

MAR 19970014: OLDMAN RIVER

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19970014

**PETROGRAPHY AND CHEMICAL ANALYSIS OF A SUITE OF ROCK SAMPLES
FROM THE OLDMAN RIVER LEAD-ZINC PROSPECT**

SITUATED ON

SOUTHWEST ALBERTA MINERAL PERMIT NO. 9393080228

By Chris Graf, P.Eng.

for

ECSTALL MINING CORPORATION

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SUMMARY

Ecstall's Oldman River lead-zinc prospect is situated at 50° 7' 30" N latitude and 114° 43' 30" W longitude on Township 13 Range 6 Section 35 west of 5th meridian.

The prospect has a long history dating back to the discovery of outcropping galena-sphalerite mineralization by a group of hunters in 1912. The most significant exploration work was carried out in 1953/1954 by West Canadian Collieries, who opened two adits, dug several trenches and diamond drilled 2 shallow holes. They also hand cobbled 10 tons of ore, which was shipped to Cominco's Trail, B.C. smelter for treatment and a smaller sample, which was sent to the Mines Branch in Ottawa for mineral dressing and processing tests.

The Oldman River mineralization is of the Mississippi Valley type (MVT) and is hosted by the upper Devonian age Palliser formation. The mineralized zone occurs in a dolomitic limestone unit 50 feet below the top of the Palliser formation, and 200 feet above its base which is the regional Lewis thrust fault, below which lies the lower Cretaceous Kootenay formation.

Mineralization fluids have affected a sizable stratabound zone roughly 200 m wide and 20 m thick, which contains irregular flat lying and vertically oriented veins of introduced coarse crystalline calcite/dolomite/ankerite. Disseminated pyrite, sphalerite and galena occur in low concentrations throughout this entire zone, but are most heavily concentrated at surface in the areas where the 2 adits have been driven. A report by M.E. Holter in 1977 describes the detailed geology and sampling inside these adits.

In 1997 the writer visited the prospect on foot and collected a number of mineralized rock (grab) samples from the old dumps and alongside the lower adit. Six of these samples were broken in half and pieces of each then sent to Chemex Laboratories for 30 element ICP analysis plus assays for lead and zinc contents and to Vancouver Petrographics for thin section examination, mineral identification and petrographic descriptions.

The analytical results and a petrographic report by John Payne of Vancouver Petrographics are both included in this report.

The analytical data showed several samples to contain high concentrations of lead and zinc, which was expected as they were selected heavily mineralized pieces. Concentrations of all other elements in these samples were low except those for silver and germanium. Sample O.R. 97-1 contained 210 g Ag/t or 7 oz Ag/ton and 310 ppm Ge. Sample O.R. 97-3 contained 180 g Ag/ton or 6 oz Ag/ton and 170 ppm Ge.

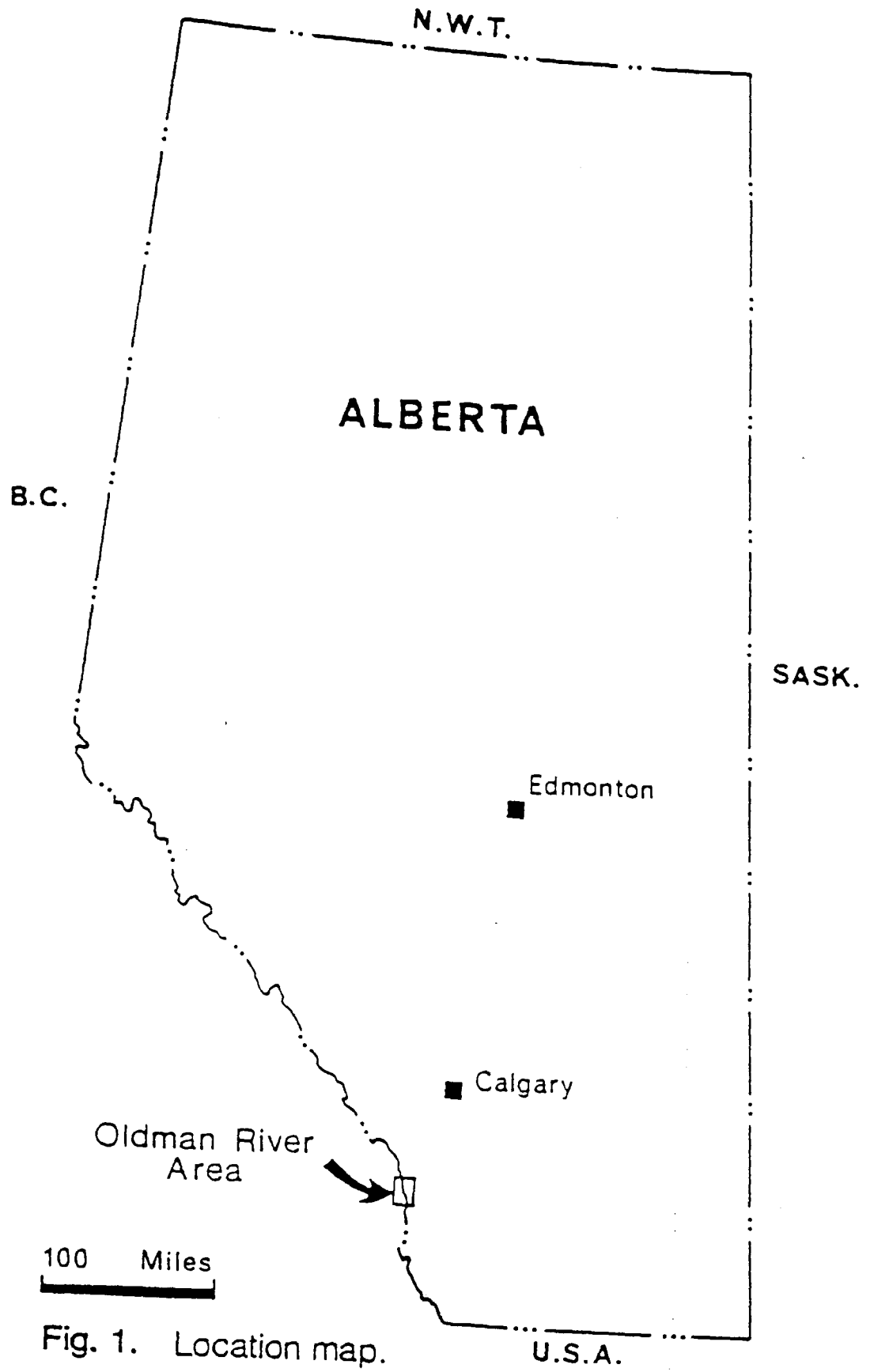


Fig. 1. Location map.

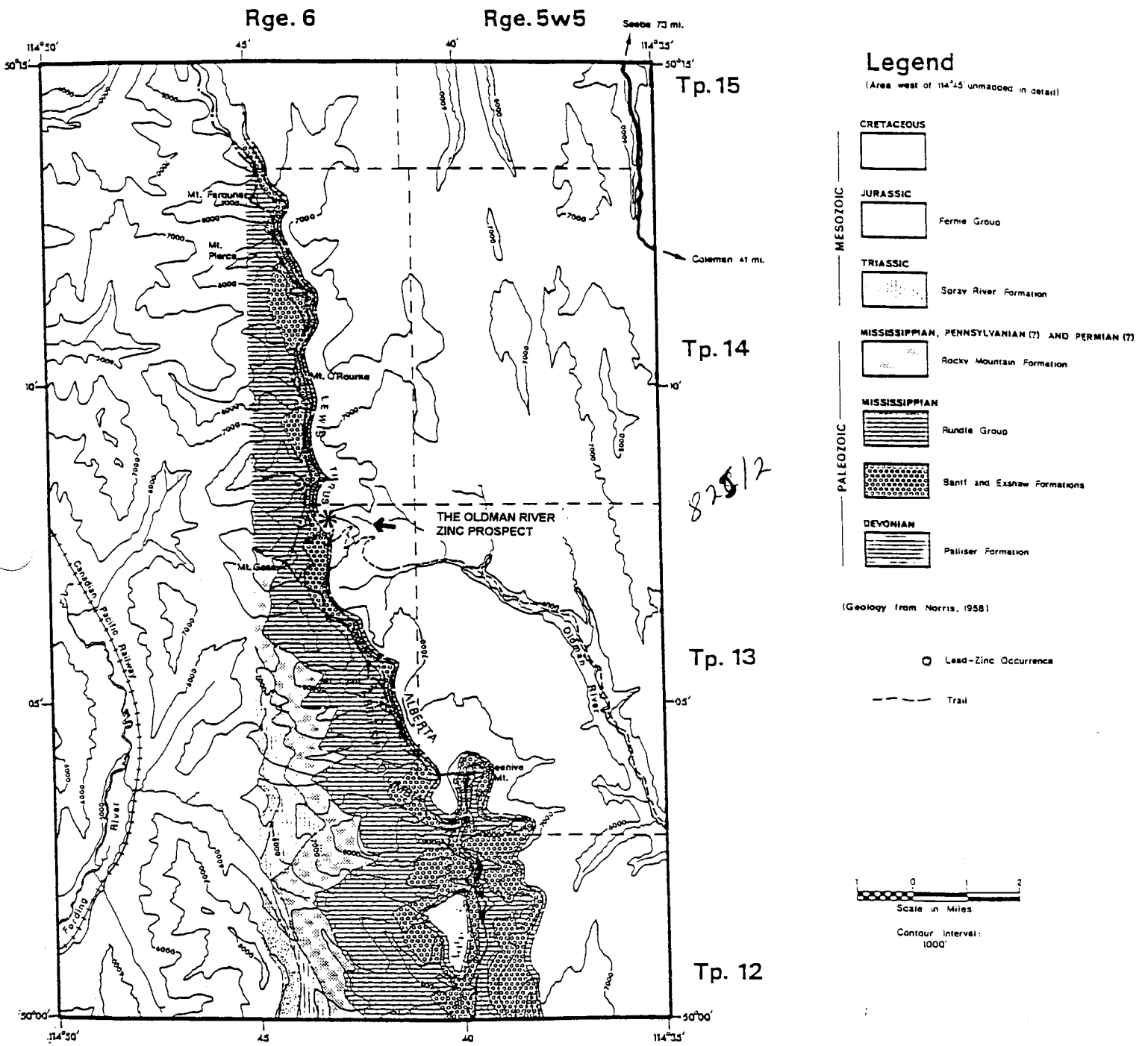


Fig. 2. Geological map of the Oldman River Area, from D. K. Norris (1958).



View of the Oldman River lead-zinc prospect looking northwest. Note the person standing beside the lower adit for scale.



Vancouver Petrographics Ltd.

8080 GLOVER ROAD, LANGLEY, B.C. V3A 4P9
PHONE (604) 888-1323 • FAX (604) 888-3642

Report # 970926 for:

**Chris Graff,
Ecstall Mining Corporation,
307 - 475 Howe Street,
Vancouver B.C.,**

Project: Oldman Pb-Zn

Samples: OR-97: 1 to 6

Summary:

The samples contain a variety of intergrowths of carbonates and sulfides, dominated by sphalerite with variable amounts of galena and pyrite. Some sphalerite patches have thin overgrowths of pyrite. Textures suggest that the rocks were metamorphosed and recrystallized. Some samples contain recrystallized zones or breccia matrix dominated by calcite or dolomite. A few late carbonate veinlets are dominated by calcite.

Carbonates were distinguished in part on the style and rate reaction on contact with dilute, cold HCl. Calcite begins to react immediately, and after a few seconds effervesces vigorously. Dolomite reacts immediately, but the reaction continues as a slow bubbling on the surface. Ankerite reacts more slowly with bubbles slowly forming on the surface after several seconds contact with the acid. As well, the refractive index increases from calcite to dolomite to ankerite, although the presence of dusty inclusions in some samples changes the apparent relief and makes this not as useful a method to distinguish the carbonates as the reactivity with cold, dilute HCl.

Sample OR-97-1 is a recrystallized aggregate of ankerite and sphalerite with much less abundant patches of galena and minor disseminated pyrite. A few coarser grained patches of ankerite may have formed by recrystallization into tension zones.

Sample OR-97-2 contains angular fragments of brownish ankerite up to 15 mm in size enclosed in a matrix of mainly coarse grained, cream-coloured calcite. The colour of the ankerite fragments is due to dusty limonite inclusions.

Sample OR-97-3 is a patchy intergrowth of ankerite and sphalerite with minor pyrite. Pyrite occurs along margins of some sphalerite patches and in a few veinlets. Galena occurs mainly in irregular patches and wispy dendritic seams in ankerite near sphalerite.

Sample OR-97-4 is a uniform intergrowth of medium to coarse grained ankerite and patches of sulfides dominated by pyrite and sphalerite with less abundant galena and minor kaolinite. Minor late veinlets are of calcite.

Sample OR-97-5 contains two distinct zones. Much of the sample contains an intergrowth of very fine grained dolomite with disseminated sphalerite and much less abundant pyrite and minor galena. In one corner is a band a few mm wide dominated by sphalerite with minor interstitial dolomite and pyrite. A late veinlike or recrystallized zone is of dolomite/calcite.

Sample OR-97-6 contains a zone of fine to medium grained dolomite/ankerite and sphalerite with much less abundant pyrite. Just under half of the sample is dominated by medium to coarse grained calcite with minor inclusions of pyrite and sphalerite.

Photographs were taken to illustrate typical textures. A list of photographs with brief descriptions are at the end of the report.



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Sample OR-97-1 Ankerite-Sphalerite-Galena-(Pyrite)

The sample is a recrystallized aggregate of ankerite and sphalerite with much less abundant patches of galena and minor disseminated pyrite. A few coarser grained patches of ankerite may have formed by recrystallization into tension zones.

ankerite	40-45%
sphalerite	40-45
galena	12-15
pyrite	1- 2

Ankerite forms anhedral grains averaging 0.5-1 mm in size and a few up to 3 mm across; the latter are mainly in coarse grained ankerite-rich patches which may have formed by recrystallized in zones of low pressure. Most ankerite grains contain moderately abundant dusty to cryptocrystalline fluid and semi-opaque inclusions. A few vuggy zones are rimmed by subhedral ankerite grains averaging 1-1.5 mm in size. Some of these have an overgrowth averaging 0.02 mm wide of cryptocrystalline to extremely fine grained ankerite/dolomite. The presence of minor patches in the hand sample in which the sample reacts rapidly with dilute HCl suggests the presence of some interstitial calcite. The extremely fine grained carbonate probably is more reactive with dilute, cold HCl than the coarser grained carbonate.

Sphalerite forms dense patches of granular aggregates of grains averaging 0.07-0.15 mm in size. Grains range in colour from medium orange to deep reddish orange. A few coarser grains and patches have cores of medium to deep reddish orange colour and rims ranging from pale orange to colourless. Some patches of early-formed deep red-brown sphalerite have overgrowths of recrystallized, medium to pale orange sphalerite, in part intergrowth with ankerite.

Galena is concentrated strongly in a zone 15 mm across in which it is intergrown coarsely with much less abundant sphalerite. Elsewhere it form irregular patches averaging 0.3-1 mm in size intergrown with sphalerite.

Pyrite forms disseminated anhedral to subhedral grains averaging 0.01-0.03 mm in size, and a few clusters up to 0.1 mm across of grains averaging 0.02-0.05 mm in size. Many sphalerite patches and a few galena patches have a thin, partial rim of cryptocrystalline pyrite.

Sample OR-97-2 Brecciated Ankeritic Carbonate, Coarse Calcite Matrix

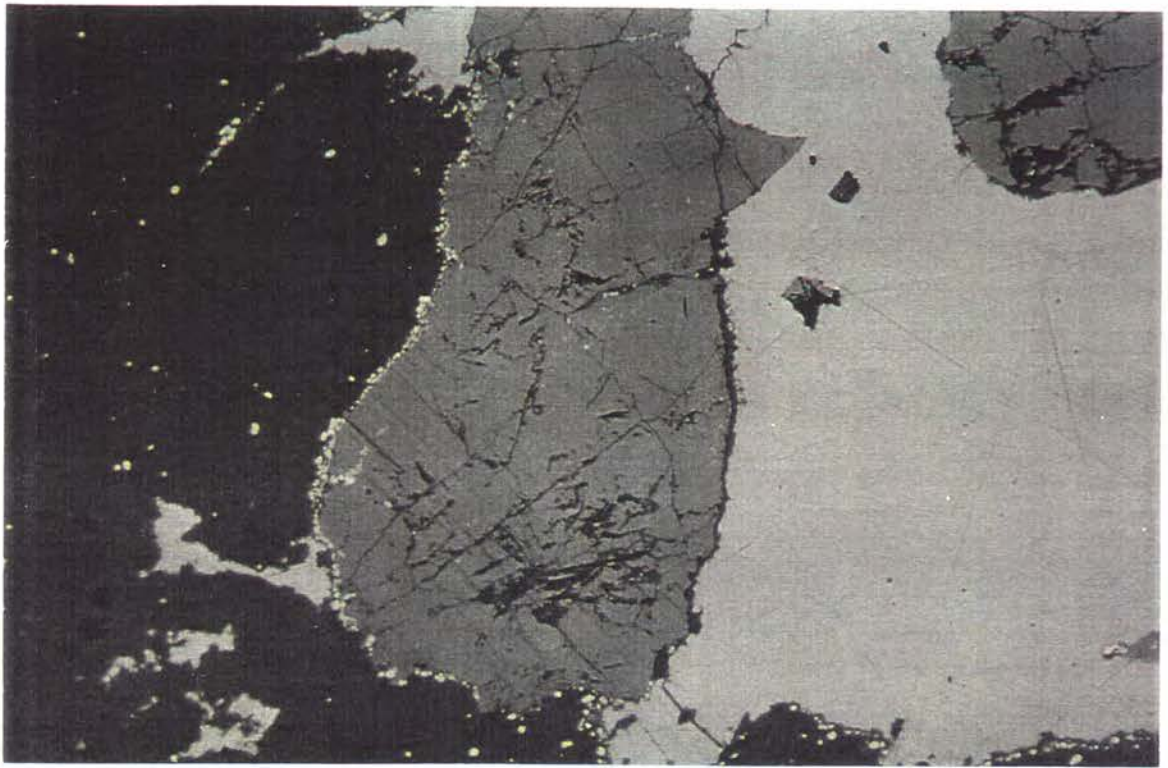
The sample contains angular fragments of brownish ankerite up to 15 mm in size enclosed in a matrix of mainly coarse grained, cream-coloured calcite. The colour of the ankerite fragments is due to dusty limonite inclusions.

ankerite	30-35% (higher in some rock chips)
limonite	1
recrystallized patches	
calcite	65-70

The host rock consists of ankerite as subhedral to slightly interlocking, equant grains averaging 0.07-0.2 mm in size. Ankerite contains minor dusty limonite, giving it a pale to light brown colour in thin section and a medium brown colour in hand sample. Minor disseminated opaque grains averaging 0.005-0.01 may be of limonite/hematite.

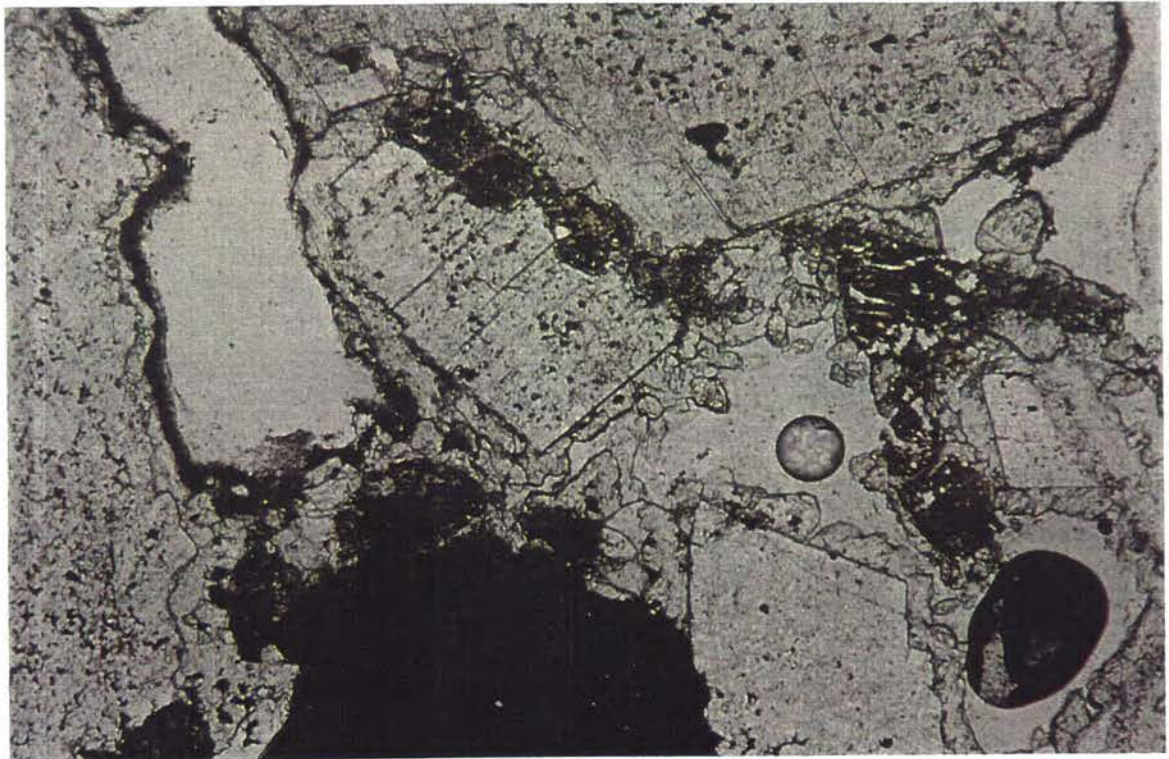
A few subrounded patches up to 0.3 mm in size are of hematite/limonite, probably after pyrite. Associated with some of these are wispy seams of brown limonite, which cut the ankerite-rich fragments but not the calcite matrix.

The rock was brecciated, and fragments healed by a matrix of calcite. This forms colourless (in thin section) anhedral grains averaging 1-3 mm in size and locally up to several mm across. In some patches up to a few mm across, grains contain moderately abundant dusty, black inclusions which give the grains an overall light grey colour.



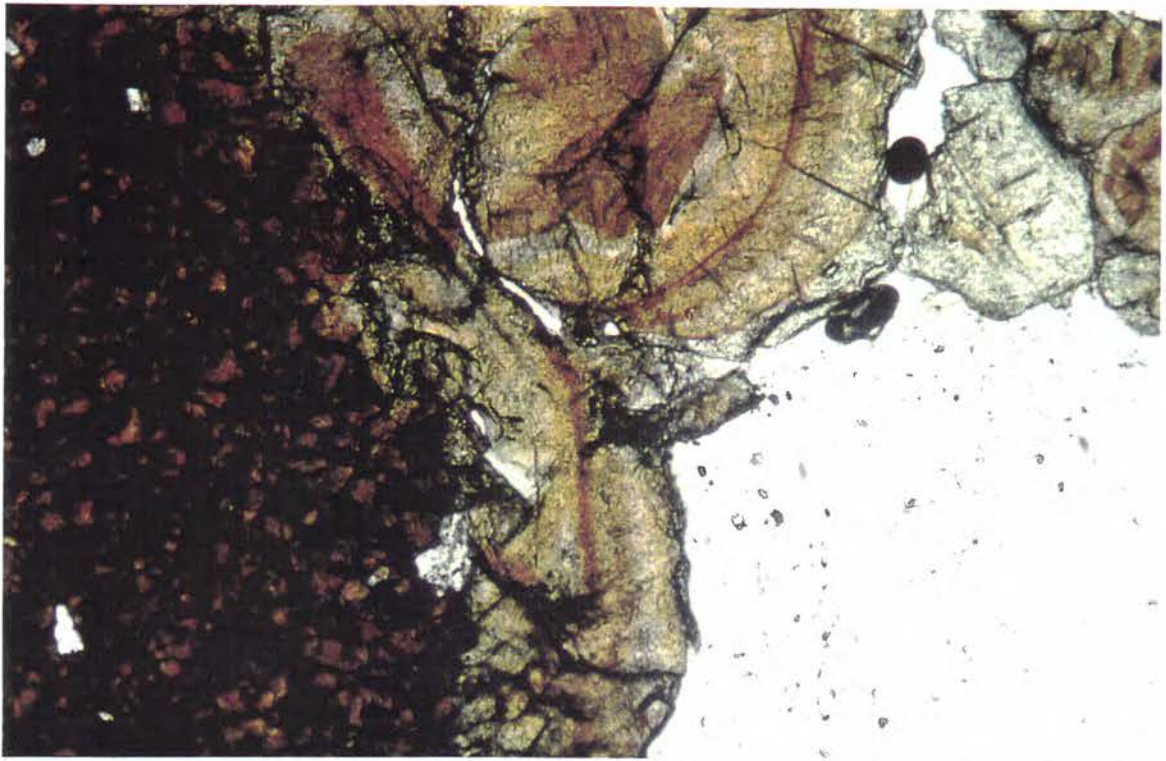
O.R. 97-1

Sphalerite (medium grey)-galena (silvery to creamy grey)-ankerite (brownish grey) intergrowth; minor train of pyrite along sphalerite-ankerite border, lesser along galena-ankerite border; sub micron sized inclusions of pyrite/pyrrhotite in sphalerite; irregular patches of galena in ankerite. Reflected light. Length of photo 1.6 mm.



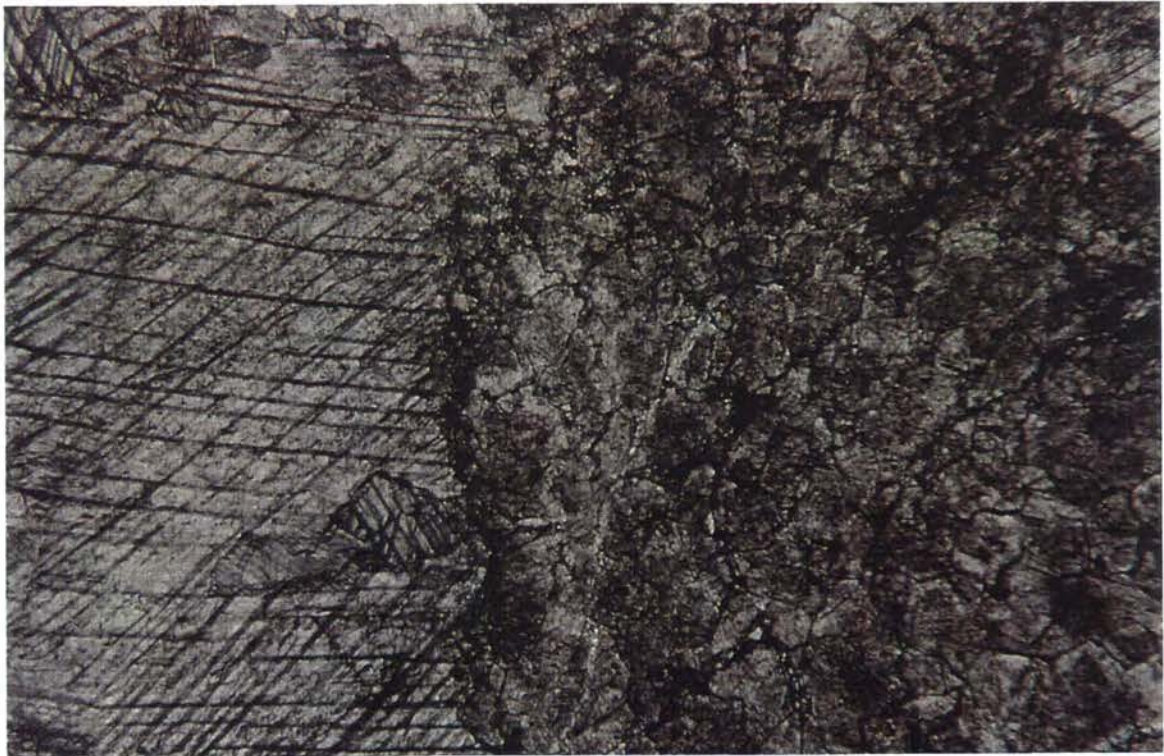
O.R. 97-1

Vuggy patch with medium grained, subhedral ankerite grains with thin overgrowths of very fine grained ankerite; ankerite intergrown with minor sphalerite (light brown) and galena (opaque); sphalerite was partly plucked from the section. One cavity contains a spheroidal bubbles from sample preparation. Transmitted light. Length of photo 1.6 mm.



O.R. 97-1

Deep reddish orange, very fine grained sphalerite with overgrowth of coarser grained, colour zoned sphalerite, in which colours range from medium orange to colourless. Transmitted light. Length of photo 1.6 mm.



O.R. 97-2

Patch of very fine grained ankerite with dusty limonite inclusions and minor disseminated pyrite along grain borders, adjacent to matrix of coarser grained calcite with less abundant dusty inclusions. Transmitted light. Length of photo 2.85 mm.

Sample OR-97-3 Ankerite-Sphalerite-(Pyrite-Galena)

The sample is a patchy intergrowth of ankerite and sphalerite with minor pyrite. Pyrite occurs along margins of some sphalerite patches and in a few veinlets. Galena occurs mainly in irregular patches and wispy dendritic seams in ankerite near sphalerite.

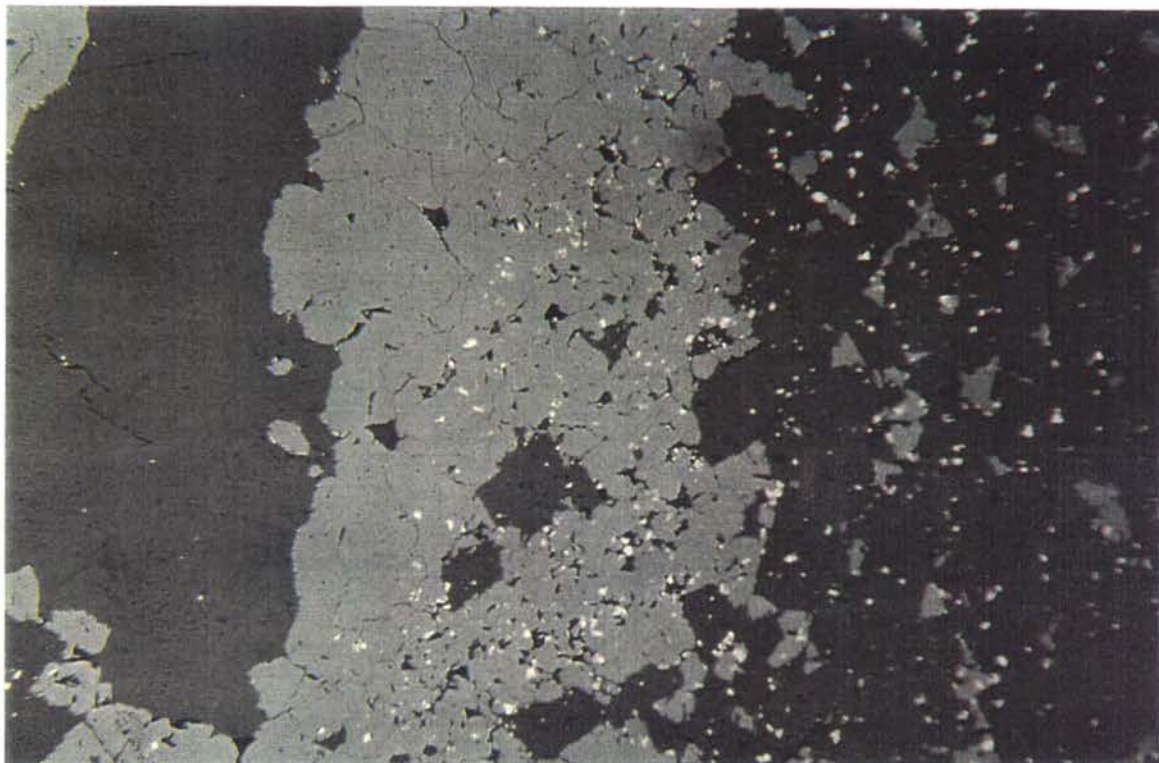
ankerite	60-65%
sphalerite	30-35
pyrite	1- 2
galena	0.2

Ankerite occurs in two main modes. Some forms anhedral grains averaging 0.3-0.8 mm in size, and other patches consist of grains from 1-5 mm in size. The former contains moderately abundant disseminated sphalerite, whereas the latter generally do not contain sphalerite but contain minor disseminated pyrite grains averaging 5-10 microns in size.

Sphalerite occurs in two main modes with gradational textured between them. In much of the rock, sphalerite forms disseminated, equant grains averaging 0.1-0.5 mm in size intergrown with ankerite. Sphalerite is concentrated in several sphalerite-rich patches up to 15 mm in size

Pyrite forms disseminated grains averaging 0.01-0.02 mm in size in both sphalerite and ankerite. It also forms sub-micron sized grains in some patches of sphalerite, which render the sphalerite grains opaque in transmitted light. Pyrite is concentrated along borders of some sphalerite patches as thin rims of cryptocrystalline grains. One veinlet 0.02-0.03 mm wide along the border of two ankerite grains is of granular, cryptocrystalline pyrite. It is similar in texture and may be associated in origin to some of the pyrite rims along borders of sphalerite patches.

Galena forms a few irregular, interstitial patches up to 0.2 mm in size along grain borders of ankerite and in fractures in ankerite. Some of these patches have dendritic outlines.



O.R. 97-3

Zoned intergrowth from left to right of ankerite (free of sulfides), sphalerite, sphalerite with moderately abundant, extremely fine grained pyrite, and intergrown ~~of~~ very fine grained ankerite and lesser sphalerite with moderately abundant extremely fine grained pyrite. Reflected light. Length of photo 2.85 mm.



O.R. 97-3

Ankerite-sphalerite intergrowth. Selvages of pyrite on some sphalerite-ankerite grain borders; irregular, wispy, fracture-filling zones of galena in ankerite. Reflected light. Length of photo 1.6 mm.

Sample OR-97-4 Ankerite-Pyrite-Sphalerite-(Galena); Minor Calcite Veinlets

The rock is a uniform intergrowth of medium to coarse grained ankerite and patches of sulfides dominated by pyrite and sphalerite with less abundant galena and minor kaolinite. Minor late veinlets are of calcite.

ankerite	40-45%
pyrite	30-35
sphalerite	17-20
galena	4- 5
kaolinite	0.3
veinlets	
calcite	0.1

Ankerite forms anhedral to subhedral grains averaging 0.5-2 mm in size. Many are strained moderately. They contain moderately abundant, dusty to extremely fine grained, fluid inclusions. A few grains contain moderately abundant elongate, subhedral to euhedral inclusions of pyrite averaging 0.03-0.05 mm long; most of the inclusions are oriented along ankerite cleavage directions.

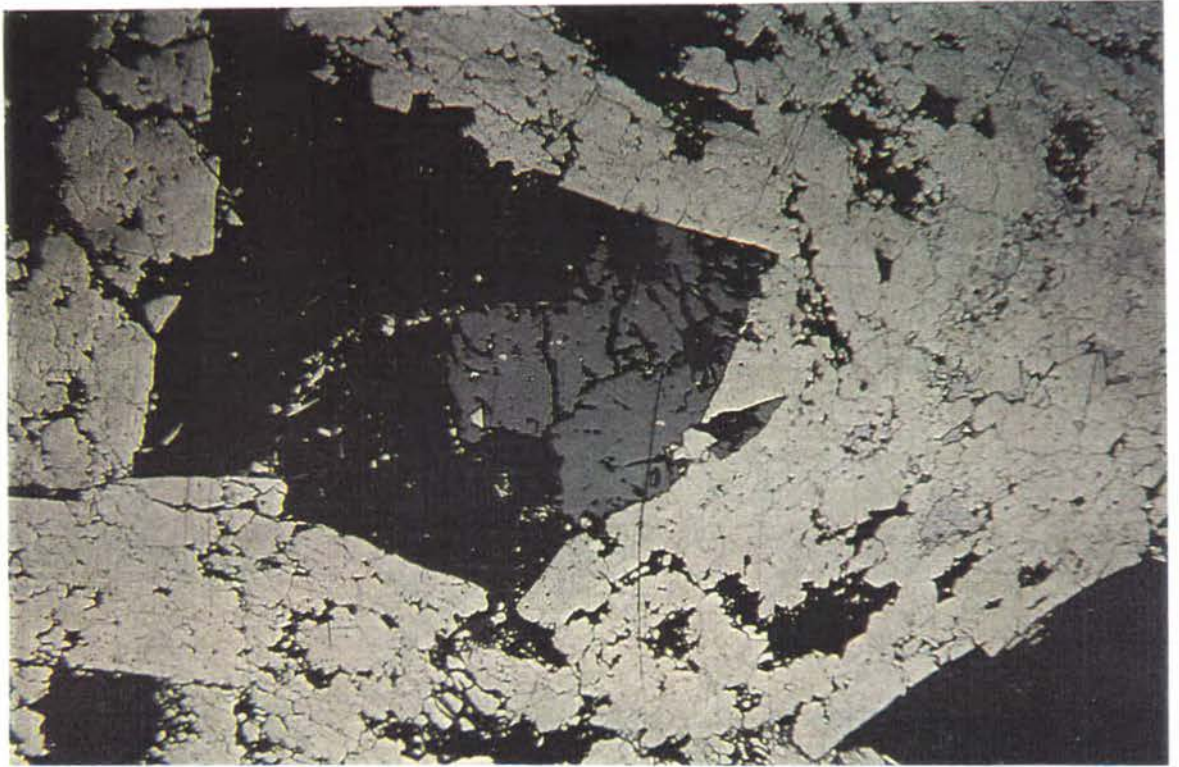
Pyrite forms irregular to rectangular clusters averaging 0.5-1.5 mm in size and locally up to 2 mm long of extremely fine to very fine, anhedral, commonly granular grains. Intergrown with these are interstitial patches containing extremely fine grained, anhedral pyrite grains intergrown with cryptocrystalline to extremely fine grained ankerite.

Sphalerite forms anhedral to locally subhedral grains averaging 0.7-2 mm in size. In much of the rock it is intergrown coarsely with pyrite; near one end, sphalerite is much more abundant, and is intergrown with lesser pyrite and galena. Sphalerite has a variable colour, ranging from cores of medium reddish brown colour to rims grading outwards from pale orange to colourless. Some sphalerite grains contain zones with moderately abundant cryptocrystalline inclusions of pyrite/pyrrhotite, which make those parts of the grains opaque in transmitted light. A few subhedral sphalerite grains are cut by tension fractures averaging 0.01-0.015 mm wide filled with ankerite.

Galena forms interstitial patches averaging 1-2 mm in size and a few up to 2.5 mm across intergrown mainly with sphalerite. Some of the galena intergrown with sphalerite contains ragged patches of extremely fine to very fine grained pyrite. Galena also forms irregular, interstitial patches averaging 0.1-0.5 mm in size intergrown with pyrite clusters.

Locally intergrown with ankerite and possibly replacing it are patches up to 0.7 mm across of cryptocrystalline kaolinite.

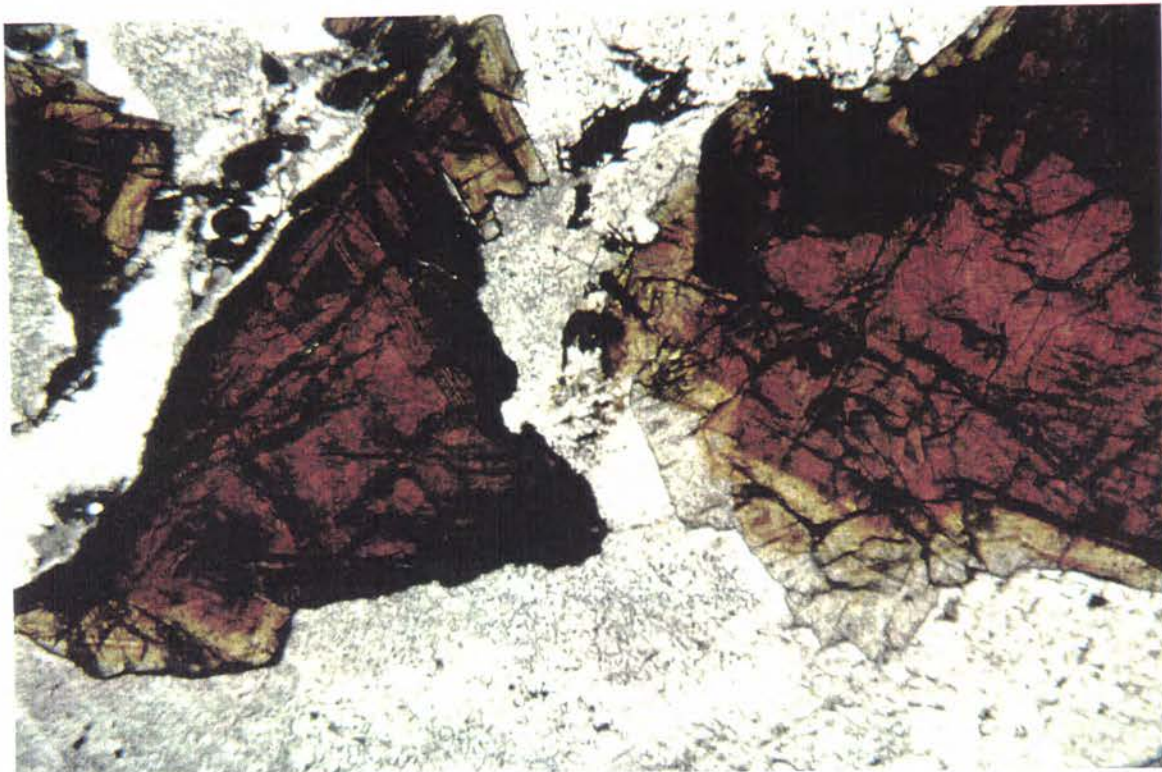
Two veinlets averaging 0.03-0.05 mm wide are of extremely fine grained calcite.



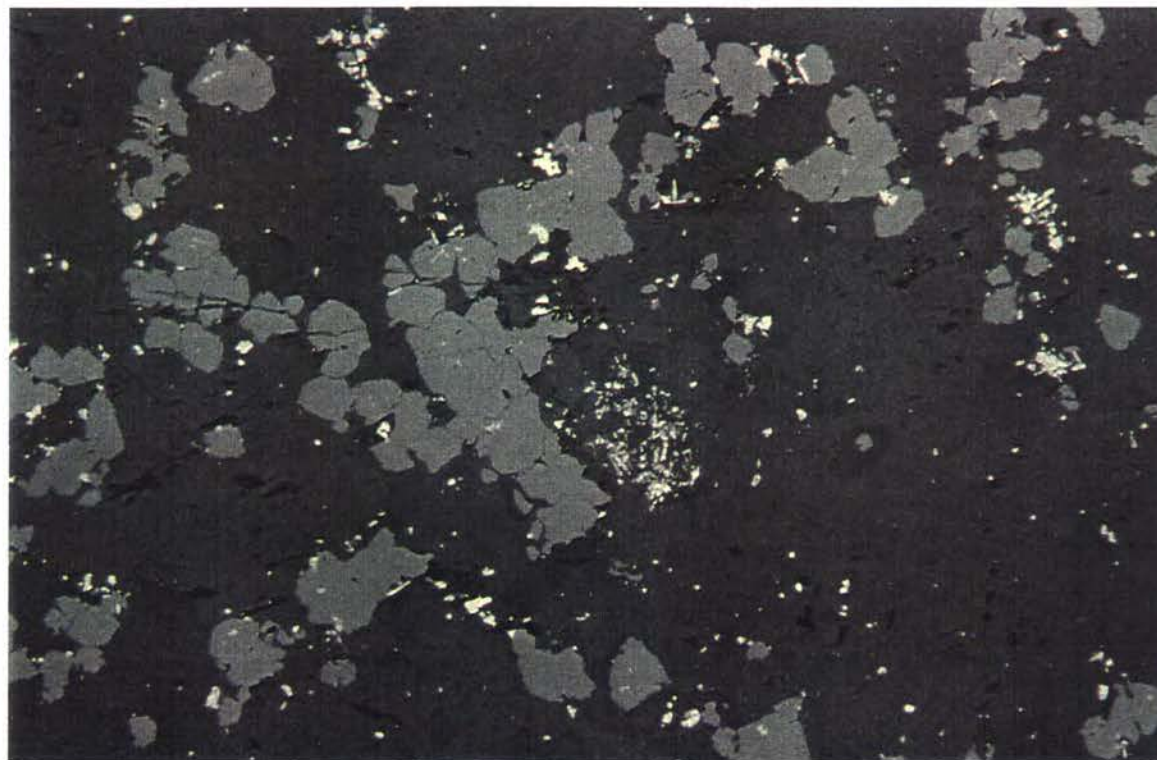
O.R. 97-4 Rectangular patches of pyrite (either strongly fractured or extremely fine to very fine granular aggregates) with minor interstitial patches of galena (light grey); intergrown with ankerite (dark grey) and sphalerite (medium grey). Some ankerite grains contain subhedral to euhedral, extremely fine grained pyrite. Reflected light. Length of photo 2.85 mm.



O.R. 97-4 Intergrowth of galena, sphalerite, and ankerite, with minor pyrite. Some fractures in sphalerite are filled with ankerite. Reflected light. Length of photo 2.85 mm.



O.R. 97-4 Sphalerite-ankerite intergrowth; sphalerite shows moderate to strong colour zonation from deep reddish orange core to colourless rim. Transmitted, conoscopic light. Length of photo 2.85 mm.



O.R. 97-5 Intergrowth of fine grained dolomite and very fine grained sphalerite; pyrite forms a prominent cluster of elongate, extremely fine grains in dolomite and smaller clusters and disseminated grains commonly near sphalerite-dolomite grain borders. Reflected light. Length of photo 1.6mm.

Sample OR-97-5 Dolomite-Sphalerite-(Pyrite)

Much of the sample contains an intergrowth of very fine grained dolomite with disseminated sphalerite and much less abundant pyrite and minor galena. In one corner is a band a few mm wide dominated by sphalerite with minor interstitial dolomite and pyrite. A late veinlike or recrystallized zone is of dolomite/calcite.

dolomite	75-80%	
sphalerite	15-17	(medium to medium-dark orange)
pyrite	2- 3	
galena	0.2	
apatite	trace	
veinlet/recrystallized zone		
dolomite/calcite	1	
dolomite	0.1	

Dolomite forms equant, subhedral to slightly interlocking grains averaging 0.2-0.4 mm in size and a few up to 0.5 mm across. It contains moderately abundant fluid inclusions averaging 3-5 microns in size. Dusty inclusions of limonite give the mineral a variable pale to light brown colour.

In the sphalerite-rich band, sphalerite forms a massive aggregate of granular grains averaging 0.05-0.08 mm in size, with a few from 0.1-0.15 mm in size, with minor to moderately abundant interstitial lenses and selvages of dolomite and minor pyrite. In the dolomite-rich zone, sphalerite forms disseminated, equant grains averaging 0.05-0.07 mm in size.

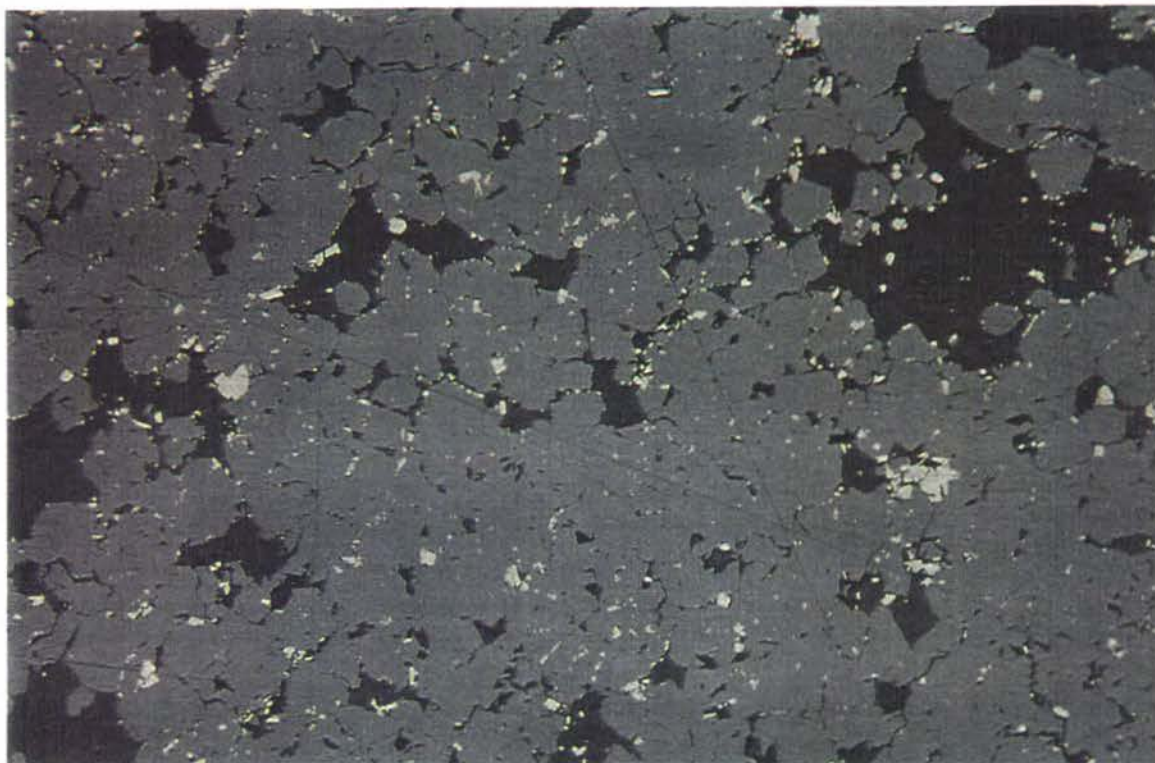
Pyrite forms a few clusters up to 0.3 mm in size of very fine to extremely fine grains. It is more common as disseminated, anhedral equant grains averaging 0.01-0.02 mm in size and less abundant subhedral to euhedral elongate grains averaging 0.02-0.04 mm long.

Galena forms disseminated patches averaging 0.2-0.4 mm in size, mainly in sphalerite-rich patches, and a few irregular patches including one patch 1.5 mm across in the dolomite-rich part of the sample. The large patch is adjacent to a late dolomite veinlet, but appears not to be related genetically to it.

Apatite forms a few subhedral to euhedral, prismatic grains averaging 0.03-0.05 mm long.

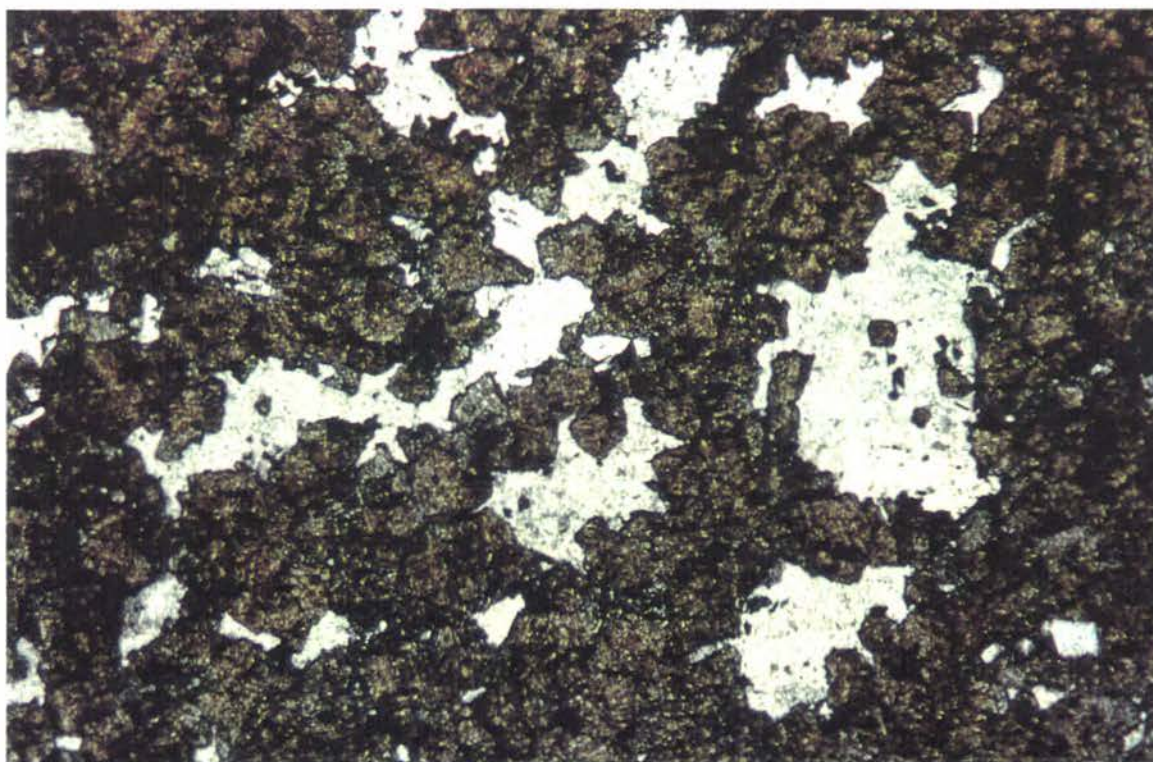
Along one side of the section is a discontinuous veinlike zone up to 1.5 mm wide of extremely fine grained calcite/dolomite. On one side of the veinlet is a zone up to 3 mm long containing dolomite grains averaging 0.7-1.2 mm in size which contain only minor inclusions of sphalerite. The origin of this patch is uncertain.

Two veinlets, one at one end of the section and one in an adjacent corner average 0.02-0.03 mm wide and consist of extremely fine grained dolomite.



O.R. 97-5

Sphalerite-rich band: granular sphalerite grains with much less abundant interstitial patches of dolomite and minor disseminated pyrite. Reflected light. Length of photo 1.6 mm.



O.R. 97-5

Sphalerite-rich band with interstitial dolomite, minor disseminated pyrite - similar to above photo. Transmitted light. Length of photo 1.6 mm.

Sample OR-97-6 Dolomite/Ankerite-Sphalerite-Pyrite, Replacement Patches of Calcite

Part of the sample is a fine to medium grained aggregate of dolomite/ankerite and sphalerite with much less abundant galena and pyrite. About half of the sample is dominated by medium to coarse grained calcite.

dolomite/ankerite	25-30%	
sphalerite	25-30	(medium to deep orange to reddish orange)
pyrite	3- 4	
galena	trace	
calcite	35-40	

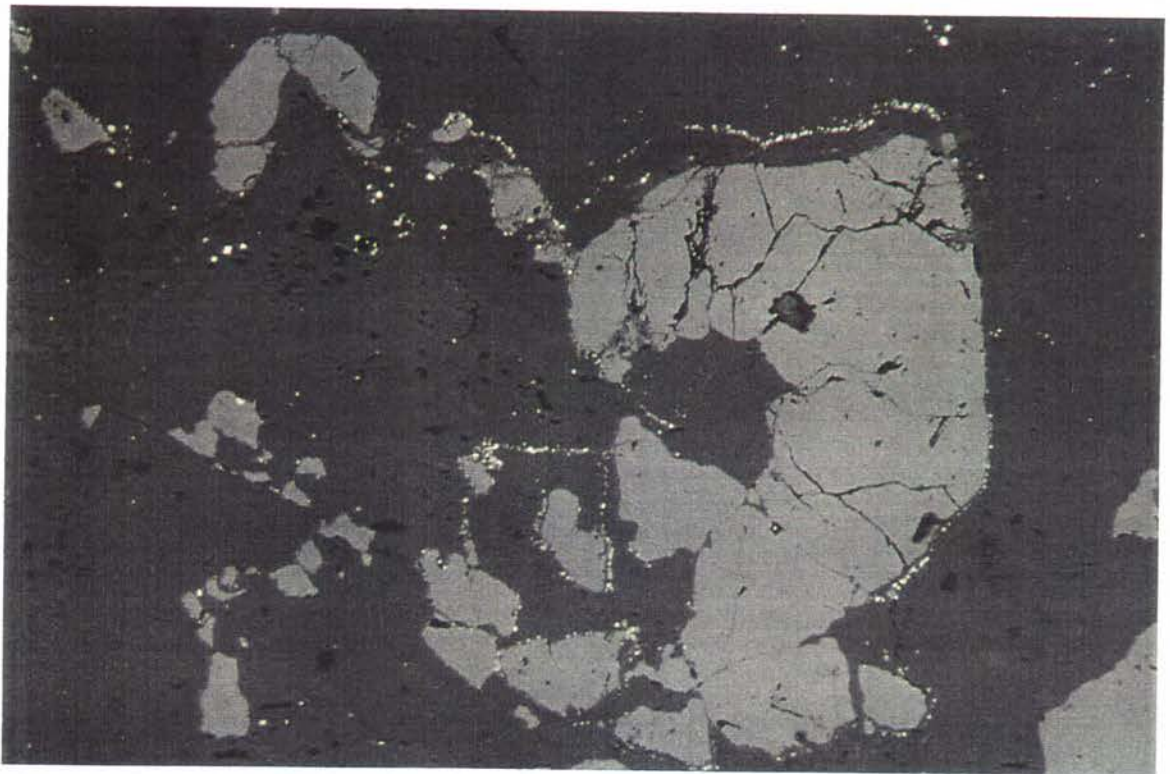
Dolomite/ankerite forms anhedral grains averaging 1-2 mm in size. They contain minor to abundant dusty fluid and semi-opaque inclusions which give the dolomite grains a pale to light, brownish grey colour. A few patches up to 0.5 mm in size interstitial to sulfides are of cryptocrystalline carbonate. The carbonate reacts moderately slowly with dilute, cold HCl, with a rate between those of dolomite and ankerite.

In the sulfide-bearing part of the sample, sphalerite forms granular aggregates averaging 0.3-0.7 mm in grain size. Many sphalerite patches have rims from 0.01-0.03 mm wide of cryptocrystalline pyrite. Some sphalerite patches contain zones of sub-micron pyrite which render the sphalerite grains opaque in translucent light. Sphalerite is medium to medium dark orange to locally reddish orange in colour. In some grains, the colour becomes paler towards the margins of the grains.

Pyrite is concentrated strongly in a few patches and lenses up to a few mm long as anhedral grains averaging 0.05-0.15 mm in size. A few subhedral grains up to 0.15 mm in size occur in ankerite.

Galena forms minor, irregular grains averaging 0.02-0.05 mm in size enclosed in dolomite/ankerite.

In the calcite-rich patch, calcite forms anhedral grains up to a few mm across. Pyrite forms 0.5-2% disseminated grains averaging 0.01-0.02 microns in size. Sphalerite forms scattered grains averaging 0.05-0.1 mm in size and a few patches up to 0.5 mm across. A few wispy veinlets up to 0.1 mm wide are of extremely fine grained, probably recrystallized, calcite.



O.R. 97-6 Sphalerite intergrown with dolomite/ankerite; wispy trains of pyrite in carbonate near borders of many sphalerite grains. Reflected light. Length of photo 1.6 mm.



O.R. 97-6 Sphalerite-ankerite intergrowth, seams of cryptocrystalline pyrite on some sphalerite-carbonate grain borders. Reflected light. Length of photo 1.6 mm.

REFERENCES

Holter, M.E. 1977, The Oldman River lead zinc occurrence southwestern Alberta: Bull.Can.Petroleum Geology, V.25, No.1 p 92-109.

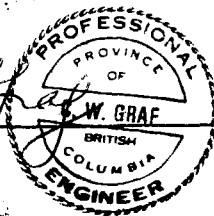
STATEMENT OF QUALIFICATIONS

I, Chris Graf, of [REDACTED] Vancouver, British Columbia, Canada, hereby certify that the work described in this report was carried out under my supervision and that:

1. I carried out the field work and sampling and I am qualified to write this report.
2. I graduated with a B.Ap.Sc. (Geological Engineering) from the University of British Columbia.
3. I am a registered member of the Association of Professional Engineers of British Columbia, and have been since 1980.
4. I have been practicing my geological engineering profession since 1974.

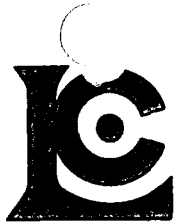
Signed in Vancouver, British Columbia, on the 10th day of December 1997.


Chris Graf, B.Ap.Sc., P.Eng.



APPENDIX I

Analytical Results



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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A9752381

Comments: Attn: Chris Graf

CERTIFICATE **A9752381**

(IID) - ECSTALL MINING CORP.

Project:
 P.O. #:

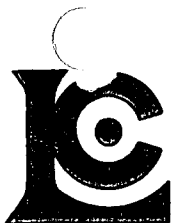
Samples submitted to our lab in Vancouver, BC.
 This report was printed on 6-DEC-97.

SAMPLE PREPARATION		
CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
258	6	RUSH Assay ring approx 150 mesh
295	6	RUSH crush and split (0-3 Kg)
233	6	Assay AQ ICP 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					
CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
953	6	Au g/tonne: RUSH, 1 assay ton	FA-AAS	0.03	150.00
473	6	Ag g/tonne: RUSH	FA-GRAVIMETRIC	3	1000
4001	6	Ag ppm: A30 ICP package	ICP-AES	1	200
4002	6	Al %: A30 ICP package	ICP-AES	0.01	15.00
4003	6	As ppm: A30 ICP package	ICP-AES	10	50000
4004	6	Ba ppm: A30 ICP package	ICP-AES	20	200000
4005	6	Be ppm: A30 ICP package	ICP-AES	5	100
4006	6	Bi ppm: A30 ICP package	ICP-AES	10	50000
4007	6	Ca %: A30 ICP package	ICP-AES	0.01	30.0
4008	6	Cd ppm: A30 ICP package	ICP-AES	5	1000
4009	6	Co ppm: A30 ICP package	ICP-AES	5	50000
4010	6	Cr ppm: A30 ICP package	ICP-AES	10	20000
4011	6	Cu ppm: A30 ICP package	ICP-AES	5	50000
4012	6	Fe %: A30 ICP package	ICP-AES	0.01	30.0
4013	6	Hg ppm: A30 ICP package	ICP-AES	10	10000
4014	6	K %: A30 ICP package	ICP-AES	0.01	20.0
4015	6	Mg %: A30 ICP package	ICP-AES	0.01	30.0
4016	6	Mn ppm: A30 ICP package	ICP-AES	10	50000
4017	6	Mo ppm: A30 ICP package	ICP-AES	5	50000
4018	6	Na %: A30 ICP package	ICP-AES	0.01	20.0
4019	6	Ni ppm: A30 ICP package	ICP-AES	5	50000
4020	6	P ppm: A30 ICP package	ICP-AES	100	10000
4021	6	Pb ppm: A30 ICP package	ICP-AES	5	50000
4022	6	Sb ppm: A30 ICP package	ICP-AES	10	10000
4023	6	Sc ppm: A30 ICP package	ICP-AES	5	10000
4024	6	Sr ppm: A30 ICP package	ICP-AES	5	10000
4025	6	Ti %: A30 ICP package	ICP-AES	0.01	10.00
4026	6	Tl ppm: A30 ICP package	ICP-AES	20	10000
4027	6	U ppm: A30 ICP package	ICP-AES	20	10000
4028	6	V ppm: A30 ICP package	ICP-AES	20	50000
4029	6	W ppm: A30 ICP package	ICP-AES	20	10000
4030	6	Zn ppm: A30 ICP package	ICP-AES	5	50000
31	6	Ga ppm: HCl04-HNO3-HF dig., ext	AAS-BKGD CORR	1	1000
41	6	Ge ppm: HCl04-HNO3-HF digestion	AAS	5	1000



Chemex Labs 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: ECSTALL MINING CORP.

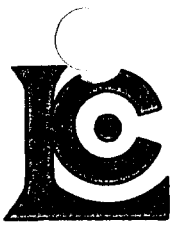
307 - 475 HOWE ST.
 VANCOUVER, BC
 V6C 2B3

Project :
 Comments: Attn: Chris Graf

Page : ber :1-A
 Total Pages :1
 Certificate Date: 06-DEC-97
 Invoice No. :19752381
 P.O. Number :
 Account :IID

CERTIFICATE OF ANALYSIS A9752381

SAMPLE	PREP CODE		Au g/t	Ag g/t	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Hg ppm	K %	Mg %	Mn ppm	Mo ppm
	RUSHRUSH	FA																			
O.R. 97-1	258	295	< 0.03	210	>200	< 0.01	< 10	< 20	< 5	< 10	5.14	570	45	< 10	390	2.31	< 10	< 0.01	1.34	260	5
O.R. 97-2	258	295	< 0.03	3	3	0.03	< 10	20	< 5	< 10	29.5	5	< 5	< 10	5	0.10	< 10	< 0.01	6.18	180	< 5
O.R. 97-3	258	295	< 0.03	180	167	0.01	< 10	< 20	< 5	< 10	15.40	315	30	< 10	235	2.48	< 10	< 0.01	8.34	1390	< 5
O.R. 97-4	258	295	< 0.03	34	40	< 0.01	10	< 20	< 5	< 10	10.05	315	60	10	160	14.00	< 10	0.01	5.51	880	< 5
O.R. 97-5	258	295	< 0.03	24	23	0.03	< 10	< 20	< 5	< 10	22.2	70	5	< 10	50	1.73	< 10	< 0.01	8.63	1220	5
O.R. 97-6	258	295	< 0.03	32	29	< 0.01	< 10	< 20	< 5	< 10	9.36	670	60	< 10	320	7.22	< 10	< 0.01	5.45	870	< 5



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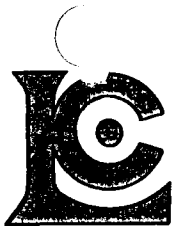
Project :
 Comments: Attn: Chris Graf

Page Number : 1-B
 Total Pages : 1
 Certificate Date: 06-DEC-97
 Invoice No. : 19752381
 P.O. Number :
 Account : IID

CERTIFICATE OF ANALYSIS A9752381

SAMPLE	PREP CODE	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Ga ppm	Ge ppm
O.R. 97-1	258 295	< 0.01	< 5	< 100	>50000	< 10	< 5	30	< 0.01	20	< 20	< 20	< 20	>50000	31	310
O.R. 97-2	258 295	0.04	< 5	< 100	2370	< 10	< 5	190	< 0.01	< 20	< 20	< 20	< 20	2790	1	< 5
O.R. 97-3	258 295	0.03	5	< 100	7560	< 10	< 5	45	< 0.01	20	< 20	< 20	< 20	>50000	12	170
O.R. 97-4	258 295	0.04	35	< 100	45400	< 10	< 5	25	< 0.01	20	< 20	< 20	< 20	>50000	7	80
O.R. 97-5	258 295	0.06	5	< 100	3650	< 10	< 5	160	< 0.01	20	< 20	< 20	< 20	36000	1	25
O.R. 97-6	258 295	0.03	25	< 100	14110	< 10	< 5	15	< 0.01	20	< 20	< 20	< 20	>50000	20	150

CERTIFICATION: 



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To: ECSTALL MINING CORP.

307 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

A9752640

Comments: Attn: Chris Graf

CERTIFICATE

A9752640

(IID) - ECSTALL MINING CORP.

Project:
P.O. #:

Samples submitted to our lab in Vancouver, BC.
This report was printed on 6-DEC-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
244	4	Pulp; prev. prepared at Chemex

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
312	1	Pb %: Conc. Nitric-HCL dig'n	AAS	0.01	100.0
316	4	Zn %: Conc. Nitric-HCL dig'n	AAS	0.01	100.0



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Page Number : 1
Total Pages : 1
Certificate Date: 06-DEC-97
Invoice No. : 19752640
P.O. Number :
Account : IID

CERTIFICATE OF ANALYSIS

A9752640

SAMPLE	PREP CODE	Pb %	Zn %								
O.R. 97-1	244 --	29.4	26.0								
O.R. 97-3	244 --	-----	15.35								
O.R. 97-4	244 --	-----	11.10								
O.R. 97-6	244 --	-----	23.7								

CERTIFICATION: 

APPENDIX II

Cost Statement

GEOLOGICAL CONSULTANTS

██████████ 2 ½ days @ \$400/day \$1000.00

TRANSPORTATION

Air transportation Vancouver-Cranbrook return \$605.00
Car rental & fuel \$118.30

ROCK SAMPLE DATA

Vancouver Petrographics Ltd. \$1,088.73
Chemex Labs Ltd. \$ 498.88

REPORT PREPARATION \$ 100.00

TOTAL \$3,410.91