20		Bshl	**Black Shale**
165.90			Sharp contact into dark black, well laminated shale. Bedding is approx. 50 degrees to c.a. Weakly brecciated with 5% calcite veinlets. Lower contact is sharp but irregular with quartzite.
165.90		MNZN	**Mineralized Breccia**
176.65			Brecciated and mineralized quartzite as above. Rare intervals ov black shale up to approx. 50cm thick, but ussually cm to mm scale. Bedding at 30-40 degrees to c.a. within shale. Calcite veins are up to 20cm thick. Intense breccia near lower conact. 168.1-168.25m fault gouge 173.2-175.1m dominated by brecciated shale.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description
151.15	164.20		
164.20	167.00	NULL	
167.00	176.65	NULL	

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
150.05	151.15	644469		0.00	0.29	0.50	0.00
151.15	152.00	644470		0.00	15.35	0.50	0.00
152.00	153.00	644471		0.00	5.60	0.50	0.00
153.00	154.00	644472		0.00	1.80	1.00	0.00
154.00	155.00	644473		0.00	2.71	0.50	0.00
155.00	156.00	644474		0.00	2.55	1.00	0.00
156.00	157.00	644475		0.01	0.24	0.50	0.00
157.00	158.00	644477		0.00	1.56	1.00	0.00
158.00	159.00	644478		0.00	2.82	0.50	0.00
159.00	160.00	644479		0.00	7.46	0.50	0.00
160.00	161.05	644480		0.00	1.43	0.50	0.00
161.05	162.00	644481		0.00	1.30	1.00	0.00
162.00	163.15	644483		0.00	18.35	2.00	0.00
163.15	164.20	644484		0.00	5.54	1.00	0.00
164.20	165.00	644485		0.00	0.12	0.50	0.00
165.00	165.90	644486		0.00	0.42	1.00	0.00
165.90	167.00	644487		0.00	0.05	0.50	0.00
167.00	168.00	644488		0.00	9.68	0.50	0.00
168.00	169.00	644489		0.00	4.27	0.50	0.00
169.00	170.00	644490		0.00	6.71	0.50	0.00
170.00	171.00	644491		0.00	0.57	0.50	0.00
171.00	172.00	644492		0.00	2.21	1.00	0.00
172.00	173.20	644493		0.04	11.55	1.00	0.00
173.20	174.00	644494		0.00	1.43	0.50	0.00
174.00	175.00	644495		0.00	1.37	1.00	0.00
175.00	175.80	644496		0.09	1.63	0.50	0.00
175.80	176.65	644497		0.00	9.07	1.00	0.00

AN0112

Lithology

From	To	Code	Rock Name / Description
176.65		Cbx	**Quartzite Breccia**
180.15			Locally well laminated to highly brecciated quartzite. Unmineralized except for 1cm sphalerite, galena stringer at 177.8m. Calcite veining and brecciation increases towards the underlying mineralized breccia. Bedding is well developed on a cm scale near the beginning of the unit at 36 degrees to c.a.
180.15		MNZN	**Mineralized Breccia**
181.15			Mineralized breccia. Intensely fractured core, almost completely replaced by approx. 50% sphalerite and 40% calcite with 10% fragments.
181.15		Cbx	**Quartzite Breccia**
187.50			Intensely carbonatized breccia. Dominated by quartzite with local shaley fragments. Lower contact is indistinct with relatively unbrecciated quartzite. Unit is unmineralized.
187.50		Qtz	**Quartzite**
215.50			Massive, medium-grained, grey coloured quartzite. Local thin shale intervals, 20-30cm thick. These have sharp contacts with quartzite and are well laminated internally at 35-40 degrees to c.a. Quartzite is weakly fractured with 1cm calcite veins at various angles to c.a.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description
176.65		NULL	
180.15		NULL	
180.15		NULL	
181.15		NULL	

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
176.65	177.70	644498		0.04	0.06	1.00	0.00
177.70	179.00	644499		0.42	0.39	4.00	0.00
179.00	180.15	644500		0.09	0.22	1.00	0.00
180.15	181.15	644551		0.64	27.40	5.00	0.03
181.15	182.00	644552		0.00	0.05	1.00	0.00
182.00	183.00	644553		0.00	0.03	1.00	0.00
183.00	184.00	644554		0.00	0.00	1.00	0.00

noranda

NORANDA INC.

Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0113**	**Length:**	308.76	**Units:**	meters
Started	9/27/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	10/3/01	**Claim #:**		**Logged By:**	D. King
Drill Type:		**Case Pld:**	Yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	5.9	**Core Location:**	Andrew camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641547	**Easting:**	1019.00	**Easting:**	641547	**Latitude:**	
Northing:	6978404	**Northing:**	500.00	**Northing:**	6978404	**Longitude:**	
Elevation:	1310	**Elevation:**	1310.00	**Elevation:**	1310		
Plot_Sys:		**Grid Declin:**	-45.00	**UTM Declin:**			
NTS:		**Mag Declin:**	29	**UTM Zone:**			

Collar Survey: No
Target: 100m down-dip of AN01-04
Geophysics: No
Remarks:

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-55.00			COLLAR	
39.60	-52.30	156.00	185.00	Reflex	
85.35	-50.30	155.60	184.60	Reflex	
131.05	-48.80	156.40	185.40	Reflex	
178.90	-47.10	160.70	189.70	Reflex	
223.70	-45.00	160.70	189.70	Reflex	
301.75	-41.80	159.40	188.40	Reflex	

Geology

Lithology

From	To	Code	Rock Name / Description
0.00	5.90	**OB**	**Overburden** Overburden

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0113

Lithology

From	To	Code	Rock Name / Description
	5.90	GRshl	Grey Shale
	31.30		Dominated by grey shale to siltstone and fine-grained quartzite. Locally well bedded at approx. 60 degrees to c.a., on a cm scale. Several decimeter scale maroon shale intervals above approx. 16m. These are welll bedded with cm grey shale units. Core is intensely fractured above 17m, increasing in competancy downhole with local broken intervals from 17-26m. Unit is moderately silicified.
31.30		Mshl	Maroon Shale
	79.50		Unit is dominated by approx. 90% maroon shale - soft, very fine-grained maroon to brown coloured. Interbedded with <1cm to 2m intervals of grey to green siltstone to shale. Folding is ovbious in bedding. Bedding is commonly 40-45 degrees to c.a. but ranges from 0-80 degrees. Core is locally intensely fractured and moderately fractured throughout. 60.2-60.65m Brecciated black graphitic shale - Fault zone? 68.4-70.1m Core is highly fractured locally graphitic. Fault at 68.4-68.6m 55.0-56.4m Fine-grained siltstone - grey coloured. 66.9-68.75m Grey to black shale and siltstone. 73.45-74.4m Fine-grained, siliceous quartzite layer - Brecciated 74.8-75.9m Brecciated sandstone as above. Lower conatact at 60 degrees to c.a.
79.50		GRshl	Grey Shale
	83.50		Dominated by grey to dark grey shale. Bedding on a cm to mm scale. Unit is locally intensely brecciated and broken - probable fault gouge. Becomes darker grey to black towards end of unit. 5% disseminated pyrite fro 82.8-83.2m. Lower conact is sharp with maroon shale.
83.50		FLT	Fault
	84.00		Fualt gouge - limonite staining.
84.00		GRshl	Grey Shale
	87.35		Grey Shale as described above.
87.35		FLT	Fault
	87.75		Fault gouge - brecciated and silicified.
87.75		GRshl	Grey Shale
	89.70		Grey Shale as described above.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0113

Lithology

From	To	Code	Rock Name / Description
89.70		**Mshl**	**Maroon Shale**
102.20			Maroon shale dominated interval with cm to decimeter scale intervals of well laminated grey shale to siltstone. Bedding is commonly 55 degrees to c.a. but some folding is evident.
102.20		**GRshl**	**Grey Shale**
105.40			Grey to greenish tinted shale. Bedding on a cm to mm scale.
105.40		**Mshl**	**Maroon Shale**
115.45			Maroon shale dominated unit with numerous (10%) <1-20cm intervals of grey-green shale. Bedding commonly 45 degrees to c.a. but folding is common, and recognized in the grey shale layers. Bedding is not visible in the homogeous maroon shales.
115.45		**GRshl**	**Grey Shale**
119.00			Grey to greenish tinted shale dominated unit. Local decimeter scale intervals are dark grey to black - increasing downhole. Bedding is not obvious.
119.00		**BshlBx**	**Black Shale Breccia**
119.25			Black shale to black shale breccia from 119.0-137.5m. Consists of dark black shale, laminated on a mm scale with fine siltstone layers. Interbedded black shale to locally medium grained sandstone breccia in a black shale matrix. Bedding is locally visible but unit is dominated by breccia. Breccia is fine-grained siliceous sandstone to siltstone fragments within a dark black graphitic shale matrix. Fragments are angular, mm to cm scale. Carbonate alteration as thin calcite veinlets commonly along poorly developed bedding and also at various angles to c.a. Veinlets are commonly restricted to the veinlets and do not cut through the matrix - pre-brecciation. Often contains fine disseminated pyrite up to 3-5% and also rare trace sphalerite.
119.25		**FLT**	**Fault**
119.30			Fault gouge
119.30		**BshlBx**	**Black Shale Breccia**
124.35			Black shale breccia as described above. 122.0m 1mm sphalerite stringer along foliation. 123.9-124.35m medium-grained quartzite layer with carbonate viening.
124.35		**FLT**	**Fault**
124.65			Fault gouge
124.65		**BshlBx**	**Black Shale Breccia**
125.05			Black shale breccia as above.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

Lithology

From	To	Code	Rock Name / Description
125.05		FLT	Fault
125.80			Fault gouge
125.80		BshlBx	Black Shale Breccia
130.85			Black shale breccia.
130.85		FLT	Fault
131.05			Fault gouge.
131.05		BshlBx	Black Shale Breccia
137.50			Black shale
137.50		Dr	Diorite?
140.50			Pale-green to greyish, medium grained intermediate intrusive? Sharp irregular contacts. Consists of qtz + feldspar? in a mafic matrix. Contains 10-15% <1mm white lueroxene? flakes. 138.5-138.95 - black shale breccia as above.
140.50		BshlBx	Black Shale Breccia
141.30			Black shale breccia as above unit.
141.30		LstBx	Limestone Breccia
144.40			Consists of 90% angular <1mm to 3cm limestone fragments in a dark grey to black shale matrix. Fine mm scale laminations are locally visible within the Lst fragments.
144.40		BshlBx	Black Shale Breccia
149.00			As above unit. Loc py and tr sp at 144.7m.
149.00		Lst	Limestone
154.60			Locally well bedded limestone at ~30 deg mm scale laminations. Pale grey colour. Moderately brecciated and calcite altered with numerous calcite veins and between breccia fragments. Sharp UC at ~55 deg to c.a.
154.60		GRshl	Grey Shale
168.85			Grey to black shale locally well bedded at ~60 deg to c.a. Consists of intervals of grey shale and intervals of black shale with grey shale fragments and beds. Some black shale areas contain cherty fragments, vfg quartzite?
168.85		Qtz	Quartzite
179.10			Fine grained, grey coloured quartzite dominated interval with local beds of grey or black shale. These are often thin layers <1cm thick. Quartzite is commonly brecciated with dark black alteration flooding the matrix.

Alteration

From	To	Code / Description

Mineralization

From	To	Code / Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0113

Lithology

From	To	Code	Rock Name / Description
179.10		GRshl	**Grey Shale**
	199.10		Grey to locally black shale dominated interval consist of finely bedded to laminated grey and black shale. Local beds of fg quartzite sst as above unit. These are cm to decimeter scale beds. Locally brecciated intervals.
199.10		Qtz	**Quartzite**
	199.85		Brecciated quartzite with black shale between breccia fragments.
199.85		MNZN	**Mineralized Breccia**
	200.20		Sphalerite and galena within brecciated quartzite and grey shale. ~15% sphalerite 10% galena.
200.20		GRshl	**Grey Shale**
	214.70		Grey to locally black shale. Bedding is commonly 55 deg to c.a. where visible contains decimeter to meter scale intervals of calcite veining and brecciation. More common below 206.4m. 211.1-211.9 - calcite vein; 200.6 - 1-2cm galena vein; 203.3-203.5 - 5% galena blebs and veins.
214.70		MNZN	**Mineralized Breccia**
	221.50		Quatzite breccia calcite veining +/- sphalerite veins. 5% sp overall, local short higher grade intervals.
221.50		Cbx	**Carbonatized Brecciated Quartzite**
	227.00		Quartzite breccia with rare galena with occasional f.g. siltstone to shale beds. 10% calcite veining at various angles to c.a. 223.0-223.4 - grey shale interval with bedding ~38 deg to c.a., calcite stringers at 25 deg to c.a. opposite bedding; 3cm galena vein from 224.25-224.3.
227.00		MNZN	**Mineralized Breccia**
	229.70		Quartzite breccia with 2-3% spalerite overall.
229.70		Bshl	**Black Shale**
	231.40		Black shale with local weak brecciation.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description
214.70	255.60	MNZN	

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
199.10	199.85	644555		0.00	0.00	0.51	0.01
199.85	200.30	644556		14.75	6.59	40.11	0.01
200.30	201.30	644557		4.64	0.07	5.14	0.00
213.70	214.70	644558		0.03	0.01	0.51	0.00
214.70	215.70	644559		0.01	1.78	0.51	0.00
215.70	216.70	644560		0.00	2.89	0.51	0.00
216.70	217.70	644561		0.01	2.38	0.51	0.00
217.70	218.55	644562		0.03	0.04	0.51	0.00
218.55	219.50	644563		0.00	2.78	0.51	0.00
219.50	220.50	644564		0.00	1.46	0.51	0.00
220.50	221.50	644565		0.00	6.47	0.51	0.00
221.50	222.50	644566		0.01	0.07	0.51	0.00
222.50	223.50	644568		0.01	0.00	0.51	0.00
223.50	224.50	644569		1.87	0.04	3.09	0.00
224.50	225.50	644570		0.00	0.00	0.51	0.00
225.50	226.50	644571		0.00	0.00	0.51	0.00
226.50	227.00	644572		0.01	0.11	0.51	0.00
227.00	228.00	644573		0.02	0.20	0.51	0.00
228.00	229.00	644574		0.00	0.87	0.51	0.00
229.00	229.70	644575		0.22	4.23	0.51	0.01
229.70	230.70	644576		0.00	0.00	0.51	0.00
230.70	231.40	644577		0.00	0.00	0.51	0.00

Lithology

From	To	Code	Rock Name / Description
231.40	237.40	GRshl	Grey Shale Grey shale locally brecciated with rare sphalerite.
237.40	243.60	MNZN	Mineralized Breccia Quartzite breccia with calcite +/- sphalertie veining. 3-5% sphalerite, locally higher grade intervals.
243.60	245.45	GRshl	Grey Shale Weak to moderately brecciated grey shale. Calcite veinlets are tin <1-5mm in size and commonly 40-50 deg to c.a. Bedding is not obvious, possibly 55 deg opposite orientation of calcite stringers.
245.45	253.80	Cbx	Carbonatized Brecciated Quartzite Dominated by quartzite breccia with some intervals of dark black shale with lesser brecciation. Relatively unmineralized with rare galena, no visible sphalerite.
253.80	255.60	MNZN	Mineralized Breccia Mineralized quartzite breccia with ~10% galena. Continuous from the previous interval except contains sphalerite and gal mineralization. Consists of ~70% carbonate. Locally up to 25% sp over 20cm.
255.60	260.00	Cbx	Carbonatized Brecciated Quartzite Host is predominantly quartzite with local zones that contain black shale fragment. Continuous from previous except relatively unmineralized and ~40% calcite alteration. Trace chalcopyrite at 258.0m.
260.00	261.60	FLT	Fault Intensely brecciated and carbonate graphite healed fault zone. Local intense fault gauge as 261.4-261.6m.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
231.40	232.40	644578		0.00	0.00	0.51	0.00
232.40	233.40	644579		0.00	0.00	0.51	0.00
233.40	234.40	644580		0.00	1.97	0.51	0.00
234.40	235.40	644581		0.00	0.00	0.51	0.00
235.40	236.40	644582		0.06	0.00	0.51	0.00
236.40	237.40	644583		0.00	0.37	0.51	0.00
237.40	238.40	644584		0.00	0.71	0.51	0.00
238.40	239.40	644585		0.00	0.09	0.51	0.00
239.40	240.40	644586		1.95	0.48	4.11	0.00
240.40	241.40	644587		0.01	0.80	0.51	0.00
241.40	242.80	644588		0.01	0.01	0.51	0.00
242.80	243.70	644590		0.00	8.44	3.09	0.01
243.70	244.70	644591		0.00	0.02	0.51	0.00
244.70	245.35	644592		0.00	0.00	0.51	0.00
245.35	246.35	644594		1.96	0.06	5.14	0.00
246.35	247.15	644595		0.05	0.62	0.51	0.01
247.15	248.15	644596		0.00	0.46	0.51	0.00
248.15	249.15	644597		0.90	0.00	2.06	0.00
249.15	250.15	644598		0.00	0.00	0.51	0.00
250.15	251.15	644599		0.00	0.00	0.51	0.00
251.15	252.15	644600		16.20	0.00	23.66	0.01
252.15	253.15	644601		0.01	0.00	1.03	0.00
253.15	253.80	644602		0.01	0.00	0.51	0.00
253.80	254.60	644603		0.00	1.11	0.51	0.00
254.60	255.60	644604		10.10	9.27	26.74	0.01
255.60	256.60	644606		0.00	0.09	0.51	0.00
256.60	257.60	644607		0.00	0.01	0.51	0.00
257.60	258.80	644608		0.00	0.00	0.51	0.00
258.80	260.00	644609		0.00	0.00	0.51	0.00

AN0113

Lithology

From	To	Code	Rock Name / Description
261.60		Qtz	**Quartzite**
	262.25		Unbrecciated, med to fg quartzite. Contains a few <1-2mm calcite stringers but relatively fresh. Sharp upper contact from fault gauge at ~70 deg to c.a.
262.25		GRshl	**Grey Shale**
	265.00		Grey to black shale, dominated by grey shale with thin 1-20mm layers of black shale. Bedding at a high angle to c.a. Commonly 75-80 deg. UC is broken core and LC.
265.00		Qtz	**Quartzite**
	308.76		Consits of medium to fg grey quartzite interbedded with intervals of siltstone and shale. Siltstone/shale intervals are commonly decimeter scale but up to 1-2m in thickness. Usually well laminated with bedding 60-70 deg to c.a. but as low as 40 deg. Rarely graded bedding is visible that would indicate tops to the north (up hole). Shale beds may contain fine disseminated pyrite. Calcite veining is not uncommon as <1-10mm veinlets. Several intervals of blocky core up to ~281m. Flt 265.05-265.4 fault guage; 270.7-270.8 - fault guage; trace sphalterite in siltstone bed at 285.1m.
308.76			End of Hole

Alteration

From	To	Code / Description

Mineralization

From	To	Code / Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

noranda

NORANDA INC.

Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0114**	**Length:**	210.9	**Units:**	meters
Started	10/4/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	10/9/01	**Claim #:**		**Logged By:**	D. King
Drill Type:		**Case Pld:**	Yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	5.9	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641444	**Easting:**		**Easting:**	641444	**Latitude:**	
Northing:	6978303	**Northing:**		**Northing:**	6978303	**Longitude:**	
Elevation:	1332	**Elevation:**		**Elevation:**	1332		
Plot_Sys:		**Grid Declin:**	-45.00	**UTM Declin:**			
NTS:		**Mag Declin:**	29	**UTM Zone:**			

Collar Survey: No
Target: 100m west of AN01-04
Geophysics: No
Remarks:

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-55.00			COLLAR	
45.70	-52.90	147.50	176.50	Reflex	
91.50	-51.30	149.30	178.30	Reflex	
132.90	-49.30	148.60	177.60	Reflex	
178.60	-48.00	150.20	179.20	Reflex	

Geology

Lithology

From / To	Code	Rock Name / Description
0.00 / 4.80	OB	Overburden

Alteration

From / To	Code	Description

Mineralization

From / To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

Lithology

From	To	Code	Rock Name / Description
4.80		**Mshl**	**Maroon Shale**
48.60		Soft, maroon coloured, vfg shale with cm scale interbeds of green to grey shale. Bedding defined by green shale interbeds at 57-60 deg to c.a. Core is very blocky. Bedding locally up to 70 deg.	
48.60		**GRshl**	**Grey to Green Shale**
51.30		Grey to greenish tinted shale. Similar to thin interbeds within the maroon shale unit. Bedding a cm scale at 60-70 deg to c.a.	
51.30		**FLT**	**Fault?**
51.80		Blocky, graphitic shale with numerous calcite quartz veinlets. Veinlets at 37 deg to c.a. Sharp broken contact with quartzite.	
51.80		**Qtz**	**Quartzite**
52.35		Massive, medium grained, grey coloured quartzite.	
52.35		**FLT**	**Quartzite, Bshl Fault Breccia**
67.05		Mixture of black graphitic shale and quartzite. Locally intensely brecciated with siltstone, quartzite clasts in graphitic matrix. Some areas contain numerous carbonate veinlets. Commonly contains 2-5% fine disseminated pyrite more common within graphitic black shale rich areas. Core is intensely broken with ~80-85 % recovery.	
67.05		**Qtz**	**Quartzite**
74.20		Medium grained, grey coloured quartzite. Rarely up to 7% diss py. Brecciation and fault guage from ~74.2-75m. Contains local thin shale interbeds.	
74.20		**Lst**	**Limestone-Lst Breccia**
80.40		Light grey coloured limestone with several grey shale interbeds and grey to black shale matrix between Lst clasts. Numerous calcite veinlets at various angles to c.a.	
80.40		**Bshl**	**Black Shale**
81.30		Black to locally grey shale. Core is highly fractured. Weak fol/bedding? at 50 deg to c.a.	
81.30		**Qtz**	**Quartzite**
84.00		Medium grained dark grey coloured quartzite sst. Numerous black veinlets <1mm thick give a breccia pattern locally. Some kind of alteration along fractures. Calcite veinlets are not uncomon towards end of unit. Sharp UC at 61 deg to c.a.	
84.00		**Bshl**	**Black Shale-Faulted?**
86.15		Black to grey coloured shale. Core is highly faulted and broken with local soft fault guage. Up to ~5% diss py is not uncommon.	

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

Lithology

From	To	Code	Rock Name / Description
86.15		Qtz	**Quartzite**
87.20			Sharp broken contact into quartzite as above. Black shale? matrix between grains and as local thin interbeds. Bshl contains 5% diss py.
87.20		FLT	**Fault Gauge**
87.50			Clay filled fault guage.
87.50		Mshl	**Maroon Shale**
105.60			Sharp faulted UC into maroon shale as described at top of hole. Dominated by green shale up to 89.85m. Well bedded at 68-70 deg to c.a. but locally folded.
105.60		GRshl	**Grey to Green Shale**
107.40			Gradational upper contact from maroon shale unit. Several calcite veins along bedding unit.
107.40		Bshl	**Black Shale**
110.40			Fairly quick change from above into dark black shale unit. Bedding is not obvious. Local calcite veinlets concentrated along contact with qtz bed within. 108.75-109.2 - qtz with numerous calcite veinlets. Calcite veins on contacts; ankerite yellowy brown tint.
110.40		Gshl	**Green to Grey Shale**
111.40			Local weak brownish tint to shale. Bedding is unclear; calcite veinlets along fracture is common. 110.5-110.6 - silicified interval with 8% sp and 3% gal.
111.40		Bshl	**Black Shale**
113.60			Sharp contact into black shale with numerous qtz-carb veinlets commonly at ~30 deg to c.a. Several areas of intense fracturing and fault guage.
113.60		Qtz	**Quartzite to Breccia**
117.30			Fracture filled with calcite. UC and LC are highly brecciated and carbonatized. 115.6-115.8 - clay fault guage.
117.30		Bshl	**Black Shale**
123.50			Dark black shale with local thin grey shale interbeds and clasts. Several zones of brecciation and calcite veining. Calcite veining and bx increase below ~120.7m. 121.05-121.15 - 5% gal stringers. 121-123.35 - becomes brecciated and silicified/carbonatized. Trace sp at 123.0-123.35m.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
120.35	121.35	644610		2.89	0.01	13.00	0.03
121.35	122.35	644612		0.00	0.00	0.50	0.00
122.35	123.35	644613		0.00	0.09	0.50	0.00
123.35	124.20	644614		29.00	5.52	93.00	0.03

AN0114

Lithology

From	To	Code	Rock Name / Description
123.50		**MNZN**	**Mineralized Bshl**
125.20			Moderately brecciated and silicified black shale with locally massive galena and sphalerite. Massive galena up to 15cm. Gal, sp veins commonly orientated ~55 deg to c.a. Sp veins are commonly brecciated; ~25% galena, 15% sphalerite overall. Sharp lower contact at ~60 deg into clay fault guage.
125.20		**FLT**	**Mineralized Fault Zone**
127.90			Intense clay fault guage with ~35% recovery. Most of the rock fragments are of mineralized breccia.
127.90		**Csst**	**Calcareous Sst to Limestone**
139.25			Limestone/calcareous sandstone with thin shale units. Dominated by medium to fine grained light grey coloured limestone with thin mm scale partings. Commonly well bedded on a mm to cm scale were more massive limestone lacks the shale partings and is locally brecciated with calcite veins. Bedding averages 40-45 deg to c.a.
139.25		**Bshl**	**Black Shale to Cals Sst**
145.95			Black shale to fg grey siltstone dominated interval. Bedding on a mm scale.
145.95		**Csst**	**Calcareous Sst to Limestone**
152.50			Limestone to calcareous sandstone as above unit. Majority of bedding is at a low angle to c.a. ~20 deg to c.a.
152.50		**GRshl**	**Grey Shale/Calc Siltstone**
157.85			Grey to black shale dominated interval interbedded with decimetric scale intervals of fg calcareous sandstone/limestone. mm scale laminations at 55 deg to c.a.
157.85		**Csst**	**Calcareous Sst to Limestone**
187.25			Limestone to calcareous sandstone dominated interval. Local decimetric scale intervals of grey to black shale. Dominated by mg grey limestone to carbonaceous sandstone. Locally very weak carbonate. Avg fol ~50 deg to c.a. Contacts are not distinct as in and out of sst and shale dominated intervals.
187.25		**GRshl**	**Grey Shale/Calc Siltstone**
203.25			Grey shale to carbonateous siltstone; mm scale bedding laminations. Local zones of mg grey limestone/sst; bedding 45 deg to c.a. on average.

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description
123.50		**MNZN**	
127.90		MNZN	

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
124.20	125.20	644616		43.00	8.60	89.00	0.02
125.20	126.80	644617		8.92	4.87	36.00	0.01
126.80	127.90	644618		19.25	7.35	48.00	0.03
127.90	128.90	644619		0.03	0.02	0.50	0.00

AN0114

Lithology

From	To	Code	Rock Name / Description
203.25		**Mshl**	**Maroon Shale/Lst**
205.75			Maroon shale dominated zone. Consists of decimetric scale intervals of Mshl with cm scale interbeds of grey shale and local zones of pale grey to white limestone up to ~10cm thick.
205.75		**GRshl**	**Grey Shale/Calc Siltstone**
210.90			Grey shale to carbonaceous siltstone as above. Local mg carb sandstone/lst.
210.90			End of Hole

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

noranda

NORANDA INC.

Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0115**	**Length:**	217.3	**Units:**	meters
Started	10/9/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	10/13/01	**Claim #:**		**Logged By:**	D. King
Drill Type:		**Case Pld:**		**Contractor:**	Advanced
Core Size:	NQ2	**Case Dep:**	4.6	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641444	**Easting:**		**Easting:**		**Latitude:**	
Northing:	6978303	**Northing:**		**Northing:**		**Longitude:**	
Elevation:	1332	**Elevation:**		**Elevation:**			
Plot_Sys:		**Grid Declin:**	-45.00	**UTM Declin:**			
NTS:		**Mag Declin:**	29	**UTM Zone:**			

Collar Survey: No
Target: 80m downdip of AN01-14
Geophysics: No
Remarks:

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-75.00			COLLAR	
35.00	-75.30	152.00	181.00	Reflex	
85.30	-74.60	147.60	176.60	Reflex	
133.20	-73.30	151.90	180.90	Reflex	
178.90	-72.30	153.80	182.80	Reflex	

Geology

Lithology

From / To	Code	Rock Name / Description
0.00 / 4.60	OB	Overburden

Alteration

From / To	Code	Description

Mineralization

From / To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

Lithology

From	To	Code	Rock Name / Description
4.60		Mshl	**Maroon Shale**
72.20			Soft, deep brown to maroon coloured shale. Core is highly fractured. Bedding ranges from ~20-45 deg to c.a. Avg 40-45 deg. Top of hole is shallower ~20 deg. Avg bedding 45-50 deg to c.a. from 40-72m.
72.20		GRshl	**Grey Shale**
80.00			Gradational contact into grey shale dominated interval. Grey-green tinted shale with decimeter scale intervals of of dark mauve shale.
80.00		Bshl	**Black Shale**
89.15			Black shale with thin siliceous cherty? beds. Bedding is ~50 deg to c.a. were visible. Local zones of broken core+/- silicification and qtz-carb veins. 80.35-80.45 - silicification+qtz veining. 83.4-85 - baroken core with local qtz veinlets. Contains thin mm-cm scale siliceous (cherty) siltstone layers. Majority of unit contains 1-2% fine diss py. Silty intervals are up to ~10-15cm thick with mm scale laminations internally. These areas often contain thin qtz-carb veinlets <1-2mm at various angles to c.a. Becomes brecciated with siltstone/shale fragments in black shale matrix below ~87m.
89.15		LstBx	**Limestone Breccia**
107.80			Light grey coloured limestone to limestone breccia. Gradational from previous shale over ~50cm. Clast dominated (~95%) in a black to grey shale matrix. Limestone clasts are brecciated by 10% calcite veinlets at various angles to c.a. Rarely bedding is seen in the limestone. Trace py at 95.4m. Below ~100.9m contains decimeter scale grey shale interbeds (35%) up to 10-15cm thick. These are commonly laminated on a mm scale with limestone. Bedding steep 65-75 deg to c.a.
107.80		BshlBx	**Black Shale Breccia**
109.10			Relatively sharp contact into black shale breccia. Matrix supported with small limestone clasts grading into black shale towards bottom of unit.
109.10		Qtz	**Quartzite**
112.55			
112.55		Bshlbx	**Black Shale Breccia**
118.50			
118.50		FLT	**Fault Gouge**
124.40			
124.40		GRshl	**Grey Shale**
126.30			

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0115

Lithology

From	To	Code	Rock Name / Description
126.30	128.20	Bshl	Black Shale
128.20	129.30	FLT	Fault Gouge
129.30	133.05	GRshl	Grey Shale
133.05	137.80	Bshl	Black Shale
137.80	138.30	FLT	Fault Gouge
138.30	139.30	Bshl	Black Shale
139.30	140.00	FLT	Fault Gouge
140.00	141.20	Bshl	Black Shale
141.20	141.50	MNZN	Mineralized Bshl
141.50	143.00	Bshl	Black Shale
143.00	143.50	MNZN	Mineralized Fault?
143.50	143.75	MNZN	Massive Galena
143.75	149.80	Bshl	Black Shale
149.80	150.30	FLT	Fault Gouge

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
140.60	141.20	644620		0.00	0.00	0.51	0.00
141.20	141.50	644621		8.88	13.35	32.91	0.03
141.50	142.35	644622		0.03	0.05	0.51	0.00
142.35	143.00	644623		0.02	0.02	0.51	0.00
143.00	143.75	644624		53.00	5.28	139.89	0.01
143.75	144.50	644625		0.22	0.03	0.51	0.00
149.00	149.80	644627		0.02	0.00	0.51	0.00
149.80	150.30	644628		1.59	1.37	4.11	0.00

AN0115

Lithology

From	To	Code	Rock Name / Description
150.30	162.00	MNZN	Mineralized Breccia
162.00	163.30	Qtz	Quartzite
163.30	165.65	Bshl	Black Shale
165.65	180.50	Qtz	Quartzite
180.50	185.85	Bshl	Black Shale/Breccia
185.85	196.10	MNZN	Mineralized Zone
196.10	217.30	Csst	Carbonaceous Sst

Alteration

From	To	Code / Description

Mineralization

From	To	Code / Description
150.30	162.00	MNZN
185.85	196.10	MNZN

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
150.30	150.95	644629		7.82	2.20	16.46	0.01
150.95	151.70	644630		0.02	9.67	1.03	0.00
151.70	152.50	644631		0.01	5.08	1.03	0.00
152.50	153.60	644632		0.01	0.19	0.51	0.00
153.60	154.20	644633		0.00	15.05	1.03	0.01
154.20	154.85	644634		0.00	0.20	0.51	0.00
154.85	155.50	644635		0.01	3.65	0.51	0.00
155.50	156.40	644636		0.00	2.80	0.51	0.00
156.40	157.35	644637		15.25	8.64	43.20	0.03
157.35	158.40	644638		53.06	0.10	204.69	0.03
158.40	159.40	644639		36.60	13.40	110.06	0.05
159.40	160.50	644641		0.14	15.65	5.14	0.00
160.50	160.85	644642		0.59	0.60	1.03	0.00
160.85	162.00	644643		2.73	27.60	15.43	0.05
162.00	163.00	644644		0.02	0.09	0.51	0.00
163.00	164.00	644645		0.00	0.04	0.51	0.00
185.00	185.85	644646		0.91	0.15	0.51	0.00
185.85	186.95	644647		14.15	3.24	23.66	0.00
186.95	187.90	644648		11.80	36.00	25.71	0.06
187.90	188.65	644650		53.40	4.81	128.57	0.03
188.65	189.55	644151		7.40	36.60	12.34	0.05
189.55	190.50	644152		4.41	0.62	5.14	0.00
190.50	191.50	644153		0.08	0.46	0.51	0.00
191.50	192.50	644154		0.18	18.60	2.06	0.01
192.50	192.95	644155		40.70	8.85	82.29	0.01
192.95	193.45	644156		0.10	0.22	0.51	0.00
193.45	194.45	644157		45.20	0.66	118.29	0.06
194.45	195.35	644158		24.00	6.48	43.20	0.01
195.35	196.10	644159		17.65	4.25	45.26	0.02
196.10	197.10	644160		0.10	0.04	0.51	0.00

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NORANDA INC.

Drill Hole Log

Drillhole Collar

Hole-ID:	**AN0115**	**Length:**	217.3	**Units:**	meters
Started	10/9/01	**Proj. #:**	2501	**Project:**	Andrew
Finished:	10/13/01	**Claim #:**		**Logged By:**	D. King
Drill Type:		**Case Pld:**		**Contractor:**	Advanced
Core Size:	NQ2	**Case Dep:**	4.6	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641444	**Easting:**		**Easting:**		**Latitude:**	
Northing:	6978303	**Northing:**		**Northing:**		**Longitude:**	
Elevation:	1332	**Elevation:**		**Elevation:**			
Plot_Sys:		**Grid Declin:**	-45.00	**UTM Declin:**			
NTS:		**Mag Declin:**	29	**UTM Zone:**			

Collar Survey: No
Target: 80m downdip of AN01-14
Geophysics: No
Remarks:

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-75.00			COLLAR	
35.00	-75.30	152.00	181.00	Reflex	
85.30	-74.60	147.60	176.60	Reflex	
133.20	-73.30	151.90	180.90	Reflex	
178.90	-72.30	153.80	182.80	Reflex	

Geology

Lithology

From / To	Code	Rock Name / Description
0.00 / 4.60	OB	Overburden

Alteration

From / To	Code / Description

Mineralization

From / To	Code / Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0115

Lithology

From	To	Code	Rock Name / Description
4.60		**Mshl**	**Maroon Shale**
72.20			Soft, deep brown to maroon coloured shale. Core is highly fractured. Bedding ranges from ~20-45 deg to c.a. Avg 40-45 deg. Top of hole is shallower ~20 deg. Avg bedding 45-50 deg to c.a. from 40-72m.
72.20		**GRshl**	**Grey Shale**
80.00			Gradational contact into grey shale dominated interval. Grey-green tinted shale with decimeter scale intervals of of dark mauve shale.
80.00		**Bshl**	**Black Shale**
89.15			Black shale with thin siliceous cherty? beds. Bedding is ~50 deg to c.a. were visible. Local zones of broken core+/- silicification and qtz-carb veins. 80.35-80.45 - silicification+qtz veining. 83.4-85 - baroken core with local qtz veinlets. Contains thin mm-cm scale siliceous (cherty) siltstone layers. Majority of unit contains 1-2% fine diss py. Silty intervals are up to ~10-15cm thick with mm scale laminations internally. These areas often contain thin qtz-carb veinlets <1-2mm at various angles to c.a. Becomes brecciated with siltstone/shale fragments in black shale matrix below ~87m.
89.15		**LstBx**	**Limestone Breccia**
107.80			Light grey coloured limestone to limestone breccia. Gradational from previous shale over ~50cm. Clast dominated (~95%) in a black to grey shale matrix. Limestone clasts are brecciated by 10% calcite veinlets at various angles to c.a. Rarely bedding is seen in the limestone. Trace py at 95.4m. Below ~100.9m contains decimeter scale grey shale interbeds (35%) up to 10-15cm thick. These are commonly laminated on a mm scale with limestone. Bedding steep 65-75 deg to c.a.
107.80		**BshlBx**	**Black Shale Breccia**
109.10			Relatively sharp contact into black shale breccia. Matrix supported with small limestone clasts grading into black shale towards bottom of unit.
109.10		**Qtz**	**Quartzite**
112.55			
112.55		**Bshlbx**	**Black Shale Breccia**
118.50			
118.50		**FLT**	**Fault Gouge**
124.40			
124.40		**GRshl**	**Grey Shale**
126.30			

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0115

Lithology

From To	Code	Rock Name Description
126.30 128.20	Bshl	Black Shale
128.20 129.30	FLT	Fault Gouge
129.30 133.05	GRshl	Grey Shale
133.05 137.80	Bshl	Black Shale
137.80 138.30	FLT	Fault Gouge
138.30 139.30	Bshl	Black Shale
139.30 140.00	FLT	Fault Gouge
140.00 141.20	Bshl	Black Shale
141.20 141.50	MNZN	Mineralized Bshl
141.50 143.00	Bshl	Black Shale
143.00 143.50	MNZN	Mineralized Fault?
143.50 143.75	MNZN	Massive Galena
143.75 149.80	Bshl	Black Shale
149.80 150.30	FLT	Fault Gouge

Alteration

From To	Code Description

Mineralization

From To	Code Description

Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
140.60	141.20	644620	0.00	0.00	0.51	0.00	
141.20	141.50	644621	8.88	13.35	32.91	0.03	
141.50	142.35	644622	0.03	0.05	0.51	0.00	
142.35	143.00	644623	0.02	0.02	0.51	0.00	
143.00	143.75	644624	53.00	5.28	139.89	0.01	
143.75	144.50	644625	0.22	0.03	0.51	0.00	
149.00	149.80	644627	0.02	0.00	0.51	0.00	
149.80	150.30	644628	1.59	1.37	4.11	0.00	

AN0115

Lithology

From	To	Code	Rock Name / Description
150.30	162.00	MNZN	Mineralized Breccia
162.00	163.30	Qtz	Quartzite
163.30	165.65	Bshl	Black Shale
165.65	180.50	Qtz	Quartzite
180.50	185.85	Bshl	Black Shale/Breccia
185.85	196.10	MNZN	Mineralized Zone
196.10	217.30	Csst	Carbonaceous Sst

Alteration

From	To	Code	Description

Mineralization

From	To	Code	Description
150.30	162.00	MNZN	NULL
185.85	196.10	MNZN	

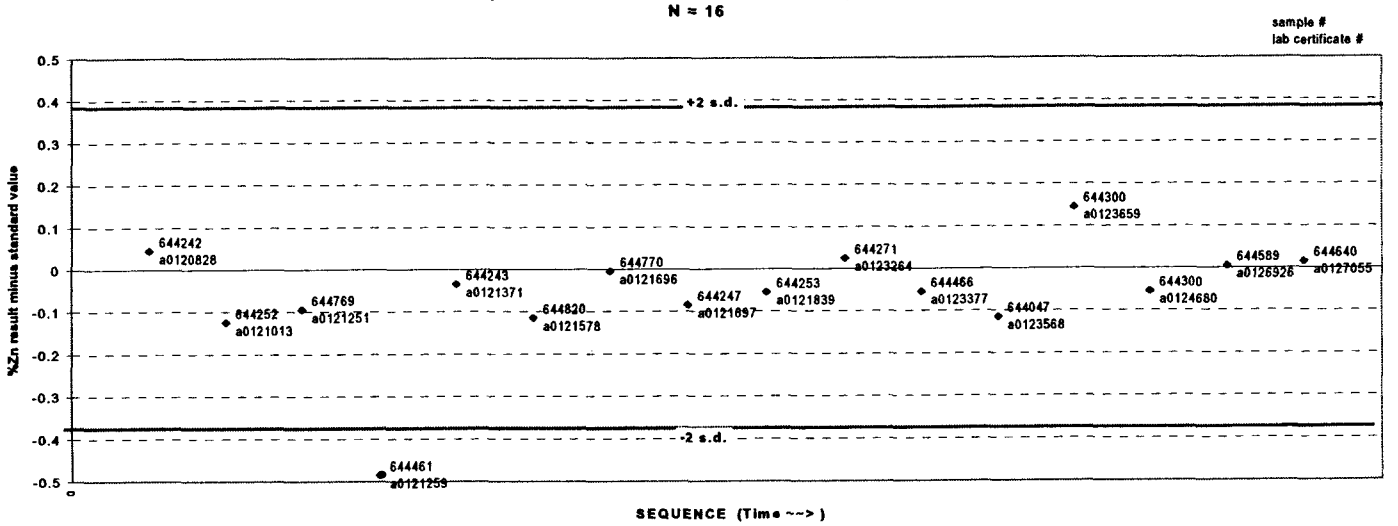
Assay

From	To	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
150.30	150.95	644629		7.82	2.20	16.46	0.01
150.95	151.70	644630		0.02	9.67	1.03	0.00
151.70	152.50	644631		0.01	5.08	1.03	0.00
152.50	153.60	644632		0.01	0.19	0.51	0.00
153.60	154.20	644633		0.00	15.05	1.03	0.01
154.20	154.85	644634		0.00	0.20	0.51	0.00
154.85	155.50	644635		0.01	3.65	0.51	0.00
155.50	156.40	644636		0.00	2.80	0.51	0.00
156.40	157.35	644637		15.25	8.64	43.20	0.03
157.35	158.40	644638		53.06	0.10	204.69	0.03
158.40	159.40	644639		36.60	13.40	110.06	0.05
159.40	160.50	644641		0.14	15.65	5.14	0.00
160.50	160.85	644642		0.59	0.60	1.03	0.00
160.85	162.00	644643		2.73	27.60	15.43	0.05
162.00	163.00	644644		0.02	0.09	0.51	0.00
163.00	164.00	644645		0.00	0.04	0.51	0.00
185.00	185.85	644646		0.91	0.15	0.51	0.00
185.85	186.95	644647		14.15	3.24	23.66	0.00
186.95	187.90	644648		11.80	36.00	25.71	0.06
187.90	188.65	644650		53.40	4.81	128.57	0.03
188.65	189.55	644151		7.40	36.60	12.34	0.05
189.55	190.50	644152		4.41	0.62	5.14	0.00
190.50	191.50	644153		0.08	0.46	0.51	0.00
191.50	192.50	644154		0.18	18.60	2.06	0.01
192.50	192.95	644155		40.70	8.85	82.29	0.01
192.95	193.45	644156		0.10	0.22	0.51	0.00
193.45	194.45	644157		45.20	0.66	118.29	0.06
194.45	195.35	644158		24.00	6.48	43.20	0.01
195.35	196.10	644159		17.65	4.25	45.26	0.02
196.10	197.10	644160		0.10	0.04	0.51	0.00

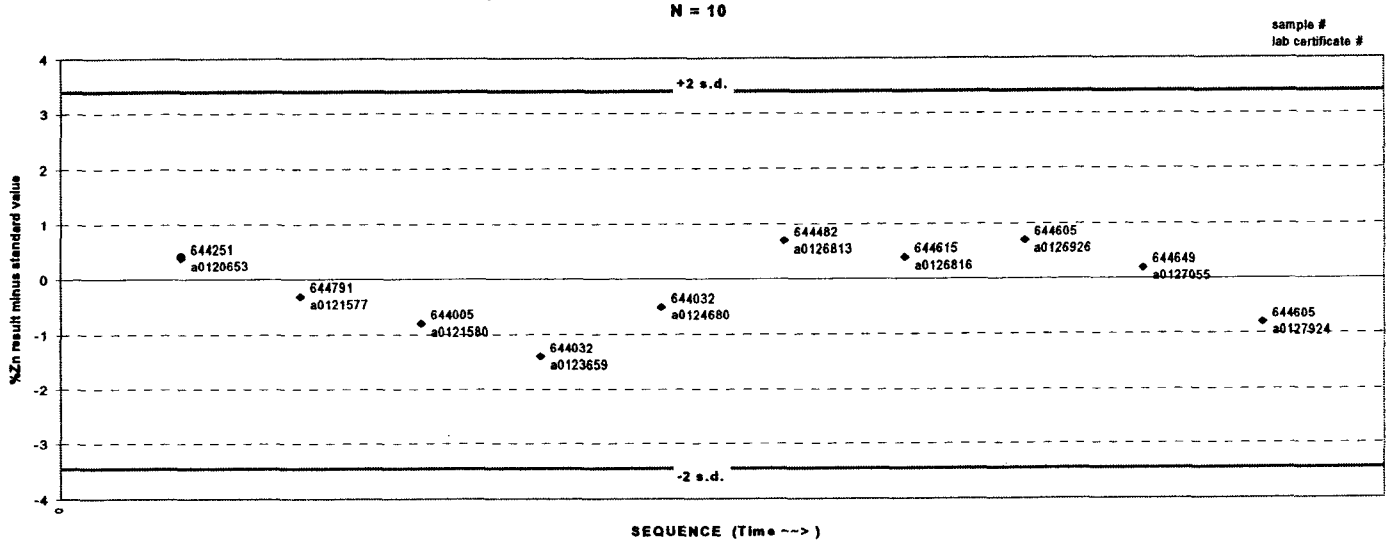
APPENDIX VI

QUALITY CONTROL / QUALITY ASSURANCE CHARTS

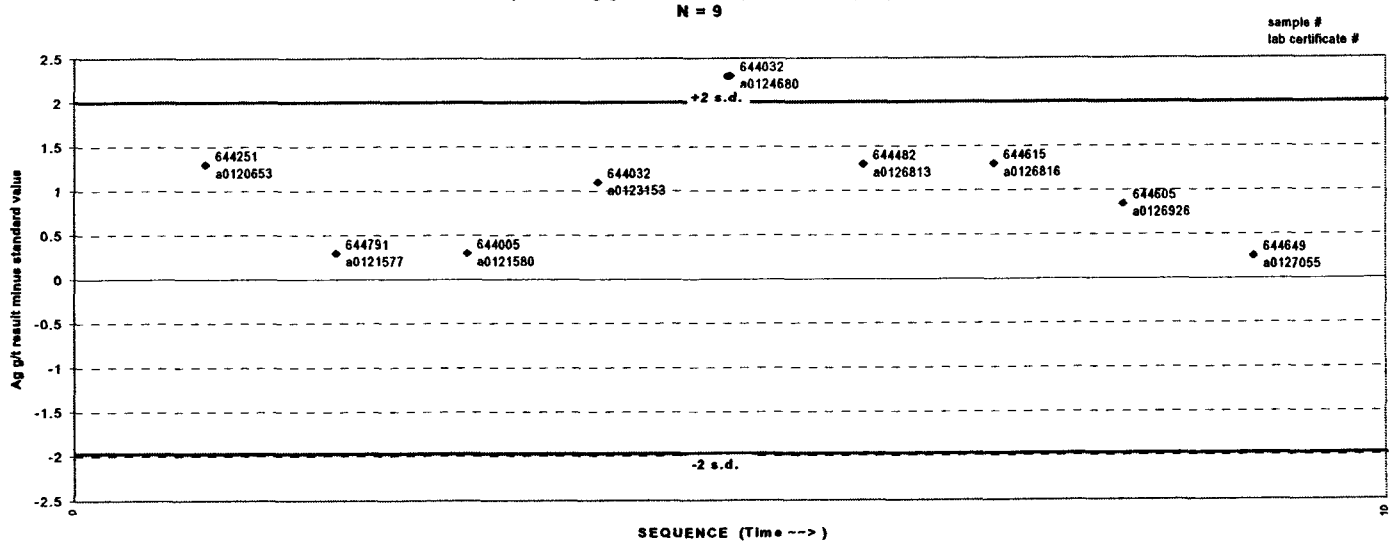
GEOSTATS STANDARD GBM300-8
Expected %Zn Value = 3.0249% +/- 2 s.d. (0.3874%)
N = 16



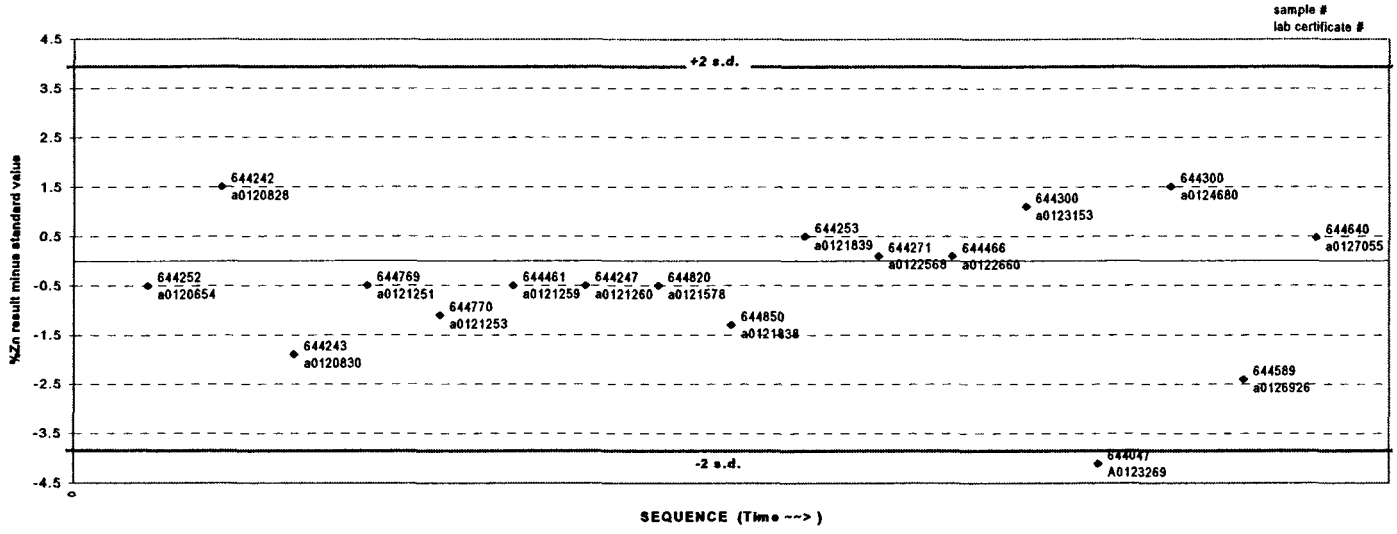
GEOSTATS STANDARD GBM399-8
Expected %Zn Value = 28.0072% +/- 2 s.d. (3.4150%)
N = 10



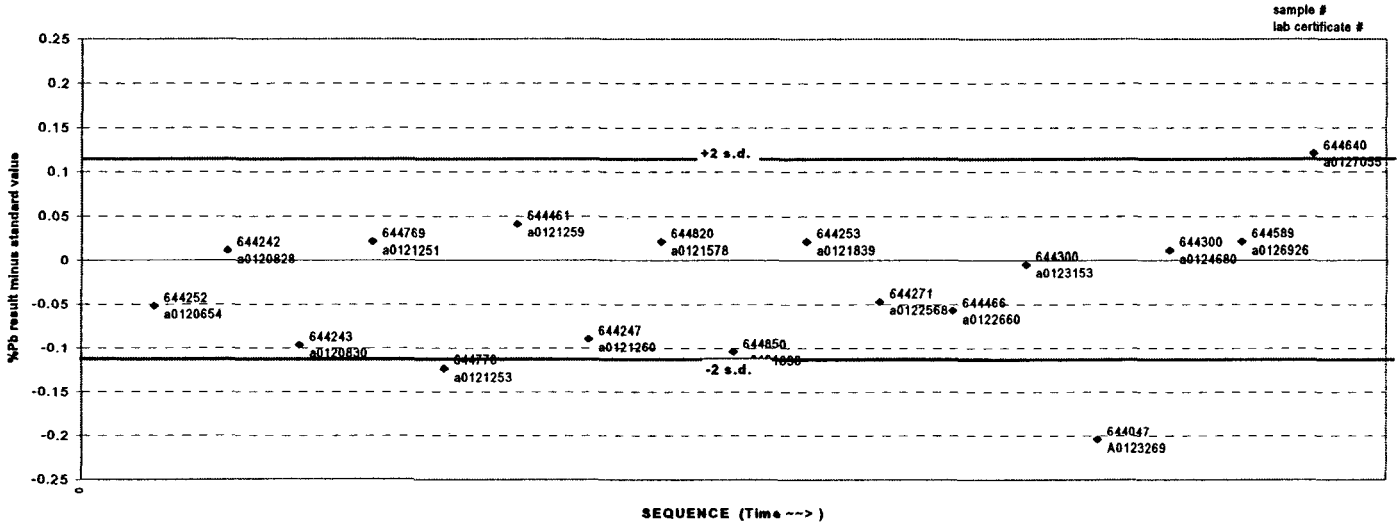
GEOSTATS STANDARD GBM399-8
Expected Ag g/t Value = 9.7g/t +/- 2 s.d. (2.0g/t)
N = 9



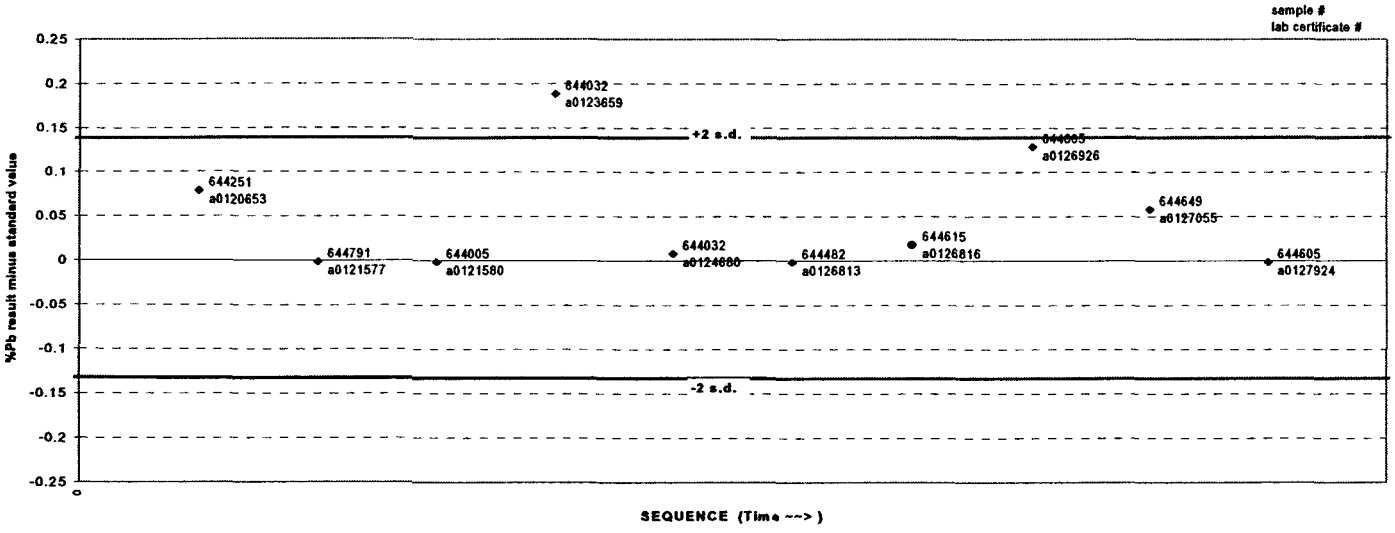
GEOSTATS STANDARD GBM300-8
Expected Ag g/t Value = 12.5g/t +/- 2 s.d. (3.8g/t)
N = 17



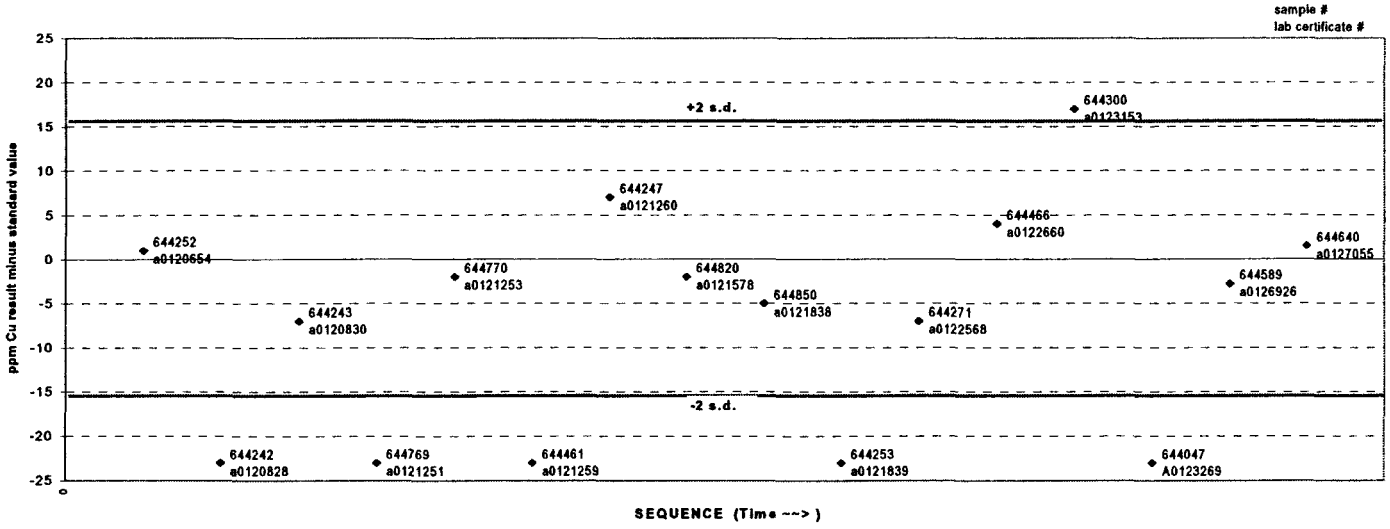
GEOSTATS STANDARD GBM300-8
Expected %Pb Value = 0.9590% +/- 2 s.d. (0.1176%)
N = 17



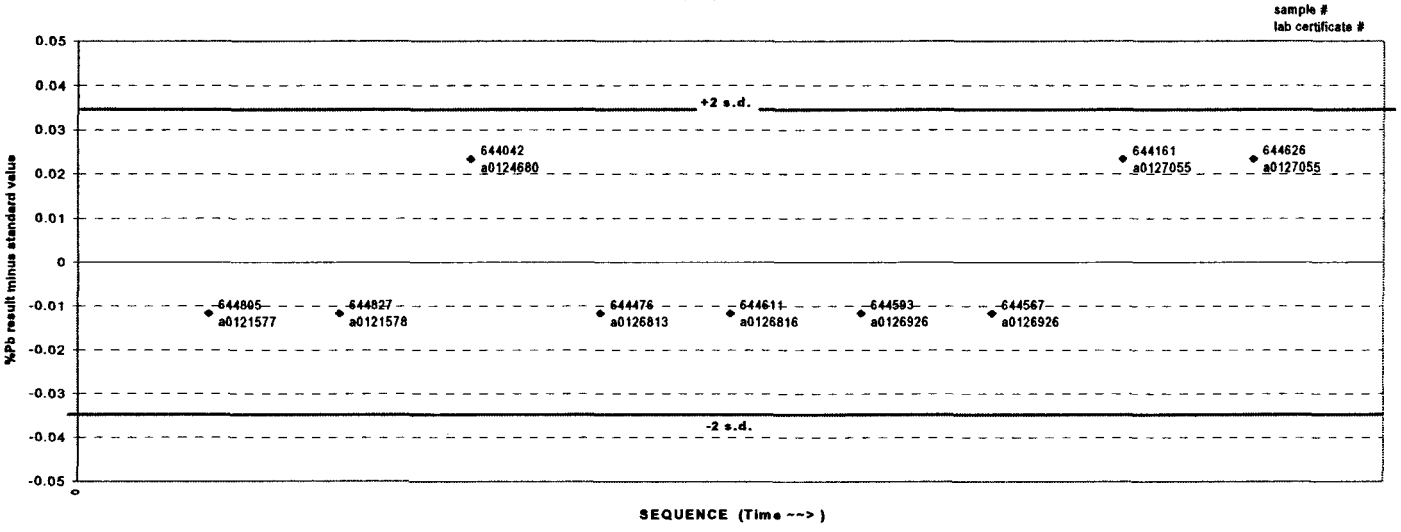
GEOSTATS STANDARD GBM399-8
Expected %Pb Value = 1.3817% +/- 2 s.d. (0.1314%)
N = 10



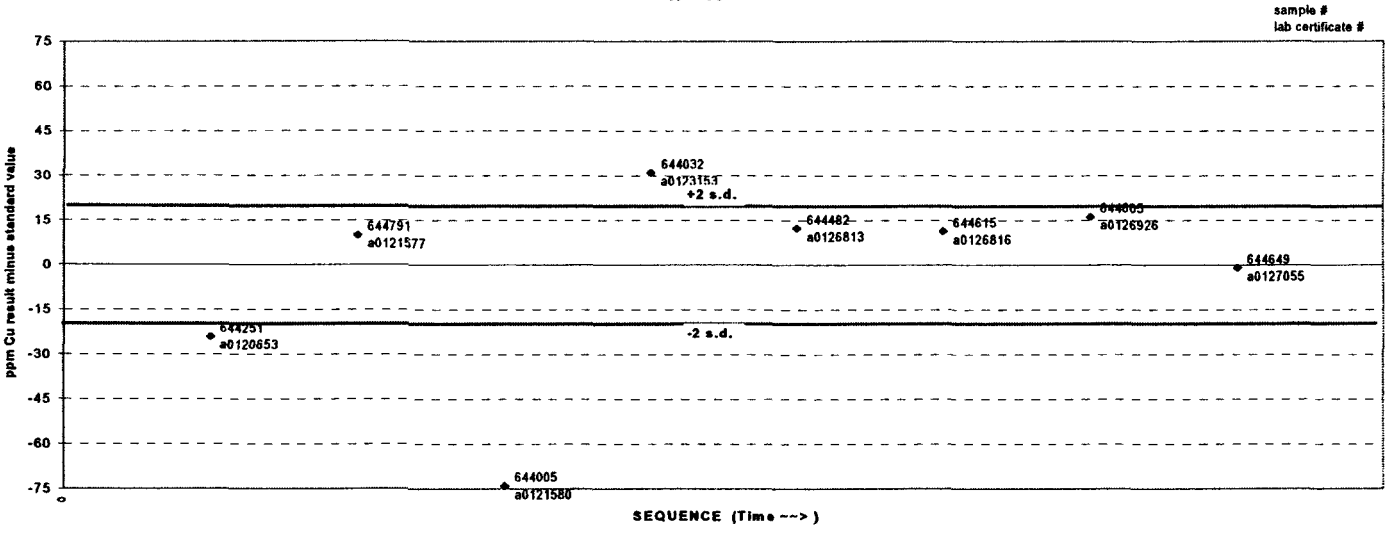
GEOSTATS STANDARD GBM300-8
Expected ppm Cu Value = 123 ppm +/- 2 s.d. (16 ppm)
N = 16



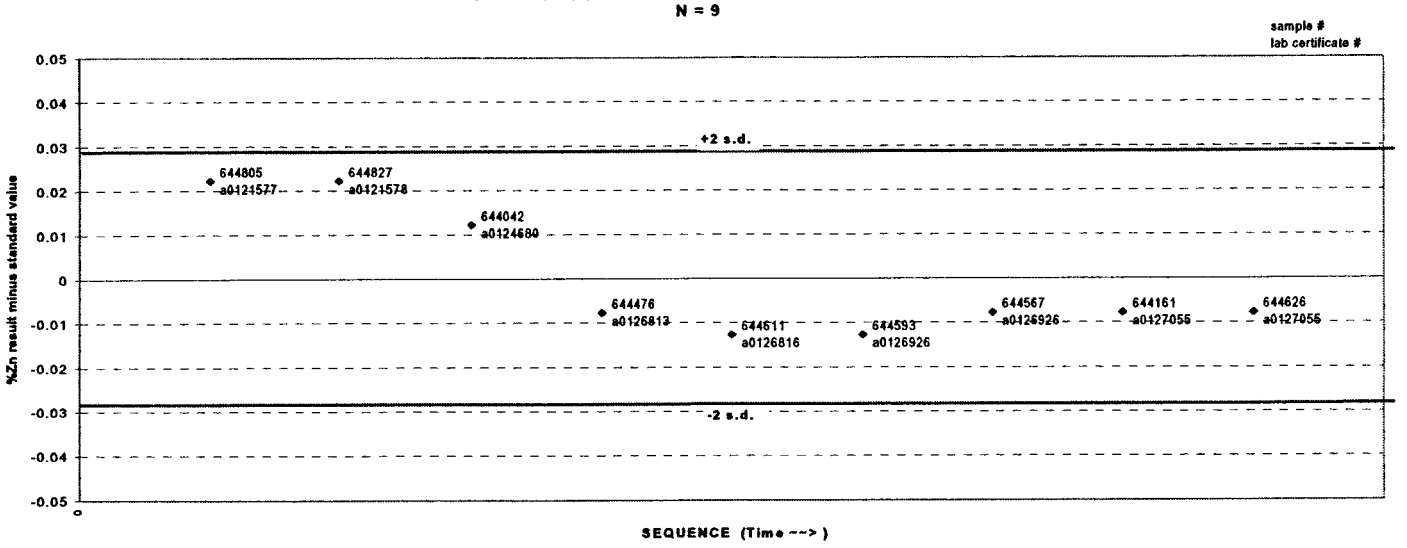
BLANK
Expected (avg.) %Pb Value = 0.017% +/- 2 s.d. (0.035%)
N = 9



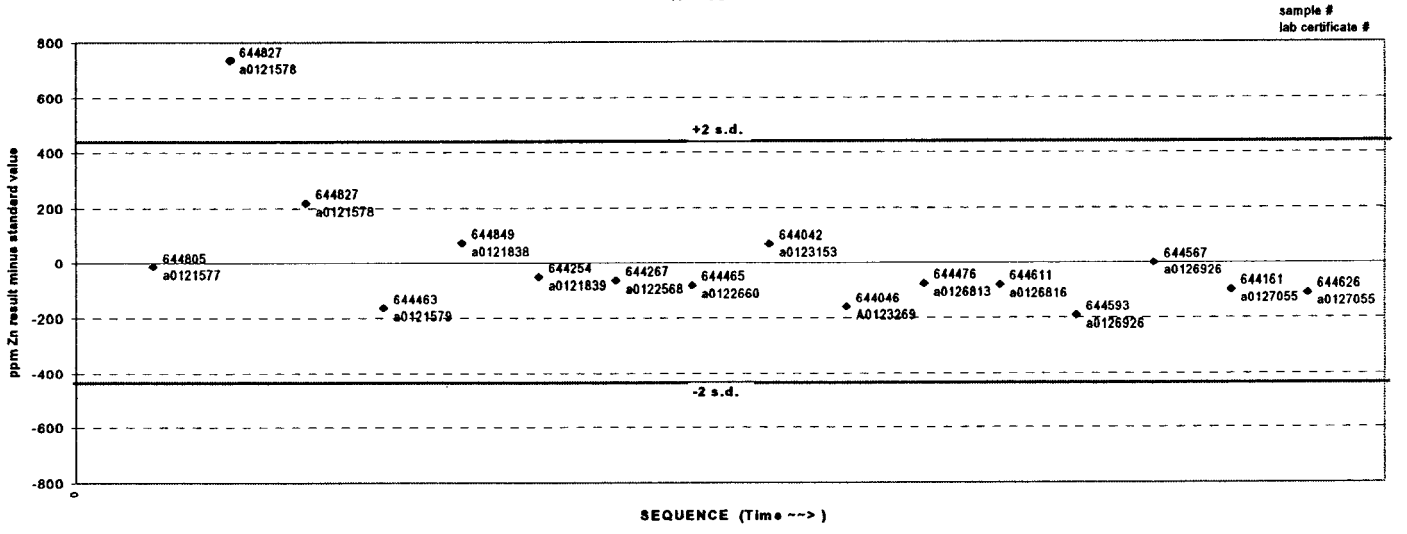
GEOSTATS STANDARD GBM399-8
Expected ppm Cu Value = 124 ppm +/- 2 s.d. (20 ppm)
N = 16



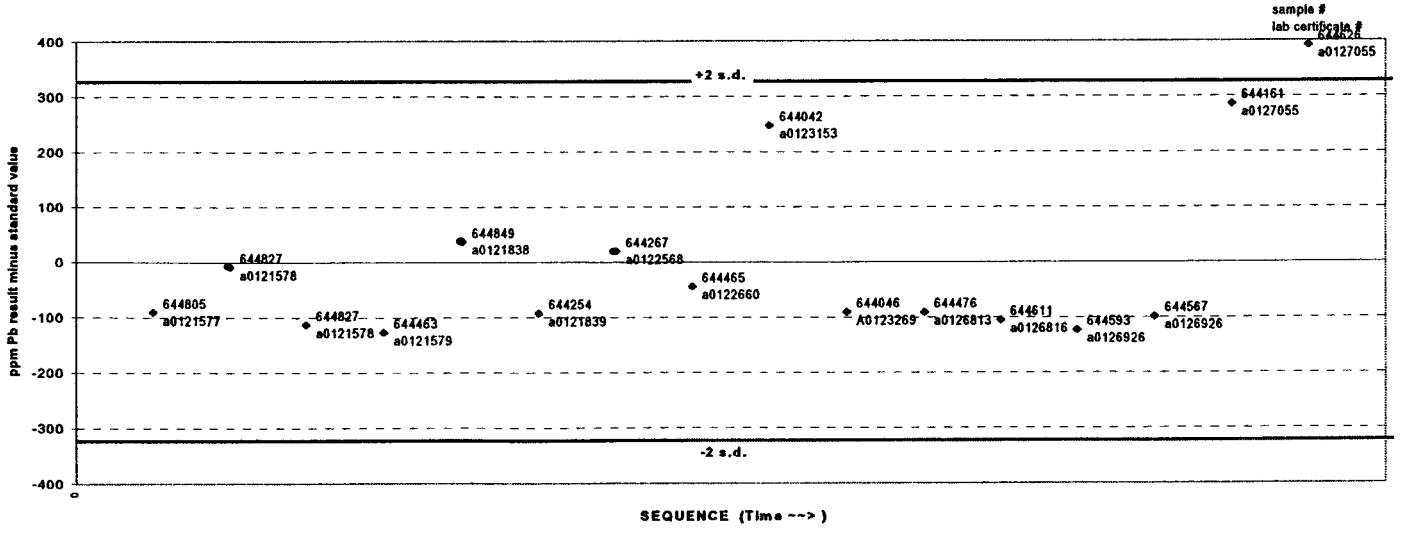
BLANK
Expected (avg.) %Zn Value = 0.018% +/- 2 s.d. (0.029%)
N = 9



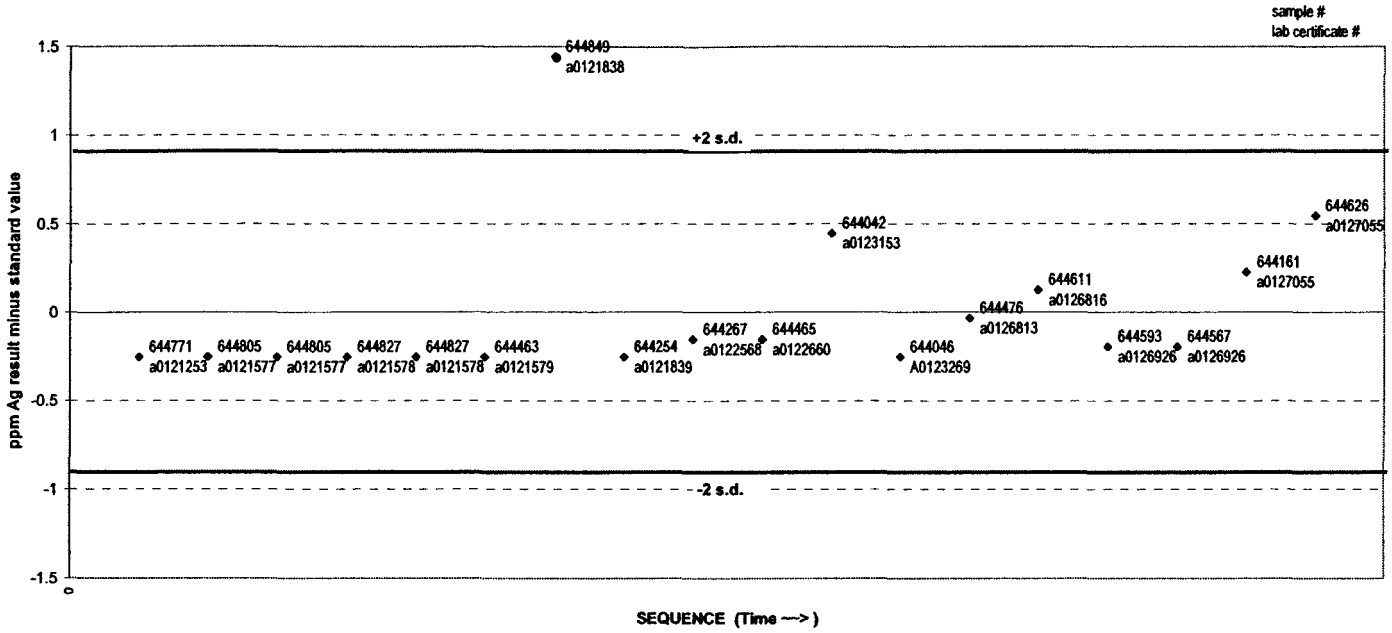
BLANK
Expected (avg.) ppm Zn Value = 232 ppm +/- 2 s.d. (442 ppm)
N = 16



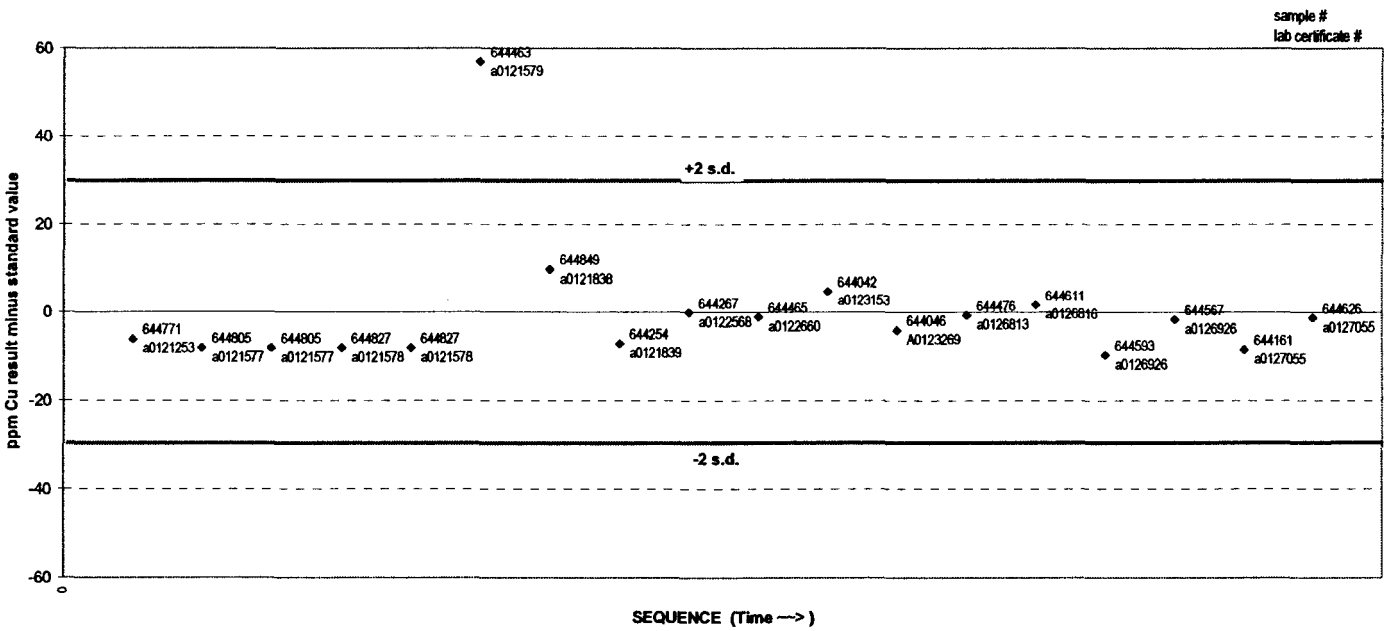
BLANK
Expected (avg.) ppm Pb Value = 130 ppm +/- 2 s.d. (326 ppm)
N = 16



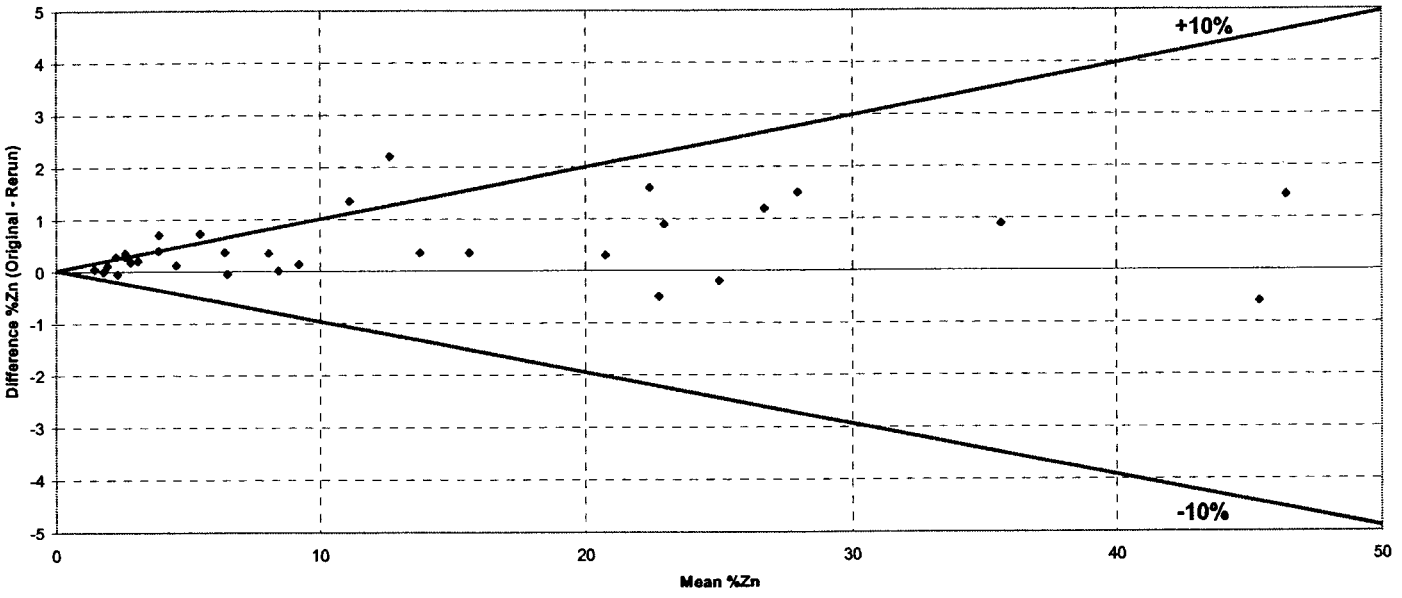
BLANK
Expected (avg.) ppm Ag Value = 0.36ppm +/- 2 s.d. (0.88ppm)
N = 18



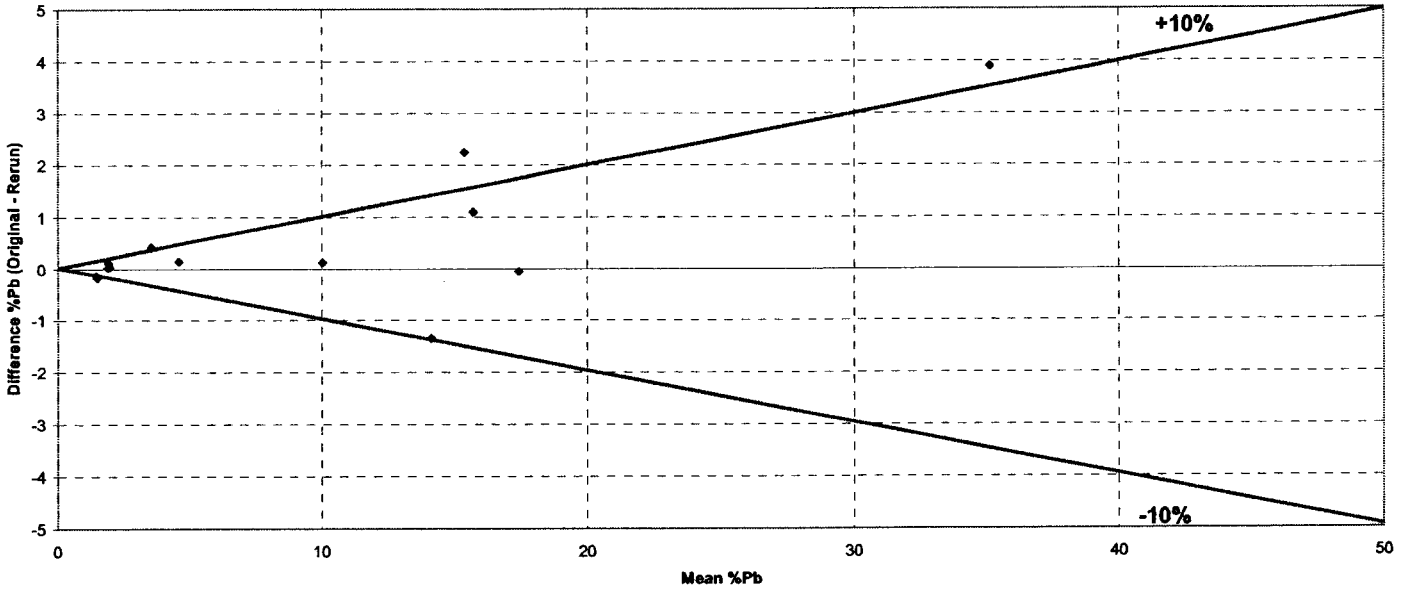
BLANK
Expected (avg.) ppm Cu Value = 17.1 ppm +/- 2 s.d. (30.3 ppm)
N = 18



ZN RE-ASSAYS OF SELECTED PULPS
MEAN VS DIFFERENCE
N = 32



PB RE-ASSAYS OF SELECTED PULPS
MEAN VS DIFFERENCE
N = 13



APPENDIX VII

STATEMENT OF COSTS

noranda

February 7, 2002

Statement of Diamond Drilling Expenditures
Andrew Property
For the period of January 1 - August 16, 2001

Diamond Drilling Expenditures

diamond drilling- perm prll	50,041.58
diamond drilling-contr prll	12,906.25
diamond drilling-supplies	41,896.63
diamond drilling- misc.	9,583.89
diamond drilling-equip.rep/ren	9,016.12
diamond drilling- lodging	1,074.44
diamond drilling- transport.	7,697.57
diamond drilling-fixed wing	63,836.60
diamond drilling-helicopters	140,083.81
diamond drilling-50% meals,ent	120.32
diamond drilling-100% meal/gro	
diamond drilling-contractors	6,047.50
drill contract - mob/demob	4,350.00
drill contract - hours	35,140.00
drill contract - consumables	18,879.58
drill contract - coring	116,948.66
diamond drilling-courier,exprs	5,859.95
Total Diamond Drilling Expenditure	$ 523,482.90

Certified Correct:

Laina Maclean
Mgr, Exploration Mgmt Accounting

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February 7, 2002

Statement of Diamond Drilling Expenditures
Andrew Property
For the period of August 17 - December 31, 2001

Diamond Drilling Expenditures

diamond drilling- perm prll	18,957.81
diamond drilling-contr prll	9,450.00
diamond drilling-supplies	3,401.56
diamond drilling- misc.	28,947.13
diamond drilling-equip.rep/ren	2,100.45
diamond drilling- lodging	1,729.36
diamond drilling- transport.	2,602.11
diamond drilling-fixed wing	24,417.45
diamond drilling-helicopters	55,147.90
diamond drilling-50% meals,ent	751.38
diamond drilling-100% meal/gro	3,824.13
diamond drilling-contractors	- 4,000.00
drill contract - mob/demob	4,028.83
drill contract - hours	15,194.00
drill contract - consumables	9,121.27
drill contract - coring	23,253.50
diamond drilling-courier,exprs	256.45
Total Diamond Drilling Expenditure	$ 199,183.33

Certified Correct:

Laina Maclean
Mgr, Exploration Mgmt Accounting

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NORANDA INC.
Western Canada Region
Thunder Bay, Ontario

ANDREW PROPERTY

094274 CLAIM MAP

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Drawn by : M. S.	Date: January 2002
Revised :	Projection: UTN NAD 83, Zone 8
Figure 2	File number: figure2.prn

N

Clearwater Creek

AREA OF INFLUENCE

East Creek

ANDREW1 YB65796
ANDREW2 YB65797
ANDREW3 YB65798
ANDREW4 YB65799
ANDREW5 YB65800
ANDREW6 YB65801
ANDREW7 YB65802
ANDREW8 YB65803
ANDREW9 YB65804
ANDREW10 YB65805

AMB1 YC02355 · AMB2 YC02356 · AMB3 YC02357 · AMB4 YC02358 · AMB5 YC02359 · AMB6 YC02360 · AMB7 YC02361 · AMB8 YC02362 · AMB9 YC02363 · AMB10 YC02364 · AMB11 YC02367 · AMB12 YC02366 · AMB13 YC02365 · AMB14 YC02368 · AMB15 YC02369 · AMB16 YC02370 · AMB17 YC02371 · AMB18 YC02372 · AMB19 YC02373 · AMB20 YC02374 · AMB21 YC02375 · AMB22 YC02376 · AMB23 YC02377 · AMB24 YC02378 · AMB25 YC02379 · AMB26 YC02380 · AMB27 YC02381 · AMB28 YC02382 · AMB29 YC02383 · AMB30 YC02384 · AMB31 YC02385 · AMB32 YC02386 · AMB33 YC02387 · AMB34 YC02388 · AMB35 YC02389 · AMB36 YC02390 · AMB37 YC02391 · AMB38 YC02392 · AMB39 YC02393 · AMB40 YC02394 · AMB41 YC02395 · AMB42 YC02396 · AMB43 YC02397 · AMB44 YC02398 · AMB45 YC02399 · AMB46 YC02400 · AMB47 YC02401 · AMB48 YC02402 · AMB49 YC02403 · AMB50 YC02404 · AMB51 YC02405 · AMB52 YC02406 · AMB53 YC02407 · AMB54 YC02408 · AMB55 YC02409 · AMB56 YC02410 · AMB57 YC02411 · AMB58 YC02412 · AMB59 YC02413 · AMB60 YC02414 · AMB61 YC02415 · AMB62 YC02416 · AMB63 YC02417 · AMB64 YC02418 · AMB65 YC02419 · AMB66 YC02420 · AMB67 YC02421 · AMB68 YC02422 · AMB69 YC02680 · AMB70 YC02423 · AMB71 YC02681 · AMB72 YC02424 · AMB73 YC02425 · AMB74 YC02426 · AMB75 YC02427 · AMB76 YC02428 · AMB77 YC02429 · AMB78 YC02430 · AMB79 YC02431 · AMB80 YC02432 · AMB81 YC02433 · AMB82 YC02434 · AMB83 YC02435 · AMB84 YC02436 · AMB85 YC02437 · AMB86 YC02438 · AMB87 YC02439 · AMB88 YC02440 · AMB89 YC02441 · AMB90 YC02442 · AMB91 YC02443 · AMB92 YC02444 · AMB93 YC02445 · AMB94 YC02446 · AMB95 YC02447 · AMB96 YC02448 · AMB97 YC02449 · AMB98 YC02450 · AMB99 YC02451 · AMB100 YC02452 · AMB101 YC02453 · AMB102 YC02454 · AMB103 YC02455 · AMB104 YC02456 · AMB105 YC02776 · AMB106 YC02777 · AMB107 YC02778 · AMB108 YC02779 · AMB109 YC02780 · AMB110 YC02781 · AMB111 YC02782 · AMB112 YC02783

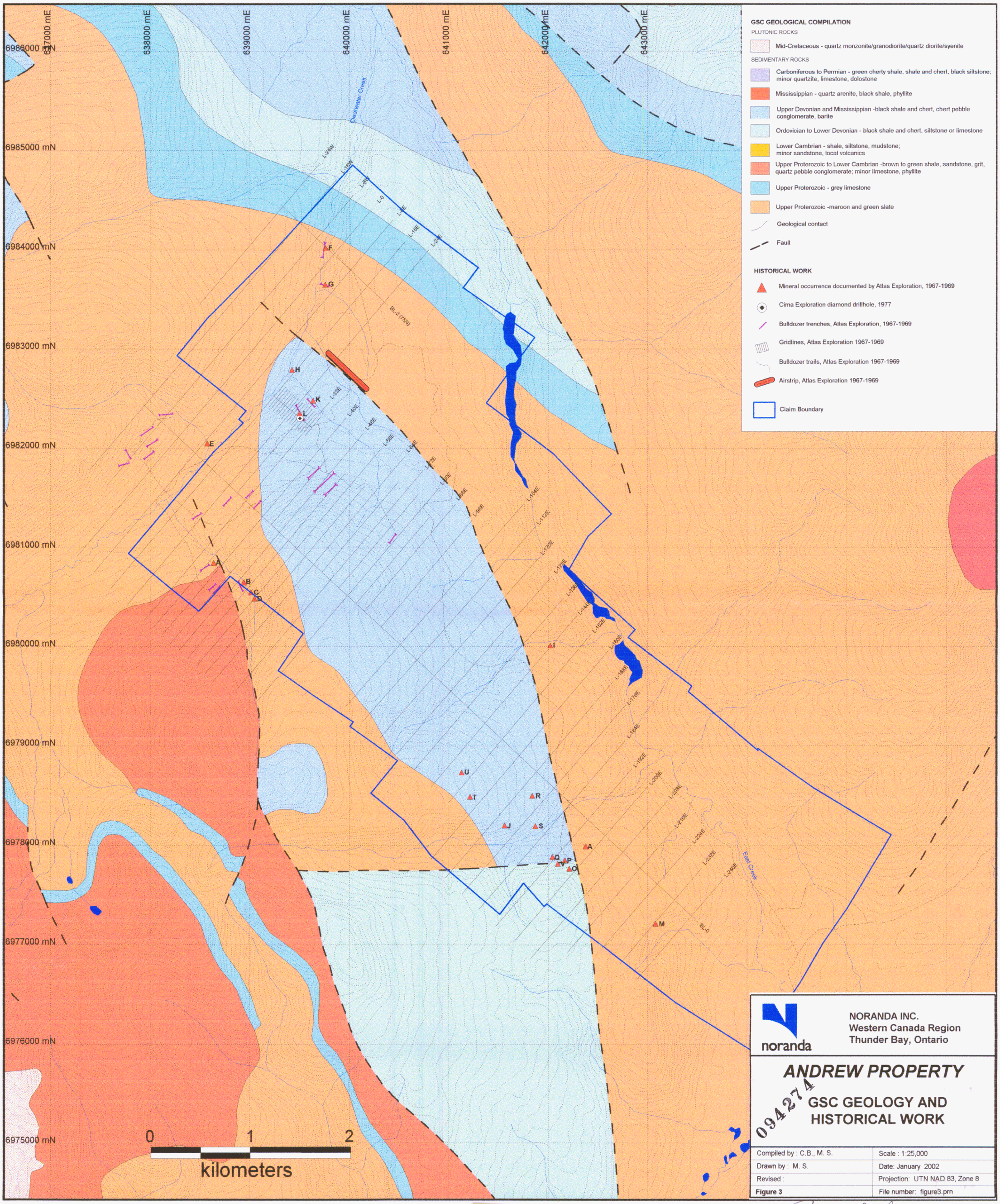
AMB127 YC09965 · AMB128 YC09966 · AMB129 YC09967 · AMB130 YC09968 · AMB131 YC09969 · AMB132 YC09970 · AMB133 YC09971 · AMB134 YC09972 · AMB135 YC09973 · AMB136 YC09974 · AMB137 YC09975 · AMB138 YC09976 · AMB139 YC09977 · AMB140 YC09978 · AMB141 YC09979 · AMB142 YC09980 · AMB143 YC09981 · AMB144 YC09982 · AMB145 YC09983 · AMB146 YC09984

AMB116 YC09955 · AMB115 YC09954 · AMB124 YC09962 · AMB123 YC09961 · AMB126 YC09964 · AMB125 YC09963

0 0.5 1
kilometers

638000 mE · 639000 mE · 640000 mE · 641000 mE · 642000 mE · 643000 mE · 644000 mE · 645000 mE

6985000 mN · 6984000 mN · 6983000 mN · 6982000 mN · 6981000 mN · 6980000 mN · 6979000 mN · 6978000 mN · 6977000 mN · 6976000 mN



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ANDREW PROPERTY

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GSC GEOLOGY AND HISTORICAL WORK

Compiled by : C.B., M. S.	Scale : 1:25,000
Drawn by : M. S.	Date: January 2002
Revised :	Projection: UTN NAD 83, Zone 8
Figure 3	File number: figure3.prn

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GEOLOGY AND MINERAL OCCURRENCES

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Drawn by : M. S.	Date: January 2002
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Figure 4	File number: figure4.prn

GEOLOGY

DMe — Devonian-Mississipian (Earn Group)
black shale and chert, chert pebble conglomerate

ODr — Ordovician to Devonian (Road River Group)
black shale, siltstone, limestone

PEh — Proterozoic to Cambrian (Hyland Group)
Shale, quartzite, quartz pebble conglomerate, sandstone, siltstone, limestone
PEh2 - grey finely crystalline limestone
PEh3 - maroon and green shale, quartzite, siltston quartz pebble conglomerate, limestone

SYMBOLS

- CONTACT
- FAULT
- THERMAL AUREOLE OF PLUTON
- BEDDING
- MINERAL OCCURRENCE
- DRILLHOLE
- PROPERTY BOUNDARY
- AREA OF INFLUENCE
- SCATTERED FLOAT, OUTCROP OF QTZ-CALCITE-SPH-GAL VEINS
- SILICIFIED, QUARTZ VEINED ZONE

OUTCROPS
LITHOLOGIES

- ▲BLACK CLASTICS
- ☆BRECCIA
- □CHERT PEBBLE CGL
- ■CHERT, BLACK
- ▩CHERT, GREY
- FAULT GULLY
- ★INTRUSIVE
- ▼LIMESTONE
- ◆METASEDIMENTS
- ○QUARTZ PEBBLE CONGLOMERATE
- ●QUARTZ SANDSTONE
- ●QUARTZITE
- ●QUARTZITE, DOLOMITIC
- ●QUARTZITE, PYRITIC
- ▲SHALE, GREEN
- △SHALE, GREY
- ▲SHALE, MAROON
- ◇SIL'D BRX'D SEDIMENTS
- ▽SILTSTONE
- ▬SINKHOLE
- ●SOIL GOSSAN

DME
PEh, ODr
PEh ODr
DMe
PEh, ODr
PEh. ODr
PEh3
PEh2
East Creek

638000 mE 639000 mE 640000 mE 641000 mE 642000 mE 643000 mE
6983000 mN 6982000 mN 6981000 mN 6980000 mN 6979000 mN 6978000 mN 6977000 mN

0 0.5 1
kilometers

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ROCK, SOIL SAMPLE, AND EM-MAG ANOMALY FOLLOW-UP LOCATIONS

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Figure 5	File number: figure5.prn

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LEGEND

AIRBORNE EM ANOMALY CLASSIFICATION

- >50 siemens
- 20-50 "
- 10-20 "
- 5-10 "
- 2-5 "
- 1-2 "
- <1 "

INTERPRETED CONDUCTOR AXIS AND REFERENCE #

ROCK SAMPLE

SOIL SAMPLE

Clearwater Creek

East Creek

Grid A
Baseline Az 136 degrees
Wingline Az 46 degrees

Grid B
Baseline Az 152 degrees
Wingline Az 62 degrees

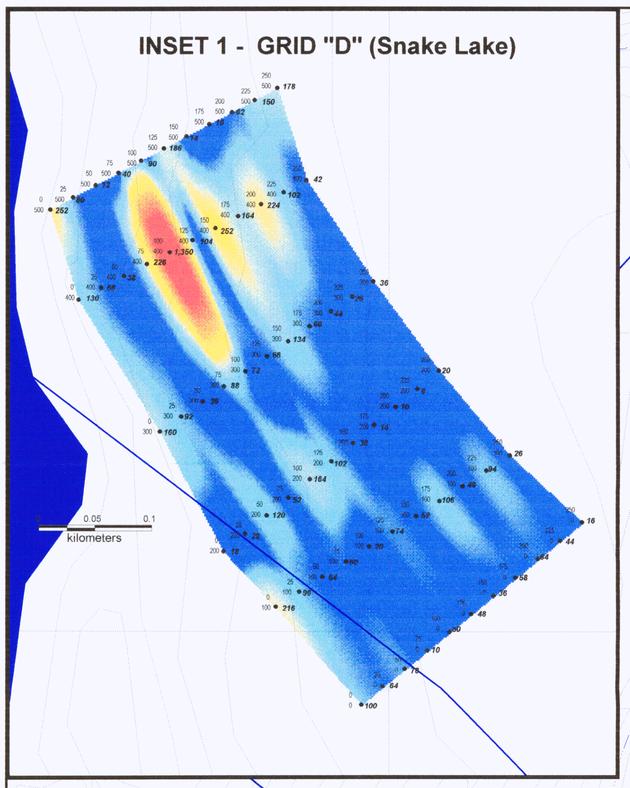
Grid C
Baseline Az 136 degrees
Wingline Az 46 degrees

Grid C
Baseline Az 136 degrees
Wingline Az 46 degrees

0 0.5 1
kilometers

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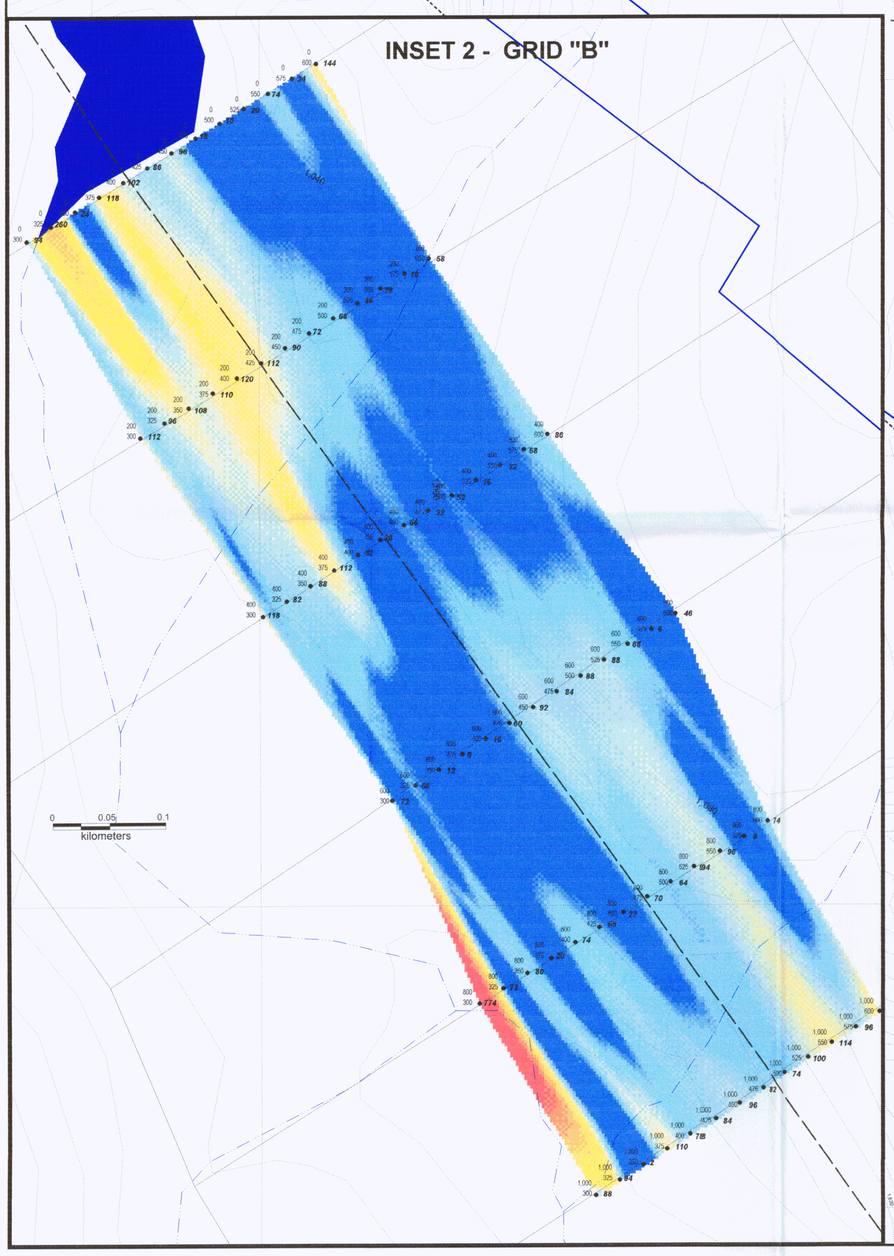
ZINC IN SOIL GEOCHEMISTRY

Compiled by : C.B., M. S.	Scale : 1:7,500
Drawn by : M. S.	Date: January 2002
Revised :	Projection: UTN NAD 83, Zone 8
Figure 6	File number: figure6.prn

KEY:

LOCAL GRID EASTING
LOCAL GRID NORTHING ● ZN IN PPM

0 0.5 1
kilometers



East Creek

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ANDREW PROPERTY

DRILLHOLE AND SECTION LOCATION PLAN

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Drawn by : M. S.	Date: January 2002
Revised :	Projection: UTN NAD 83, Zone 8
Figure 7	File number: figure7.prn

N

638000 mE 639000 mE 640000 mE 641000 mE 642000 mE 643000 mE 644000 mE 645000 mE

6985000 mN 6984000 mN 6983000 mN 6982000 mN 6981000 mN 6980000 mN 6979000 mN 6978000 mN 6977000 mN 6976000 mN

Clearwater Creek

East Creek

FIG. 16

AN-01-10

TL A 10+00 N

L A 0+00 E

L A 2+00 E

L A 4+00E

L A 6+00 E

L A 8+00 E

L A 10+00 E

L A 12+00 E

L A 14+00 E

L A 16+00 E

L A 18+00 E

Grid A
Baseline Az 136 degrees
Wingline Az 46 degrees

BL A 0+00 N

AN-01-02

AN-01-01

FIG. 15

FIG. 14

AN-01-03

INSET

0 50 100
meters

AN-01-04
12.8% Zn, 0.1% Pb / 13.5m

AN-01-12
5.0% Zn, 0.1% Pb / 13.5m

AN-01-11
14.9% Zn, 3.1% Pb / 12.8m

AN-01-15
9.5% Zn, 18.8% Pb / 4.8m
11.0% Zn, 20.2% Pb / 5.8m

AN-01-14
6.6% Zn, 24.5% Pb / 3.7m

AN-01-13
2.6% Zn, 0.01% Pb / 6.8m
2.4% Zn, 6.32% Pb / 3.5m

AN0105 AN0106 AN0109 AN0112 AN0115 AN0113 AN0114 AN0111 AN0107

FIG. 13 FIG. 12 FIG. 11 FIG. 9 FIG. 10

GEOLOGY LEGEND FOR ANDREW AREA

- QUARTZ-CALCITE BRECCIA WITH SPHALERITE, GALENA
- SILICIFIED, FRACTURED SEDIMENTS
- SILICIFIED QUARTZITE WITH QUARTZ STRINGERS
- BLACK SILTSTONE, SHALE

TL B 10+00 N

BL B 0+00 N

L B 0+00 E

L B 2+00 E

L B 4+00E

L B 6+00 E

L B 8+00 E

L B 10+00 E

L B 12+00 E

L B 14+00 E

L B 16+00 E

Grid B
Baseline Az 152 degrees
Wingline Az 62 degrees

BL C 0+00 N

TL C 12+00 N

L C 0+00 E

L C 2+00 E

L C 4+00E

L C 6+00 E

L C 8+00 E

L C 10+00 E

L C 12+00 E

L C 14+00 E

L C 16+00 E

L C 18+00 E

AN-01-08

Grid C
Baseline Az 136 degrees
Wingline Az 46 degrees

FIG. 8

0 0.5 1
kilometers

1200.0 Z

1100.0 Z

1000.0 Z

AN0108

Overburden

Grey Shale

Fault Breccia

Green Grey Shale

Limestone Breccia

Dark Grey Shale

146.30

-10 0 10 20 30 40 50 60 70 80 90

Scale 1:200

094274

Noranda Inc. Western Canada Region 874 Tungsten Street Thunder Bay, ON P7B 6J3	1 : 500 Vertical Section Looking WNW DDH AN01-08 See Figure 9 for Legend Figure 8
UNITS : METRES DATE: 02/01/31 TIME: 20:59:20	Software by Geosoft Software, Internet.com

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6918300.0 N
641350.0 E
6918350.0 N
641370.0 E
6918400.0 N
641390.0 E

1300.0 Z
1200.0 Z
1100.0 Z

AN0107

UP_SHALE
MNZN
QTZITE
BK_SHALE

Overburden
sph Grey/Brown Shale
sph Maroon Shale
Grey Shale
Limestone
Grey Shale
Fault Breccia
Grey Shale
sph Quartzite
sph Grey Shale
176.90

Interpretive Legend

MNZN: Coarse grained sphalerite +/- galena in brecciated quartzite and lesser brecciated black shale

UP_SHALE: Upper shale sequence. Primarily maroon, green and grey shales.

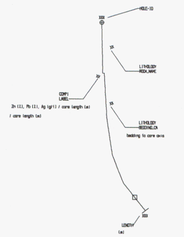
BK_SHALE: Primarily dark grey to black shales with lesser quartzite and limestone blocks (olistoliths ?)

QTZITE: Quartzite dominated sequence. Grey, massive, medium-grained quartzite, commonly brecciated. Lesser grey and black shales.

LOW_LMST: Lower limestone unit. Massive limestone to calcarenite and calcareous sandstone.

Drillhole Lithology

Ov. Fabric dyke
Dr. metamorphosed diorite dyke (?)
Grd. Shale
Patt. maroon shale
Patt. Green shale
Patt. Dark grey to black shale
Mixed. Grey shale
Sed. Grey sandstone
Qtz. Quartzite, commonly grey, metamorphosed
Carb. calcareous sandstone, occasionally to limestone
Lst. Limestone
Dbx. Carbonate/clast breccia. Abundant calcite veins & fillings
Sandbx. Black shale fragments in black shale matrix
Lstbx. Limestone breccia
Mx?. Fault related rocks, including gouge and breccia
Mnzbx. e.g. sphalerite and galena in brecciated quartzite



094274

-10 0 10 20 30 40 50 60 70 80 90
Scale 1:500

Noranda Inc. Western Canada Region 874 Tungsten Street Thunder Bay, ON P7B 6J3	Vertical Section Looking WNW DDH AN01-07 1 : 500 Figure 9
UNITS : METRES DATE: 02/01/27 TIME: 15:16:22	Software by Geosoft Software International

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6978000.0 N
641500.0 E
6978300.0 N
641350.0 E
6978600.0 N
641350.0 E

1300.0 Z
1200.0 Z
1100.0 Z

UP_SHALE
UP_SHALE
UP_SHALE
BK_SHALE
BK_SHALE
MNZN
QTZITE
QTZITE
QTZITE
LOW_LMST

14.68, 3.12, 12.50 / 18.50
5.02, 0.05, 1.09 / 30.00

AN01-11
126.50
AN01-12
215.50

Overburden
Overburden
Maroon Shale
Green Shale
Quartzite
Grey Shale
Maroon Shale
Grey Shale
Quartzite
Maroon Shale
Carbonatized Breccia
Black Shale
Quartzite
Grey Shale
Maroon Shale
Quartzite
Black to Grey Shale
Quartzite
Possible fault
Quartzite
Possible fault
Quartzite
Grey Shale
Quartzite
Grey Shale
Carbonatized Breccia
Mineralized Breccia
Black Shale
Mineralized Breccia
Quartzite Breccia
Mineralized Breccia
Quartzite Breccia
Quartzite

0 5 10 15 20 30 40 50 60 70 80 90
Scale 1:500

Interpretive Legend

MNZN: Coarse grained sphalerite +/- galena in brecciated quartzite and lesser brecciated black shale

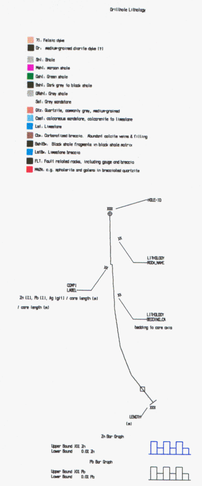
UP_SHALE: Upper shale sequence. Primarily maroon, green and grey shales.

BK_SHALE: Primarily dark grey to black shales with lesser quartzite and limestone blocks (olistoliths ?)

QTZITE: Quartzite dominated sequence. Grey, massive, medium-grained quartzite, commonly brecciated. Lesser grey and black shales.

LOW_LMST: Lower limestone unit. Massive limestone to calcarenite and calcareous sandstone.

Drillhole Lithology



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Western Canada Region
874 Tungsten Street
Thunder Bay, ON
P7B 6J3

UNITS : METRES DATE: 02/01/27 TIME: 15:14:58

Vertical Section Looking WSW
DDH AN01-11, 12
1 in: 500
Figure 10

Software by Geosoft Software International

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AN0104

AN0113

AN0105

AN0109

UP_SHALE

UP_SHALE

MNZN

BK_SHALE

BK_SHALE

QTZITE

QTZITE

QTZITE

QTZITE

LOW_LMST

LOW_LMST

10.75, 0.01, 0.04 / 6.8

12.84, 0.12, 1.75 / 27.50

1.13, 0.65, 2.23 / 40.50

71.60

195.10

308.75

236.30

Interpretive Legend

MNZN: Coarse grained sphalerite +/- galena in brecciated quartzite and lesser brecciated black shale

UP_SHALE: Upper shale sequence. Primarily maroon, green and grey shales.

BK_SHALE: Primarily dark grey to black shales with lesser quartzite and limestone blocks (olistoliths ?)

QTZITE: Quartzite dominated sequence. Grey, massive, medium-grained quartzite, commonly brecciated. Lesser grey and black shales.

LOW_LMST: Lower limestone unit. Massive limestone to calcarenite and calcareous sandstone.

Drillhole Lithology

- Fl: Felsic dyke
- Dr: medium-grained diorite dyke (?)
- Sh: Shale
- Mshl: maroon shale
- Gshl: Green shale
- Bshl: Dark grey to black shale
- GRshl: Grey shale
- Sst: Grey sandstone
- Qtz: Quartzite, commonly grey, medium-grained
- Cast: calcareous sandstone, calcarenite to limestone
- Lst: Limestone
- Cax: Carbonatized breccia. Abundant calcite veins & filling
- BshlBx: Black shale fragments in black shale matrix
- LstBx: Limestone breccia
- FLT: Fault related rocks, including gouge and breccia
- MNZN: e.g. sphalerite and galena in brecciated quartzite

HOLE-ID
XXX
XS
LITHOLOGY ROCK_NAME
Xr
COMPI LABEL
Zn (%), Pb (%), Ag (g/t) / core length (m)
/ core length (m)
XS
LITHOLOGY BEDDING_DA
bedding to core axis
XXX
LENGTH (m)

094274

Zn Bar Graph
Upper Bound 10% Zn
Lower Bound 0.01% Zn

Pb Bar Graph
Upper Bound 10% Pb
Lower Bound 0.01% Pb

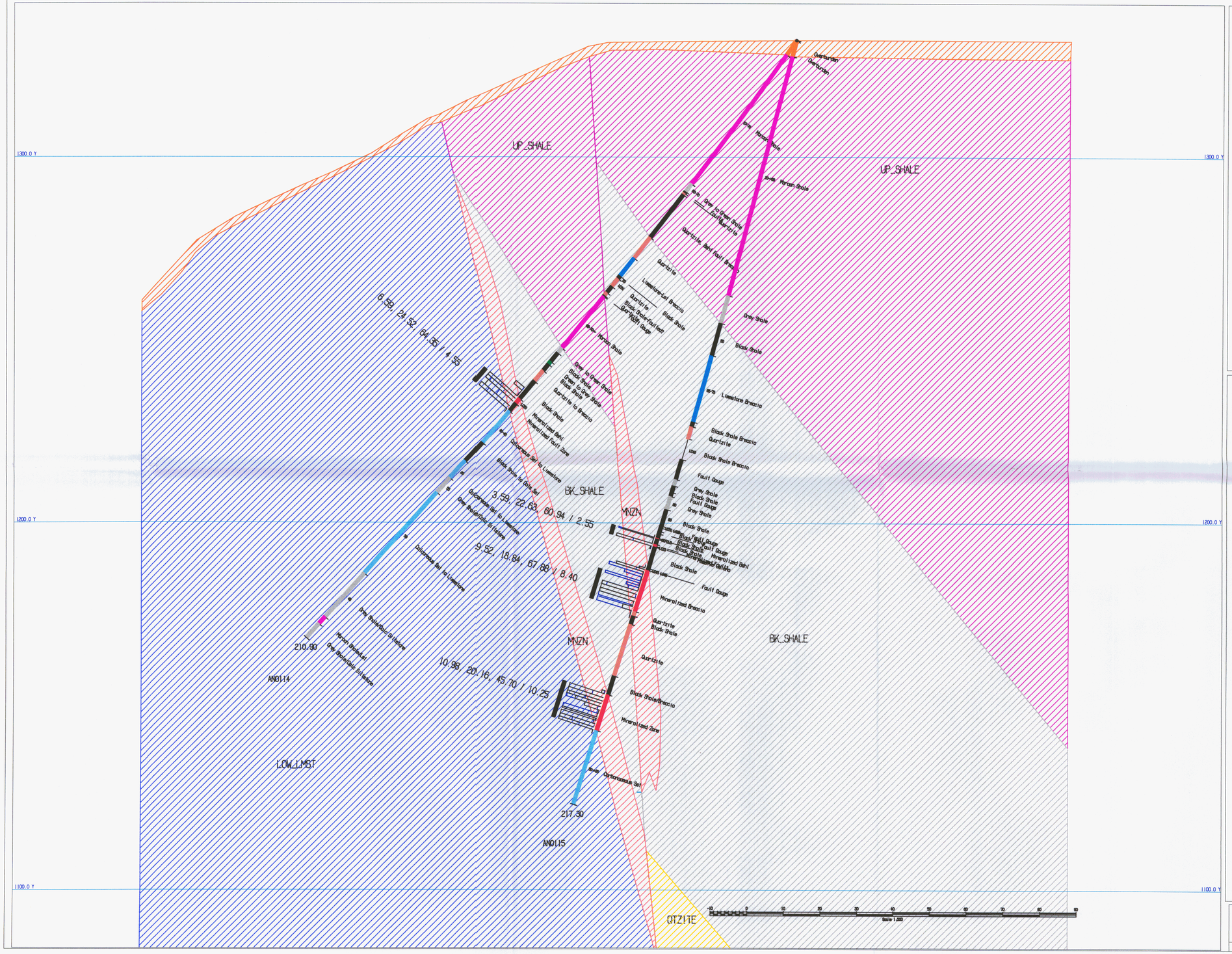
Noranda Inc.
Western Canada Region
874 Tungsten Street
Thunder Bay, ON
P7B 6L8

UNITS : METRES DATE: 02/01/25 TIME: 19:42:15

Section AN12 - Looking West
DDH's AN01-04, 05, 09, 13
1 : 500
Figure 11

Software by Geosoft Software International

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Interpretive Legend

MNZN: Coarse grained sphalerite +/- galena in brecciated quartzite and lesser brecciated black shale

UP_SHALE: Upper shale sequence. Primarily maroon, green and grey shales.

BK_SHALE: Primarily dark grey to black shales with lesser quartzite and limestone blocks (olistoliths ?)

QTZITE: Quartzite dominated sequence. Grey, massive, medium-grained quartzite, commonly brecciated. Lesser grey and black shales.

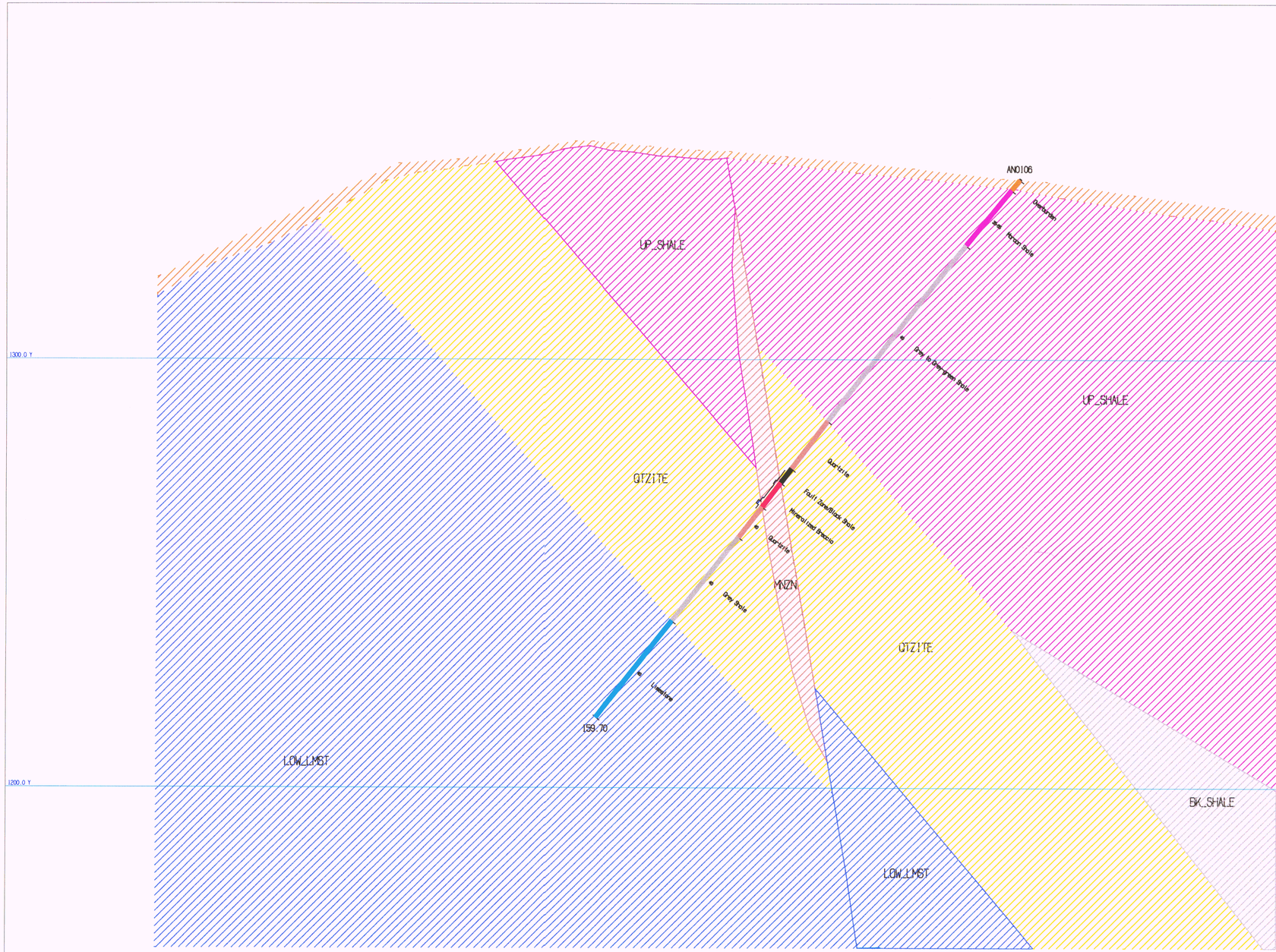
LOW_LMST: Lower limestone unit. Massive limestone to calcarenite and calcareous sandstone.



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Noranda Inc. Western Canada Region 874 Tungsten Street Thunder Bay, ON P7B 6L9	Vertical Section Looking West DDH AN01-14, 15 1 : 500 Figure 12
UNITS : METRES DATE: 02/01/27 TIME: 17:48:54	Software by Geocon Software International

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Interpretive Legend

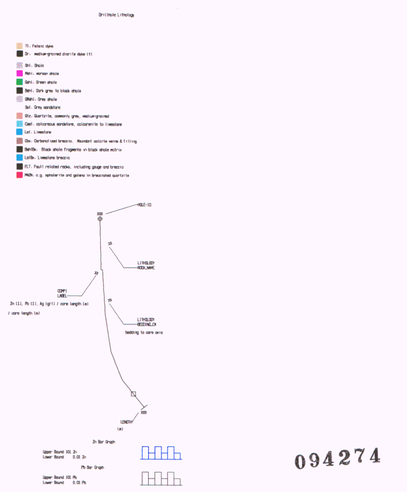
MNZN: Coarse grained sphalerite +/- galena in brecciated quartzite and lesser brecciated black shale

UP_SHALE: Upper shale sequence. Primarily maroon, green and grey shales.

BK_SHALE: Primarily dark grey to black shales with lesser quartzite and limestone blocks (olistoliths ?)

QTZITE: Quartzite dominated sequence. Grey, massive, medium-grained quartzite, commonly brecciated. Lesser grey and black shales.

LOW_LMST: Lower limestone unit. Massive limestone to calcarenite and calcareous sandstone.



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Noranda Inc. Western Canada Region 874 Tungsten Street Thunder Bay, ON P7B 6J3	Vertical Section Looking Northwest DDH AND1-06 1 : 500 Figure 13
UNITS : METRES DATE: 02/01/27 TIME: 17:59:22	Software by Gemcom Software International

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1200.0 Z

ANO103

Overburden

Limestone

Grey Shale

Quartzite

Grey Shale

Fault

Grey Shale

Limestone

Green Shale

Limestone

Quartzite

Green Shale

160.30

1100.0 Z

1000.0 Z

-10 0 10 20 30 40 50 60 70 80 90

Scale 1:500

094274

Noranda Inc. Western Canada Region 674 Tungsten Street Thunder Bay, ON P7B 6J8	1 : 500 Vertical Section Looking NW DDH ANO1-03 See Figure 9 for Legend Figure 14
UNITS : METRES DATE: 02/01/31 TIME: 21:16:32	Software by Geocom Software International

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AN0101

AN0102

1100.0 Z

1000.0 Z

Overburden

Skarn

Quartz Vein
Fault Breccia

Black Shale

Quartzite

Skarn Shale
Felsic Dyke

Shale

Fault Breccia

Quartzite

Shale

Fault Zone

Shale

141.70

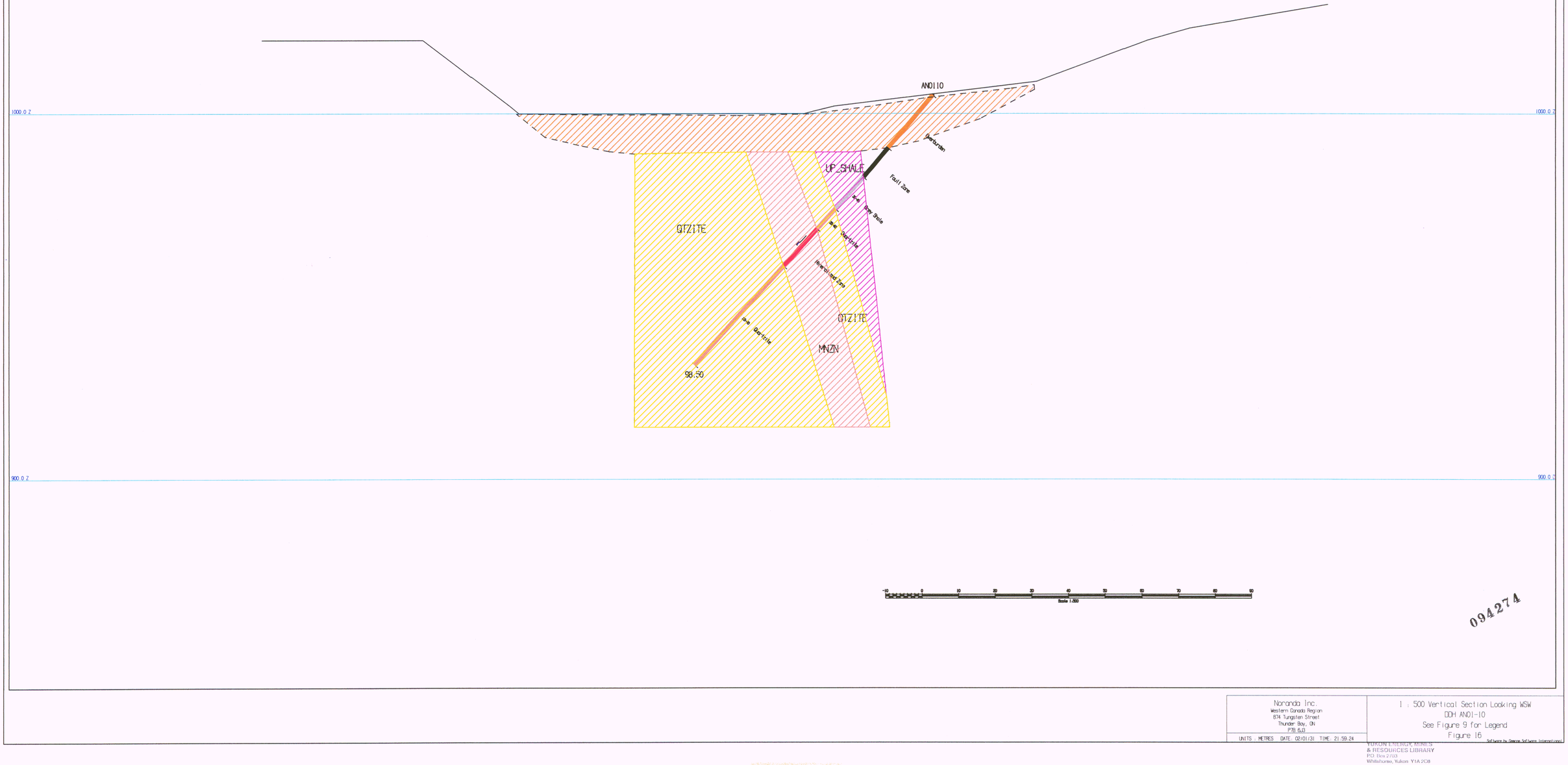
149.40

-10 0 10 20 30 40 50 60 70 80 90
Scale 1:500

094274

Noranda Inc. Western Canada Region 874 Tungsten Street Thunder Bay, ON P7B 6J3	1 : 500 Vertical Section Looking NW DDH AN01-01, 02 See Figure 9 for Legend Figure 15
UNITS : METRES DATE: 02/01/31 TIME: 21:45:15	Software by Geosoft Software International

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Noranda Inc. Western Canada Region 874 Tungsten Street Thunder Bay, ON P7B 6J3	1 : 500 Vertical Section Looking WSW DDH ANO1-10 See Figure 9 for Legend Figure 16
UNITS : METRES DATE: 02/01/31 TIME: 21:59:24	Software by Geocom Software International Corp.

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