

104B/1E

FILE NO. (104B 054)

NAME SILBAK PREMIER

SUBJECT CLIPPINGS

104B054 SILBAK PREMIER

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BRITISH SILBAK PREMIER MINES LIMITED(BSK-V)

Apr 8 '87 **WESTMIN RESOURCES LIMITED(MNI-T.M.V)** GCNL 69

PROGRESS REPORTED - First drill testing of the

104 B 054 underground reserve potential on the Silbak Premier property at Stewart, B.C. has encountered numerous significant precious metals intersections.

The best intersection was 34 feet, 25 feet true thickness, assaying 0.7 oz.gold/ton, 0.85 oz.silver/t in hole 87-260. In Jan. and Feb. 11 holes were drilled in 602 XC and 609 Dr zones on 6 level.

Underground drilling on Level 2 to test the lower part of the underground Glory Hole open pit, returned encouraging moderate gold values in the north part of the proposed pit, holes 182 through 211, where earlier assay results tended to be silver-rich.

Reverse circulation rotary drilling within a previously upper caved part of the Glory Hole area returned some particularly high grade intersections which will be mined in the early stages of operation.

Wright Engineers expects to complete the feasibility study in early June, 1987.

Exploration is scheduled to resume in May, focussing on expansion of the proposed open pits and evaluation of other surface and underground targets.

Details of the assay tables will be published in GCNL No.70, April 9,1987. (See Westmin story on page one.)

Apr 9, 87 **BRITISH SILBAK PREMIER MINES LIMITED (BSK-V) #1**
WESTMIN RESOURCES LIMITED (WMI-V,T,M) GCNL 70
 ASSAY DETAIL PRESENTED - Progress of work near Stewart,
 104B 054 B.C., being conducted by Westmin
 Resources Limited on the Premier mine property of British
 Silbak Premier Mines Limited was summarized in GCNL
 69(87)P.2. Detailed results of several drill hole assays
 are PRINTED OVERLEAF PAGES 1 AND 2 of this news letter.

British Silbak Premier Mines Limited. Westmin Resources Limited,

TABLE I - HIGHLIGHTS OF 1987 DRILLING AT SILBAK PREMIER #2

104B 054

DRILL HOLE	INTERVAL (Ft.)	LENGTH (Ft.)	GOLD oz/t	SILVER oz/t
		Core recovered/ drill length		
87-183	35.0 - 43.0	8.0	0.187	13.63
87-186	32.0 - 52.0	20.0	0.344	23.66
	or 0 - 107.0	102.0/107.0	0.102	5.74
87-187	79.0 - 109.0	30.0	0.127	4.77
	169.0 - 174.0	5.0	0.332	13.76
87-188	130.0 - 137.5	6.5/7.0	0.857	16.93
87-189	160.0 - 165.0	5.0	0.115	1.61
	187.0 - 220.0	29.5/33.0	0.078	4.32
87-190	75.0 - 160.0	63.0/85.0	0.254	14.32
87-192	72.0 - 100.0	25.9/28.0	0.140	4.68
87-193	5.0 - 25.0	19.0/20.0	0.132	11.19
87-195	2.0 - 20.7	18.7	0.113	1.79
87-197	80.3 - 100.0	19.7	0.728	3.82
87-198	158.4 - 206.0	34.8/47.6	0.124	18.68
87-200	10.0 - 18.0	8.0	0.301	31.99
	220.0 - 230.0	10.0	0.152	1.02
87-202	23.0 - 32.0	9.0	0.060	6.25
87-207	236.6 - 299.0	60.9/62.4	0.114	0.87
	259.0 - 271.0	10.9/12.0	0.734	3.61
87-212	158.0 - 262.0	75.4/104.0	0.128	1.54
87-213	130.0 - 200.0	52.0/70.0	0.122	6.94
87-214	62.0 - 82.0	19.6/20.0	0.184	2.04
87-216	200.0 - 220.0	9.0/20.0	0.140	4.42
87-219	50.0 - 65.0	14.3/15.0	0.266	1.32
87-224	70.0 - 95.0	24.8/25.0	0.131	3.68
6 LEVEL DRILLING				
87-250	122.7/132.7	10.0	0.103	0.93
87-260	347.0/381.0	34.0	0.701	0.85

GCN 70
87

TABLE II - HIGHLIGHTS OF 1987 DRILLING AT SILBAK PREMIER

104 B 054

#3

DRILL HOLE	INTERVAL (Ft.)	LENGTH (Ft.)	GOLD oz/t	SILVER oz/t
87-P-5	0 - 40	40	1.107	8.33
87-P-6	0 - 65	65	0.625	9.44
87-P-7	0 - 155	147	0.377	7.24
87-P-9	0 - 125	125	0.144	2.93
87-P-11	3 - 33	30	0.070	4.97
87-P-12	2 - 97	95	0.079	3.50
87-P-13	18 - 48	30	0.113	4.40
87-P-15	0 - 110	110	0.134	4.52
87-P-17	20 - 30	10	0.105	5.30
87-P-20	54 - 154	100	0.062	5.00
87-P-21	30 - 55	25	0.338	6.47
	65 - 145	80	0.121	1.29
87-P-22	28 - 124	96	0.156	6.63
87-P-24	38 - 153	115	0.094	3.36
87-P-26	53 - 163	110	0.149	7.55
87-P-30	98 - 168	70	0.084	0.88
87-P-33	2 - 37	35	0.148	0.78
87-P-37	42 - 92	50	0.428	0.88

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Pioneer Metals
669-3383
~~Sue Nichols~~
Susan?

Apr 13, 87 NM

104B054

Drill results enhance potential of Silbak

by David Duval

VANCOUVER — Reverse circulation drilling has cut several rich intersections within an untested part of the glory hole area of the **British Silbak Premier Mines** property, near Stewart, B.C. That's according to **Westmin Resources** which already has a 50% interest in the property.

Among the best intersections were: 40 ft of 1.1 oz gold and 8.33 oz silver; 65 ft of 0.625 oz gold and 9.44 oz silver; 50 ft averaging 0.428 oz gold plus minor silver; and 147 ft of 0.377 oz gold and 7.24 oz silver.

Although the current feasibility only takes into account open pit reserves, an underground mining operation at a later date is fast becoming a viable option.

British Silbak, which has been very active on the market since Westmin announced plans for its Stewart properties last month (N.M., March 9/87), can elect to participate at the same level after Westmin has spent \$6.7 million. **Canacord Resources** has a vested 18.75% working interest in Westmin's holdings in the area including the Big Missouri property of **Tournigan Mining Explorations**.

Another 3,423 ft of drilling was completed in the first two months of 1987 on the sixth level of the Silbak mine and some impressive intersections were returned. Results included 25 ft (true thickness) grading 0.7 oz gold and 0.85 oz silver in No 87-260. The program was designed to test the 602 XC and 609 DR zones where a small amount of production occurred in previous mining operations.

Harlan Meade, exploration manager, western region, says there

could be a stratigraphic control to the mineralization. But he admits they don't have a good handle on the gold distribution at this point. He says the style of mineralization is similar to that encountered on the edges of the zones at the Big Missouri which, incidentally, has a higher over-all gold grade than the Silbak. In a relative sense, he says, the gold content seems to be improving at depth in the Silbak.

Drilling from the second-level returned moderate gold values in the north part of the proposed open pit. The best results included 10.9 ft of 0.734 oz gold and 3.6 oz silver; 19.7 ft grading 0.728 oz gold and 3.8 oz silver; 20 ft averaging 0.344 oz gold and 23.6 oz silver; and 63 ft grading 0.254 oz gold and 14.3 oz silver. These intercepts represent recovered core only. In many cases, the actual drill length was significantly longer. Mr Meade says these results will be integrated into the current feasibility study.

Westmin confirms that detailed feasibility and design engineering for the Silbak and Big Missouri properties has been awarded to Wright Engineers. The study should be completed in early June with production announced shortly thereafter.

GCNL
5 Mar 87 WESTMIN RESOURCES LIMITED (WMI-V, M, T)
BRITISH SILBAK PREMIER MINES LTD. (BSK-V)
No 45 TOURNIGAN MINING EXPLORATIONS LTD. (TGN-V)

PRODUCTION FEASIBILITY STUDY - Following extensive STARTS ON GOLD-SILVER DEPOSITS diamond drilling on the 1048046, 054 British Silbak Premier Mines Ltd. and nearby Tournigan Mining Explorations Ltd. properties near Stewart in NW B.C., Westmin Resources Limited is proceeding with an immediate production feasibility study which is scheduled for completion by mid-year.

The Stage 1 Environmental and Socio-Economic Impact Report is to be submitted to the provincial government in early April.

Geological and mineable reserves have increased significantly and drilling is continuing on the Silbak property to further define the Glory Hole zone..

Based on results of drilling to 31 Dec 86, geological reserves in the Glory Hole zone total 6,380,157 tons grading 0.069 oz. gold/t and 2.69 oz. silver/t or a gold equivalent grade of 0.105 oz./t using current metal price ratios. This is an increase of 15% in gold grade and 7% in silver from January 1986 estimates. The waste-to-ore ratio for mineable reserves has been reduced to 4.4:1 from 5.2:1. Underground drilling during the first 2 months of 1987 on 2 level continued to increase open pit reserves.

The higher grade West zone includes 474,260 tons averaging 0.234 oz. gold/t and 1.81 oz. silver/t.

Mineable reserves within the four open pit zones at Tournigan's Big Missouri property are estimated at 1,806,760 tons grading 0.089 oz. gold/t and 1.17 oz. silver/t (0.105 oz. gold equivalent/t) with a waste-to-ore ratio of 2.34:1. The 1986 drilling has better defined the distribution of higher grade mineralization in the S-1 and Province zones and increased the mineable reserves. Some pits remain open to expansion of reserves in various directions.

Based on U.S. \$390 gold and U.S. \$5.40 silver and cash operating costs of \$134 per ounce and \$3.06 per ounce, respectively, it is estimated that the capital (\$62,000,000) and operating costs could be paid back within 2 years.

For the first 3 years of higher grade production, annual output is estimated at 80,000 ounces of gold and 560,000 ounces of silver.

During the period January 1986 to February 1987 some \$3,200,000 were spent on exploration of the two properties. Total expenditures are now about \$5,300,000 at Silbak Premier and \$3,000,000 at Big Missouri. Westmin has vested a 50% working interest in the Silbak Premier property and British Silbak Premier Mines has elected to have Westmin continue making expenditures to a total of \$6,700,000 at which time Westmin must provide a feasibility study and British Silbak may elect a 50:50 joint venture or undergo dilution to a 20% carried net profits interest.

Westmin expenditures at Big Missouri total \$3,000,000 which have earned a 70% working interest. Tournigan retains a 30% net profits interest from which Westmin may buy an additional 7-1-2% interest for \$1,000,000 within 90 days of the start of commercial production.

Despite record minerals, oil and natural gas production, Westmin Resources earnings in 1986 slid to a net of \$8,648,000, on revenues of \$189,563,000, compared with earnings of \$30,452,000 on revenues of \$169,783,000 in 1985.

After provision for dividends on the preferred shares, there was a loss of 21¢ a common share, compared with earnings of 40¢ in 1985. The company blames the earnings decline on severely depressed crude oil prices, coupled with weakness in natural gas, but notes that

crude oil and gold prices recovered significantly toward the end of 1986 and into this year.

In the fourth quarter 1986, Westmin had net earnings of \$3,265,000 on gross revenue of \$45,383,000, or a loss of 3¢ a share after provision for preferred dividends. It compares with net earnings of \$5,933,000 or 6¢ a share on revenue of \$42,506,000 in the comparable 1985 quarter.

At the end of the year, the company had working capital of \$117,000,000, up from \$87,583,000 a year earlier. Westmin sold its

interest in Lacana Mining in February, for \$34,661,000.

With completion of the Sundance acquisition and H-W mine-mill expansion in 1985, capital expenditures on exploration, acquisitions and development decreased to \$36,865,000 from \$288,968,000 the previous year.

With these facilities now in place and fine-tuned for optimum output, Westmin says the company is in a position to realize to the maximum on any increase in world prices for its products.

N. W. M. R. 9/87 1048046 054 Production record but Westmin profit off

Major gold mine Big Missouri, Silbak in production by late '88

by David Duval

VANCOUVER — It took nine years and 24 separate deals to consolidate the Big Missouri properties near Stewart, B.C., into a simplified package for Westmin Resources. Over that period, Tournigan Mining Explorations spent \$1 million to secure the ground; and Westmin was told two years in advance what the option arrangement would be.

They agreed and it looks like the Big Missouri will now be part of a major new gold mining operation which will also include the old Silbak Premier mine. That particular property came into the Westmin fold in 1983 almost a year after Henry J. Block took control of British Silbak Premier Mines. The company mounted a \$2-million exploration program in 1979 but ran out of money and was eventually taken over by the Block brothers.

A detailed feasibility study on the combined project should be completed by June for board approval. Contingent upon adequate financing being in place, mine development could begin this summer and full production in late 1988. Because of winter conditions in the region, it will be imperative for Westmin to begin construction this summer. Otherwise the startup date will have to be moved ahead six months or more.

In many respects, the development is a mirror image of the Mascot Gold Mines project near Hedley, B.C. Both are former underground producers and the economics of each proved to be much more favorable as open pit mining operations. Each of them mined to an underground cutoff that would be economic today on an open pit basis. Economies of scale also come in play with open pit mining.

In terms of gold equivalent, Westmin's holdings are about two-thirds the grade of Mascot but they have a lower stripping ratio and Westmin has the ability to generate its own hydro-electric power.

According to A. E. (Art) Soregaroli, Westmin's vice-president exploration (mining), the 1986 drill program in Silbak's Glory Hole area increased the gold grade by 15% and silver by about 7%. Geological reserves now stand at approximately 6.4 million tons grading 0.069 oz gold and 2.69 oz silver per

ton or a gold equivalent of 0.105 oz. There was only a small increase in tonnage from the previous estimate and the strip ratio dropped by about 15% to 4.4-to-1 (waste-to-ore).

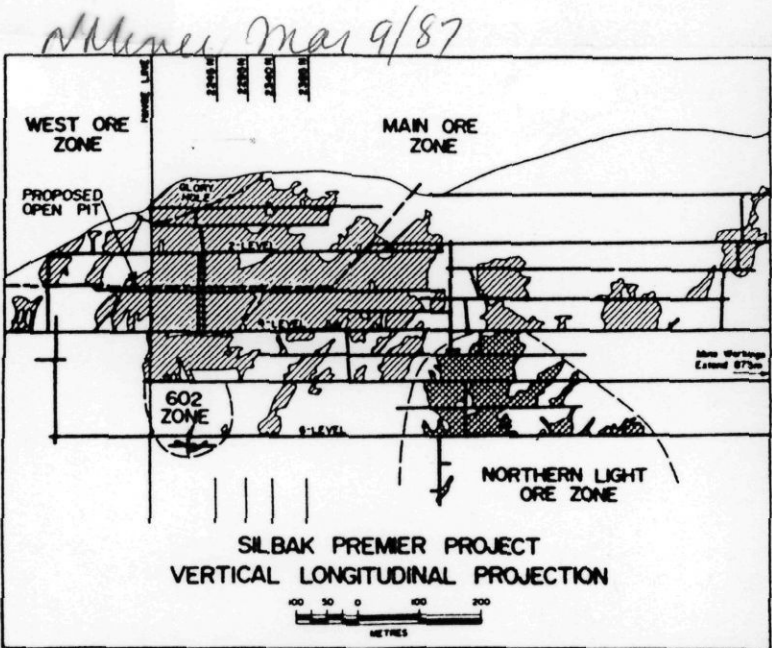
These results are based on work to the end of 1986 which doesn't include more than 8,000 ft of drilling on the upper levels of the Glory Hole area, says Harlan Meade, exploration manager western region. The holes were drilled from the No 2 level in the mine and he expects "a small improvement in the reserve base." Winter conditions allowed them to rotary drill caved material at the bottom of the Glory Hole and he admits they are "getting some good numbers there too."

Reserves at the Big Missouri, which would be a seasonal mining operation because of its elevation, occur within four open pit zones. Westmin describes these as mineable reserves and they total some 1.8 million tons averaging 0.089 oz gold, 1.17 oz silver at a 2.3-to-1 strip ratio. Mr. Soregaroli notes that "several of the pits are open to expansion since they do not include all geologic reserves."

The company has updated a prefeasibility study prepared by Kilborn Engineering just over a year ago and the numbers look very positive. Capital costs for the project are estimated at \$62 million and payback would be two years at \$390 gold and silver at \$5.40. Cash operating costs are expected to be around \$134 per oz gold and \$3.06 for silver during the first three years of production when higher grade material will be mined. (With the exception of capital, all costs are in U.S. dollars.)

Annual production should be approximately 80,000 oz gold and 560,000 oz silver during the first three years, says Bruce K. McKnight, manager corporate planning and development. But in subsequent years gold production will drop significantly based on the current mine plan. On the other hand, silver production will almost double as the company begins to draw most of its mill feed from the Silbak. These production scenarios could (and probably will) change should additional reserves be blocked out, particularly at the Big Missouri.

Mill rate will probably be 2,000



tons per day or higher and they are looking at alternatives to cyaniding concentrate. Direct cyanidation of ore is one possibility but he says "we are still experimenting with that." Recoveries are expected to be at least 90% for gold and 50% for silver but they are trying to improve on the latter.

Small hydro is an important part of the development concept and Westmin has the water rights in the area. The company expects to rebuild an existing power dam on the property and would generate three times more power by increasing the head and also the length of the penstock. Westmin generates its own power at Buttle Lake on Vancouver Island where it has a 3,000-ton-per-day milling operation.

The company will have to apply for a special permit from the government and could supply excess power to nearby Stewart at a small cost. At the moment, Stewart's power is diesel-generated.

The company will probably use a sub-aerial (land based) system for tailings disposal similar to that used at Buttle Lake. With little or no environmental legislation in place decades ago, previous operators dumped tailings into creeks which flowed into the ocean. This new method will be considerably more sophisticated and environmentally secure.

Westmin has a vested 50% working interest in the Silbak Premier and British Silbak has elected to have Westmin continue making expenditures to a total of \$6.7 million. At that point, Westmin must provide a feasibility study and British Silbak may elect to continue on a 50-50 joint venture basis or be diluted down to a 20% carried net profits basis.

Westmin has earned a 70% working interest in the Big Missouri and Tournigan retains a 30% net profits interest. Westmin can buy 7.5% of Tournigan's interest for \$1 million within 90 days of commercial production. Canacord Resources, which provided \$3 million for the 1986 exploration program, has earned 18.75% (working) of Westmin's interest in the whole project.

Mr McKnight says the company is looking at tidying up this aspect of the project, noting that one option would be to put everyone's interests into a new company and issue shares. John Powell, a vice-president at British Silbak, confirms that several companies have approached him about "acquiring a piece of the action." While admitting the company has not put a "for sale" sign up, he concedes that "everything is for sale at a price." British Silbak has several subsidiaries and is actually a real estate company. It feels more comfortable in that business, he admits.

20 JAN 87 WESTMIN RESOURCES LIMITED (MMI-V,T,M)
 6CNL13 BRITISH SILBAK PREMIER MINES LIMITED (BSK-V)

HOLE	INTERVAL FT.	LENGTH FT.	OZ. GOLD/T	OZ. SILVER/T
86-U-136	320.0-350.0	30.0	0.020	10.46
86-U-139	99.0-103.0	4.0	0.232	9.77
	169.0-178.5	9.5	0.197	3.42
	220.0-225.0	5.0	0.040	33.30
86-U-140	9.0- 47.0	24.0*	0.426	7.24
86-U-146**	160.0-161.0	55.0	0.080	3.63
incl.	(126.0-131.0	5.0	0.549	1.71)
86-U-148**	166.0-201.0	31.5*	2.112	3.03
incl.	(175.7-180.0	4.3*	5.175	8.18)
	(190.0-196.0	6.0*	2.030	0.29)
86-U-150	195.0-215.0	12.1*	0.149	0.21
86-U-153	116.0-416.0	241.6*	0.107	1.46
incl.	(116.0-136.0	20.0	0.390	0.45)
	(187.0-291.0	71.0*	0.063	0.63)
	(291.0-323.5	32.3	0.299	7.14)
	(323.5-343.0	13.3*	0.054	0.32)
	(391.0-416.0	6.0*	0.115	2.66)
86-U-154	175.0-185.0	10.0	0.377	1.24
86-U-155	51.0-102.0	19.7*	0.105	0.44
	102.0-107.0	5.0	1.050	1.46
86-U-160	35.0-105.0	31.6*	1.497	34.09
incl.	(40.0- 45.0	1.5*	3.440	41.40)
	(50.0- 55.0	0.3*	1.076	43.10)
	(55.0- 60.0	1.5*	20.580	473.90)
	(95.0-100.0	2.5*	3.750	88.00
86-U-161	3.0- 15.0	8.0*	0.237	2.24
	15.0- 47.8	25.8*	0.133	8.41
86-U-163	9.0- 20.0	11.0	0.204	0.81
86-U-164	20.0- 67.4	32.1*	0.124	2.15
86-U-165	27.5-133.5	47.5*	0.129	2.00
incl.	(46.0- 53.0	2.0*	0.750	24.73)
	(118.0-125.0	4.0*	0.969	1.88)
86-U-169	177.0-229.0	32.5	0.103	8.59
86-U-171	221.3-263.8	42.5	0.047	8.62
86-U-173	16.2- 30.0	13.8	0.030	10.77
86-U-177	47.6- 69.5	21.9	0.106	1.88
	228.9-317.5	28.6	0.087	4.84
	330.0-335.0	5.0	0.026	11.75
86-U-181	80.6- 90.5	3.0*	0.483	62.13

* Feet recovered within caved stope fill

** Reported earlier (November 28, 1986)

20 JAN 87 6CNL13
 DRILLING EXTENDS HIGH GRADE - A total of 10,600 feet of
 PRECIOUS METAL VALUES underground diamond
 104B054 drilling by Westmin
 Resources Limited on the British Silbak Premier Mines
 property near Stewart, B.C., has confirmed and extended
 the high grade precious metals mineralization indicated
 by a surface drill program in the Glory Hole area of the
 property. (SEE TABLE DRILL HOLE ASSAYS).

Submission of Stage I Environmental Impact Study is
 expected in April. Ore reserve and feasibility studies
 are underway toward a mid-1987 production decision.

A minimum 7,000 foot underground drill program is
 in progress on 2 Level and drilling will start soon on 6
 level to define additional underground reserves.

A total of 2,950 feet of reverse circulation rotary
 drilling was completed in 102 holes to test dump
 material near 4 level, 2 level and B.C. Silver portals.
 Preliminary results indicate this material to be
 moderate to low grade ore. An estimate of reserves in
 these dumps is expected shortly.

N. MINER 26 JAN 87 Drilling confirms high grade zone on Silbak property

VANCOUVER - Underground
 diamond drilling at Westmin Re-
 sources' British Silbak property has
 confirmed and extended the high
 grade precious metals mineraliza-
 tion discovered earlier by surface
 drilling (N.M., Dec 15/86).

A total of 10,600 ft of drilling was
 completed in the Glory Hole area
 and a minimum 7,000-ft program
 now is in progress on the No 2
 level. Drilling is also expected to
 begin shortly from the No 6 level to
 define reserves that are mineable
 by underground methods, an option
 which is becoming very attractive
 for the company.

A reverse circulation drilling
 program was completed on dump
 material near old mine workings
 and preliminary results suggest this
 material is moderate to low grade,
 according to Westmin.

The company says preliminary
 estimates of geological reserves for
 the Silbak Premier and the Big Mis-
 souri property to the north are
 expected in February. In the mean-
 time, engineering studies relating
 to metallurgy, tailings disposition,
 geotechnical aspects and hydroelec-
 tric potential are progressing satis-
 factorily in preparation for a detailed
 feasibility.

Discussions have been held with
 appropriate government agencies
 and more are planned with munic-
 ipal groups in the Stewart region.
 The company expects to submit its
 stage I report in early April and a
 production decision is aimed for
 mid-1987. Work on the Silbak and
 Big Missouri properties is being
 funded by Canaccord Resources in
 return for an interest in the pro-
 perties.

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PRESS RELEASE

**WESTMIN RESOURCES GETS ORE GRADE PRECIOUS METAL VALUES
IN LATEST BRITISH SILBAK PREMIER DIAMOND DRILL PROGRAM**

CALGARY (SEPTEMBER 25, 1986) - Westmin Resources has encountered particularly high grade intersections in the first phase of its 1986 diamond drill program on the British Silbak Premier Mines' precious metals property, just north of Stewart in northwestern British Columbia.

The drilling program was designed to test and confirm areas within the proposed open pit and all but two of the 38 holes, totalling 16,200 feet of drilling, penetrated ore grade sections of mineralization.

The fill-in drilling, in the Glory Hole area, tested both areas of caved stope from earlier mining activity, plus other untested areas within the proposed open pit boundary.

Some of the higher grade intersections (uncut) are as follows:

<u>Hole No.</u>	<u>Interval</u>	<u>Feet</u>	<u>Au oz/ton</u>	<u>Ag oz/ton</u>
86-78	308-332	24.0	0.441	48.50
86-83	142-166.5	24.5	0.199	9.24
86-87	168-197	29.0	0.113	7.08
86-94	177-209	32.0	0.383	32.65
86-95	77-97	20.0	0.316	16.58
	139-157	18.0	0.330	32.89
86-96	162-165.5	3.5	2.065	63.96
86-97	363-367	4.0	0.206	10.08
86-102	349-360	11.0	0.335	3.67
86-103	217-221	4.0	0.518	3.30
86-107	161-181	20.0	0.259	9.90

Several of these high grade intersections occur in areas previously thought to be of lower grade ore, and holes 95 and 96 are in an area thought devoid of mineralization. The net result of this drilling will be expanded reserves as well as the definition of higher grade areas accessible for early mining when production begins.

Within the Glory Hole area many of the previous stopes are filled with material which has caved from the surrounding rocks. Drilling these filled stopes in 1983, 1984 and 1985 indicated that much of the fill is moderate to good grade ore. Additional testing of filled stopes in 1986 continues to return favourable results with hole 86-102 returning 162 feet of recovered core (over a drill length of 279 feet) grading 0.237 oz Au/ton and 1.26 oz Ag/ton. The footwall of the stope assays 0.335 oz Au/ton and 3.67 oz Ag/ton over 11 feet. Several exceptionally high-grade assays have been obtained from caved stope-fill material. Additional efforts to test this material are in progress.

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PROPERTY FILE

Sampling of surface dumps during 1985 suggested significant gold and silver values within the dumps from the B.C. Silver and 2 Level portal areas. In 1986 preliminary evaluation of the dump near the 4 Level portal has indicated more than 500,000 tons of ore grade material. Initial results of 63 systematic samples indicates a grade of 0.10 oz Au/ton and 1.26 oz Ag/ton. Total dump material on the property may exceed 1 million tons.

The second phase of the 1986 program is currently underway, entailing 5,000 feet of surface drilling and 13,000 feet of underground drilling on the Silbak property, plus a minimum of 6,000 feet of surface drilling on the Big Missouri property some four miles to the north.

Rehabilitation and preparation of underground diamond drill sites on 2 Level, to test the lower part of the proposed open pit mining area under the Glory Hole, is nearing completion. Concurrently, metallurgical, environmental and geotechnical studies are in progress, with a re-estimate of ore reserves scheduled for January, 1987, to be followed by a feasibility study decision.

Westmin will earn a minimum 50 per cent working interest in the Silbak Premier property by making exploration expenditures of \$4,700,000 before December 31, 1987. British Silbak Premier Mines may elect to participate in a joint venture as to 50 per cent or assume a carried position with a 20% net profits royalty interest. Westmin currently has a 12 per cent working interest, has purchased a 6 per cent net profits carried interest and will acquire an additional 4 per cent net profits carried interest through the payment to British Silbak of \$300,000 on January 1, 1987 and 1988. Westmin spent approximately \$3,510,000 on the project to the end of the 1986 Phase I program.

Westmin also has a 70 per cent interest in the Big Missouri property under option from Tournigan Mining Explorations Ltd.

Westmin Resources Limited has entered into an agreement with Canacord Resources Inc. whereby Canacord may earn a 13.33% interest in the interest of Westmin in the Silbak Premier and Big Missouri projects by providing \$2,000,000 for the 1986 exploration program. Canacord may elect to increase its funding to \$3,000,000 before February 28, 1987 and thereby increase its interest to 18.75 per cent of Westmin's interest.

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PROPERTY FILE

Things keep on looking up for Westmin's Silbak bet

VANCOUVER — The news just keeps getting better from Westmin Resources' British Silbak property near Stewart, one of only a few exploration programs currently under way in B.C.

Several spectacular gold-silver intersections were encountered during phase 2 of a fill-in drill program. The holes are being drilled on 20-m centres and the grades are improving over the original ones, says Westmin.

The company has been drilling the "glory hole" area which is actually a subsidence crater. Hanging-wall material has caved into old stopes and enlarged the once-smaller glory hole opening. Much of this caved material has been very high grade, something that is sure to improve the reserve grade significantly, The Northern Miner gathers.

Things are not looking too bad either at the nearby Big Missouri property where some dandy shallow intersections have been reported from four proposed open pit zones. But more on that later.

The surface program at Silbak, which involved 5,297 ft of drilling in 20 holes, now has been completed as well as about half of the planned 17,000 ft of underground drilling. The underground holes, which are being drilled from the No 2 level of the former producer, are designed to test the lower portion of the proposed open pit and also beneath it for additional reserves.

According to Arthur E. Sorengaroli, vice-president exploration, the highest grade intersection obtained to date was in Hole 86-122 which cut 5 ft grading 22.7 oz gold per ton and 18.4 oz silver, followed by 10 ft averaging 0.39 oz gold and 2.15 oz silver. Those intersections are about 85% of true thickness and occurred approximately 60 ft from an earlier high grade intersection which returned 1.9 oz gold and 20.9 oz silver over 15 ft.

Bonanza grade mineralization was also found 230 ft further east along strike in the underground drill program. Hole 86-U-148 returned 31.5 ft of 2.1 oz gold and 3 oz silver and there was 3.5 ft of unrecovered core that could have carried precious metals values.

Both those impressive drill intersections were located in the previously stoped west portion of the glory hole area.

Harlan Meade, Westmin's exploration manager (western region), suggests the material might have been left by previous operators because of extensive cross-faulting. These faults also made for poor ground conditions and caving often drove them out of working areas. Mother Nature continued the process during the dormant years at Silbak, filling in the stopes with good grade material for open pit mining.

Reserve grade increased

What is really exciting about the high grade results is their impact on reserve grade. As an example, Mr Meade states that 10,000 oz of material in one of these high grade sections would increase the reserve grade (and production economics) by 2.6%. And the probability of finding more such material is excellent.

Much of this material was considered to be waste before, so the stripping ratio also stands to drop, another economic consideration. "We have certainly increased the grade and the tonnage will go up with it," says Mr Sorengaroli.

Because the underground potential is starting to look better and better, Westmin is considering a drill program from the No 6 level, the lowest working horizon in the mine. In the past, the company has stated its intention to draw feed from the Silbak and Big Missouri (four miles to the north) but the latest results have added a new dimension to the project — the possibility of developing an underground producer. In any event, this would follow an open pit production decision.

The Northern Miner looked at a longitudinal section of the old Silbak mine workings which simply terminate at the bottom level and the potential seems to be definitely there. "The underground potential is untouched and wide open," says Mr. Sorengaroli, adding, "there has to be some ore there."

Westmin also says a reverse circulation drilling program on the

No 4 level dump will begin this month. "Earlier sampling indicated this material to be ore grade," says Westmin, noting that there are 500,000 tons of it available. The grade could average 0.1 oz or better and would be a nice source of mill feed for startup. Metallurgical, geotechnical and environmental studies are in progress and a re-estimation of reserves is expected in January.

Modest tonnage increase

The most impressive intersection to date at the Big Missouri was 96 ft of 0.32 oz gold and 0.57 oz silver and that was from a shallow hole where mineralization was encountered 10 ft below the collar. "Along with other intersections, this increases the high grade core of the S-1 zone and indicates increased tonnage and grade," says Westmin.

A modest increase in tonnage is expected in the Dago zone and large diameter core drilling in the Province West zone returned good grade material in holes 86-51 and 86-52. The first hole returned 22 ft of 0.23 oz gold and 0.31 oz silver and the second 35 ft of 0.19 oz gold and 0.15 oz silver. These diamond drill hole grades are higher than percussion drill samples taken earlier and should increase the grade of the zone.

The Martha Ellen zone is the largest open pit zone at Big Missouri and a significant increase in size is estimated, says Westmin. Two stepout holes returned ore grade mineralization some 500 ft west of the previously indicated boundary. Significant base metals were also encountered in several holes. A few years back it was thought the Big Missouri would be phased in at a later date but Westmin now confirms it now is in their initial mining plans.

In 1986, a total of 7,255 ft of diamond drilling was completed on the property in 61 holes. Westmin has earned a 70% interest in the property while Tournigan Mining Explorations retains a 30% carried interest. Westmin can pick up another 7.5% by paying Tournigan \$1 million within 90 days of making a production decision. Exploration on the Silbak and Big Missouri properties is being funded by Canacord Resources for an interest in the project. British Silbak Premier Mines is Westmin's major partner in the Silbak.

EXPLORATION

Gold Values for Westmin

Westmin Resources of Vancouver has reported several spectacular gold and silver intersections from the second phase of in-fill drilling being carried out at its British Silbak Premier Mines property near Stewart in north-west British Columbia. The best intersection is reported to have averaged over 750 g/t (22 oz/t) of gold and 617 g/t (18 oz/t) silver over a width of 1.5 m. A second averaged 13.4 g/t gold and 73.7 g/t silver over a width of 3 m. Both occurred in the vicinity of an earlier high grade intersection which averaged 65 g/t gold and 715 g/t silver over a width of 4.6 m.

The company has indicated that some 70 m further east along strike, an underground drill hole intersected 9.6 m of mineralization which averaged 72 g/t gold and 104 g/t silver. Several other drill holes continue to encounter moderate to high grade mineralization. This underground drilling is testing the deeper section of a proposed open pit as well as deeper extensions that could possibly permit an expansion of the pit dimensions.

Westmin now expects to be able to announce a new reserve estimate for the property early in the New Year. The previously declared total was about 5.8 Mt grading 2 g/t gold and 86 g/t silver.

Westmin currently holds a 22% interest in the property and has an option to acquire another 50% from British Silbak. Canacourt Resources Inc., a consortium of companies which includes Noranda Inc., can earn a 13% interest in the property by providing \$C2 million in exploration funds in 1986.

MINING JOURNAL
DEC 12, 1986

Westmin Resources Limited

British Silbak Premier Mines Ltd.

HIGHLIGHTS OF PHASE II SURFACE AND UNDERGROUND DIAMOND DRILLING

HOLE NO.	INTERVAL ft.	LENGTH ft.	GOLD ounces per ton	SILVER per ton
SURFACE DRILLING				
86-50 (deepened)	325.0-327.6	2.6	0.042	67.60
86-117	337.5-364.2	26.7	0.126	9.74
86-118	24.0-46.0	20.9*	0.067	6.20
86-122	182.0-187.0 187.0-197.0 197.0-217.0 217.0-227.0	5.0 10.0 5.0* 10.0	22.663 0.392 0.178 0.021	18.38 2.15 9.55 5.70
86-125	184.5-195.0	10.5	0.189	2.12
86-126	75.0-96.6	13.4*	0.410	12.87
86-130	223.0-239.0 239.0-301.0	16.0 20.2*	0.139 0.168	1.57 1.23
86-131	168.0-181.5	13.5	0.574	2.18
86-135	304.0-333.7	29.7	0.432	4.89
UNDERGROUND DRILLING				
86-U-146	106.0-161.0 including 126.0-131.0	55.0 5.0	0.080 0.549	3.63 1.71
86-U-148	166.0-201.0	31.5*	2.112	3.03

NOV 28/86
* feet of core recovered within caved stope fill
FROM GCNL
DEC 6/86 104B054

No 228 **WESTMIN RESOURCES LIMITED (WMI-V)** Nov 27/86
TOURNIGAN MINING EXPLORATIONS LTD. (TGM-V)

HOLE NO.	INTERVAL	LENGTH	OZ. GOLD/T	OZ. SILVER/T
S-1 ZONE				
86-4	126 - 196 Ft.	70	0.137	0.42
86-7	55 - 146	91	0.247	0.95
86-9	10 - 106	96	0.315	0.57
DAGO ZONE				
86-14	165 - 201	36	0.269	0.73
MARTHA ELLEN ZONE				
86-22	21 - 48	27	0.159	0.42
86-40	98 - 122	24	0.175	0.29
86-41	153 - 193	40	0.173	0.73
86-46	53 - 73	20	0.168	0.20
PROVINCE ZONE				
86-51	2 - 24	22	0.228	0.31
86-52	42 - 77	35	0.191	0.15
86-58	4 - 23	19	0.197	0.30

Westmin Resources have reported improved precious metals reserves in the Stewart area, B.C., with the significant ore grade diamond drill intersections on four proposed open pit zones on the Big Missouri property. See GCNL NO.202, P.2 Oct.21/86, and No.185 for recent results from a drill program on the **BRITISH SILBAK PREMIER MINES LTD. (BSK.A-V)** property, four miles to the south of the Big Missouri. 1048046,054

Metallurgical, environmental, geotechnical and ore reserves studies are scheduled for completion by 31Dec86. A feasibility study decision is expected early in 1987.

Hole 86-9 is the most impressive Big Missouri intersection to date. Better definition of the boundary of the Dago zone in one area indicates a modest tonnage increase. Grades in diamond drill core are higher than in previous percussion drill samples and will significantly increase the grade of the Province West zone.

Drilling a 500 foot stepout hole and trenching within the Martha Ellen zone, the largest of the four open pit zones, indicates a significant increase in the size of the zone. A total of 7,255 feet of MQ and HQ diamond drilling was completed in 61 holes on the Big Missouri property during the 1986 program.

Westmin has earned a 70% interest in the property, while Tournigan Mining Explorations retains a 30% carried interest. Westmin may increase its interest to 77 1/2% by paying Tournigan \$1,000,000 within 90 days of commencement of commercial production.

Dec 5/86

WESTMIN RESOURCES LIMITED (WMI-T,M,V)
BRITISH SILBAK PREMIER MINES LTD. (BSK.A,BSK.B-V)

BONANZA GOLD VALUES REPORTED FROM GLORY HOLE DRILLING

1048054

New high grade gold silver assays have been reported by Westmin Resources from the phase I surface diamond drilling program on the British Silbak Premier mine near Stewart, B.C. (See GCNL No.233,202, and 185 for earlier drill hole assays.) See table overleaf for the highlights of the drill hole assays from both the surface and underground programs.

Westmin is considering drilling from the No.6 level of the former mine to expand underground reserves. Metallurgical, geotechnical and environmental studies

WESTMIN RESOURCES LIMITED (WMI-T,M,V)
BRITISH SILBAK PREMIER MINES LTD. (BSK.A,BSK.B-V)
 BONANZA GOLD VALUES REPORTED FROM GLORY HOLE DRILLING

HOLE NO.	LENGTH	OZ. GOLD/TON	OZ. SILVER/TON
86-122	5 ft.	22.663	18.38
Followed by	10	.392	2.15
86-34	15	1.89	20.93
86-U148	31.5	2.11	3.03
86-126	13.4	.41	12.87

GCNL Dec 4/86

New high grade gold silver assays have been reported by Westmin Resources from the phase I diamond drilling program on the British Silbak Premier mine near Stewart, B.C. (See GCNL No.202, and 185 for earlier drill hole assays) Hole No.86-122 was the highest grade intersected to date. No.86-34 was drilled earlier and is about 60 feet from No.86-122. The true width in both of these holes is estimated at about 85% of the intersection length. The underground hole No.86-U148 was drilled about 230 feet along strike from No.86-122. Both holes No.86-122 and No.86-U148 are drilled within the previously stoped area of the Glory hole. No.86-126 was drilled to test the cave filled stoped area.

The 1986 surface diamond drilling program has been completed with 20 hole totalling 5,297 feet. About 50% of the planned 17,000 feet of underground drilling has been completed on the No.2 level of the former mine. The underground drilling is testing the lower part of the proposed open pit and the surrounding area to test for possible extensions.

Reverse circulation drilling is testing the No.4 dump material to determine if the 500,000 to 1,000,000 tons of material is of ore grade as indicated by earlier sampling. 1048054

are in progress and a re-estimation of reserves is expected in January, 1987. The previous open pit geological reserve is expected to expand, with a resultant decrease in waste to ore ratio, and an increase in gold and silver grade. The Silbak Premier property is four miles south of the Big Missouri property which also yielded impressive results. Exploration on both properties is being funded by Canacord Resources Inc. in return for an interest in the project.

Westmin looks bullish on Silbak, Big Missouri

by David Duval

VANCOUVER — There appears to be little doubt that Westmin Resources will have a viable mining operation at Stewart, B.C., when it completes this year's work program at its British Silbak and Big Missouri gold properties.

A new reserve estimate should be available by year-end at which time the company will begin a formal feasibility study, says Arthur E. Soregaroli, vice-president exploration.

Westmin now is testing the Glory Hole area where some highly encouraging gold and silver assays have been returned (N.M., Oct. 27/86). These results were expected, he confirms, because residual ore had been noted in previously-worked stope areas.

This high grade ore occurs in the hangingwall and footwall of these stopes and also in sloughed material that has fallen into the stopes. Many of these stopes have been filled with good grade material that was simply below the cut-off grade mined by previous operators.

Dr Soregaroli says the high grade sections "seem to have some continuity" which should help in meeting his prediction that "the strip ratio will go down and the grades go up." Before this year's program, the company reported reserves of approximately 6.4 million tons grading 0.06 oz gold and 2.5 oz silver at a 5.5-to-1 strip ratio. Exploration

activity this year has largely been directed towards upgrading the confidence level of those reserves for the feasibility study.

That study will determine the economics of installing a 1,500-2,000-ton-per-day milling operation on the British Silbak property where the bulk of the reserves exist.

The Big Missouri property some five miles to the north will likely be a seasonal mining operation where its output would be stockpiled and blended as required by the Silbak mill.

There are four main gold zones at the Big Missouri, all of which were drilled this summer to define more accurately the higher grade sections and the lateral extent of the deposits. Those zones have been pretty well defined but there is still considerable potential in the Martha Ellen zone which will be tested at a later date. One of the proposed open pits is the surface expression of the Big Missouri underground mine, he notes.

Westmin is drilling the bottom of the proposed Silbak open pit from the No 2 underground level. They were unable to drill this area from surface because of open stopes. Drillers have successfully traversed some of the narrow, empty stopes from underground drill stations, which meant they had to re-collar their holes blind in either the hangingwall or footwall of the stope.

The previous operators selectively mined high grade portions of the Silbak ore zone and Dr Soregaroli emphasizes these stoped-out areas have been taken

into account when calculating reserves. He also points out that the company has been very conservative in establishing reserve grade and tonnage.

There is still considerable underground potential between the open pit and the No 6 level and also below that horizon. Work there has defined a geological reserve of 320,000 tons grading 0.12 oz gold and 1.1 oz silver and there is "still potential for a lot more," he says.

Canacord Resources is providing \$2 million towards the 1986 exploration program in return for 13.35% of Westmin's interest in the Silbak and Big Missouri projects. For another \$1 million before Feb 28, 1987, Canacord can increase its equity to 18.75%. British Silbak Premier Mines has the option to earn a 50% working interest in the Silbak property and under certain conditions be reduced to a 20% net carried interest in the Big Missouri, but Westmin can buy that down to 22.5% for \$1 million.

Westmin will probably be able to generate its own power at the mine because there is an old hydroelectric plant on the property which was used by the Big Missouri. This would represent a considerable saving when compared to diesel-generated electricity.

104B046,054 (1E)

N.M. 27 OCT 1986

104B/1E
(104B 046,054)

More high grade values at Westmin's Silbak bet

VANCOUVER — Westmin Resources has received more encouragement from its Silbak Premier property near Stewart, B.C. Some additional high grade intersections have been reported from the Glory Hole area and all the values are within the present design limits of a proposed open pit.

Eight gold intercepts were recently encountered in six drill holes, four of which represented caved stope fill material from previous mining operations. The shallow drill holes included: 18.3 ft of 0.92 oz, 19.4 ft grading 0.35 oz, 25 ft averaging 0.34 oz, 26.5 ft of 0.26 oz, 32 ft grading 0.12 oz and 5.4 ft averaging 0.32 oz. Two others were lower grade and they averaged 0.098 oz over 31 ft and 0.085 across 24 ft.

Westmin says the surface drilling results in the Glory Hole area suggest an "improvement and expansion of the ore inventory and probable reduction in the waste-to-ore stripping ratio." A phase-two drill program is under way and another 6,000 ft of drilling is planned for the Glory Hole area and 13,000 from the No 2 level underground to define reserves in the lower part of the proposed open pit.

The underground portion of the program is also designed to test the grade of the stope fill material and the mineralization on the footwall of stope in areas not sufficiently tested by surface drill holes. Some percussion drilling is planned for the No 4 level dump which is estimated to contain more than 500,000 tons of material grading 0.10 oz gold and 1.26 oz silver.

Assay results are expected shortly from the Simcoe area which is located 2,600 ft southeast of the Glory Hole zone. Two drill holes totalling 1,834 ft were recently completed there in a broad mineralized zone. Additional targets are being defined by geophysical and geochemical survey work, says Westmin.

The company has also completed a 7,255-ft diamond drill program on the adjacent Big Missouri property which is owned jointly by Westmin and Tournigan Mining Explorations. The 61-hole program was designed to upgrade reserves in the four mineralized zones adjacent to the Big Missouri property and results will be reported when available.

A recalculation of reserves for the Silbak and Big Missouri prop-

erties is expected in January. This will provide the basis for a feasibility study with one common facility at the Silbak property and a production rate of 2,000 tons per day. It's possible the Big Missouri would be operated on a seasonal basis because of weather conditions at higher elevations.

Westmin can earn a minimum 50% working interest in the Silbak for expenditures of \$4.7 million before Dec 31, 1987. British Silbak Premier Mines can elect to participate in a joint venture as to 50% or be reduced to a 20% carried net profits interest. Westmin had spent \$3.5 million to the end of the 1986 phase one program.

Westmin has agreed to sell 13.33% of its interest in the Silbak and Big Missouri projects to Canacord Resources for \$2 million in 1986 exploration expenditures. Canacord can elect to increase its funding to \$3 million by the end of February to raise its interest to 18.75% of Westmin's.

GCNL #201 20 OCT 1986

BRITISH SILBAK PREMIER MINES LIMITED (BSK-V)

GROWTH PLANNED WITH - John A. Block, president, and John
DIVERSE ACTIVITIES A. Powell, vice-president

operations, in a recent interview outlined the four areas of activity for the company and the planned activities to be emphasized to achieve steady accelerating asset growth over the longer term. It is a firm commitment of management to build the company over the next five to ten years into a major factor in real estate in the Fraser Valley in B.C. and in northwestern Washington state, while maintaining a strong presence in the mining industry.

The company activities are to be under the following four headings:

1. mining;
2. construction contracting for home and industrial buildings;
3. land development for single and multiple family housing and for commercial and industrial buildings, with support real estate sales force;
4. cash flow investments such as the existing mobile park and golf driving range.

The 80 pad mobile home park at Langley, B.C. is fully occupied and will generate a positive cash flow between \$50,000 and \$60,000. Expansion is being planned. The golf driving range and "proshop" at Coquitlam has been acquired on a "no risk" basis and is expected to break even in 1986 and generate a cash flow from retail sales of \$250,000 in 1987. Land development will concentrate on developing single family lots, contract building of the homes on a pre-sold basis (some 25 homes will be completed in 1986 with a value of \$1,600,000), and double the present four real estate sales licences to eight during the year. The recently occupied, new, 26,000 sq.foot office complex in Surrey will assist in the expansion of Surrey, Delta, Lower Fraser Valley development plans. Some of the projects are: 14 acres at Cloverdale, B.C.; a 2-acre multiple family development at Guildford; 18 acres at Marysville, Washington now being sold in 0.5 acre lots; 82 acres also near Marysville, recently purchased from Scott Paper, now being selectively logged at a profit in preparation for 0.5 acre development and sale in 1986 and 1987. The final decision to develop a major naval yard at Everett is expected to be made in the next few months. If the decision is to go ahead, then at least 5,000 new families will move to the area and British Silbak intends to participate in a major way in filling that demand.

104B / 1E (104B 046,054)

Westmin can earn a 60% interest in the British Silbak property at Stewart, B.C. by spending \$4,700,000 on exploration and paying the company \$300,000 per year to Dec. 1987. Westmin has spent approximately \$3,000,000 on the property to date and is expected to have spent a total of \$4,000,000 by year end. Under the agreement, British Silbak has the option to allow Westmin to spend a further \$2,000,000 and, if the results warrant, pay back \$1,000,000 and thereby avoid any dilution below 40% working interest, or revert to a 20% carried net royalty interest. Westmin has entered an agreement whereby Canacord Resources Inc. may earn 13.33% interest in the interest of Westmin in the Silbak Premier. To date in 1986, Westmin has completed some 16,000 feet of diamond drilling, nearly all from surface with encouraging results. In the current phase of exploration Westmin is expected to complete a further 20,000 feet of drilling, mostly from underground, before the year end. It is anticipated that sufficient data will be collected by Dec. 31, 1986 to warrant proceeding with a feasibility study. Such a study is expected to take six months and cost approximately \$1,500,000. At Dec. 31, 1985, ore reserves were 5,110,000 tons grading 0.062 oz. gold/t,

2.31 oz. silver/t, at a stripping ratio of 5 tons waste to one ton ore.

The most recent property results, previously reported, have confirmed and expanded ore reserves. (SEE MUCH DETAIL IN GCNL NO. 184, P. 2, Sept. 25, 1986)

HOLE	INTERCEPT	FOOTAGE	OZ. GOLD/T	OZ. SILVER/T
86-78	308-332	24.0	0.441	48.50
86-83	142-166.5	24.5	0.199	9.24
86-87	168-197	29.0	0.113	7.08
86-94	177-209	32.0	0.383	32.65
86-95	77-97	20.0	0.316	16.58
	139-157	18.0	0.330	32.89
86-96	162-165.5	3.5	2.065	63.96
86-97	363-367	4.0	0.206	10.08
86-102	349-360	11.0	0.335	3.67
86-103	217-221	4.0	0.518	3.30
86-107	161-181	20.0	0.259	9.90

NMINER

6 OCT 1986

104B/IE (104B

046,054)

Westmin cuts high grade on British Silbak ground

Westmin Resources has cut some high grade intersections in the first phase of its 1986 diamond drill program on the British Silbak Premier Mines' gold-silver property north of Stewart, B.C.

The drilling program was designed to test and confirm areas within the proposed open pit and all but two of the 38 holes, totalling 16,200 ft of drilling, penetrated ore grade sections of mineralization.

Some of the higher grade intersections (uncut) are as follows:

Hole #	Length of intersection	Oz gold per ton	Oz silver per ton
86-78	24.0	0.441	48.5
86-83	24.5	0.199	9.24
86-87	29.0	0.113	7.08
86-94	32.0	0.383	32.65
86-95	20.0	0.316	16.58
	18.0	0.330	32.89
86-96	3.5	2.065	63.96
86-97	4.0	0.206	10.08
86-102	11.0	0.335	3.67
86-103	4.0	0.518	3.30
86-107	20.0	0.259	9.90

Several of these intersections occur in areas previously thought to be of lower grade ore, and holes 95 and 96 are in an area thought devoid of mineralization. The net result of this drilling will be expanded reserves as well as the definition of higher grade areas

accessible for early mining when production begins, the company says.

The second phase of the 1986 program, now under way, entails 5,000 ft of surface drilling and 13,000 ft of underground drilling on the Silbak property plus a minimum of 6,000 ft of surface drilling on the Big Missouri property some four miles to the north.

Westmin will earn a minimum 50% working interest in the Silbak Premier property by making exploration expenditures of \$4.7 million by the end of 1987. British Silbak may elect to participate in a joint venture or assume a carried position with a 20% net profits royalty interest.

Westmin spent about \$3.5 million on the project to the end of the 1986 phase one program. It also has a 70% interest in the Big Missouri property under option from Tournigan Mining Exploration.

Canacord Resources can earn a 13.33% interest in Westmin's share of the Silbak Premier and the Big Missouri projects by providing \$2 million for the 1986 exploration program. Canacord can increase its funding to \$3 million by the end of February, 1987, in order to increase its interest to 18.75% of Westmin's interest.

GCNL #202

21 OCT 1986

WESTMIN RESOURCES LIMITED (WMI-TMV)
BRITISH SILBAK PREMIER MINES LTD. (BSK.A,BSK.B-V)
TOURNIGAN MINING EXPLORATIONS LTD. (TGN-V)

HOLE	INTERVAL	FEET**	OZ. GOLD/TON	OZ. SILVER/TON
86-104	272.0-297.0	25.0	0.335	4.88
86-108	355.5-382.0	26.5	0.255	1.60
86-109	196.0-227.0	31.0	0.098	2.89
86-113	308.0-367.0*	32.0	0.120	3.78
	393.0-429.0*	24.0	0.085	3.04
86-115	89.0-111.0*	18.3	0.919	10.35
	111.0-148.0*	19.4	0.345	4.94
86-116	104.6-110.4	5.4	0.323	12.39

MORE HIGH GRADE GOLD-SILVER - Several significant intersections.

104B/IE (104B 046,054) additional to those reported in GCNL 185(86) p.3, have been produced in continuation of diamond drilling in the Glory Hole area at the Silbak Premier property near Stewart, B.C. For interests in the property held by Westmin Resources Limited, the operator; British Silbak Premier Mines Ltd., the property owner; and Canacord Resources Inc., an optioner, see detail in GCNL 185(86) p.3. Westmin reports that all high grade intersections are within the proposed open pit in the Glory Hole area. Intersections in holes 86-113 and 86-115 are within caved stopefill material and augment the previously released high grade intersection in hole 86-102 which gave 162 feet of recovered core grading 0.237 oz.gold/ton and 1.26 oz.silver/ton over an interval of 279 feet. Holes 102 and 115 substantiate that this caved material contains some exceptional grade material.

Results of surface drilling in the Glory Hole area suggest improvement and expansion of the ore inventory and probable reduction in the waste/ore stripping ratio. The Phase II program is in progress with about 6,000 feet of additional fill-in surface drilling planned for the Glory Hole area and 13,000 feet of underground drilling from 2 level in the lower part of the proposed open pit. Underground drilling is aimed to further test the grade of the stope-fill material and the mineralization on the footwall of stopes in areas incompletely tested by surface drill holes.

Percussion drilling is planned to examine the grade of the 4 Level dump which is estimated to contain more than 500,000 tons of material grading 0.10 oz.gold/t and 1.26 oz.silver.

In the Simcoe area, some 800 meters SE of the Glory Hole zone, two drill holes totalling 1,834 feet were completed in a broad mineralized zone. Assays are expected shortly from the drill and surface trench samples. Other geophysical and geochemical surveys continue to define additional targets. Plans for underground drilling from 6 Level are being reviewed with a decision on exploration later this fall.

On the adjacent Big Missouri property, a 7,255-foot diamond drill program in 61 holes designed to upgrade reserves of the four known mineralized zones has been completed. For details of property interests of Westmin, the operator; Tournigan Mining Explorations Ltd., the owner, and Canacord, an optioner; see GCNL 185(86), p.3. Assays will be reported when available. Re-estimation of reserves at both the Silbak Premier and the Big Missouri properties is expected in January, 1987 and will provide the basis for a feasibility study decision. One tentative mining plan envisages ores from both properties being milled at a common facility on the Silbak Premier property at a rate of 2,000 tpd.

GCL #185 25 SEPT 1986

NO.185(1986)
SEPTEMBER 25, 1986**WESTMIN RESOURCES LIMITED (MMI-V)****BRITISH SILBAK PREMIER MINES LTD. (-V)**

HOLE	INTERCEPT	FOOTAGE	OZ. GOLD/T	OZ. SILVER/T
86-78	308-332	24.0	0.441	48.50
86-83	142-166.5	24.5	0.199	9.24
86-87	168-197	29.0	0.113	7.08
86-94	177-209	32.0	0.383	32.65
86-95	77-97	20.0	0.316	16.58
	139-157	18.0	0.330	32.89
86-96	162-165.5	3.5	2.065	63.96
86-97	363-367	4.0	0.206	10.08
86-102	349-360	11.0	0.335	3.67
86-103	217-221	4.0	0.518	3.30
86-107	161-181	20.0	0.259	9.90

FEASIBILITY STUDY IS EXPECTED TO FOLLOW - Exploration on
39,000 FEET OF DIAMOND DRILLING IN 1986 the Silbak

Premier property some 9 miles north of Stewart in NW B.C. is progressing well with confirmation and expansion of ore reserves. Open pit geological reserves before the 1986 program were 5,118,400 tons in the probable category grading 0.061 oz.gold and 2.65 oz.silver per ton and 1,248,600 tons possible grading 0.056 oz.gold and 1.98 oz.silver/t. These reserves are in the Glory Hole area, the upper part of the former Silbak Premier Mine, wherein 4,722,413 tons were mined in the period 1918 to 1968 with a recovered grade of 0.384 oz.gold and 8.03 oz.silver/t. In addition to the Glory Hole open pit reserves, underground reserves totalled 127,000 tons grading 0.13 oz.gold and 0.94 oz.silver/t in the 602XC zone, and 383,000 tons grading 0.118 oz.gold/t, 1.15 oz.silver/t, 4.93% zinc and 1.50% lead in the Northern Light zone. Both areas are open for expansion by additional diamond drilling.

Phase I of the 1986 exploration program in the Glory Hole area has been completed with some 16,200 feet of diamond drilling in 38 holes. All about 2 of these holes penetrated ore grade sections. This fill-in drilling defined the various mineralized zone better and encountered numerous particularly high grade intersections within the broader zone of reserves. Some of those intersections (uncut) are shown in the table. Some are in areas previously thought to be of lower grade and holes 95 and 96 are in an area thought devoid of mineralization. The result of this drilling will be expanded and perhaps higher grade reserves.

Within the Glory Hole area, many of the previous stopes are filled with material caved from surrounding rocks. Drilling these filled stopes in 1983, 1984 and 1985 indicated that much of the fill is moderate to good grade ore. Additional testing of filled stopes in 1986 continues to return favourable results with hole 86-102 returning 162 feet of recovered core (over a drill length of 279 feet) grading 0.237 oz.gold and 1.26

oz.silver/t. The footwall of the stope assays 0.335 oz.gold and 3.67 oz.silver/t over 11 feet. Efforts to test this material further are in progress.

Rehabilitation and preparation of diamond drill sites on 2 Level are in progress. Drilling there is expected to start soon to test the lower part of the proposed pit in the Glory Hole area.

Sampling of surface dumps during 1985 suggested significant gold and silver values within dumps from the B.C. Silver and 2 Level portal areas. In 1986, preliminary evaluation of the dump near the 4 Level portal has indicated more than 500,000 tons of ore grade material from which 63 samples graded 0.10 oz.gold and 1.26 oz.silver/t. Total dump material on the property may exceed 1,000,000 tons.

Other parts of the property are being explored. About 2,500 feet south of the Glory Hole are in the Simcoe area, 2 diamond drill holes cut widespread sulphide mineralization in altered volcanic rocks. Assays are awaited.

Westmin will earn a minimum 50% working interest in the Silbak Premier property by spending \$4,700,000 on exploration by 31Dec87. British Silbak Premier Mines Ltd. may elect to participate in a joint venture as to 50% or assume a carried position with a 20% net profits royalty interest. Westmin currently has 12% working interest, has bought a 6% net profits carried interest and will add a 4% net profits carried interest by paying British Silbak \$300,000 on 1Jan87 and 1Jan88. Westmin has spent about \$3,510,000 on a project to the end of the 1986 Phase I program.

Westmin has entered an agreement whereby Canacord Resources Inc. may earn 13.33% interest in the interest of Westmin in the Silbak Premier and Big Missouri projects by providing \$2,000,000 for the 1986 program. Canacord can elect to provide \$3,000,000 by 28Feb87 to raise its interest to 18.75% of Westmin's interest. Westmin has 70% interest in the Big Missouri property under option from TOURNIGAN MINING EXPLORATIONS LTD. (TGN-V). This property, which is about 4 miles north of the Silbak Premier, has probable geological reserves of 2,454,000 tons averaging 0.075 oz.gold and 0.95 oz.silver/t in 4 open pit zones.

Phase II work at Silbak Premier and Big Missouri is in progress, funded by Canacord. Some 23,000 feet of diamond drilling are planned, being 5,000 from surface and 13,000 underground for the Glory Hole area and 6,000 from surface at Big Missouri. A decision to start underground exploration of the 602XC, Northern Light and other areas in the former mine workings is expected this fall. Westmin expects a re-estimate of ore reserves in January 1987 followed by a decision to start a production feasibility study.

104B/IE (104B 046,054)

NMINER

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Westmin drilling Silbak Glory Hole

Drill crews have started work to upgrade and improve reserves at the British Silbak mine near Stewart, B.C.

Westmin Resources is to expend a minimum of \$700,000 on approximately 8-10,000 ft. of diamond drilling in the Glory Hole open pit area under its 5-year option with Silbak.

The agreement calls for Westmin to expend \$4.7 million on exploration by Dec. 31, 1987, and pay to Silbak \$300,000 a year for its option. To date, Westmin has spent \$1.5 million on exploration and has paid \$900,000 in option payments.

In the first two drilling seasons Westmin proved up 4,295,000 tons at 0.071 oz. gold and 3.22 oz. silver per ton in the open pit area of the former Glory Hole which produced in the 1920s and '30s.

Jan. 24 — Results from Westmin Resources on the bulk tonnage potential of the old Silbak Premier mine near Stewart, B.C. suggests that a major open pit operation might be viable.

The TSE saw the biggest daily volume in two years with over 20 million shares changing hands. Buyers paid special attention to base metal mines. Inco Limited closed at \$18.70 while Falconbridge Limited closed at \$87.

N. MINER
JAN 6/86

NMINER 27 JAN 1986

Westmin increases reserves at former Silbak Premier

by David Duval

VANCOUVER — The reserve inventory has increased substantially at the former British Silbak Premier mine near Stewart, B.C., held under option by Westmin Resources.

According to Dr. Arthur Soregaroli, vice-president exploration for the minerals division, the Silbak and the Big Missouri (under option from Tournigan Mining Explorations) are being viewed as a package, so success at one project will definitely improve the economics of the other.

He says exploration work last year in the Glory Hole area at Silbak increased reserves by 20%, based on 26,000 ft. of diamond drilling in 79 holes and 2,300 ft.

Hole zone and approximately 20,000 ft. of underground drilling from the No. 2 level to test the lower part of the pit area.

Dr. Soregaroli tells The Northern Miner there is still good potential for underground reserves, pointing out they have only looked at the upper few hundred feet in the mine to the third level. Previous operators mined to the sixth level but there was little production below level No. 4, he says.

Noting that budget constraints have prevented them from testing the underground potential, he predicts that finding reserves there will not be any problem. But he doubts they will be similar in grade to that mined in the past when the cutoff was approximately 0.25 oz.

By local standards, the Silbak property is well located. The proposed pit would be below 2,000 ft. in elevation, reducing the incidence of weather-related problems. He says more drilling is planned for the Big Missouri this year, so presumably there could be a further upgrading of the two prospects or "package" when results from there are known.

GENL #18 27 JAN 1986

OPEN PIT PROBABLE AND POSSIBLE RESERVES HAVE INCREASED 20% TO - 5,118,400 TONS GRADING 0.061 OZ. GOLD, 2.65 OZ. SILVER/T

WESTMIN RESOURCES LTD. (WMI-V)

Westmin Resources Ltd.'s 1985 exploration program on the Glory Hole area of the former producing mine of British Silbak Premier Mines Limited near Stewart in NW B.C., has increased reserve tonnage by about 20%. Management report that open pit geological reserves increased to 5,118,400 tons (probable and possible) grading 0.061 ounce gold and 2.65 ounces silver per ton from 4,295,000 tons averaging 0.071 oz. gold/t gold and 3.22 oz. silver/t a year ago. Within the proposed pit is potential for an additional 1,248,000 tons grading 0.056 oz. gold/t and 1.98 oz. silver/t.

Reserves in the probable category, which include blocks within 49.2 feet (15 m) of a drill hole, trench or underground sample location, were doubled to 2,668,100 tons averaging 0.063 oz. gold/t and 2.80 oz. silver/t from 1,348,000 tons grading 0.073 oz. gold/t and 3.48 oz. silver/t.

The reserve estimate is based on 26,000 feet of diamond drilling in 79 holes and 2,300 feet of trenching and underground sampling. The proposed open pit ranges in elevation from 665 to 475 meters. The Glory Hole zone remains open to depth and along strike to the north.

Exploration in prior years established probable underground reserves of 127,000 tons grading 0.130 oz. gold/t and 0.94 oz. silver/t in the 602 XC zone and 383,000 tons grading 0.118 oz. gold/t, 1.15 oz. silver/t, 1.50% lead and 4.93% zinc in the Northern Light zone. These zones are open along strike and down dip. Studies are in progress to define additional areas of potential in the previous underground workings. The Silbak Premier mine was a highly successful operation over most of its 50-year life (1918-1968) during which over 4,700,000 tons of ore with recovered grade of 0.384 oz. gold/t and 8.03 oz. silver/t were mined and milled. Lead, zinc and copper were sporadically recovered. Most production occurred between 1918 and 1953 and during this period the mine generated more than \$20,000,000 in dividends.

To the end of 1985, Westmin had spent \$2,350,000 on the property and can earn at least 50% interest by spending a total of \$4,700,000 by 31 Dec 87. At that time, British Silbak has the option of becoming a joint venture participant or diluting to a 20% net profits royalty interest after payback. Westmin is required to spend about \$1,150,000 in 1986. This program will focus on additional fill-in drilling within the Glory Hole zone with some 20,000 feet of underground diamond drilling planned from 2 level to test the lower part of the proposed open pit area. Exploration drilling will also be undertaken to test other surface showings and underground targets.

N Miner
Jan 24, 85

Major open pit gold mine seen from Westmin test

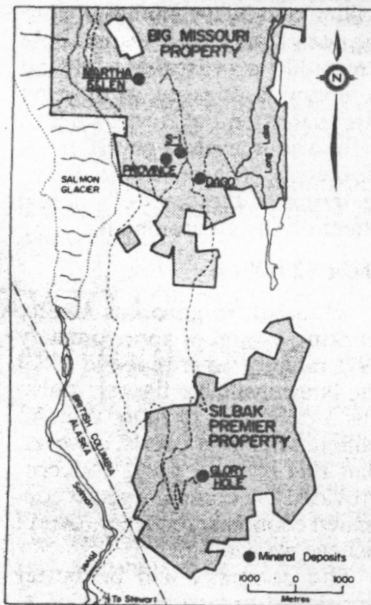
by David Duval

104B 054

VANCOUVER — The bulk tonnage potential of the old Silbak Premier mine near Stewart, B.C., has been tested by Westmin Resources, results of which suggest a major open pit operation might one day be viable. Westmin holds the property under option from British Silbak Premier Mines.

Based on approximately 15,500 ft. of diamond drilling plus surface and underground sampling information, Westmin has blocked out reserves totalling 4.3 million tons at a gold equivalent of 0.148 oz. Most of the drilling involved the Glory Hole area where a steeply dipping mineralized zone up to 200 ft. wide was defined.

According to Dr. A. E. Soregoli, vice-president exploration (mining), the zone occurs within a previously mined area where 2.3 million tons grading approximately 0.56 oz. gold and 12.9 oz. silver were recovered from narrow stopes. The proposed open pit would encompass some of the old underground workings and he feels there could be a significant



upgrading of reserves and a lowering of the existing strip ratio with fill-in drilling.

The reserve estimate includes 0.071 oz. gold and 3.22 oz. silver and the gold equivalent grade is based on 1.0 oz. gold equalling 42 oz. silver. Not included in the cal-

culation are recoverable base metals which occur locally within the mineralized zone, says Westmin.

British Silbak finds itself in an enviable position vis-a-vis property expenditures in that the company doesn't have to put up any money until Westmin has spent \$6.7 million on exploration and development. John Powell, Silbak's vice-president operations, tells The Northern Miner when that point has been reached Silbak will have to put up a million in cash or be diluted down.

Silbak is controlled by John Block and his brother Henry, who was previously president of the real estate firm, Block Brothers. Mr. Powell says that Silbak has extensive real estate interests and anticipates a profit of about \$500,000 for the fiscal year ended Jan. 31. But he cautions, there might be

See Page 6

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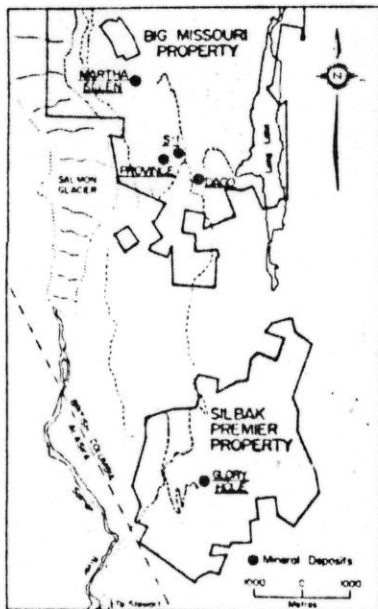
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Silbak is controlled by John Block and his brother Henry, who was previously president of the real estate firm, Block Brothers. Mr. Powell says that Silbak has extensive real estate interests and anticipates a profit of about \$500,000 for the fiscal year ended Jan. 31. But he cautions, there might be writedowns relating to real estate holdings which could eliminate that profit. However, this would be a one-time occurrence, he states.

With option payments of \$300,000 per year from Westmin and other revenues, Mr. Powell says Silbak is a very profitable company. When the Blocks took it over in 1981 Silbak had much more debt and he confirms that debt has now been reduced to under \$2 million against \$11 million in assets.

Also at Stewart, Westmin expects to have a feasibility study completed for the Big Missouri property about four miles to the north by June of this year. But Mr. Soregaroli confirms that study will not include any production from the Silbak which potentially could improve the economics of each situation.

Of all the company's Stewart properties the Big Missouri is the most advanced; Westmin has spent about \$2.6 million there since 1979 compared to \$1.6 million at the Silbak. The former falls under an option agreement with Tournigan Mining Explorations and the latter under a separate arrangement with British Silbak Premier Mines.

According to Harlan Meade, exploration manager, western region, the Silbak still has additional potential along strike, noting a minimum \$700,000 exploration expenditure this year will test that potential.

Drilling from the No. 2 level will test the proposed open pit area more thoroughly and upgrade the category of the ore reserves, says Mr. Soregaroli, who claims they nearly have enough tonnage to justify putting a mill on the property. "There is a reasonable mine life at present reserves," he adds.

Compared to the Big Missouri the logistics of mining at the Silbak are much better, suggesting a year-round operation as opposed to a seasonal one for the other. A preliminary pit design indicates a strip ratio of 2 to 1, rising to 5.6 to 1 in the final stages of mining. But this could change with improved definition of the gold-bearing zone.

Augmenting open pit reserves at Silbak are some 365,000 tons of

similar grade material not included within the present pit limits. This particular zone is open in several directions and down dip. Another 350,000 tons are available in the lower reaches of the mine (at the same grade) and these reserves contain significant zinc, lead and copper, the company notes. There are several other targets which have yet to be evaluated.

No metallurgical work has been completed but Mr. Soregaroli says metallurgy shouldn't be a significant problem because the operation has a production history and there weren't any in the past.

Westmin describes the geological setting as basically a stock-work vein system emplaced in a sub-volcanic environment where there appears to be a mixture of stratigraphically and structurally-controlled mineralization. There is no restriction on tonnage, the company emphasizes, so additional exploration could alter the economics greatly. Westmin has the option to earn a minimum 50% interest in the property and total expenditures by year-end should be about \$2.3 million.

104B/1E
(104B 046)

G&NL #13 18 JAN 1985

BRITISH SILBAK PREMIER MINES LIMITED (BSK.A,BSK.B-V)

	Short Tons	Ounces Gold/Ton	Ounces Silver/Ton	Ounces Gold Equivalent/Ton
Probable	1,348,000	0.073	3.48	0.156
Possible	1,535,000	.066	3.31	.145
Inferred	1,412,000	.074	2.89	.143
Total	4,295,000	.071	3.22	.148

WESTMIN RESOURCES LIMITED (WMI-V,T)

**OPEN PIT RESERVES TO BE FURTHER EXPLORED
IN 1985 PROGRAM OF \$700,000**

Exploration in the Glory Hole area of the former producing Silbak Premier mine, 20 miles north of Stewart, north west B.C., has defined a steeply dipping open pit reserve up to 60 meters thick centered on the upper part of the mine. Westmin Resources is doing the work on

property and under a March, 1983 agreement holds an option to earn a minimum 50% interest in the claims. The zone occurs within the area mined from 1918 to 1933 where 2,300,000 tons grading approximately 0.56 oz. gold/ton and 12.9 oz. silver/ton were recovered from narrow stopes. Based on 5,452 meters of diamond drilling and other surface and underground sample information, a 600-meter long zone contains estimated open pit geological reserves as shown in the table. The reserve is undiluted and was calculated using the sectional method and an 0.04 oz. gold equivalent/ton cutoff. Gold equivalent grade is based on 1 oz. gold/ton equal to 42 oz. silver/ton. Recoverable base metals also occur locally within the mineralized zone.

The Silbak property is just a few miles south of the Westmin-Tournigan Mining Explorations Ltd. Big Missouri property which had reserves of about 2,200,000 tons grading 0.098 oz. gold equivalent at the end of the 1983 drilling season.

Waste-to-ore ratio at the Silbak ranges from 2:1 in early stage pits to 5.6:1 in the final proposed pit. Waste-to-ore ratios may be reduced by additional fill-in drilling to expand reserves within the present proposed open pits. Approximately 365,000 tons of similar grade material are not included within the current proposed pits. The zone is open in several directions and down dip.

In addition to open pit reserves in the Glory Hole area, work by previous operators has defined approximately 350,000 tons of reserves at deeper levels of the mine with similar gold and silver grades and containing significant zinc, lead and copper. A program of a minimum of \$700,000 is planned for 1985.

BONUS PETROLEUM CORP. (BOU-V)

EXPANDED PROJECTS - C.D. Borggard, President of Bonus Petroleum Corp., has announced the acquisition of a major geological study covering the area from Townships 7 to 17, Ranges 12 to 19 W4M of southeastern Alberta. This includes the fields of Wrentham, Taber, Retlaw, Hayes, Enchant, Grand Forks, Long Coulee and several other substantial oil producing pools.

The company has expanded its exploration activities in this area with a view to adding to its oil and gas reserves base. Bonus is currently negotiating three prospects within the study area and anticipates participating in a minimum of six to eight prospects during the coming year.

GCNL # 13 (Jan 18), '85

BRITISH SILBAK PREMIER MINES LIMITED (BSK.A, BSK.B-V)

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Probable	1,348,000	0.073	3.48	0.156
Possible	1,535,000	.066	3.31	.145
Inferred	<u>1,412,000</u>	<u>.074</u>	<u>2.89</u>	<u>.143</u>
Total	4,295,000	.071	3.22	.148

WESTMIN RESOURCES LIMITED (WMI-V,T)

OPEN PIT RESERVES TO BE FURTHER EXPLORED

IN 1985 PROGRAM OF \$700,000 104B

054

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Waste-to-ore ratio at the Silbak ranges from 2:1 in early stage pits to 5.6:1 in the final proposed pit. Waste-to-ore ratios may be reduced by additional fill-in drilling to expand reserves within the present proposed open pits. Approximately 365,000 tons of similar grade material are not included within the current proposed pits. The zone is open in several directions and down dip.

In addition to open pit reserves in the Glory Hole area, work by previous operators has defined approximately 350,000 tons of reserves at deeper levels of the mine with similar gold and silver grades and containing significant zinc, lead and copper. A program of a minimum of \$700,000 is planned for 1985.

WESTMIN RESOURCES LIMITED EXPANDS RESERVES
AT BRITISH SILBAK PREMIER MINES PROPERTY

VANCOUVER (January 16, 1985) - Exploration in the Glory Hole area of the former producing Silbak Premier mine has defined a steeply dipping mineralized zone up to 60 meters thick centered on the upper part of the mine. The zone occurs within the area mined from 1918 to 1933 where 2.3 million tons grading approximately 0.56 oz. gold/ton and 12.9 oz. silver/ton were recovered from narrow stopes. Based on 5,452 meters of diamond drilling and other surface and underground sample information, a 600-meter long zone contains estimated open pit geological reserves as listed.

	<u>Short Tons</u>	<u>oz. gold/ton</u>	<u>oz. silver/ton</u>	<u>oz. gold Equivalent/ton</u>
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TOTAL	4,295,000	.071	3.22	.148

The reserve is undiluted and was calculated using the sectional method and an 0.04 oz. gold equivalent/ton cutoff. Gold equivalent grade is based on 1 oz. gold/ton equal to 42 oz. silver/ton. Recoverable base metals also occur locally within the mineralized zone.

The Silbak property is located near Stewart in Northwestern B. C., just a few miles south of Westmin-Tournigan Mining Explorations Ltd. Big Missouri property which had reserves of about 2.2 million tons grading 0.098 oz. gold equivalent at the end of the 1983 drilling season.

Waste-to-ore ratio at the Silbak ranges from 2:1 in early stage pits to 5.6:1 in the final proposed pit. Waste-to-ore ratios may be reduced by additional fill-in drilling to expand reserves within the present proposed open pits. Approximately 365,000 tons of similar grade material are not included within the current proposed pits. The zone is open in several directions and down dip.

In addition to open pit reserves in the Glory Hole area, work by previous operators has defined approximately 350,000 tons of reserves at deeper levels of the mine with similar gold and silver grades and containing significant zinc, lead and copper.

Much of the underground potential of the mine as well as numerous relatively untested surface occurrences of mineralization remain to be evaluated.

Westmin and British Silbak Premier Mines entered into a joint venture option agreement in March 1983 wherein Westmin can earn a minimum 50 percent interest in the property.

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Cdn. Northwest	30¢	Feb. 15	An	17.5¢
Cdn. Occid.	16¢	July 1	Quarterly	35¢
Cimarron	25¢	Apr. 12	Quarterly	30¢
Giant Reef	5¢	July 1	Quarterly	60.5¢
Gulf Canada	13¢	July 1	Quarterly	25¢
Husky	9¢	Sept. 27	Semi-ann'l	9¢
Imp. Oil A	40¢	July 1	Quarterly	39¢
Midcon	50¢	Dec. 14	Annual	16.5¢
Murphy x	15¢	May 31	Semi-ann'l	80¢
Norcen	12.5¢	June 1	Quarterly	15¢
Oakwood Pete A	10¢	Jan. 27	Annual	25¢
PanCdn Pet. x	25¢	June 28	Quarterly	10¢
Paramount Res.	20¢	May 15	Semi-ann'l	50¢
Passburg Pete.	12.5¢	Jan. 18	Initial	20¢
Ranchmen's R.	12.5¢	Aug. 1	75¢	12.5¢
Shell Can. A	30¢	June 14	Semi-ann'l	80¢
Suncor	20¢	Sept 19	Quarterly	60¢
Texaco Can.	30¢	June 3	Quarterly	20¢
Total Pet.	6¢	June 20	Quarterly	90¢
Trans-C PipeL.	28¢	Apr. 30	Quarterly	6¢
Tudor Energy	1.5¢	June 28	Initial	24¢
Union Gas A	20¢	Nov 1	Quarterly	1.5¢
Yk. Bear	\$7.00	May 6	Semi-ann'l	80¢
				12¢

N.B.: Ex-dividend date is normally four trading days prior to record date. Shares traded on or after that date do not carry right to current dividend. * Includes current 1985 payments. † U.S. funds. x Payments adjusted throughout to basis of present shares.

Westmin drilling Silbak Glory Hole

Drill crews have started work to upgrade and improve reserves at the British Silbak mine near Stewart, B.C. 104B 054

Westmin Resources is to expend a minimum of \$700,000 on approximately 8-10,000 ft. of diamond drilling in the Glory Hole open pit area under its 5-year option with Silbak.

The agreement calls for Westmin to expend \$4.7 million on exploration by Dec. 31, 1987, and pay to Silbak \$300,000 a year for its option. To date, Westmin has spent \$1.5 million on exploration and has paid \$900,000 in option payments.

In the first two drilling seasons Westmin proved up 4,295,000 tons at 0.071 oz. gold and 3.22 oz. silver per ton in the open pit area of the former Glory Hole which produced in the 1920s and '30s.

Silver Lake Resources has concluded, through a major London-based European banking group, the private placement of 300,000 treasury shares at \$1.50 per share. These funds will be added to working capital and utilized for general corporate purposes, according to W. S. Eplett, president.

Abitibi financing features unique 'bonus' warrants

Abitibi Metals, a company controlled by Georges Dumont for over 30 years, has arranged a public offering expected to be completed in early September.

The company, which is not related with Abitibi Resources, is offering units consisting of 800 common shares, 3,200 flow-through shares and 4,000 warrants. Each unit costs \$2,400.

The company is also issuing 1,600 bonus warrants per unit as an incentive to hold flow-through shares until Sept. 1, 1986.

The company expects to gain a listing on the Montreal Exchange when the financing is complete.

Funds from the financing will go toward a property in the area of the Camflo and Kiena gold mines in northwestern Quebec. The company also aims to spend about \$150,000 on its Glandelet Twp. property which is along strike of the Vior discovery in Ligneris Twp., also in northwestern Quebec.

Abitibi has a 5% net profit royalty from a portion of Louvem's Monique property in the Val d'Or area of northwestern Quebec. Louvem recently announced some good diamond drill results from the property but no production has been made.

New board for Waddy Lake

E. F. Partridge, president of Waddy Lake Resources Inc., reports that the following new directors will be appointed to its board at an early date: Murray Pezim, Arthur Clemis, Leslie MacConnell and Nel Dragovan.

Ontario Petroleum Institute — 24th Annual Conference, Sept. 29 — Oct. 1, Holiday Inn, London, Ont. Contact: O.P.I. 396, Chatham, Ont. N7M 5K5.
Geological Association of Canada/Topographical Survey/Ministry of Natural Resources — International Symposium — "Geology of Deposits," Sept. 29 — Oct. 1, Toronto Contact: BP Canada Inc., Seleo Div 55 University Ave., Suite 1700, Toronto M5J 2H7.

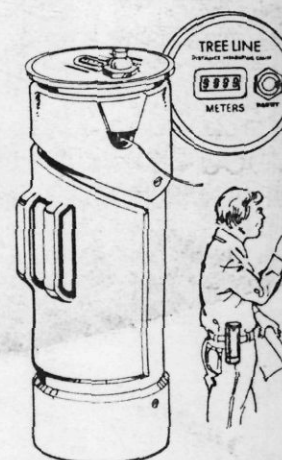
News in Brief

Goldbrook Explorations which has begun dewatering old Gold Hill mine in Cathlamet Twp., about 14 miles southeast of Kirkland Lake Ont., failed to at all this week, but a small amount of shares traded at 85¢ a last week. The company plans to dewater the 1,100-ft. shaft, re-enter it and install a hoist in preparation for a bulk sampling program on the 100-ft. level.

Production in the 1920s from a 20-in. vein, which according to mine records, graded average 1 oz. gold per ton.

Tashota-Nipigon Mines started an 8,000-ft. diamond program on its Onan Lake property in northern Ontario. The first hole is testing the depth of the former gold production.

TREE-LINE MEASUREMENT



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TELEPHONE

Westmin is key player in camp at Stewart

Westmin Resources has been a key player in the Stewart camp, British Columbia, for a number of years. Its primary focus has been the Big Missouri property which it holds under option from Tournigan Mining Exploration. At last report the project's reserve inventory had reached approximately 2.2 million tons at a grade of 0.098 oz. gold equivalent.

Mine evaluation studies are under way and Westmin has the right to earn a 70% interest in the prospect which is located 111 miles north of Stewart, an area with a diversified mineral history. A feasibility study must be submitted to Tournigan by June 1, 1985, and although the mining logistics there are difficult, the company's experience at Butte Lake on Vancouver Island, a major base-precious metals producer, should be a big plus for the Big Missouri project.

Four potential open pit zones containing gold, silver and minor lead with zinc mineralization have been outlined on the Big Missouri. Additional drilling is planned this year to further define the various mineralized zones.

Four potential open pit zones

Exploration work on the British Silbak Premier Mine prospect, five miles to the south, also has been encouraging. Diamond drilling has mostly involved the evaluation of near-surface mineralization in the upper part of the old Silbak Premier mine. But there are numer-

ous other targets for future exploration, Westmin stated.

Although Esso Minerals Canada has closed down its Granduc mining operation there, the company still intends to retain an active presence in the region. The company has even moved its head office to Vancouver at a time when a number of firms have or are talking about leaving the city. Esso has teamed up with Scottie Gold Mines to explore a 37-unit claim block adjacent to Scottie's Summit Lake gold mine. These claims cover major gold-bearing showings discovered in 1983, according to Scottie president, Donald A. McCleod. There are five separate showings and three have high gold values, he said.

High gold values not unusual for area.

The Bend showing contains massive pyrrhotite. It is located about 1,500 ft. northeast of the Granduc mill. A chip sample taken over an 8-ft. width returned 0.61 oz. gold, including a massive sulphide section which graded 1.1 oz. gold. Exceptional gold values also were found on the Road vein about one mile from the Granduc mill. These values are not unusual for the area as Scottie is one of the highest grade gold producers in the country.

A 50-50 joint venture between the two companies, the program will involve a budget of \$500,000. It is scheduled to get under way immediately, Scottie explaining

that any reserves blocked out could be processed at its existing mill.

Last year Esso tested seven target areas on Consolidated Silver Butte Mines' Big Missouri Ridge property which it optioned in 1980. In total, Esso drilled 5,512 ft. and completed 787 ft. of trenching on this promising gold-silver-lead-zinc-copper prospect. Of the 13

A 50-50 joint venture with program budgetted at \$500,000.

holes drilled, six tested the No. 2 zone and others parallel to it to the east.

No. 2 stockwork has been traced for 500 ft. and the work outlined moderate to high grade precious and base metal values in tabular vein structures.

Also, work on another five targets disclosed pyritic, altered and veined andesites with patchy stockwork mineralization but it was sub-economic. One of the best holes last year averaged 0.78 oz. gold and 2.05 oz. silver per ton with 1.47% lead and 6.84% zinc across a true thickness of 14.8 ft.

Silver Butte has converted its interest to a 20% carried interest in net proceeds from production. Esso has already spent \$1 million on the property but no budget has been set for 1984. Exploration will resume when metal prices stabilize.

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BRITISH SILBAK PREMIER MINES LIMITED (BSK-V)

(104B/IE) (1042 054)

YEAR ENDED 31 JANUARY	1984	1983
Real Estate Sales	\$2,993,070	\$ 525,492
Cost of Real Estate Sales	1,895,764	267,378
Gain on Real Estate Sales	1,097,306	258,114
Interest Income	111,715	10,215
Rental Income, Net	4,850	-
Management Fee	10,318	-
Total Revenue, Net	1,224,189	268,329
Administrative Expenses	564,922	217,600
Deferred Income Taxes	353,000	25,000
Net Income	306,267	25,729
Per Class A & B Common Share	5¢	1¢
Cash Flow (Out)	176,645	(66,343)
Outstanding Shares, Class A	2,031,107	2,031,107
Class B	6,650,391	2,456,980

**REAL ESTATE & GOLD
INTERESTS REPORTED**

The annual meeting of British Silbak Premier Mines Limited will be held on 15Jun84 at 10 a.m. in the Sheraton-Plaza 500 Hotel, Vancouver. Nominees for election as directors are now serving: Henry J. Block, chairman, owning 1,055,446 Class A and 1,953,241 Class B shares; John A. Block, president, 8,522 B shs.; John Powell 11,348 B shs.; Walter Jensen 1,000 A and 809,000 B shs.; Victor B. Bjorkman 1,200 A and 200 B shs.; Roger Haynes, secretary, 10,000 B shs.; Edmund H. Talbot 31,500 Class A and 31,500 B shs. - all of Vancouver area, and Robert H. Davis of Newport Beach, California, owning 48.259% interest in 120,000 Class A and 120,000 B shs.

The company's inventory of real estate was carried at \$2,516,564 at 31Mar84. Properties were held in Snohomish county, Washington state, and in White Rock and Pitt Meadows,

B.C. Rental properties were carried at \$5,555,887, including the Cambie Plaza shopping centre, Vancouver and the Cedar Lane mobile home park.

In 1983, British Silbak sold 2% interest in their past producing Premier gold-silver-copper-lead-zinc mine at Stewart, B.C. for \$300,000 to Westmin Resources Limited and granted Westmin the option to earn 48% more by spending \$4,700,000 on production work. Also, Westmin can acquire 2% net profits royalty interest, to a maximum of 10%, at a cost of \$300,000 per year. British Silbak can participate in a joint venture development of the property following completion of the scheduled preproduction expenditures or elect not to do so and be reduced to a 20% net profits royalty interest once Westmin has recovered its preproduction expenditures and its net profits royalty interest.

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considerable re-negotiation and revision, but resulted in completion of a formal agreement in March 1983. Terms of the agreement called for five annual payments of \$300,000, each of which purchases a 2% net profits interest in the property. In addition, Westmin must spend \$5-million on exploration/development during the 5-year period to earn a 50% interest in the property. After expenditure of \$2.3-million, Westmin is vested in a 10% carried interest. British Silbak Premier can elect to participate as a joint venturer at the 50% level or dilute to a 20% net profits royalty after payback.

The Silbak Premier Mine was a highly successful mine over most of its 50-year life (1918-1968) during which over 4,700,000 tons of ore with a recovered grade of 0.384 oz/ton gold and 8.03 oz/ton silver were mined and milled. Lead, zinc and copper were sporadically recovered. Most production occurred between 1918 and 1953 and during this period the mine generated in excess of \$20,000,000 in dividends.

Although detailed field studies have not started, an evaluation and reploting of all available data on a common base have identified several surface and underground target areas that will require concentrated exploration programs.

Cursory examination of mineral zones and maps suggest the gold, silver and base metals on the Silbak Premier property occur both in stratigraphically controlled zones and in cross-cutting structures. Although the property contains minor quantities of drill-indicated reserves and moderate quantities of possible reserves, a considerable amount of intense exploration is required to prove such reserves and to evaluate new zones. The property has the potential to again produce several million tons of moderate grade ores.

Exploration in 1983 will concentrate on detailed surface and underground geological studies and on evaluation of near-surface exploration targets. Terms of the agreement require expenditure of at least \$500,000 in 1983.

Future development of the properties will depend upon exploration success and perhaps upon the success of other properties in the area. The Big Missouri and Silbak Premier properties are only five miles apart and ores from the two properties could be treated in a common mill complex. Other factors, such as timing, metal prices, etc could dictate the development of each property on a 'stand-alone' basis. Of course, a third alternative worthy of consideration is the shipment of ore to a custom concentrator. Westmin will keep open its options during the continued exploration and development of these important gold-silver-base metal properties. WM



Roman Pachovsky PhD
Supervisor, Heavy Oil

Development of heavy oil expertise helped weather metal price slump

During the past two years of extremely depressed metal prices, Westmin's Petroleum Division has been generating the major portion of the company's revenues and profits.

And, Westmin's heavy oil properties have become a major contributor to Petroleum Division results. A significant portion of the company's proven petroleum reserves are contained within the Lloydminster heavy oil corridor of east-central Alberta. In this area alone, conservative estimates have placed the amount of oil-in-place in the billion cubic metre range with Westmin's share of the total estimated at 200-million m³ (1.3 billion barrels). Despite the recognized enormous potential of this resource, it has only been during the last three years that Westmin has begun to tackle the unique challenges of establishing economic production from its heavy oil holdings.

Heavy oil is a thick petroleum hydrocarbon which is distinct from conventional oils on the one hand, and bitumens or tar sand material on the other. Conventional oils flow very readily in the ground and when a well is drilled into a conventional oil pool, the oil flows into the well and is pumped to the surface. Typically, such a well can produce about 30% of the oil-in-place at rates of several hundred m³/day. In the industry, this is called primary production. Bitumen, however, does not flow at all and cannot be produced by primary production methods.

Heavy oil falls into an area somewhere between these two extremes. A typical heavy oil well can flow under primary production but the producing rates are low, with an average being about 3 m³/day, and the oil recoveries ranging

about 1% to 3% of the oil-in-place.

In addition, there are several unique problems associated with the recovery of these heavy oils. Unlike conventional oils, they are normally found in unconsolidated sands, like beach sands, which can flow along with the oil into the well. These sands can damage and seize up pumping equipment and this adds to operating costs.

Heavy oil also contains more impurities than conventional oils and this makes them less desirable to most petroleum refiners. As a consequence, prices for heavy oils are lower than conventional.

The combination of low producing rates, higher operating costs, lower selling prices and limited markets remained a major obstacle to serious heavy oil development until the late 1970s.

Westmin, however, recognized that such a vast resource could not be ignored and in 1978 began drilling exploratory wells on its heavy oil acreages to identify the potential and try to produce some of the wells. Of the 13 wells drilled that year, eight proved to have producing capability. Over the next three years, an average of 15 wells per year were drilled and through this drilling program Westmin identified three major producing areas in the heavy oil corridor — Vermilion, Morgan and Lindbergh. The most promising of these is the Lindbergh area and consequently, the majority of the drilling over the past two years has been concentrated here.

In 1972, Westmin established a major field office at Elk Point. To date the company has drilled 101 heavy oil wells (41 in 1982), with 71 of these being in the Lindbergh field.

but remains open in three directions. Calculation of open-pittable reserves in the S-1 Zone must await completion of additional drilling.

The Martha Ellen Zone, which has long been known from surface showings, was first drilled in 1982 and has produced some of the best diamond drill intersections on the Big Missouri property. The zone contains higher base metal content than other known zones on the property and is exposed in surface trenches and drill holes over an area exceeding 2000 ft along strike giving the zone the potential of becoming the largest on the property. The boundaries of the zone have not been established. Ten holes have been drilled in the south part of the zone, the most significant of which are shown in the accompanying table.

The Martha Ellen Zone is undefined and is open in at least three directions. This zone could develop into the most important zone on the Big Missouri property when traced down-dip by diamond drilling.

The Upper Horizon contains the Province Zone which occupies the top of Big Missouri ridge. The zone has been exposed in a series of long bedrock trenches which extend across the zone. Sampling of these trenches and diamond drilling have essentially defined the limits of the zone.

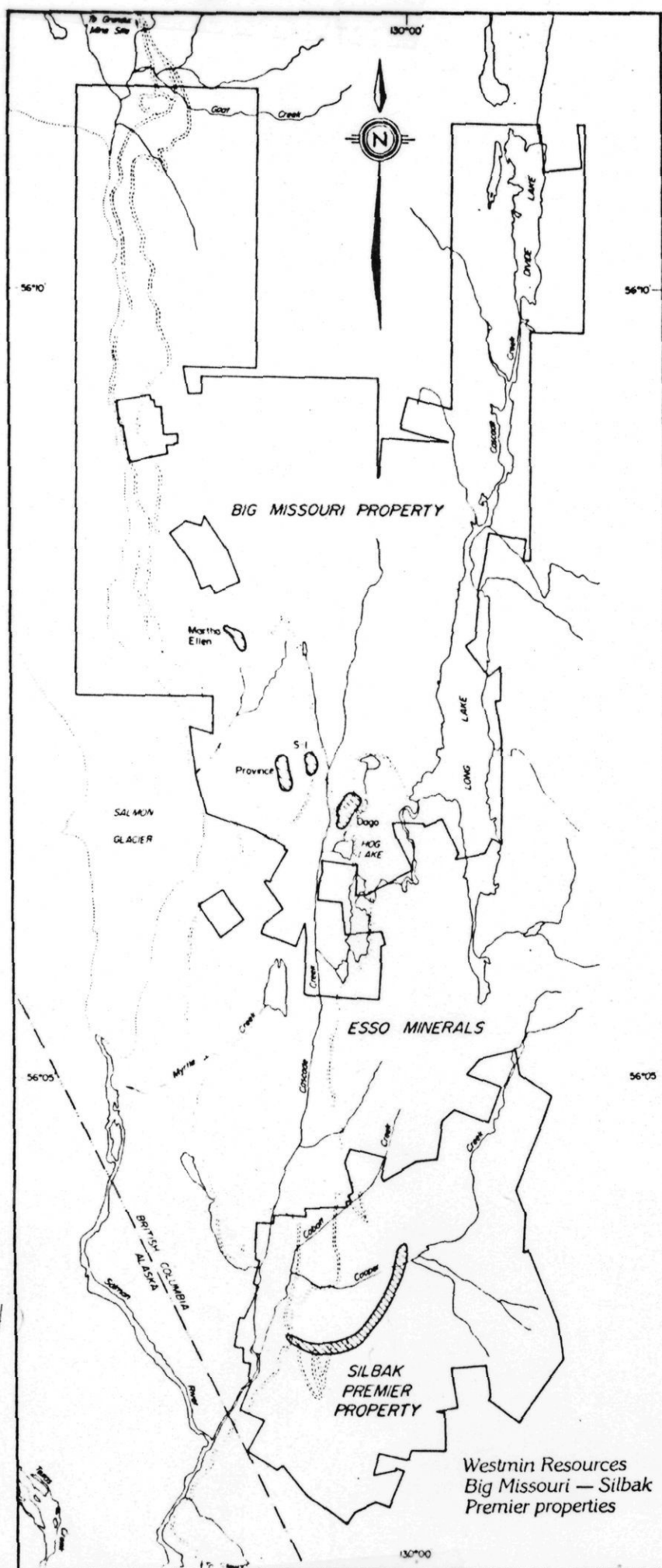
A conservative drill indicated, geological, open-pit reserve of the Dago, Province and S-1 Zones was released in April 1982 based on results of the 1981 program. The figures are 929,000 tons grading 0.103 oz gold equivalent per ton (undiluted) using a cut-off of 0.04 oz gold equivalent per ton, where gold equivalent is calculated as 1 oz gold equals 42 oz silver. The addition of the Martha Ellen Zone and upgrading of the Dago and S-1 Zones will add considerable tonnage to this reserve estimate. Each of the four zones has the potential for between 400,000 and 1,000,000 tons of ore amenable to open-pit mining at a grade of approximately 0.10 oz/ton of gold equivalent.

During the period 1979-1982 a total of 198 diamond drill holes totalling approximately 28,000 ft and 173 percussion holes (9500 ft) were completed. Exploration has concentrated on zones with open-pit potential. Under-ground targets have not been tested.

SILBAK PREMIER

In the fall of 1981 Westmin was invited by British Silbak Premier Mines to examine the former Silbak Premier Mine property and evaluate the voluminous data relating to the property.

An initial agreement was reached between Westmin and British Silbak Premier which later required



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Promise of the Stewart area, British Columbia

The recent option of the Silbak Premier property is part of an exploration play by Westmin Resources aimed towards the establishment of a major mining operation in the Stewart area of British Columbia. The addition of the Silbak Premier property compliments the Big Missouri property which has been the centre of major exploration by Westmin since 1979. Both properties formerly produced gold, silver and base metals.

The Stewart area is a heavily mineralized area of volcanic, intrusive and sedimentary rocks containing literally thousands of mineral showings. Two mines are presently operating in the area: the Granduc copper mine operated by Canada Wide Mines (Esso Minerals Ltd) and the Scottie Gold Mine located about one mile south of the Granduc mill. During the past year Esso Minerals has also reported significant gold-silver assays from drill holes at Sulphurets Creek, north of Granduc Mine and from the Consolidated Silver Butte Property which lies between the Big Missouri and Silbak Premier properties.

BIG MISSOURI

Westmin was initially attracted to the Stewart area when invited to examine the Big Missouri property of Tournigan Mining Explorations Ltd. Tournigan president John Hernbling had succeeded, after several years of diligent

bargaining, in consolidating a large group of contiguous claims (177 units) covering many old showings at and around the former Big Missouri Mine. The Big Missouri Mine, operated by Cominco from 1938-1942, produced 847,615 tons with a recovered grade of 0.069 oz/ton of gold, 0.062 oz/ton silver plus some lead and zinc. Ore was treated in an underground mill with a capacity of 750 tpd.

In 1979 an agreement was completed whereby Westmin will earn a 70% interest in the Big Missouri property through the annual purchase of Tournigan shares to a total of 700,000 shares at a cost of \$1-million and through annual exploration expenditures totalling \$1.7-million by 31 Dec 1984. A feasibility study must be completed by 1 June 1985.

Provisions in the agreement allow Westmin to purchase an additional interest in the property at the time of commercial production. Tournigan retains a 30% net profits royalty (less the Westmin option) after payback of capital and preproduction expenses. To the end of 1982 Westmin had spent over \$2-million exploring the property and had purchased 400,000 Tournigan shares.

Initial exploration during the first year was dedicated to detailed re-evaluation of the geology and ore controls supported

by geochemical studies, detailed sampling, trenching and a few drill holes for stratigraphic purposes. Results of these studies established a stratigraphic control for the gold-silver-base metal showings. Evaluation of the many showings on the property using such a stratigraphic model resulted in the partial delineation of four potential open-pit zones within an area one mile in diameter. Gold, silver and variable amounts of zinc, lead and copper are concentrated in stratigraphically controlled sulphide zones in andesitic volcanic rocks of Jurassic age (Hazelton Group). Both the host rocks and the mineral zones dip gently to moderately westward generally subparallel to the topography, thus rendering them amenable to open-pit mining.

Three mineral-bearing silicified and/or bleached horizons have been identified within the andesitic host rocks. Individual horizons are up to 98 ft thick, but generally consist of several closely spaced sulphide bands each of which is 15 to 30 ft thick. Several hundred feet of barren or locally mineralized andesite separates the horizons. Each horizon has certain characteristics which help distinguish it from the other horizons.

The Lower Horizon hosts the Dago Zone, the most intensely explored gold-silver zone on the property. The Dago Zone has been explored by means of several adits and one shaft from surface as well as by trenching and diamond and percussion drilling and is thus the best understood of all the mineral zones. The zone is contained within a block 800 ft long, 100-300 ft wide and up to 100 ft thick. Dago Zone occupies a ridge making it especially conducive to open-pit mining.

The Middle Horizon hosts the S-1 and the Martha Ellen Zones. The S-1 Zone, which is the surface expression of the previous underground stopes in the Big Missouri Mine, has been partially drilled,

Drill Results. Big Missouri property — Martha Ellen Zone

Hole	From ft	To ft	Length ft	Au oz/t	Ag	Cu	Pb %	Zn
82-51	34.3	82.3	48.0	0.171	2.13	0.32	1.35	4.35
85-52	5.9	19.0	13.8	0.069	1.55	0.36	1.14	2.38
82-53	6.0	26.9	20.9	0.061	2.05	0.10	0.77	2.78
82-55	99.0	190.0	92.0	0.083	2.79	0.35	0.77	3.29
82-64	83.3	119.1	35.8	0.194	1.47	—	0.64	2.14

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TOURNIGAN MINING EXPLORATIONS LTD.

104B/IE
(104B 046) WESTMIN RESOURCES LIMITED

DRILLING DOUBLED RESERVES - Westmin Resources Limited have doubled near-surface gold/silver ON GOLD PROPERTY IN NW B.C. reserves on the Big Missouri property near Stewart, B.C., held under option from Tournigan Mining Explorations Ltd. say Westmin's western exploration manager Harlan Meade and Tournigan president John Hembling. The 1982 program, 86 diamond drill holes totalling some 11,188 feet, brought reserves to 1,900,000 tons averaging a gold equivalent of 0.10 ounce per ton in four potential open pit zones. All of these reserves are drill indicated, 1,080,000 tons grading 0.093 oz. gold/t being in the probable category and 820,000 grading 0.106 being in the possible category. The gold equivalent grade is calculated using one ounce of gold equalling 42 oz. silver and does not include consideration for base metal content. Reserves of 929,000 tons of about the same grade were reported in April, 1982.

Work is continuing on extending areas that could be mined by open pit methods. Possibilities of mining the deeper parts of the various mineralized zones by underground methods is also under evaluation.

Since 1979, Westmin have spent about \$2,100,000 exploring the property and bought 200,000 shares of Tournigan. Under the option agreement, whereby Westmin may earn 70% interest in the Big Missouri property, Westmin must buy 200,000 more Tournigan shares and complete a feasibility study by 1 Jun 85.

The Big Missouri property adjoins the Silbak Premier property recently optioned by Westmin from British Silbak Premier Mines. Exploration will continue on both properties towards a possible joint mining operation.

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NO. 180 (1982)
SEPTEMBER 20, 1982

GNL #180 20 SEPT 82

BRITISH SILBAK PREMIER MINES LIMITED 104B/1E
104B 57 WESTMIN RESOURCES LIMITED

EXPLORATION AGREEMENT SIGNED - British Silbak Premier Mines Limited and Westmin Resources Limited have jointly announced the signing of a formal agreement wherein Westmin can earn a minimum 50% interest in the former Silbak Premier Mine and property near Stewart, B.C. The Silbak Premier Mine was one of the richest precious metal mines in B.C. which, during the period 1918 to 1968, produced in excess of 4,500,000 tons of ore with a recovered grade of 0.334 oz. gold per ton and 8.04 oz. silver per ton. Lead, zinc and copper were also recovered. The property is in the immediate vicinity of the Big Missouri property which is currently being explored by Westmin under an option agreement with Tournigan Mining Explorations Limited.

Westmin must make an initial cash payment of \$300,000 to British Silbak Premier Mines and expend \$4,700,000 on exploration and/or development prior to 31Dec87, to earn a 50% interest. British Silbak Premier may then elect to participate in a joint venture with Westmin or reserve election until the expenditure of an additional \$2,000,000 on the property by Westmin. After this expenditure, British Silbak Premier may elect to participate in joint venture with Westmin by paying Westmin \$1,000,000 or by spending the next \$2,000,000 on the property and by contributing 50% of all additional expenditures.

Alternatively, British Silbak Premier may elect not to participate as a joint venturer and retain a 20% net profits royalty interest effective after recovery of all preproduction expenses.

Westmin may undertake a modest exploration program this fall, weather permitting.

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The Northern Miner

NOVEMBER 19, 1981

VOL. 67 NO. 37

Silbak property optioned to Westmin important mining operation possible

By David Duval

VANCOUVER — Westmin Resources, a multi-faceted resource company normally content to make ripples rather than waves, has consolidated its position in the Stewart area. But just get a few ripples together and sure enough you have a wave, which seems to be the case in northwestern B.C.

Proceeding cautiously, the company has accumulated some positive data on the former Big Missouri mine previously held by Cominco. It's had the property under option from Tournigan Mining.

Westmin has also added to its asset base by optioning British Silbak Premier Mines' gold-silver-base metal mining property. For \$5 million in expenditures over a 5-year period, Westmin can earn a 50% interest; it will also act as operator.

Management of these companies conclude the two properties will become "the future nucleus of an important mining operation."

Interviewed by The Northern Miner, Westmin's vice president of exploration (mining division), A. E. Soregaroli, and his exploration manager for the western region, Harlan Meade, said they've spent three years exploring the Big Missouri. During the 1981 field season 8,500 ft. of diamond drilling in 61 holes was completed together with 9,600 ft. of percussion drilling — all from surface. The short holes were designed to evaluate the open pit

potential of several zones discovered earlier. Only a little sampling and some geological evaluation were done underground. However, considerable panel sampling was completed in the past.

What attracted them to the area, says Westmin, was the geology which is similar in many respects to its Butte Lake mining operation on Vancouver Island. The company also points out that Cominco provided them with data they'd compiled on the prospect meaning costly duplication of work wasn't necessary.

Not a prolific mining operation, the Big Missouri milled about 847,000 tons over a 4-year period with a recovery rate for gold of 0.0689 oz. and 0.062 oz. for silver. Putting the present claim package together took 5-6 years largely through the efforts of John Hembling, Tournigan's president.

While reserves haven't been tabulated Mr. Soregaroli reports that "all of us involved in the project have never been discouraged and we remain that way." Mr. Meade predicts a reserve calculation will be out by year-end or shortly after. An extensive computer evaluation will be needed for this.

He also notes that many areas with good potential remain to be evaluated including the underground which will be probably looked at in

more detail next season. About 160 claim units are held in and around the Big Missouri, two-thirds of them Crown Grants.

Preliminary studies suggest the stripping ratio is good and their goal is to establish sufficient reserves to warrant an open pit mining operation. Cash flow from such an operation would likely be used to explore and develop the property further.

During its period of operation (1918-68) the Silbak Premier produced over 1.8 million oz. gold and 37,963,245 oz. silver from nearly 4.72 million tons of ore and the mine is thought to have considerable ton-nages of "easily accessible mineral-ized rock above the main haulage level and in parallel structures."

After expenditures of \$7 million have been made on the property British Silbak can back in for a 50% participation by making a \$1-million payment to Westmin or it can elect to commit \$2 million for property development thereafter assuming one-half of all future expenditures.

Silbak president, Bernard J. Ouellette, says its interest will be reduced to a 20% net profits carried position by electing not to partici-pate.

The agreement also calls for Westmin to purchase 120,000 Silbak shares at \$2.50 each with an option on an additional 600,000 shares exercisable later on.

In order to retire bank debt and provide operating expenses British Silbak plans a public offering of 800,000 shares at \$2.50 each with warrants.

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WESTMIN RESOURCES LIMITED

BRITISH SILBAK PREMIER MINES LIMITED

DEAL MADE ON OLD - Harlan Meade, identified as Exploration Manager, Western Region, for Westmin B.C. GOLD PRODUCER Resources Limited (formerly Western Mines Limited), and Bernard J. Ouellette, president of British Silbak Premier Mines Limited, announce the signing of a letter of intent to enter an agreement whereby Westmin can earn 50% interest and management of the Silbak Premier gold-silver-base metal mining property near Stewart, B.C. The property produced 1,814,723 ounces of gold and 37,963,245 ounces of silver from 4,772,413 tons of ore during its period of operation (1918-1968). Preliminary evaluations suggest considerable tonnages of easily accessible mineralized rock remain above the main haulage level and in parallel structures. Several gold-silver bearing structures remain only partially tested.

A formal agreement will provide for Westmin to earn 50% interest by spending \$5,000,000 on exploration and/or development over 5 years. After \$7,000,000 have been spent, British Silbak can elect to participate at the 50% level by a back-in payment of \$1,000,000 to Westmin, or by committing to spend the next \$2,000,000 on property developments and thereafter assuming half of all further expenditures. In the event British Silbak elect not to participate, their interest will be reduced to a 20% net profits carried position.

The agreement requires Westmin to buy 120,000 shares of British Silbak at \$2.50 each with an option to buy 600,000 more over a period of time at escalating prices. British Silbak plan to have a public offering of 800,000 shares at \$2.50 per share with warrants attached for the purposes of retiring bank debt and providing for operating expenses. All equipment on the property remains under the ownership of British Silbak until Westmin earn their 50% interest, at which time ownership is equal. The final agreement is subject to regulatory approval.

On the nearby Big Missouri property optioned from Tournigan Mining Explorations Limited, Westmin are in their third year of intensive exploration and envision development of these two properties as the future nucleus of an important mining operation.

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Two stages of mineralization are recognized.

(1) Quartz — carbonate — pyrite with minor chalcopyrite — common propylitization = 1st generation mesothermal.

(2) Crustiform and colloform argentiferous galena, sphalerite, pyrrargyrite, and native silver within a quartz — calcite — barite — jasper gangue; wall rock alteration is minor = 2nd generation epithermal = economic mineralization of area.

A lateral epithermal zoning outwards and eastwards from a pluton to the west is suggested by a progressive change from west to east from Au-Cu mineralization to Cu ± Ag to predominantly Ag mineralization.

SUMMARY

In summary, the geologic environments, structural styles, and alteration and sulphide assemblages associated with high-level precious metals and base metals deposits in central and northern BC are slowly but surely emerging as bone fide exploration targets and undoubtedly many more deposits are yet to be discovered.

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(3) **Sedimentary — Volcanic Division** — composed of interbedded tuff, sandstone, and conglomerate.

(4) **Volcanic Flow Division** — uppermost unit composed of andesitic and dacitic flows.

This 'Goosly Sequence' is flanked by shallow dipping Tertiary andesites and basalts. Two stock-like intrusions crosscut the 'sequence'. A quartz monzonite stock (K-Ar age date 55.8 ± 2.3 Ma) with sparse copper-molybdenum mineralization cuts Mesozoic strata 400 to 600m west of the ore zones and is thought to be contemporaneous with or younger than the main mineralizing event. A gabbro — monzonite complex (K-Ar age date 48.4 ± 1.9 Ma) intrudes Mesozoic strata immediately east of the Main Zone and WTR Zone and is believed to be post ore.

Main Zone ores are fine-grained, generally occurring as disseminations; whereas, Southern Tail Zone ores are coarse-grained and occur predominantly as veins. Sulphides are best developed in zones of intense fracturing and brecciation, but, in general, are restricted to a tabular fracture zone which roughly parallels stratigraphy. However, copper-silver sulphides occur throughout the stratigraphic column.

The WTR Zone is a northerly extension of the Main Zone and appears to be more massive in nature. In addition to high-grade assays of Cu, Ag, Au (up to 4.8 ppm) and Zn, visible molybdenite and scheelite were observed.

The Tourmaline Zone occurs in the hangingwall over a surface area of approximately 1000m x 600m. Pyrite is ubiquitous with minor amounts of chalcopyrite, sphalerite, galena and tetrahedrite in veins.

It is postulated that sulphides were deposited syngenetically within the pyroclastic division and that a contemporaneous or younger major structural break (or breaks), roughly parallel to stratigraphy, together with intrusion and hydrothermal alteration and mineralization by the quartz monzonite stock, resulted in a remobilized and overprinted mode of mineralization consisting of massive sulphide-type and high-level porphyry-type.

At least three stages of alteration have been recognized — an early pervasive solfataric phase characterized by pyrite, chalcedonic silica, and muscovite, a contact phase created by intrusion of the gabbro-monzonite complex adjacent to the Main Zone producing pyrrhotite, andalusite, scorzalite, corundum, and sillimanite in a contact aureole about 90m wide, and a late phase characterized by quartz, sericite, chlorite and tourmaline.

The potential for more ore at Equity Silver is considered very good.

BIG MISSOURI PROSPECT

The Big Missouri precious and base metal prospect is located 25km northeast of Stewart and is currently being evaluated for its potential open pit extraction of precious metals by Westmin Resources (formerly Western Mines Limited).

Between 1938 and 1942 Cominco Ltd produced approximately 850,000 tons of ore containing 58,384 oz of Au, 52,677 oz of Ag, 2712 lb of Pb, and 3920 lb of Zn from a 60m wide zone with an average grade of 0.117 oz/ton Au and 0.9 oz/ton Ag.

Geology

Two main rock units separated by an angular unconformity crop out on the property.

(1) **Lower** — northwesterly trending Lower Jurassic Hazelton Group flows and volcanogenic sediments.

(2) **Upper** — tightly folded immature sediments of the Middle to Upper Bowser Group.

The Hazelton Group is greater than 3000m thick, with the top half having formed as a result of subaqueous volcanism in which highly explosive ash flow and air fall deposition was followed by quieter effusions of thick andesitic lava flows and pyroclastic flows. Within green andesites, 1 to 2m thick gold-silver and lead-zinc bearing chert layers were precipitated as chemical sediments originating from fumarolic centres active at periods during andesitic volcanism. Fissures in the andesites acted as conduits for metal-rich brines, and alteration of country rock, in the form of 'envelopes' of sericite, quartz and pyrite is common. The pyroclastic layers above the chert layers allowed fluids to discharge further creating a more extensive hangingwall alteration.

The Coast Plutonic Complex crops out west of the Salmon Glacier and includes the Texas Creek, Boundary, and Hyder Plutons ranging in age from Lower Jurassic to Cretaceous.

Mineralization

The most abundant base metal sulphides are galena and sphalerite with accessory chalcopyrite. Associated precious metals include polybasite, pyrrargyrite, electrum, native silver and native gold. They occur as disseminations, as veinlets, and as lenses within chert horizons, and there appears to be a distinct association of precious metals with galena and/or sphalerite. Quartz, carbonate and up to 15% fine-grained black carbon are the common gangue minerals.

Conclusion

A syngenetic, epithermal mode of mineralization related to volcanism is postulated for the Big Missouri deposit.

PREMIER DEPOSIT

The historic Premier Mine is located 5km south of the Big Missouri property. Production until 1953 totalled 4.7-million tons of ore yielding 1.8-million oz of gold, 41-million oz of silver, and important lead-zinc byproducts. The recovered grade was 0.38 oz/ton Au and 8.7 oz/ton Ag for an overall silver:gold ratio of 25:1.

Mine workings exist over a 2000ft vertical interval and a maximum width of 50ft. A syndicate under the name British Silbak Premier, is currently re-exploring and re-evaluating this important gold-silver deposit.

Mineralization

Pyrite, sphalerite, galena, and chalcopyrite occur telescopically within an extensive northeasterly elongated replacement shear zone in silicified and chloritized volcanic and volcanoclastic rocks localized along a system of complexly intersecting shears over 1675m in length and 185m in width. Individual ore shoots, with uniform plunges to the west, are found as isolated or overlapping enechelon pipe-like lenses. A true bonanza of native gold, electrum, argentite, pyrrargyrite, polybasite, and native silver occurs in a gangue of quartz, calcite, barite, and adularia. Rare amounts of mercury and scheelite have been noted.

The mineralized veins appear to have been localized in a cataclastite zone adjacent to the Texas Creek Pluton (situated to the west), and a particular volcanic conglomerate appears to have been most amenable to deformation, alteration, and mineralization. The so-called 'Premier Porphyry' is actually epiclastics metasomatically altered and intensely fractured by the Texas Creek Pluton. The overlying Betty Creek Formation is believed to have acted as an impervious barrier to ore solutions (Barr 1980).

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DOLLY VARDEN — TORBRIT
The Dolly Varden-Torbrit silver deposits are located 27km north of Alice Arm and are currently being re-explored and re-evaluated.

Total production from mines in the area up to 1959 (including Wolf, North Star and Torbrit) is estimated to be over 20-million oz of silver and 10-million lb of lead from 1.4-million tons of ore with an average grade of 15.45 oz-ton Ag and 7.8% Pb. Reserves are in the neighbourhood of 1-million tons grading 8.9 oz/ton Ag. There is no gold.

Mineralization

Mineralization is contained in steeply dipping quartz veins, varying up to 15m in width, which have intruded a sequence of interstratified and interfingering clastic and pelitic sedimentary rocks and mafic volcanics of Jurassic Age (Hazelton Group).

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(2) **Lawyers.** The Lawyers Au-Ag prospect is located 12km north of the Baker Mine. Fine-grained acanthite, electrum, native silver with minor pyrite, chalcopryite, galena, sphalerite and tetrahedrite occur in a gangue of predominantly amethystine to white quartz and adularia with minor calcite intrusive into the Upper Volcanic subdivision of 'Toodoggone' trachytes.

Secondary minerals include malachite, chalcocite and cerussite. The structurally controlled mineralized zone varies from 60 to 75m in width and has been partially drill tested over a north-south length of 610m and a vertical depth of 60m. Typical open spaced epithermal textures are observed in the fissure zone. Grades of mineralization are erratic with some nearby float assaying over 20 oz/ton Au and 700 oz/ton Ag.

Other Prospects. Other active prospects in the area include Cliff Creek, Metsantan, McClair, Saunders, Shas, Fin, Dryborough, Kemess, and Attycelly.

Summary

In summary, it must be concluded that the Toodoggone area represents a rich polymetallic epithermal mineral 'Province'.

CAPOOSE PROSPECT

The Capoose precious metals 'bulk' silver and base metals prospect is located a few kilometres north of Fawnie Nose, approximately 110km southeast of Burns Lake.

Geology

The Fawnie Range, in the vicinity of the Capoose property, is composed of a complexly fault broken conformable sequence of metamorphosed interbedded meta-greywacke, argillite and pyroclastic volcanic rocks and flows of rhyolitic and andesitic composition (of probable Upper Hazelton Group Age ?) unconformably overlying andesitic rocks of the Takla Group.

The eastern side of the Capoose property is underlain by sediments and maroon tuffs of probable Upper Jurassic Age (Hazelton Group ?). Belemnites and pelecypods found in the sequence have not yet been positively identified and are only indicative of a broad Jurassic to Cretaceous Age. In places, belemnites have been replaced by pyrite.

Conformably overlying a limey argillite unit with an attitude of 170°/20°W is an acidic unit consisting of rhyolitic pyroclastic and flow rocks. Phenocrysts of highly embayed quartz are set in a cryptocrystalline groundmass of quartz and feldspar. Flow banding averages 135°/15°W with a strong vertical jointing at 090°, parallel to the major structural zones. Local 'balling' or pisolitic formation within rhyolite has produced beds with 'balls' up to 30cm in diameter.

Alteration and Texture

The most striking feature of the metamorphosed rhyolitic and andesitic units, in the vicinity of mineralization, is the ubiquitous presence of amber brown coloured garnets occurring as disseminations, as fracture fillings, as vein fillings in quartz, and as replacement nuclei.

X-ray diffractometry and emission spec data indicate the composition of the garnets to be approximately $Sp_{63}Al_{29}Gr_8$ (ie Mn-rich). Garnets range from fresh to totally altered or replaced by a mixture of quartz \pm sericite \pm opaques.

Hydrothermal solutions have cracked the garnets and they have subsequently been healed by sulphides (mainly pyrite). The process of 'garnetization' is postulated to have involved growth by nucleation and dispersion. A dispersion rim of predominantly quartz and/or sericite within replaced garnets is common. The textures suggest that crystallization took place rapidly under strong chemical or energy gradients. Dendritic growth textures are also exhibited.

It is further postulated that growth was diffusion-controlled as a result of the composition of the large crystals (ie garnets) differing appreciably from the groundmass (qtz \pm fsp). The skeletal texture of garnets implies difficulty in nucleation.

Globular to botryoidal and fracture filling hematite is common in rhyolitic rocks. Epidote and chlorite are common alteration products in the andesitic rocks.

Structure

The predominant structures in the area are east-west faults exhibited by small linear depressions on Fawnie Range. Diamond drilling has also identified numerous fault gouges. Broad warping of thin bands in the argillite unit occur.

Mineralization

Three zones of precious ('bulk-silver') and base metals mineralization have been identified.

Zone 1. Galena, pyrite, pyrrhotite, chalcopryite, arsenopyrite and sphalerite occur as disseminations (esp galena), as replacement of garnets (nuclei and attendant dispersion halos), and as fracture and/or vein fillings within garnetized and silicified rhyolite tuffs, breccias and flows and minor interbedded andesitic rocks in a steeply west dipping structurally controlled zone. Tetrahedrite, pyrrargyrite, electrum, native gold, and cubanite have also been reported. Precious metals also occur within galena and sphalerite. Pyrite is ubiquitous and may have formed throughout the mineralizing event.

Zone 2. Located immediately to the west of Zone 1, this is similar style to Zone 1 with possibly a little more arsenopyrite.

Zone 3. Located to the north of Zone 1, this is also similar style to Zone 1 with more 'massive' to vein-type textures.

In all three Zones, Garnet replacement and mineralization are closely related.

Although it is much too early to talk about average grades, an estimate for such a 'bulk' silver type of mineralization might be 45 gm/tonne Ag with additional values in Au, Cu, Pb, and Zn. Much higher grades exist locally. It is interesting to note that a sample collected by myself assayed 0.03% Mo and 0.03% W.

Summary

It is postulated that a magmatic source provided heat and mineralizing solutions intrusive into rhyolitic and andesitic rocks, possibly near an old volcanic centre, resulting in replacement of garnets by sulphides and formation of mineralized veinlets and possibly more massive bodies of mineralization.

EQUITY SILVER MINE

The Equity Silver copper-silver-gold-antimony high-level volcanogenic deposit, located 35km southeast of Houston, is currently in production (open pit) with reserves estimated at about 28-million tonnes grading 106.3 gm/tonne silver, 0.384% copper, 0.96 gm/tonne gold, and 0.85% antimony.

Three principal mineralized zones — Southern Tail, Main and WTR — trending for some 2400m along a major NNE-SSW structural break have been outlined.

Tetrahedrite, chalcopryite, pyrite, sphalerite, galena, arsenopyrite, magnetite and specular hematite with associated tourmaline, andalusite, scorzalite, pyrophyllite, sericite, quartz, dumortierite and corundum occur as stockworks, as disseminations, and as massive 'pods' within a window of a steeply west dipping sequence of intermediate to acidic pyroclastic and volcanoclastic sedimentary rocks of Mid to Upper Mesozoic Age. The 'Goosly Sequence' consists of the following (from the oldest to youngest).

(1) **Clastic Division** — composed of a lower polymictic conglomerate and an upper chert pebble conglomerate, thought to be correlative with the Skeena Group.

(2) **Pyroclastic Division** — a heterogeneous sequence of interbedded dust, ash, and lapilli tuffs, breccia, and reworked pyroclastic debris. These units are host to the copper-silver ores and have been extensively altered. The Pyroclastic Division is thought to be correlative with the Kasalka Group of Upper Cretaceous Age but further age dating will be required to confirm this.

northwesterly trending belt at least 90km in length and 15km in width.

At least three principal subdivisions are recognized.

(1) Lower Volcanic. Andesitic volcanic rocks consisting of maroon and green porphyritic flows and pyroclastics.

(2) Upper Volcanic. Intermediate alkalic assemblage including trachytes, crystal and lithic tuffs with intercalated dust tuff and quartz feldspar porphyries. Welded tuffs exist locally. The characteristic orange colour of the trachytic rocks has resulted from oxidation to hematite while the rock was still hot — possibly during late stage pneumatolysis. A coeval period of explosive volcanism and intrusion of syenomonzonite bodies was accompanied by brecciation along zones of weakness (predominantly large scale faults and attendant splays) resulting in silicification and precious and base metal deposition to varying degrees.

(3) Upper Volcanic — Sedimentary? Lacustrine volcanic sediments and possibly younger andesitic flows. Minor quartz feldspar porphyries.

A subaerial to shallow water environment of deposition of 'Toodoggone' volcanic rocks is postulated to have occurred in a northwesterly trending line of volcanic centres.

To the west, flat-lying to gently west dipping Upper Cretaceous to Tertiary pebble conglomerates and sandstones of the lower Tango Creek Formation of the Sustut Group unconformably overlie Takla Group and 'Toodoggone' volcanic rocks.

Structure

'Toodoggone' volcanic rocks dip gently (15 to 30°) to the west. The most obvious and probably most important structures in the area are long northwesterly trending fault systems (eg McClair system). Attendant with these larger faults are abundant splays. Northerly trending faults are also common.

Repeated, extensive normal block faulting from Jurassic to Tertiary time (over lengths of greater than 60km) provided the necessary channelways for mineralizing solutions to penetrate. Prominent gossans often are associated with structural zones but may or may not contain sulphides other than pyrite.

Mineralization

Four main types of polymetallic mineral deposits are recognized, of which two are pertinent to this paper.

(1) 'Porphyry' $\text{Cu} \pm \text{Mo} \pm \text{Ag} \pm \text{Au}$. Mainly associated with Omineca Intrusions (186 to 200 my). Chalcopryite, pyrite, with or without molybdenite, occur as fractures, as disseminations, or in quartz veins within intrusive rocks and host volcanic rocks (mainly Takla Group andesites). The silver (>.1 oz/ton) and

gold (>0.015 oz/ton) byproducts from this type may be significant. Ex: Kemess, Fin (ex-Pine), Riga, Pillar, Rat, Mex.

(2) Precious and Base-Metal ('Geothermal') Epithermal $\text{Au} + \text{Ag} \pm \text{Cu} \pm \text{Pb} \pm \text{Zn}$.

(a) The Fissure — Vein Type is associated with predominantly silicified zones (quartz veins and/or old volcanic centres) related to repeated, extensive normal block faulting and possible tensional fractures formed during late doming.

Recurrent broken faults guided intrusions, hydrothermal ('geothermal') activity, and important later mineralizing solutions. An episodic, near-surface sealing cap, or 'low pH cap', consisting of mainly illite and sericite located in the hangingwall may also have acted as a trap for mineralizing solutions.

Hydrostatic boiling is a key to mineral deposition and may occur anywhere in the system depending on the salinity and temperature of the water. In terms of exploration guides, it will be important to determine by laboratory studies (ie fluid inclusion studies) if indeed boiling has occurred.

Principal ore minerals, occurring in open space fillings, include fine-grained argentite (acanthite (>80% Ag), electrum (>20% Au), native gold, native silver, and minor amounts of chalcopryite, pyrite, galena, and sphalerite. Rare constituents include bornite, polybasite, stromeyerite, and secondary chalcocite, cerussite, malachite, and covellite. Gangue minerals include amethystine to white quartz, chalcedony, adularia, albite, calcite, hematite, Mg-rich siderite, ankerite, chlorite, kaolinite, and rarely barite and fluorite.

Mineralization tends to be non-uniform (ie occurs in shoots) and rarely exceeds more than 20% of the vein system. Base metals are deposited earlier than precious metals. Acanthite and electrum occur in clouded areas which may exhibit boiling textures caused by episodic pressures. Sharp-edged breccia fragments are sometimes strongly replaced by quartz, adularia or sericite. Several episodes of fracturing occurred as evidenced by breccia fragments being enclosed within later mineralized veins.

Preliminary chemical data suggests the following: host 'Toodoggone' rocks are quartz normative; $\text{K}_2\text{O}/\text{Na}_2\text{O}$ ratio increases toward mineralization; and sulphur values are very low (<.04%).

Trace elements, including Cu, Pb, Zn, Ag, Au, Hg, Sr, Ba, Mo, Sb, Se, Te, Th, U, W, As and Bi are all low, except of course in the mineralized zones where slight anomalies are noted. There is an increase in Si, H_2O and K and a decrease in Al, Fe, Na, Ti, P_2O_5 and Ba, in zones of mineralization.

The Ag:Au ratio of this type is approximately 25:1. Ex: Chappelle, Lawyers, Metsantan, McClair, Cliff Creek, Shas, Saunders?

As suggested by Larry Buchanan, with Fischer-Watt Mining Co, deposits of this type may be vertically stacked with barren zones in between ore-bearing zones and thus the depth potential must be explored for.

(b) Hydrothermally Altered and Mineralized Type. This is associated with major fault zones and possible post subsidence of volcanic centres followed by a doming of cauldron cores. Pyrite is the most common sulphide present with minor amounts of galena, sphalerite, and rarely molybdenite and scheelite. This type is probably somewhat older of contemporaneous with fissure-type mineralization. Volcanic centres are strongly leached and sulfotactically altered to varying intensities consisting of clay minerals and silica with some areas containing alunite (eg Alberts Hump and Kodah). Epidote is a common alteration product. The 'low pH cap' mentioned earlier may now overlie areas of mineralization. Ex: Kodah, Alberts Hump, Saunders, Chappelle.

Mineral Prospects

The two most significant properties to date are the Baker Mine and the Lawyers prospect. 94E/6E/094E 026

(1) Baker Mine (ex-Chappelle). Camp and mill facilities at the Baker Mine are complete and production was scheduled for early April 1981 at a rate of 100 tons/day. During the fall of 1980 surface cut mining down to about 6m was carried out and since then underground development has been in progress from the 55 Level. Mineable reserves are 100,000 short tons containing 0.92 troy oz of gold and 18.7 troy oz of silver per ton.

Seven quartz vein systems mostly occupying fault zones have been identified in the area of the mine, with the main vein (Vein A), consisting of two or more subparallel veins traced over a length of 435m, a width of 10 to 70m, and a vertical depth of at least 150m.

Individual veins within the system vary from 0.5m to greater than 9m in width. A variety of quartz vein textures and cross-cutting relationships indicate a complex history of mineralization with multiple depositional stages.

Fine-grained acanthite, pyrite, electrum, chalcopryite, bornite, native gold, sphalerite, galena, chalcocite, covellite, polybasite and stromeyerite occur within the highly fractured and brecciated quartz system intrusive into Takla Group andesite and 'dacite'.

Higher grade mineralization is associated with grey quartz which occasionally contains visible acanthite (Ag_2S).

Alteration minerals include pervasive laumontite, chlorite, pyrite, anhydrite and silica.

It is interesting to note that one sample of high-grade ore assayed 0.23% Mo. Tellurium values range between 16 ppm and 38 ppm.

Selected precious metals deposits of Northern British Columbia

Previous knowledge and understanding of high-level 'geothermal' deposits in northern BC has been limited or restricted to historical descriptions such as that of the Premier Camp near Stewart. More recent geologic theory and understanding, together with a tremendously increased economic value of precious metals, has resulted in the discovery of several new gold and/or silver deposits or districts in BC. Some may be referred to as 'geothermal' or epithermal and others as volcanogenic. Most are high-level and exhibit many features characteristic of similar type deposits in Colorado, Nevada, and Mexico.

Five of these areas are: the Toodoggone District, Capoose Prospect, Equity Silver Mine, Big Missouri — Premier Deposits, and the Dolly Varden — Torbrit Deposits (Figure 1).

TOODOGGONE AREA

The Toodoggone area is situated approximately 300km north of Smithers and is one of the most isolated areas, geographically speaking, in the province. Access is restricted totally to aircraft. A 1600m gravel airstrip capable of accommodating a Hercules aircraft provides the only access for the Baker gold-silver mine and several other prospects in the area.

Early mining dates back to the early 1930s when placer claims near the junction of Belle Creek and the Toodoggone River were worked. Exploration remained quiet until the late 1960s when numerous companies began searching for the large tonnage, low-grade porphyries (copper \pm molybdenum). Numerous claims were staked, the most significant to date being the Chappelle claims which include the Baker Mine recently brought into production by Du Pont of Canada Exploration.

The 1970s saw little exploration, with the exception of the Baker Mine and the Lawyers gold-silver prospect; but 1980 heralded the beginning of an era for this gold-silver 'Province'. Currently there are over 4000 active units within the Toodoggone area, with approximately 3500 of those being staked over the past year.

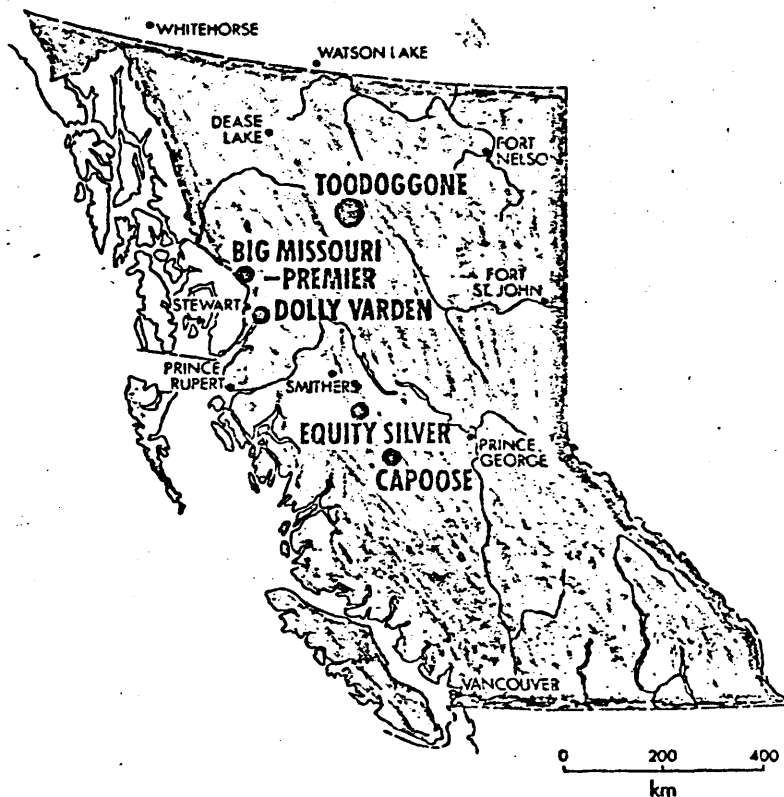
Property work of varying degrees has been carried out on such prospects as Baker (ex-Chappelle), Lawyers, McClair, Metsantan, Saunders, Fin (ex-Pine), Kemess, Shas, Attycelley and Firesteel.

Geology

The Toodoggone area lies within the eastern margin of the Intermontane Belt. The oldest rocks are wedges of crystalline limestone up to 150m or more thick. These have been correlated with the Asitka Group of Permian Age. The next oldest rocks belong to the Takla Group of Upper Triassic Age and consist of andesitic flows and pyroclastic rocks. The Omineca Intrusions of Jurassic and Cretaceous Age (K/Ar Age 186 my to 200 my, obtained by the GSC) range in composition from granodiorite to quartz monzonite. Some syenomonzonite bodies and quartz feldspar porphyry dykes may be feeders to the Toodoggone volcanic rocks which unconformably overlie the Takla Group.

'Toodoggone' rocks consists of a pile of complexly intercalated volcanic and volcanic-sedimentary rocks of Lower to Middle Jurassic Age, 500m or more in thickness, resting on the west flank of 'basement' rocks. They extend over a

Figure 1. Selected precious metals deposits of northern BC



GCNL #134 11-07-80 BRITISH SILBAK PREMIER MINES LIMITED 104B/1E

NEW WORK SEEKS TO INCREASE - Henry J. Block, chairman of British Silbak Premier Mines Limited, GOLD-SILVER ORE RESERVES announces a \$750,000 expenditure budget which will lead to the first step in bringing the Silbak Premier property at Stewart, NW-B.C., into production. F

Mr. Block says the Silbak Premier property never had large ore reserves blocked out - not more than one year's production ahead. However, it paid \$21,535,000 in dividends while operating at \$22 to \$37.50 an ounce for gold and 69¢ to \$1.89 an ounce for silver. From 4,700,000 tons of ore mined, 1,800,000 ounces of gold and 37,900,000 ounces of silver were produced. The mine was closed in 1958 when the company's mill burned down. Low metal prices in most of the intervening years contributed to keeping the mine shut. P

Mr. Block said that, in addition to the known ore reserves, the company hopes to find a large low grade mineralized deposit that will have economical values and to find within this large low grade deposit some bonanza ore.

Line cutting and geological mapping are now in progress. Geochemical, geophysical work and at least 5,000 feet of N.Q. diamond drilling, scheduled to start by 31 July, are being considered. Dr. C.E. Michener of Derry, Michener & Booth has been retained to review progress and to make new work recommendations.

The company is well financed having in excess of \$1,000,000 in the treasury.

GCNL #140 21-07-80 BRITISH SILBAK PREMIER MINES LIMITED 104B/1E 104B 052,053

OLD PREMIER MINE - Henry J. Block, chairman of British Silbak Premier Mines Limited, has TO BE REWORKED announced that \$750,000 will be spent this year on an exploration program aimed at bringing the company's gold and silver mine, 14 miles north of Stewart, B.C., back into production. The property, known as the Premier Mine, was controlled, until 1979, by the Mining Investment Corporation (formerly Selkwe Mining Company) of London, England. F

Although Silbak Premier never had large ore reserves blocked out, the company managed to pay out, during its producing years from 1918 to 1953, a total of \$21,500,000 in dividends. 4,700,000 tons of ore were mined and 1,800,000 oz. of gold and 37,900,000 oz. of silver were produced. The mine closed in 1953. Development work was resumed in 1955 and by 1956 the property was rehabilitated but a fire destroyed the mill and a number of surface buildings and, after only a few months of operation, the mine was once again closed. P

Last year a group of fourteen Canadian businessmen, assembled by new company president Bernard J. Ouellette, acquired control of Silbak Premier from its former London owners.

Mr. Block, who was formerly president of Block Bros. Industries, said, "In addition to the known ore reserves, the company hopes to find a large, low grade mineral deposit which will have economic values, and to find within this deposit some bonanza ore which, early production has shown, may grade at 100 oz. per ton of silver and 0.25 oz. per ton of gold. If found in small bodies of 10,000 to 20,000 tons (possible dimensions 90 feet x 90 feet, 12 to 18 feet wide) such a bonanza would be valued around \$12,000,000 assuming a price of \$350 per oz. for gold and \$15 per oz. for silver."

Line cutting is now in progress together with geological mapping of the property. A minimum of 5,000 feet of N.Q. diamond drilling is scheduled to start at the end of July. Dr. C.E. Michener of Derry, Michener & Booth, of Toronto, has been retained to report on the property.

The authorized capital of the company consists of 5,000,000 shares without par value of which 1,997,788 shares have been issued. The shares are listed on the Vancouver Curb Exchange.

Other directors are Allan P. Fawley, P. Eng., Edmund H. Talbot and Victor B. Bjorkman, both professional engineers, Marvin P. Kehler, a land developer and Arthur Eric Bryant of London, England.