

CENTRAL SUN MINING INC.  
Form 6-K  
April 15, 2008

**FORM 6-K**

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

Report of Foreign Issuer

Pursuant to Rule 13a-16 or 15d-16 of  
the Securities Exchange Act of 1934

For the month of **April 2008**

Commission File Number **001-32412**

**CENTRAL SUN MINING INC.**  
(Translation of registrant's name into English)

**500 – 6 Adelaide St. East**  
**Toronto, Ontario, Canada M5C 1H6**  
(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F

Form 20-F       Form 40-F

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):

**Note:** Regulation S-T Rule 101(b)(1) only permits the submission in paper of a Form 6-K if submitted solely to provide an attached annual report to security holders.

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):

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Yes  No

If "Yes" is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b) 82

**EXHIBIT NO.      DESCRIPTION**

99.1 2008	Technical Report on Mineral Resources and Mineral Reserves, Limon Mine and Mestiza Areas, Nicaragua dated March 31, 2008
99.2	Consent of William N. Pearson dated April 2, 2008
99.3	Consent of Graham Speirs dated April 2, 2008

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**SIGNATURE**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

**CENTRAL SUN MINING INC.**

Date: April 15, 2008

By: /s/ Denis C. Arsenault  
Denis C. Arsenault, Chief Financial Officer

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**EXHIBIT 99.1**

**TECHNICAL REPORT ON MINERAL  
RESOURCES AND MINERAL**

# RESERVES, LIMÓN MINE AND MESTIZA AREAS, NICARAGUA

## NI 43-101 Report

### Authors:

**William N. Pearson, Ph.D., P.Geo.**

**Graham Speirs, P.Eng.**

**March 31, 2008**

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# 1 SUMMARY

## EXECUTIVE SUMMARY

Central Sun has prepared a Technical Report on the Limón gold mine and the Mestiza property in northern Nicaragua. This report presents an updated estimate of the Mineral Resources and Mineral Reserves of the Talavera and Santa Pancha deposits at Limon and reviews the Company's Mine Plan. An inferred mineral resource has also been estimated for the Mestiza property. The Technical Report has been prepared to conform to NI 43101 Standards of Disclosure for Mineral Projects. The authors of this report have visited the property on a number of occasions and have been directly involved with the exploration and mining programs carried out there.

Central Sun is a reporting issuer listed at the Toronto Stock Exchange (TSX: CSM). The company, through its 95% interest in Triton Minera S.A. (TMSA), owns and operates the Mina El Limón mineral concession and holds 9 exploration-stage mineral concessions, including the past producing La India mine; all of which are located in northwestern Nicaragua. The Mestiza project comprises the 100% owned Espinito-Mendoza concession and the 40% owned Espinito-San Pablo mineral concessions that are enclosed by the La India concession.

This report discusses the 12,000 ha Mina El Limón mineral concession, including the Santa Pancha and Talavera underground mines, and the Mestiza project located 70 km east by road of Limon. Table 1-1 below summarizes Central Sun's estimate of the Mineral Reserves and Mineral Resources at the Mina El Limón concession and Mestiza Project, as of December 31, 2007:

### TABLE 1-1 MINERAL RESERVES AND MINERAL RESOURCES

#### Central Sun – Limón Mine and Mestiza Project

As at December 31, 2007

#### Mineral Reserves

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<b>Deposit</b>	<b>Category Tonnes</b>	<b>Grade (g Au/t)</b>	<b>Contained Ounces Au</b>
Talavera	Proven 85,900	5.34	14,800
	Probable 75,500	4.46	10,800
Santa Pancha	Proven 63,400	7.01	14,300
	Probable 811,600	4.96	129,400
Veta Nueva	Probable 182,500	5.71	33,500
Open Pits	Proven 7,000	5.91	1,300
	Probable 155,100	2.63	13,100
Subtotal	Proven 156,400	6.04	30,400
Subtotal	Probable 1,224,600	4.75	186,900
<b>Total Underground</b>	<b>Proven &amp; Probable 1,381,000</b>	<b>4.89</b>	<b>217,200</b>
<b>Additional Mineral Resources</b>			
Talavera	Measured 9,500	6.92	2,100
	Indicated 30,500	5.20	5,100
Santa Pancha	Indicated 281,500	4.60	41,600
Veta Nueva	Indicated 42,100	7.71	10,400
Open Pits	Measured 20,500	3.60	2,400
Subtotal	Measured 30,000	4.65	4,500
Subtotal	Indicated 354,100	5.02	57,200
<b>Total</b>	<b>Measured &amp; Indicated 384,000</b>	<b>4.99</b>	<b>61,600</b>
Talavera	Inferred 305,000	6.52	63,900
Santa Pancha	Inferred 912,000	5.72	167,800
Veta Nueva	Inferred 42,000	7.12	9,600
Open Pits	Inferred 32,000	4.10	4,300
Mestiza	Inferred 558,000	8.80	158,600
<b>Total</b>	<b>Inferred 1,849,000</b>	<b>6.81</b>	<b>404,600</b>

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Notes:

- 1 CIM definitions were followed for estimation of reserves & resources.
- 2 Mineral Reserves are estimated at a cutoff grade of 3.8 g Au/t. Additional Mineral Resources which exclude reserves are estimated at a cutoff grade of 2.
- 3 Mineral Reserves are estimated using an average long-term gold price of US\$550 per ounce.
- 4 A minimum vein width of 2.4 m was used, and a minimum mining width of 3.0 m.
- 5 Dilution added was 0.3m each side (total 0.6m) at 0 grade.
- 6 Specific Gravity is 2.60.

The mineral resources and reserves have been estimated in accordance with the CIM Standards for Mineral Resources and Mineral Reserves adopted by the CIM Council on December 11, 2005 as required by NI-43-101.

**ECONOMIC ANALYSIS**

Central Sun has prepared a Life of Mine Plan (LOMP) that schedules production of the Mineral Reserves as of January 1, 2008. The mine life is forecast to be approximately 4 years, ending in the fourth quarter of 2011. Central Sun's projection of the pre-tax cash flow is shown in Table 1-2, expressed in US dollars (US\$). The key input parameters are:

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- Production of 1,055 tonnes per day (based on 327 days per annum).
- Reserve and Resource Base: Mineral Reserves of 1.38 million tonnes at an average grade of 4.89 g Au/t, and Measured and Indicated Mineral Resources of 394,000 tonnes at an average grade of 4.99 g Au/t. The Mineral Resources are additional to the Mineral Reserves.
- Total production: 1.38 million tonnes at 4.89 g Au/t.
- Annual gold production: 44,534 ounces, average.
- Metallurgical recovery of 82%.
- Gold price of \$837 per ounce, average.
- Silver revenue assumed to be not material.
- Revenue is recognized at the time of production.
- Operating costs: \$541 per tonne milled.

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- Capital costs: \$9.02 million.

### GLOBAL MARKETS

The principal commodities at the Limón mine are freely traded, at prices that are widely known, so that prospects for sale of any production are virtually assured. A gold price of US\$550 per ounce was used for the Base Case.

The Nicaraguan currency (Cordoba) has shown a steady decline against the US dollar over the past five years, as follows:

- December 31, 2007 – 1 US dollar = 19.22 Cordobas
- December 31, 2006 – 1 US dollar = 18.57 Cordobas
- December 31, 2005 – 1 US dollar = 17.21 Cordobas
- December 31, 2004 – 1 US dollar = 16.24 Cordobas
- December 31, 2003 – 1 US dollar = 15.43 Cordobas

For costs originally estimated in Cordobas (for example, labour), Central Sun applies an inflation factor of 6% per annum before converting to US dollars.

### CASH FLOW ANALYSIS

The undiscounted pre-tax cash flow totals \$33.9 million. The unit operating cost is \$541 per ounce of gold. Capital expenditures are estimated to total \$55 per ounce, and royalties are forecast to total \$50 per ounce, over the remaining mine life. The total cost of production, including operating, capital and royalties, is estimated to be \$646 per ounce. All costs and revenue are expressed in US dollars (US\$) unless otherwise noted.

Central Sun's physical and cost data in the cash flow model are consistent with operations during the past several years. In view of recent gold prices ranging from \$900 to \$1,000 per ounce, the Limón Mine is expected to generate a positive cash flow for the period detailed in the Life of Mine Plan.

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TABLE 1-2 CASH FLOW MODEL

PRODUCTION	UNITS	2007	2008	2009	2010	2011	PLAN TOTAL
<b>UNDERGROUND</b>							
ORE MINED (FULL OPERATING COST) TM			331,000	350,000	350,000	349,000	1,380,000
GOLD GRADE	gpt		4.93	4.87	4.82	4.97	4.90
<b>TOTAL ORE MINED</b>	<b>TM</b>		<b>331,000</b>	<b>350,000</b>	<b>350,000</b>	<b>349,000</b>	<b>1,380,000</b>
<b>AVG. GRADE</b>	<b>gpt</b>		<b>4.93</b>	<b>4.87</b>	<b>4.82</b>	<b>4.97</b>	<b>4.90</b>
<b>MILLING</b>							
FEED TONNES	TM		331,000	350,000	350,000	349,000	1,380,000
GOLD GRADE	gpt		4.97	3.97	4.09	4.85	4.46
RECOVERY	%		82.0%	82.0%	82.0%	82.0%	82.0%
GOLD BULLION	OUNCES		43,028	44,921	44,499	45,689	178,136
GOLD IN CARBON	OUNCES						
<b>RECOVERED OUNCES</b>	<b>OUNCES</b>		<b>43,028</b>	<b>44,921</b>	<b>44,499</b>	<b>45,689</b>	<b>178,136</b>
SILVER BULLION	OUNCES						
<b>GROSS INCOME</b>							
NET REALIZED GOLD PRICE PER OUNCE	US \$		900	850	800	800	837
<b>GOLD REVENUE</b>	<b>US \$</b>		<b>38,725,217</b>	<b>38,182,650</b>	<b>35,598,864</b>	<b>36,551,244</b>	<b>149,057,976</b>
<b>COST OF PRODUCTION</b>							
MINING	US \$		10,409,619	11,007,150	11,007,150	10,975,701	43,399,620
MILLING	US \$		6,007,650	6,352,500	6,352,500	6,334,350	25,047,000
ADMINISTRATION	US \$		6,436,948	7,197,143	7,197,143	7,156,075	27,987,309
<b>TOTAL COST</b>	<b>US \$</b>		<b>22,854,217</b>	<b>24,556,793</b>	<b>24,556,793</b>	<b>24,466,126</b>	<b>96,433,929</b>
<b>UNIT COST PER TONNE</b>							
MINING	US\$/TM		31.45	31.45	31.45	31.45	31.45
MILLING	US\$/TM		18.15	18.15	18.15	18.15	18.15
ADMINISTRATION	US\$/TM		19.45	20.56	20.56	20.50	20.28
<b>COST PER TONNE</b>	<b>US \$</b>		<b>69.05</b>	<b>70.16</b>	<b>70.16</b>	<b>70.10</b>	<b>69.88</b>
<b>COST PER OUNCE</b>	<b>US \$</b>		<b>531.15</b>	<b>546.67</b>	<b>551.86</b>	<b>535.49</b>	<b>541.35</b>
<b>GROSS PROFIT/LOSS OF PRODUCTION</b>							
	US \$		<b>15,871,000</b>	<b>13,625,857</b>	<b>11,042,072</b>	<b>12,085,118</b>	<b>52,624,046</b>
Repadre Royalty Expenses (3%)	US \$		1,161,757	1,145,479	1,067,966	1,096,537	4,471,739
Income Tax Advances (Advalorem 3%)	US \$		1,161,757	1,145,479	1,067,966	1,096,537	4,471,739
<b>PROFIT/LOSS of OPERATION</b>	<b>US \$</b>		<b>13,547,487</b>	<b>11,334,898</b>	<b>8,906,140</b>	<b>9,892,043</b>	<b>43,680,568</b>
<b>CAPITAL EXPENDITURE</b>							
MINE	US \$	340,500	2,935,906	761,078	761,078	661,078	5,459,639
MILL	US \$	394,297	1,450,000	600,000	600,000	0	3,044,297
INFRASTRUCTURE	US \$		215,000				215,000
CLOSURE PLAN	US \$				300,000	736,000	1,036,000
<b>TOTAL CAPITAL</b>	<b>US \$</b>	<b>734,797</b>	<b>4,600,906</b>	<b>1,361,078</b>	<b>1,661,078</b>	<b>1,397,078</b>	<b>9,754,936</b>

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NET CASH FLOW	US \$	-734,797	8,946,581	9,973,820	7,245,062	8,494,965	33,925,632
Depreciation	US \$						
NET PROFIT/LOSS BEFORE INCOME TAX	US \$	(734,797)	8,946,581	9,973,820	7,245,062	8,494,965	33,925,632
Income Tax							
NET PROFIT/LOSS AFTER INCOME TAX		(734,797)	8,946,581	9,973,820	7,245,062	8,494,965	33,925,632
CUMULATIVE NET CASH FLOW		(734,797)	8,211,784	18,185,605	25,430,667	33,925,632	

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**SENSITIVITY ANALYSIS**

Variations to the LOMP base case NPV calculated at a 5% interest rate are detailed in Table 1-3, and graphed in Figure 1-1. The cash flow is most sensitive to gold price, followed by operating cost.

**TABLE 1-3 SENSITIVITY DATA  
Central Sun Gold – Limón Mine**

Parameter Variables	Units	-20%	-10%	Base	+10%	+20%
Gold Price	\$/oz	670	753	837	921	1004
Operating Cost	\$/tonne	56	63	70	77	84
Capital Cost	\$millions	7.22	8.12	9.02	9.92	10.82
NPV	Units	-20%	-10%	Base	+10%	+20%
Gold Price	\$millions	11.5	22.6	33.8	44.9	56.1
Operating Cost	\$millions	35.3	34.6	33.8	33.1	32.3
Capital Cost	\$millions	47.7	40.7	33.8	26.9	19.9
Mine Life	\$millions	11.5	22.7	33.8	44.9	56.1

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**FIGURE 1-1 CASH FLOW SENSITIVITY GRAPH**

## TECHNICAL SUMMARY

### *PROPERTY STATUS*

Central Sun holds interests in 10 mineral concessions in northwestern Nicaragua including the Limon Mine concession. The Mineral Concessions are located approximately 100 km northwest of Managua, the capital of Nicaragua. Production from the Limón Mine and concessions with a 10km radius of the mine are subject to the following royalties:

- A 3% net smelter royalty (NSR) to Royal Gold, Inc. ("Royal Gold), on the mineral production from the Limón Mine and any other production revenue in the future, obtained from the Limón Mine Concession and the other mineral concessions, including La India, that were formerly part of the original El Limón-La India exploration concession. The Royal Gold royalty does not apply to the

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Espinito-San Pablo and Espinito-Mendoza concessions comprising the Mestiza project nor does it apply to concessions outside the 10km radius of the Limon Mill.

- A royalty equal to 5% of the net profit of Triton Mining (USA) LLC (Triton USA) is due to Internacional de Comercial S.A. (IDC). Triton USA is a subsidiary of Central Sun which holds a 47.5% interest in the Limón Mine.

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- The Espinito-Mendoza mineral concession is subject to a 1.5% NSR payable to the vendor.
- All concessions are subject to a 3% NSR on gold production, payable to the Government of Nicaragua.

The Santa Pancha and Talavera gold deposits are located within the 12,000 ha Mina El Limón mineral concession that has a term of 25 years, expiring in 2027. The property straddles the boundary of the municipalities of Larreynaga and Telica of the Department of León and the municipalities of Chinandega and Villa Nueva of the Department of Chinandega.

TMSA is the direct owner of the surface rights that underlie all of its current mining, milling, tailings and related facilities and infrastructure at the Limón Mine. When necessary, access agreements are negotiated and signed with the individual surface owners for other areas within the concession not owned by the Company. The Permits required for current mining and milling operations, and for exploration activities are in place.

The original purchase of the mineral concessions, except for Espinito-Mendoza in the Mestiza project, was made by Minera de Occidente S.A., (subsequently renamed TMSA). TMSA is owned 47.5% by Triton Mining Corporation (Triton), 47.5% by Triton USA, and 5% by Inversiones Mineras S.A. (IMISA), a holding company representing the unionized mine workers of Nicaragua. Central Sun's 95% interest in the concessions is from its 100% ownership of Triton and Triton USA acquired as a result of a merger with Black Hawk Mining Inc. in October 2003. The Espinito-Mendoza mineral concession was acquired by Central Sun in September 2006.

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TMSA is not responsible for any type of environmental damage caused prior to the time at which it took possession of the Limón Mine in 1994, but is required to implement the necessary changes to reduce any existing environmental problems. According to the existing Central Bank regulations, TMSA may freely export and sell the gold produced and the proceeds may be repatriated without restriction.

### **LOCATION AND ACCESS**

The Mina El Limón mineral concession is situated along the eastern margin of the Nicaragua Depression. The property lies within the relatively flat lowlands of the depression itself, but contains hills with moderate relief. The Mestiza project and La India district are in the Nicaraguan highlands lying just east of the Nicaraguan depression and in a hilly area of moderate to steep relief.

Access to the Limón mine area is by paved road approximately 125 km from Managua and approximately 15 km by all-season gravel road to the Village of El Limón. The total road distance from Managua is 140 km. The Talavera underground mine is situated approximately 4 km west of the Village of El Limón, and the Santa Pancha deposit is situated approximately 5 km east of that village. Both areas are accessible by gravel roads from the Limón mine site.

The Mestiza Project and La India district are approximately 140 kilometres northwest of Managua and 45 kilometres in a direct line east of the Limon mill. The village of La Cruz de La India, located at the south end of the India concession, is on a paved highway that traverses the southern limits of the district. The road distance to the Limon mill is approximately 70 kilometres.

The climate in northwestern Nicaragua is tropical with a hot, wet season from May through November and hotter, dry season from December through to April. The mean annual temperature is 27° C with an average annual precipitation of two metres. The

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Limón Mine operates year round and is not normally affected by the typical seasonal climatic variations.

Electrical power for the Limón Mine operations is obtained from the Nicaraguan national grid system with backup generators at the mine site. Water, both industrial and potable, is drawn from local sources.

The three villages of Limón, Santa Pancha and Minvah, all located within the mine concession, have a population of approximately 10,000 people including many of the mine employees. Transportation to the Limón Mine is by private vehicles and public and company buses. At Mestiza, the local population is estimated at 7,000 inhabitants with 3,000 of these living in La Cruz de La India. A power line follows the highway and supplies electricity to the village and homes located along the way. Water for La Cruz de La India is supplied from a well, located one kilometre northeast of the village.

The Mina El Limón mineral concession is in an area of low to moderate relief that offers flat areas for mine infrastructure. Elevations of the mine property range from 40 m to 300 m above mean sea level. The area is covered with sparse vegetation consisting predominantly of grasslands and scrub brush with widely spaced trees. At Mestiza, elevations range from 350 metres to 800 metres above sea level with vegetation consisting of grass, brush and sparse tree cover.

## **HISTORY**

Historic mining and prospecting activities in the Limón district of northwestern Nicaragua, which hosts the Limón and other gold deposits, date back to the late 1850s. Modern mining and exploration started in 1918. Mine production was intermittent from the 1850s to 1941, and the exact amount of gold production is unknown for this period. Since 1941, continuous production over 63 years has amounted to more than 3.0 million ounces of gold and an unrecorded quantity of silver (as a by-product) has been produced. Much of this production was when the mine was under the control of Noranda Mines. Production rates in this period started at 200 tons per day and increased to 345 tons per day. Within the Limón Mine concession gold production has come from three sources:

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These are:

- Limón vein system,
- Santa Pancha vein system, and
- Talavera vein system.

Minor production has also come from three other sources, namely; Atravesada: (within Limón concession, with production of approximately 11,000 oz Au); Rincon de Garcia (approximately 23,800 oz Au) and Mina de Agua (approximately 46,600 oz Au). Mina de Agua and Rincon de Garcia are located in the Villanueva 2 concession about 20km north of the Limon mine. Ore from these mines was trucked for processing in the Limon mill intermittently between 1972 and 1988. There was also small scale production in the 1920s at the La Grecia mine located in the San Juan de Limay-La Grecia concession.

The La India gold vein was discovered in the 1930s. Modern gold production started in 1938 and lasted 17 years until 1955 recovering approximately 576,000 ounces of gold from 1.7 million tons at an average grade of 0.39 ounces of gold per ton (13.4 g Au/t) primarily from La India and America-Constancia veins that were mined to a depth of 200 metres. There has been no prior production in the area of the Mestiza

Project.

***GEOLOGICAL SETTING AND MINERALIZATION***

The geomorphology of Nicaragua consists of three major terranes. A northwest striking graben, 30 km to 40 km wide, parallels the Pacific coastline along the western margin of the country. This graben hosts up to 16 active or recently active volcanoes and is the site of thick Quaternary to Recent volcanic deposits. To the southwest, between the graben and the Pacific coast, a 10 km to 20 km wide belt of Tertiary, Mesozoic and Palaeozoic rocks are preserved. To the northeast of the graben; the Tertiary, Mesozoic and Palaeozoic "basement" is overlain by a major unit of Tertiary volcanic rocks, the Coyol (Miocene-Pliocene) and Matagalpa (Oligocene-Miocene) Groups. The Coyol

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Group hosts the known vein gold deposits in Nicaragua, including those at El Limón and La India.

The Limón Mine is located along the eastern edge of the Nicaragua graben within an area of low hills that contrast with the level plain of the graben floor. Approximately 50% of the area in the general vicinity of the mine is covered by a thin layer of Quaternary to Recent deposits of volcanic ash and alluvium. The Mina El Limón mineral concession is underlain predominantly by volcanic strata that are correlated with the Miocene-Pliocene Coyol Group that is present over extensive areas of western Nicaragua.

Coyol Group rocks, exposed on the Mina El Limón mineral concession, range from intermediate to felsic volcanic and volcanoclastic rocks that are cut by minor intermediate to felsic hypabyssal intrusive bodies. From lowest to highest in stratigraphic section, these rocks are as follows:

- Interstratified, massive porphyry flows and coarse volcanoclastic rocks of intermediate composition.
- Intermediate to felsic flows, domes and minor tuffs and epiclastic rocks.
- Weakly stratified, intermediate to felsic tuffs and epiclastic rocks.
- Massive to flow-banded, intermediate porphyritic flows.

The above units appear to be conformable and generally strike east to northeast and dip gently south with local variability common.

Deformation is dominated by normal faulting with little evidence for significant internal deformation of intervening fault blocks. The faults commonly trend northeast with moderate to steep dips to the northwest as well as southeast. A second group of faults strikes north to west-northwest, dipping steeply to the east and/or to northeast. Apparent displacements on these faults are tens to several hundreds of metres.

Gold mineralization in the Limón district is typical of low-sulphidation, quartz-adularia, epithermal systems. These deposits were formed at relatively shallow depth,

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typically from just below the surface to a little over one kilometre deep, from reduced, neutral-pH hydrothermal fluids with temperatures of <math><150^{\circ}\text{C}</math> to <math>300^{\circ}\text{C}</math>. The volcano-plutonic arc of western Nicaragua is a common tectonic setting for these deposits. From bottom to top, the hydrothermal alteration and the associated gold and/or sulphide mineralization along the mineralized structures is described, as follows:

- Barren to low-grade (<math><1\text{ g Au/t}</math>) structurally (fault) controlled and constrained quartz vein, and/or hydrothermal breccias and quartz stockworks, often with late-stage coarse-grained calcite veining. No base metal zone is evident at Limón. Wall rock alteration is normally minimal.
- Ore grade gold mineralization hosted in quartz veins and multi-phased quartz breccia veins (+/- adularia, +/- pyrite less than 1%). Wall rock alteration is absent to restricted at depth, but increasing in width and extent near the tops of veins, in part dependent on wall rock permeability.
- Clay alteration of variable extent and intensity, depending on wall rock permeability and fracturing, occurs in a broader zone at the tops and above the mineralized veins. The clay zone is zoned outward and upward from higher temperature mixed layer clay minerals (smectites/illite or smectites/chlorite) to lower temperature smectites that is often accompanied by dickite or kaolinite, and disseminated to microvein pyrite up to several percent. Occasional silicified horizons controlled by permeable lithologies have been observed in this zone at Limón.
- A discontinuous to continuous, laterally extensive "blanket" of low temperature quartz (opal and/or chalcedony) conforms to and occurs at the interface as well as below the paleo-water table (below the vadose zone). The quartz often includes fine-grained disseminated pyrite. Clay alteration, principally kaolinite, is more common above the veins and decreases in content, or is absent, laterally away from the veins.
- A near-surface zone of clay mineral alteration (kaolinite with or without alunite and devoid of pyrite and other sulphide minerals) is developed from acid-leaching (steam-heated alteration) in the vadose zone above the paleo-water table. To date, no evidence of sinter deposits has been observed at Limón.

Erosion over most of the Limón Property has removed tens to hundreds of metres of the upper parts of the epithermal system. In the southern portion of the property the epithermal system at Limón has been preserved from erosion to the level of, and in places

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just above, the paleo-water table. Weathering has imprinted supergene alteration on top of the system.

The veins at Limón are quartz dominant with lesser and variable quantities of calcite, and minor adularia. Pyrite is the predominant sulphide, but with an average content of less than one percent. Trace amounts of chalcopyrite, sphalerite, arsenopyrite, altaite, gold tellurides and native gold are also reported to occur. Gold is present in both the banded quartz and silicified breccias that form the veins. Gold is very fine grained and relatively uniformly distributed throughout the higher grade parts of the veins; only once has visible gold ever been reported on the Mina El Limón mineral concession.

The productive vein systems are approximately one to two kilometres long, with vein widths from less than one metre up to 25 m. Individual ore-shoots within the veins range from 60 m to 450 m long horizontally, and from 40 m to 290 m vertically. Strike orientations vary from north-northwest through northeast to east-west, and dips are from <math>40^{\circ}</math> to near vertical. All economic gold mineralization discovered and mined to date lies within 400 m of surface, however zones such as Santa Pancha are open at depth and will be tested in the 2008 exploration program. The productive and prospective elevations within the vein systems vary across the district. Post-mineral faults locally disrupt and offset the veins.

The India district, including the Mestiza Project area, is characterized by eroded stratovolcano vent areas consisting of volcanic rocks of calc-alkaline affinity vary in composition from andesite to rhyolite. Andesitic flows and tuff breccias are predominant and can be divided into a lower, regionally propylitized andesite package and an upper, unaltered andesite package. The whole suite is considered to be part of the Lower Coyol Group of Miocene-Pliocene age.

There are no detailed geological maps for the other concessions; the level of geological information is limited to the published government regional maps at 1:50,000

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scale. The other concessions are all underlain by the Tertiary volcanic suites of the Matagalpa and Lower Coyoil groups. The older Matagalpa Group is dominated by intermediate to acid pyroclastic rocks. The Lower Coyoil Group is characterized by basic lavas near its base overlain by dacite, rhyodacite and rhyolite flows, tuffs and ignimbrites. Small acid and basic subvolcanic intrusives of approximately the same age as the volcanics occur throughout the area.

The Villa Nueva, Bonete-Limon and San Antonio concessions lie within or along the western limit of the Nicaragua graben. The Tertiary volcanic suites are in places overlain by Recent and Quaternary volcanic and sedimentary units that fill the graben.

### ***EXPLORATION***

Prior to 1995, prospecting was the prominent exploration tool in the Limón area. Consequently, all but one exploration discovery of economic gold mineralization was made by trenching and drilling of outcropping quartz veins. Since there is no significant amount of sulphides or intense clay alteration directly associated with the gold mineralization, it was previously thought there is no geophysical response to the mineralized zones. A number of conventional geophysical techniques (IP, EM, and magnetometer) have been applied in the past, with little success, however recent work by Central Sun indicates that spectral IP can be used to detect areas of strong silicification with sulphides.

Since 1996, exploration work at Limón has been directed at the discovery of hidden, subparallel veins close to existing gold mineralization. In particular:

- Subparallel veins and extensions of known veins in the Talavera area.
- Extensions of previously mined veins at the Limón and Santa Pancha open pits.

In 2004, Central Sun carried out an exploration program which consisted primarily of diamond drilling. The focus was on exploration and resource definition around Talavera, at the south end of the Limón vein, and on finding the source for auriferous quartz boulders at Santa Rosa-Uval. Additional exploration drilling had been ongoing to test a number of the exploration targets within the Limón concession. In total, some 38,300 m

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of diamond drilling was completed in 2004. Only limited exploration was carried out in 2005 and 2006.

In 2007, Central Sun completed an underground in-fill diamond drilling program at Talavera that totaled 4,830 metres in 41 holes. Holes were collared at 25 m spacing and intersected targets at intervals of less than 60 m apart vertically to a depth of 30 m. A diamond drilling program of 6 holes totaling 783 m also tested the north-south extension of the El Limon zone located about 2.0 km northeast of Talavera.

In 2008, Central Sun has commenced a major exploration to test targets in the Santa Pancha and Talavera areas as well as carry out more exploration on targets outside these areas. Approximately 10,000 metres of diamond drilling is planned, in addition to IP and geological surveys. An extensive compilation of all existing data is in progress as much of this data has not been used for many years.

The principal exploration conducted in the Mestiza area consisted of trenching and drilling from 1983 to 1991 by the INMINE with the assistance of Soviet technical advisors. In 2004, the Company completed a 1900 m drill program at Soledad de la Cruz and on projected extensions of the La India vein; however no significant gold mineralization was encountered in either area. No significant work was carried out



in 2005 and 2006. In 2007 Central carried out a program of diamond drilling of 3 holes totalling 619m on the Tatiana vein however this program was terminated due to financial constraints.

In January 2008, Central Sun initiated a comprehensive exploration program at Mestiza including data compilation, line cutting, geological mapping and induced polarization surveys. Diamond drilling of 2,500m is planned to test targets outlined in this program.

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#### ***MINERAL RESERVES AND MINERAL RESOURCES***

In 2005 Scott Wilson Roscoe Postle & Associates (“Scott Wilson RPA”) carried out an audit of the Mineral Reserves and Mineral Resources at Limón, performed a number of checks to verify the various procedures and numerical calculations used in earlier estimates and completed some independent sampling as detailed in their report dated February 24, 2005 that is filed on Sedar. Scott Wilson RPA was of the opinion that the Central Sun resource and reserve estimates were in accordance with the Mineral Resource/Reserve Classification as recommended by the CIM Committee on Mineral Resources/Reserves.

The present update of the reserves and resources was completed by Central Sun mine geology and engineering personnel under the supervision of Dr. William N. Pearson, P.Geo. and Mr. Graham Speirs, P.Eng. Both individuals are Qualified Persons as defined under National Instrument 43-101. The updated mineral reserve and mineral resource estimate as at December 31, 2007 incorporated results from the in-fill underground diamond drilling completed in 2007. Methodology employed was the same as used by Scott Wilson RPA except that the gold price was adjusted to \$US550 per ounce for mineral reserves and cutoff grades adjusted for both mineral reserves and remaining resources.

#### ***SAMPLING FOR 2007 PROGRAM BY CENTRAL SUN***

Core samples from the 2007 program by Central Sun were analyzed at the Limon Mine laboratory using a standard fire assay technique. Internal quality control includes the use of blanks, duplicates and standards in every batch of samples. The Company also conducts internal check assaying. Regular external check assays on production samples were performed at Acme Laboratories from 2000 to 2007 and are being done at ALS Chemex in 2008, both of which are certified Canadian commercial laboratories.

#### ***MINING AND MILLING OPERATIONS***

The mining methods used at Talavera are longitudinal open stoping for the primary stopes and sub-level retreat for pillar recovery. Stopes are backfilled with unconsolidated

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development waste. Development of most mining areas is from the top down; sill pillars are left at regular intervals between longhole blocks.

The Santa Pancha deposit is being mined using cut and fill methods, with unconsolidated waste fill coming from mine development and nearby open pit operations. Development of the Santa Pancha ramp began in January 2005 with underground production commencing in March 2007. The open pit was mined from August 2005 through 2007. Underground mining operations are fully mechanized. The mine equipment is

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adequate to support the current 1,050 tonnes per day operation.

The Limón mill is a nominal 1,000 tonnes per day CIP gold recovery plant. It has demonstrated a capacity of 1,200 tonnes per day. The production records for the past six years, as well as the forecast for the next four years are summarized in Tables 1-4 and 1-5:

**TABLE 1-4 PRODUCTION HISTORY**

**Central Sun Gold – Limón Mine**

<b>Units</b>		<b>2007</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>	<b>2003</b>	<b>2002</b>
Mill feed	('000 t)	287.7	295.6	311.4	341.2	284.1	315.0
Head Grade	(g Au/t)	5.1	4.4	4.7	5.1	5.7	6.2
Recovery	(%)	78.5	83.3	83.8	84.6	88.1	86.8
Gold Recovered	(oz)	36,702	34,341	39,091	46,135	45,851	55,388

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**TABLE 1-5 LIMÓN MINE, LIFE OF MINE PLAN**

**Central Sun Gold – Limón Mine**

	<b>Units</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>Total</b>
	('000 t)	100	61			161
<b>Talavera</b>						
Grade		5.2	4.5			4.9
				90	92	182
Veta Nueva						
Grade				5.7	5.7	5.7
	('000 t)	165	219	234	257	875
<b>Santa Pancha</b>						
Grade		5.7	5.6	4.7	4.7	5.1
	('000 t)	66	70	26		162
<b>Open Pit</b>						
Grade	(g Au/t)	2.6	2.9	2.9		2.8
<b>Mill Grade</b>	('000 t)	331	350	350	349	1,380
<b>Recovery Gold</b>	(g Au/t)	4.9	4.9	4.8	5.0	4.9

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	(%)	82	82	82	82	82
<b>Gold</b>	<b>(oz)</b>	<b>43,028</b>	<b>44,921</b>	<b>44,499</b>	<b>45,689</b>	<b>178,136</b>

The Limón operations are in compliance with all applicable environmental requirements and have not received any non-compliance orders from regulators.

**EXPLORATION POTENTIAL**

The Limón Mine is a gold producer and on-going exploration by Central Sun continues to extend known zones of gold mineralization along strike of the Santa Pancha and Talavera Structures. The mine has an excellent record of replacing production as well as increasing resources and reserves over most of its history.

A number of exploration targets have been outlined, from west to east, as follows:

- **Talavera Oeste:** The primary target here is the extension of the Talavera Sur structure. A significant intersection of 18.8 g Au/t over 7.3 m (true width) in quartz vein was reported from Drill Hole 3301. This is along the projected southwest extension of the Talavera Sur structure. Underground holes previously drilled to test the extension of the Talavera Sur target resulted in encountering the new Talavera III (TIII) Vein. Recent drilling included Hole 3300, which

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intersected two adjacent zones of 4.3 g Au/t over 2.3 m (true width) and 7.6 g Au/t over 2.7 m (true width). These intersections are interpreted to represent the HW and FW segments of the TIII vein, adjacent to the Victoria Vein.

- **Talavera Victoria:** Previous drilling has intersected high-grade sections of 15.8 g Au/t over 36.0 m, at a depth of approximately 300 m below the surface, in Drill Hole 3235, and 7.7 g Au/t over 15.8 m in Drill Hole 3211. Both drill holes are situated along the flank of hydrothermal alteration along a ridge, some 5 km west of the Limón mill.
- **Este de Talavera Sur:** This target area is the potential extension to the east of the Talavera Sur structure.
- **East of SEO:** Drilling in this area near the main Talavera Vein suggests that the structure remains open to the northeast.
- **Morales Extension:** DDH 1763 intersected 6.85 g Au/t over 2.4m and DDH 1761, 8.0 g Au/t over 1.60m. This zone has similar characteristics as Veta Nueva.
- **Pozo Bono Extension:** Two holes have tested this area with one hole intersecting 10.15 g Au/t over 1.0 m. Follow-up drilling is planned.
- **Babilonia Sur:** Diamond drilling in the past had intersected a wide zone of low-grade gold, of 0.56 g Au/t over 15.6 m, with intervening higher grades. Follow-up drilling did not replicate earlier results however compilation of historical drill data indicates that the initial follow-up drilling was poorly placed to test this target; hence, it remains a valid exploration target for the future. It appears that this wide intersection is likely in a hole drilled down dip of the vein.
- **Santa Pancha Sur:** This target is the potential southern extension of the Santa Pancha orebody that is currently being mined.

In addition to the above targets, sampling of mineralized boulders in 2004 detected a gold- and clay-mineral anomalous zone in an area known as Santa Rosa-Uval 1.5 km to 3 km southwest of the Limón mill. Drilling beneath these areas, however, did not locate significant mineralization. This target is being re-evaluated geologically to determine if an alternative source is possible.

At Mestiza a number of major vein structures that have been identified. Most of the previous work has been directed towards the Tatiana vein however other structures in the area have good potential to host significant gold mineralization.

## 2 INTRODUCTION AND TERMS OF REFERENCE

Scott Wilson RPA completed an independent Technical Report on the Limón gold mine in northern Nicaragua in 2005. The purpose of this report was to provide an independent assessment of the Mineral Resources and Mineral Reserves of the Talavera and Santa Pancha deposits, and to review Central Sun's Life of Mine Plan. The Technical Report, dated February 24, 2005, was prepared in accordance with NI 43-101 Standards of Disclosure for Mineral Projects and is filed on Sedar. As part of Scott Wilson RPA's review, they visited the property in November 2004, and January 2005.

The present Technical Report, which is an update of the previous report prepared by Scott Wilson RPA, was prepared by Dr. William N. Pearson, P.Geo., Executive Vice President, Exploration for Central Sun and Mr. Graham Speirs, P.Eng., Chief Operating Officer for Central Sun. Dr. Pearson and Mr. Speirs are Qualified Persons as defined under National Instrument 43-101. The updated mineral resource and mineral reserve estimates were prepared by Limon mine geology and engineering staff under the direction of Dr. Pearson and Mr. Speirs. Dr. Pearson visited the site in October and November 2007 and February 2008. He has supervised all aspects of exploration on the Limon property for the Company since October 1, 2007 and regularly reviews results of the underground operations particularly as mining activity impacts on outlining additional resources and reserves. Graham Speirs has been based in Managua since October 2006 and has visited the mine site numerous times in the course of overseeing all aspects of mine production.

Central Sun is a reporting issuer listed at the Toronto Stock Exchange (TSX). The company, through its 95% interest in Triton Minera S.A. (TMSA), owns and operates the Mina El Limón – within the Limón mineral concession - and holds 10 exploration-stage mineral concessions covering 35,170 ha in northwestern Nicaragua. TMSA, through its

40% interest in Inversiones La India, S.A., holds a 40% interest in the Espinito-San Pablo mineral concession enclosed by the La India concession. The Espinito-Mendoza property, which is contiguous and to the east of the Espinito=San Pablo concession was acquired by Central Sun in September 2006 for \$2.4 million payable over 42 months. The Espinito-Mendoza and Espinito-San Pablo properties collectively form the Mestiza project.

TMSA's 10 mineral concessions have 25-year terms, expiring in 2027. The concessions, which cover a total area of approximately 35,170 ha, comprise:

- A producing gold mine – Limón Mine, which includes the Talavera underground mine, the Santa Pancha project, some small open pits, an 1,100 tpd mill, a tailings impoundment area, and related infrastructure. The Limón mine property consists of the 12,000 ha Mina El Limón mineral concession.

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- The formerly producing La India Mine and concessions. These consist of three concessions, located some 70 km east by road of the Mina El Limón mineral concession.
- The Mestiza property (Espinito-Mendoza and Espinito-San Pablo concessions) covering 550 ha which are included within the La India concession.
- A number of other exploration concessions at early stages of exploration. These consist of ten mineral concessions and are located to the north of the Limón Mine as well as between El Limón and La India districts.

This report discusses the Mina El Limón mineral concession and its contained Mineral Reserves and Mineral Resources and the Mestiza Project which contains inferred mineral resources located 70km by road east of Limon. The Limon concession hosts numerous low-sulphidation quartz-adularia veins with gold and silver mineralization. The veins vary in thickness from less than one metre to five metres, extend more than one kilometre along strike, and may extend up to 300 metres at depth. The Mestiza project was acquired by Central Sun in 2006.

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This present report is prepared in accordance with the requirements of National Instrument 43-101 (NI 43-101) of the Ontario Securities Commission (OSC) and the Canadian Securities Administrators (CSA).

In preparation of this report, the authors reviewed technical documents and reports on the Limón Mine as well as regularly reviewing on-going work on exploration and production at the mine in the normal course of their management responsibilities.

In preparing this updated technical report, Central Sun has relied on technical data contained in reports of past exploration, mining and development work and title documents in addition to current information generated by Central Sun. Central Sun maintains a property maintenance system in keeping with industry standards.

The key technical documents reviewed for this report are:

- The report entitled “Technical Report, Limón Mine, Nicaragua prepared for Glencairn Gold Corporation by Scott Wilson Roscoe Postle & Associates Inc. dated February 24, 2005.
- The report entitled “Technical Report on the Nicaragua Properties of Black Hawk Mining Inc.” by Roscoe Postle & Associates Ltd., dated August 12, 2003.
- The report entitled “Technical Report of the Santa Pancha Resource Estimate for the Limón Mineral Concession of Nicaragua” by Michael B. Gareau of Glencairn Gold Inc., dated November 24, 2004.
- Glencairn Gold Inc.’s estimate of the Limón Mineral Reserves and Mineral Resources reported as of December 31, 2004, and the Life of Mine Plan.

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Units of measurement used in this report conform to the SI (metric) system. All currency in this report is US dollars (US\$) unless otherwise noted.

List of Abbreviations:



### 3 DISCLAIMER

This report has been prepared by Central Sun Mining Inc. (Central Sun). The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to Central Sun at the time of preparation of this report,
- Assumptions, conditions, and qualifications as set forth in this report, and,
- Data, reports, and other information prepared by Central Sun and its subsidiary, Triton Minera S.A. (TMSA).

Central Sun believes that the information contained herein is reliable under the conditions and subject to the limitations set forth herein. This report is based in part on reports and information prepared by previous consultants and employees of predecessor companies that have worked on the property. Central Sun has reviewed the information in these reports and considers this information to be reliable. While Central Sun has taken all reasonable care in producing this report, it may still contain inaccuracies, omissions, or typographical errors.

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### 4 PROPERTY DESCRIPTION AND LOCATION

The Limón Mine is located approximately 100 km northwest of Managua, the capital of Nicaragua. The mine is adjacent to several small villages. Central Sun holds interests in 10 mineral concessions in the area, covering a total of approximately 35,170 (Table 41 and Figures 4-1 and 4-2).

#### LAND TENURE

The original purchase of the concessions was made by Minera de Occidente S.A., subsequently renamed Triton Minera S. A. (TMSA). TMSA is owned by Triton Mining Corporation (47.5%) and Triton Mining (USA) LLC (47.5%), both subsidiaries of Central Sun (acquired as a result of a merger with Black Hawk Mining Inc., in October 2003), and by Inversiones Mineras S. A. (5%), a holding company representing the unionized mine workers of Nicaragua. Production from the Limón Mine is subject to the following royalties:

Central Sun holds interests in 10 mineral concessions in northwestern Nicaragua including the Limon Mine concession. The Mineral Concessions are located approximately 100 km northwest of Managua, the capital of Nicaragua. Production from the Limón Mine and concessions with a 10km radius of the mine are subject to the following royalties:

- A 3% net smelter royalty (NSR) to Royal Gold, Inc. ("Royal Gold), on the mineral production from the Limón Mine and any other production revenue in the future, obtained from the Limón Mine Concession and the other mineral concessions, including La India, that were formerly part of the original El Limón-La India exploration concession. The Royal Gold royalty does not apply to the Espinito-San Pablo and Espinito-Mendoza concessions comprising the Mestiza project nor does it apply to concessions outside the 10km radius of the Limon Mill.

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- A royalty equal to 5% of the net profit of Triton Mining (USA) LLC (Triton USA) is due to Internacional de Comercial S.A. (IDC). Triton USA is a subsidiary of Central Sun which holds a 47.5% interest in the Limón Mine.

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- The Espinito-Mendoza mineral concession is subject to a 1.5% NSR payable to the vendor.
- All concessions are subject to a 3% NSR on gold production, payable to the Government of Nicaragua.

The Santa Pancha and Talavera gold deposits are located within the 12,000 ha Mina El Limón mineral concession that has a term of 25 years, expiring in 2027. The property straddles the boundary of the municipalities of Larreynaga and Telica of the Department of León and the municipalities of Chinandega and Villa Nueva of the Department of Chinandega.

TMSA is the direct owner of the surface rights that underlie all of its current mining, milling, tailings and related facilities and infrastructure at the Limón Mine. When necessary, access agreements are negotiated and signed with the individual surface owners for other areas within the concession not owned by the Company. The Permits required for current mining and milling operations, and for exploration activities are in place.

The original purchase of the mineral concessions, except for Espinito-Mendoza in the Mestiza project, was made by Minera de Occidente S.A., (subsequently renamed TMSA). TMSA is owned 47.5% by Triton Mining Corporation (Triton), 47.5% by Triton USA, and 5% by Inversiones Mineras S.A. (IMISA), a holding company representing the unionized mine workers of Nicaragua. Central Sun's 95% interest in the concessions is from its 100% ownership of Triton and Triton USA acquired as a result of a merger with Black Hawk Mining Inc. in October 2003. The Espinito-Mendoza mineral concession was acquired by Central Sun in September 2006.

- A 3% net smelter royalty (NSR) to Royal Gold, Inc. ("Royal Gold"), on the mineral production from the Limón Mine and any other production revenue in the future, obtained from the Limón Mine Concession and the other mineral concessions, including La India, that were formerly part of the original El Limón-La India exploration concession. The royalty was acquired by Repadre Capital

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Corporation (Repadre) in 1994, and transferred to IAMGOLD upon their 2003 merger with Repadre which was subsequently became Royal Gold. The Royal Gold royalty does not apply to the Espinito-San Pablo and the Soledad de la Cruz concessions.

- A royalty equal to 5% of the net profit of Triton Mining (USA) LLC (Triton USA) is due to Internacional de Comercial S.A. (IDC). Triton USA is a subsidiary of Central Sun which holds a 47.5% interest in the Limón Mine.
- A 3% NSR on gold production, payable to the Government of Nicaragua.

### MINERAL CONCESSIONS



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From 1994 until the beginning of 2002, the Limón Mine property and the other properties were held as exploitation concessions under the previous mining code. The Nicaraguan government enacted a new mining code and regulations (Mining Code) in 2001. All holdings under the new Mining Code are classified as mineral concessions. TMSA applied for and was granted, under the Mining Code, the conversion of the old exploitation concessions to new mineral concessions in January 2002. The new concessions, except for the Mina El Limón concession, were configured somewhat differently than the old concessions and some of the exploration area was reduced. The reconfigured concessions are shown in Table 4-1 and Figure 4-2.

Under the new 2001 Mining Code and regulations, the new mineral concessions have a term of 25 years. Each concession is subject to an agreement (Acuerdo Ministerial) issued by the government of Nicaragua. Administration of the concessions is more flexible with the new Mining Code that allows for amalgamation, division, and reduction of the concessions. Mineral concessions are subject annually to surface taxes payable as two advanced instalments in January and July of each year, starting from the granting dates in 2002, and adjusted for any reductions in concession area. The tax rates are as follows:

- Year 1: \$0.25 per hectare
- Year 2: \$0.75 per hectare
- Years 3 and 4: \$1.50 per hectare
- Years 5 and 6: \$3.00 per hectare

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- Years 7 and 8: \$4.00 per hectare
- Years 9 and 10: \$8.00 per hectare
- Years 11 to 25: \$12.00 per hectare

Under the Mining Code, all mineral concessions include the rights to explore, develop, mine, extract, export, and sell the mineral commodities found and produced from the concession. TMSA is required to submit annual reports of its activities and production statistics to the government, as well as quarterly reports on its exploration activities. TMSA is in compliance with all tax payments and report filings.

**TABLE 4-1 MINERAL CONCESSIONS LIST**

**Central Sun Gold – Limón Mine**

<b>Concession Name</b>	<b>Certified and Applicable Ministerial Agreement</b>	<b>Effective Tax Date</b>	<b>Area (ha)</b>	<b>TMSA Equity (%)</b>	<b>Tax Year</b>
Mina El Limón	185-RN-MC/2002	14-Apr-02	12,000	100	5
Espinito – San Pablo	186-RN-MC/2002	14-Apr-02	350	40	5
Espinoto-Mendoza	650-RN-MC/2006	15-Nov-06	200	100	1
San Juan de Limay	290-RN-MC/2003	14-Jan-02	5,100	100	5
San Juan de Limay - La Grecia	291-RN-MC/2003	14-Jan-02	1,700	100	5
San Juan de Limay - Paso Real	292-RN-MC/2003	16-Jan-02	200	100	5

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La India	293-RN-MC/2003	14-Jan-02	6,500	100	5
Villa Nueva 1	298-RN-MC/2003	14-Jan-02	1,920	100	5
Villa Nueva 2	299-RN-MC/2003	16-Jan-02	1,200	100	5
Bonete Limón	300-RN-MC/2003	16-Jan-02	6,000	100	5
<b>Total</b>			<b>35,170</b>		

Note: Tax year as of February 2008.









#### **MINA EL LIMÓN MINERAL CONCESSION**

The Talavera and Santa Pancha gold deposits are located within the 12,000 ha Mina El Limón mineral concession that has a term of 25 years, expiring in 2027 (Table 4-1 and Figure 4-3). The property straddles the boundary of the municipalities of Larreynaga and Telica of the Department of León and the municipalities of Chinandega and Villa Nueva of the Department of Chinandega (Gareau, 2004).

TMSA owns, or controls through lease arrangements, the surface rights needed for current mining, milling, tailings and related facilities, and infrastructure at the Limón Mine (Figure 4-3). When necessary, access agreements are negotiated and signed with the individual surface owners for other areas within the concession not owned by the Company. All of the permits required for mining and milling operations, and for exploration activities are in place.

TMSA is not responsible for any type of environmental damage caused prior to the time at which it took possession of the Limón Mine in 1994, but is required to implement the necessary changes to reduce any existing environmental problems. According to the existing Central Bank regulations, TMSA may freely export and sell the gold produced and the proceeds may be repatriated without restriction.

#### **MESTIZA PROJECT**

The Mestiza project is comprised of the Espinito-San Pablo and Espinito-Mendoza concessions located about 70 kilometres by road east of Limon. These concessions are surrounded by the much larger La India concession. The Espinito-San Pablo concession was acquired in the original purchase agreement with Mineral de Occidente S.A. (now TMSA). The Espinito-Mendoza concession was acquired by Central Sun from a private vendor in September 2006 for \$2.4 million to be paid over 42 months from the date of the agreement.





## **5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

Access to the Limón Mine area is by paved road (approximately 125 km from Managua) and approximately 15 km by all-season gravel road to the Village of El Limón. The total road distance from Managua is 140 km. The Talavera underground mine is situated approximately four kilometres west of the Village of El Limón, and the Santa Pancha deposit is situated approximately five kilometres east of the village. Both areas are accessible by gravel roads from the Limón Mine site.

The Mestiza Project and La India district are approximately 140 kilometres northwest of Managua and 45 kilometres in a direct line east of the Limon mill. The village of La Cruz de La India, located at the south end of the India concession, is on a paved highway that traverses the southern limits of the district. The road distance to the Limon mill is approximately 70 kilometres.

The climate in northwestern Nicaragua is tropical with a hot, wet season from May through November and hotter, dry season from December through April. The mean annual temperature is 27° C with an average annual precipitation of two metres. The Limón Mine operates year round and is not normally affected by the typical seasonal climatic variations.

Nicaragua in general has a moderately developed infrastructure of communications, roads, airports, and seaports and there is a fairly high literacy rate among the population with an ample supply of skilled and unskilled labour (Gareau, 2004).

The city of León, the second largest city in Nicaragua, is situated some 45 km southwest of the Limón Mine, and the city of Esteli is situated approximately 100 km (by road) northeast from the mine. Both of them are agro-industrial cities. Numerous towns

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and villages are located throughout the area and are used as a local base for exploration activities on the various concessions. Infrastructure support and availability of trained miners proximal to the various concessions is limited, except in the areas immediately adjacent to the Limón mining operations.

The mineral concessions are situated along the eastern margin of the Nicaragua Depression. The westernmost holdings, including the Limón mining district, lie within the relatively flat lowlands of the depression itself and the eastern holdings, including the La India gold district, are located in the moderate to steep relief of the mountainous Nicaraguan Highlands (Gareau, 2004).

Electrical power for the Limón operations is obtained from the national grid system with backup generators at the mine site. Water, both industrial and potable, is drawn from local sources.

The three villages of Limón, Santa Pancha and Minvah, all located within the mine concession, have a population of approximately 10,000 people including many of the mine employees. Transportation to the Limón Mine is by private vehicles and public and company buses. At Mestiza, the local population is estimated at 7,000 inhabitants with 3,000 of these living in La Cruz de La India. A power line follows the highway and supplies electricity to the village and homes located along the way. Water for La Cruz de La India is supplied from a well, located one kilometre northeast of the village.

The Mina El Limón mineral concession is in an area of low to moderate relief that offers flat areas for mine infrastructure. Elevations of the mine property range from 40 m to 300 m above mean sea level. Outcrops are not common in the area but do occur along road cuts. Overburden thickness ranges from one metre to three metres with an average thickness of approximately 1.5 m. Overburden consists of unconsolidated

conglomerate with pebbles and boulders of volcanic rocks in a matrix of sand and minor clay. A layer of recent volcanic ash may also comprise part of the overburden.

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The area is covered with sparse vegetation consisting predominantly of grasslands and scrub brush with widely spaced trees. The land around the Limón Mine is used for agriculture. The villages in the area use the land to raise cattle, but it is not used to grow crops. Wildlife in the area includes various species of insects, lizards, snakes, armadillos, birds, and small mammals.

At Mestiza, elevations range from 350 metres to 800 metres above sea level with vegetation consisting of grass, brush and sparse tree cover.

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## 6 HISTORY

### LIMÓN MINE AREA

Historic mining and prospecting activities in the Limón district of northwestern Nicaragua, which hosts the Limón Mine and other gold deposits, date back to the late 1850s. Modern mining and exploration started in 1918 and, since then, approximately 2.8 million ounces of gold and an unrecorded quantity of silver (as a by-product) have been produced from the mine concession area. The present mining operations have been essentially continuous since start-up in 1941.

From 1941 to 1979, just over 2.0 million ounces were recovered from 4.1 million tonnes of ore while the Limón Mine was under the control of Noranda Mines. Production rates in this period started at 200 tons per day and increased to 345 tons per day. The following is a brief account of mining and exploration in the area:

- In 1979 the Sandinistas nationalized the Limón Mine. Production under national control was reported as 280,000 oz Au from an estimated 1.9 million tonnes of ore. The Limón Mine remained under national control until privatization in March 1994, when Triton acquired control. Triton increased production to 1,000 tonnes per day in 1995.
- In May 1998 Triton was acquired by Black Hawk Mining Inc. (Black Hawk), in a share-for-share exchange resulting in Black Hawk's 95% interest in the Limón Mine. Production from March 1994 to the end of 2002 totals 455,000 ounces of gold from 2.6 million tonnes of ore.
- In October 2003, Black Hawk merged with Glencairn Gold Corporation (now Central Sun), in a share-for-share exchange. Production for 2003 and 2004 totaled 92,000 ounces of gold from 625,000 tonnes of ore.

Mine production has come from three areas on the Mina El Limón mineral concession:

- The Limón vein located adjacent to the mill in the central part of the concession
- The Santa Pancha vein system located 5 km to the east of the Limón mill

- The Talavera mine located 3.5 km west of the Limón mill

Currently, mining is active in the Santa Pancha and Talavera areas. The mining and processing operations are described in more detail in later sections of this report.

The Limón gold district has a long history of exploration by the various operators, including the completion of 389,000 m of diamond drilling in 3,369 drill holes to the end of 2007. The most recent drilling is described in the Exploration section.

The Tatascame area, a 1,200 ha subset of La India concession, currently constitutes a joint venture with Gold-Ore Resources Ltd. (Gold-Ore). Gold-Ore has an option to earn a 51% interest in these concessions by issuing 100,000 shares to Central Sun and spending US\$400,000 on exploration over two years (Gold-Ore Press Release, June 24, 2004). Recent exploration results indicate medium to high-grade gold samples, ranging from 4.54 g Au/t to 119.4 g Au/t, over intervals ranging from 1.6 m to 2.8 m, have been obtained in sampling along 50 m of rehabilitated underground workings on Crisolitas Vein. Gold-Ore plans to test this area by diamond drilling in 2005 (Gold-Ore Press Release, January 6, 2005).

#### **MESTIZA-LA INDIA AREA**

The La India gold vein was discovered in the 1930s. Modern gold production started in 1938 and lasted 17 years until 1955 recovering approximately 576,000 ounces of gold from 1.7 million tons at an average grade of 0.39 ounces of gold per ton (13.4 g Au/t) primarily from La India and America-Constancia veins that were mined to a depth of 200 metres.

An historical mineral "indicated" resource of 775,000 tonnes at 8.2 g Au/t containing 205,300 ounces of gold and an historical "inferred" mineral resource of 775,000 tonnes at 9.3 g Au/t containing 231,800 ounces of gold has been reported for the La India concession. This estimate was in part done by TVX Gold Inc. in 1997 for selected veins; the mineral resources for the remaining veins were derived from a joint 1990 Russian-

Nicaraguan study. This resource estimate is not NI 43-101 compliant and should not be relied upon.

There has been no prior production other than locally by guirisero (artisanal) miners in the area of the Mestiza Project.

#### **OTHER MINERAL CONCESSIONS**

The only records of commercial production within the other concessions in the Limón area are from mining operations at the La India Mine, Mina de Agua and Rincon de Garcia. The latter two ran as an extension of Noranda's Limón operations. The ore from these mines was trucked 22 km south for processing in the Limón mill. This area was initially identified in the 1860s, and rediscovered in 1967. At La India, some 575,000 ounces of gold are reported to have been produced from 1938 to 1955 (Gareau, 2004).

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Gold production by guirisero (artisanal miners) has been carried out for decades in various areas throughout northwestern Nicaragua.

Noranda conducted gold exploration over various parts of the present concessions during the 1960s and 1970s that included mapping, prospecting, geochemistry, and locally, trenching and drilling. In the 1980s, the Nicaraguan Government undertook site-specific exploration activity, such as the work at La India, Mina de Agua and Rincon de Garcia, through Corporación Nicaraguense de Minas (INMINE), with the assistance of Soviet technical advisors.

Triton was active from 1994 through to 1997 and, more recently, Newmont Mining Corporation (Newmont) from 2000 to 2002, under a letter of intent with Black Hawk. Newmont's program was focussed primarily on bulk mineable gold targets that included a combination of reconnaissance work and prospect specific geophysics and drilling within the Bonete Concession, adjacent to and northeast of the Limón Concession. The

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drilling did not find a source for the widespread gold-bearing quartz boulders identified at Bonete.

The three San Juan de Limay concessions (total, 7,700 ha) previously constituted a joint venture with Grande Portage Resources Ltd. (Grande Portage). Grande Portage had an option to earn a 51% interest in these concessions by paying Glencairn (now Central Sun) a sum of US\$200,000 and spending US\$800,000 on exploration within three years of the agreement (Grande Portage Press Release, October 27, 2004). Exploration work under the terms of the agreement however was not carried out and the option agreement was terminated.

The Tatascame area, a 1,200 ha subset of La India concession, was the subject of a joint venture with Gold-Ore Resources Ltd. (Gold-Ore). Gold-Ore has an option to earn a 51% interest in these concessions by issuing 100,000 shares to Central Sun and spending US\$400,000 on exploration over two years (Gold-Ore Press Release, June 24, 2004). A 10 hole, 1,063m diamond drill program was completed in 2005 to test the extension of the Cristalitos structure (Gold-Ore press release May 26, 2005). The most significant intersection was reported to be in the furthest west drill hole T-09 that cut 9.43 g Au/t over 5.3 metres core length, including 13.01 Au g/t over 3.6 metres. In addition, it was reported that T-10, located 50 metres east and drilled 50 metres vertically deeper than T-09, intersected 5.8 Au g/t over two metres within a broader zone of gold mineralization grading 3.1 g/t gold over 4.5 metres. These intersections were interpreted to indicate that the gold mineralization is open toward the west and is open for expansion to depth. No further work was carried out on the property by Gold-Ore and the option was allowed to lapse.

Table 6-1 provides a summary of the most noteworthy historical mining and exploration activities associated with the current concessions outside of the Limón Mine and Mestiza-La India areas.

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### TABLE 6-1 HISTORICAL PRODUCTION AND EXPLORATION ON OTHER

#### CONCESSION S

#### Central Sun Gold – Limón Mine

Year	Company	Locale	Concession	Comments
<b>Commerical mining:</b>				
1976-1988	Noranda	Rincon de Garcia	Villanueva 2	300,000 t at 11.0 g Au/t historical resource
1972-1976	Noranda	Mina de Agua	Villanueva 2	105,000 t at 14.7 g Au/t historical resource
1938-1355	Noranda	La India	La India	575,000 oz Au production, from 1.7 million tons at 0.39 oz Au/ton (13.4 g Au/t)
1870s		Mina de Agua	Villanueva 2	Limited production
<b>Guiriseros Activity:</b>				
1970-2003	Guiriseros	Cerro Quemado	Villanueva 1	Surface and underground
1920s	Guiriseros	La Grecia	San Juan de Limay-La Grecia	Underground workings
Recent	Guiriseros	Various	San Juan de Limay	Various surface workings
<b>Exploration Activity:</b>				
2000-2002	Newmont	Bonete	Bonete-Limón	Sampling, pits, geophysics, drilling
2000-2002	Newmont	Regional	All	Stream and rock sampling, prospecting
1996-1997	Triton	Rincon de Garcia Mina de Agua	Villanueva 2	Geochemistry, trenching
1996-1997	TVX	La India	La India	Trenching, drilling & underground sampling
1994-1995	Triton	Cerro Colorado	San Juan de Limay	Trench sampling
1994-1997	Triton	Regional	Various	Stream and rock sampling, prospecting
1994-1995	Triton	Cerro Quemado	Villanueva 1	Mapping, geochemistry, trenching
1983-1991	INMINE	La India	La India	Mapping, geochemistry, geophysics, trenching & drilling
1982-1986	INMINE	Mina de Agua	Villanueva 2	Mapping, geochemistry, geophysics, drilling
1970s	Noranda	Cerro Quemado	Villanueva 1	Drilling
1960-70s	Noranda	Regional	Various	Geochemistry, prospecting

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## 7 GEOLOGICAL SETTING

### REGIONAL GEOLOGY

The geomorphology of Nicaragua consists of three major terranes. A northwest striking graben, 30 km to 40 km wide, parallels the Pacific coastline along the western margin of the country and is known as the Nicaragua Depression (Figure 7-1). This graben hosts up to 16 active or recently active volcanoes and is the site of thick Quaternary to Recent volcanic deposits. To the southwest, between the graben and the Pacific coast, a 10 km to 20 km wide belt of Tertiary, Mesozoic and Palaeozoic rocks are preserved. To the northeast of the graben, Tertiary, Mesozoic

and Palaeozoic “basement” is overlain by a major unit of Tertiary volcanic rocks, the Coyol (Miocene-Pliocene) and Matagalpa (Oligocene-Miocene) Groups. The Coyol Group hosts the known vein gold deposits in Nicaragua, including those at El Limón and La India (Gareau, 2004).

## LOCAL GEOLOGY

The Limón Mine is located along the eastern edge of the Nicaragua Depression within an area of low hills that contrast with the level plain of the graben floor. Approximately 50% of the area in the general vicinity of the mine is covered by a thin layer of Quaternary to Recent deposits of volcanic ash and alluvium. The Mina El Limón mineral concession is underlain predominantly by volcanic strata that are correlated with the Miocene-Pliocene Coyol Group that is present over extensive areas of western Nicaragua (Gareau, 2004).

Coyol Group rocks exposed on the Mina El Limón mineral concession range from intermediate to felsic volcanic and volcanoclastic rocks that are cut by minor intermediate to felsic hypabyssal intrusive bodies. Several generations of mapping in Limón district have roughly divided the Coyol Group rocks into local units that, from lowest to highest in stratigraphic succession, are as follows:

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- Interstratified, massive porphyry flows and coarse volcanoclastic rocks of intermediate composition.
- Intermediate to felsic flows, domes and minor tuffs and epiclastic rocks.
- Weakly stratified, intermediate to felsic tuffs and epiclastic rocks.
- Massive to flow-banded, intermediate porphyritic flows.

The above units appear to be conformable and generally strike east to northeast and dip gently south with local variability common. Some secondary structures also have an easterly trend.

A relatively flat-lying and younger assemblage of volcanic rocks unconformably overlies the volcanic and volcanoclastic rocks described above. This younger unit occurs in the southern half of the concession and consists mainly of breccias and conglomerates with clasts of the underlying units. It is uncertain if this younger sequence is part of the Coyol Group (Figure 7-2).

Deformation is dominated by normal faulting with little evidence for significant internal deformation of intervening fault blocks. The faults commonly trend northeast with moderate to steep dips to the northwest as well as southeast. A second group of faults strikes north to west-northwest, dipping steeply to the east and/or to northeast. Apparent displacements on these faults are tens to several hundreds of metres.

The India district, including the Mestiza Project area, is characterized by eroded stratovolcano vent areas consisting of volcanic rocks of calc-alkaline affinity vary in composition from andesite to rhyolite. Andesitic flows and tuff breccias are predominant and can be divided into a lower, regionally propylitized andesite package and an upper, unaltered andesite package. The whole suite is considered to be part of the Lower Coyol Group of Miocene-Pliocene age.

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**TECTONIC SETTING**

The Limón mine and Mestiza projects are located within an area of volcanism, which is part of the northwest trending Nicaragua Depression. This Depression represents a graben block covering an area of approximately 10,000 km<sup>2</sup> underlain mostly by Tertiary to Recent volcanic rocks. Interpretation of field relationships, such as lithologic contacts and structural features, indicates that gold bearing quartz veins are genetically related to the west, north and northeast trending faults with similar orientation, i.e. the latter have acted as conduits for mineralizing solutions along complementary structures (Scott Wilson 2005).

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## 8 DEPOSIT TYPES

Gold mineralization in the Limón and La India districts is typical of low-sulphidation, quartz-adularia, epithermal systems. These deposits were formed at relatively shallow depth, typically from just below the surface to a little over one kilometre deep, from reduced, neutral-pH hydrothermal fluids with temperatures from less than 150° C to 300° C. The volcano-plutonic arc of western Nicaragua is a common tectonic setting for these deposits. The general characteristics and model for this deposit type is reasonably well described in the literature, e.g. J.W. Hedenquist et al (2000) and the geological model of mineralization is represented in Figure 8-1. From bottom to top, the hydrothermal alteration and the associated gold and/or sulphide mineralization along the mineralized structures is described by Hedenquist (2004 and 2002) and Gareau (2005), as follows:

- Barren to low-grade (<1 g Au/t) structurally (fault) controlled and constrained quartz vein, and/or hydrothermal breccias and quartz stockworks, often with late-stage coarse grained calcite veining. No base metal zone is evident at Limón. Wall rock alteration is normally minimal.
- Ore grade gold mineralization hosted in quartz veins and multi-phased quartz breccia veins (+/- adularia, +/- pyrite less than 1%). Wall rock alteration is absent to restricted at depth, but increasing in width and extent near the tops of veins, in part dependent on wall rock permeability.
- Clay alteration of variable extent and intensity, depending on wall rock permeability and fracturing, occurs in a broader zone at the tops and above the mineralized veins. The clay zone is zoned outward and upward from higher temperature mixed layer clay minerals (smectites/illite or smectites/chlorite) to lower temperature smectites that is often accompanied by dickite or kaolinite, and disseminated to microvein pyrite up to several percent. Occasional silicified horizons controlled by permeable lithologies have been observed in this zone at Limón.
- A discontinuous to continuous, laterally extensive “blanket” of low temperature quartz (opal and/or chalcedony) conforms to and occurs at the interface as well as below the paleo-water table (below the vadose zone). The quartz often includes fine-grained disseminated pyrite. Clay alteration, principally kaolinite, is more common above the veins and decreases in content, or is absent, laterally away from the veins.

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- A near-surface zone of clay mineral alteration (kaolinite with or without alunite and devoid of pyrite and other sulphide minerals) is developed from acid-leaching (steam-heated alteration) in the vadose zone above the paleo-water table. To date, no evidence of sinter deposits has been observed at Limón.

Erosion over most of the Limón Property has removed tens to hundreds of metres of the upper parts of the epithermal system. In the southern portion of the property the epithermal system at Limón has been preserved from erosion to the level of, and in places just above, the paleo-water table. Weathering has imprinted supergene alteration on top of the described model (Gareau, 2005).

To date this is the only style of gold mineralization that has been found and reported in the Tertiary rocks of northwestern Nicaragua. Silver is generally a commercially minor by-product of the gold mineralization. All gold production has been from vein and vein-breccia deposits hosted in linear structural features; only minor occurrences of disseminated or stockwork type epithermal precious metal mineralization have been reported in northwestern Nicaragua. Mineral showings or deposits for other metals are not known in the area (Gareau, 2004).

In the Mestiza-La India area, it appears that a complete section of an epithermal system is exposed from the intrusive dome at La India to high level epithermal quartz veins at Mestiza (e.g. Tatiana vein). The horizontal scale of the system is probably from 5 to 10km whereas the vertical scale likely ranges from 500 to 900 metres. Work by Central Sun suggests that the vertical scale of the epithermal systems at Limon are likely of a similar order of magnitude to that indicated at Mestiza-La India.

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## 9 MINERALIZATION

Gold mineralization in the Limón district is structurally controlled and forms veins that occupy pre-existing fault structures and extensional openings formed during mineralization. The veins are quartz dominant with lesser and variable quantities of calcite, and minor adularia. Pyrite is the predominant sulphide, but with a content of less than one percent. Trace amounts of chalcopyrite, sphalerite, arsenopyrite, altaite, gold tellurides and native gold are also reported to occur. Gold is present in both the banded quartz and silicified breccias that form the veins. Gold is very fine-grained within the quartz vein, and is relatively uniformly distributed throughout the higher grade parts of the veins; only once has visible gold been reported on the Limón mine concession.

The productive vein systems are approximately one to two kilometres long, with vein widths from less than one metre up to 25 m. Individual ore-shoots within the veins range from 60 m to 450 m long horizontally, and from 40 m to 290 m vertically. Strike orientations vary from north-northwest through northeast to east-west, and dips are from 40 degrees to near vertical. All economic gold mineralization discovered and mined to date lies within 400 m of surface. The productive and prospective elevations within the vein systems vary across the district. Post-mineral faults locally disrupt and offset the vein.

The gold-bearing veins and attendant alteration are hosted within volcanic flows, volcanoclastic strata and possibly hypabyssal intrusions of the lowest volcanic unit. The other three gently dipping volcanic units are variously altered by the same hydrothermal fluids that deposited the gold veins, locally quartz stringers with low gold values are found in the massive porphyritic andesite flows that immediately underlie the unconformity contact with the youngest flat-lying unit. The youngest volcanic unit appears to post-date gold mineralization because no veins or vein-related alteration has, as yet, been identified within this unit.

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The most extensive areas of argillic and quartz alteration form a corridor that crosses the Mina El Limón mineral concession along a roughly west to east trend, this alteration corridor is mostly located to the south of the Talavera, Limón and Santa Pancha-Panteón vein systems and is partially capped by the young, flat-lying volcanoclastic unit. Much of this alteration is part of the upper, near-paleosurface component of the low-sulphidation epithermal system that formed the productive gold veins. Preliminary mapping indicates the presence of both distal and proximal alteration facies related to the epithermal system. The identification of the proximal alteration facies, combined with the presence of auriferous quartz vein boulders and silicified, steeply inclined structures, provide exploration guides for the discovery of new gold-bearing vein systems, and increase the exploration potential along this corridor.

A schematic section showing the spatial distribution of the gold mineralization in the Limón area as described by Hedenquist (2004 and 2002) is shown in Figure 9-1, and the local geology of the Santa Pancha vein system is shown in Figure 9-2.

There have been no detailed mineralogical studies carried out on the Limón ore however Central Sun is planning to carry out such studies in 2008. Metallurgical studies and operating experience indicate that the gold is very fine, with grain size in the range from 5  $\mu$  to 50  $\mu$ . Only one occurrence (in December 2004) of visible gold has been recorded during decades of operation at the site.

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## 10 EXPLORATION

Prior to 1995, prospecting was the prominent exploration tool in the Limón area. Consequently, all but one exploration discovery of economic gold mineralization was made from trenching and drilling of outcropping quartz veins. Since there is no significant amount of sulphides or intense clay alteration directly associated with the gold mineralization, there is no geophysical response to the mineralized zones. RPA understands that a number of conventional geophysical techniques (IP, EM, and magnetometer) have been applied in the past, with little success.

### RECENT EXPLORATION

Since 1996, exploration work at Limón has been directed at the discovery of hidden, subparallel veins close to existing gold mineralization. Targets have included subparallel veins and extensions of known veins in the Talavera area; extensions of previously mined veins at the Limón open pit and more recently extensions of the Santa Pancha structure.

In 2004, Central Sun carried out an exploration program which consists primarily of diamond drilling that was focussed on resource definition around Talavera, at the south end of the Limón vein, and on finding the source for auriferous quartz boulders at Santa Rosa-Uval. In addition, some exploration drilling had been done to test a number of the exploration targets within the Limón concession. In total, some 38,300 m of diamond drilling was completed.

The highlight of exploration activities in 2004 was the addition of some 1,064,000 tonnes of Mineral Reserves at an average grade of 4.94 g Au/t, at Santa Pancha (Scott Wilson RPA 2005).

Only limited exploration was carried out in 2005 and 2006.

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In 2007, Central Sun completed an underground in-fill diamond drilling program at Talavera that totaled 4,830 metres in 41 holes. Holes were collared at 25 m spacing and intersected targets at intervals of less than 60 m apart vertically to a depth of 30 m. A diamond drilling program of 6 holes totaling 783 m also tested the north-south extension of the El Limon zone located about 2.0 km northeast of Talavera.

In 2008, Central Sun has commenced a major exploration to test targets in the Santa Pancha and Talavera areas as well as carry out more exploration on targets outside these areas. Approximately 10,000 metres of diamond drilling is planned, in addition to IP and geological surveys. An extensive compilation of all existing data is in progress as much of this data has not been used for many years.

The principal exploration conducted in the Mestiza area consisted of trenching and drilling from 1983 to 1991 by the INMINE with the assistance of Soviet technical advisors. In 2004, the Company completed a 1900 m drill program at Soledad de la Cruz and on projected extensions of the La India vein; however no significant gold mineralization was encountered in either area. No significant work was carried out in 2005 and 2006. In 2007 Central carried out a program of diamond drilling of 3 holes totalling 619m on the Tatiana vein however this program was terminated due to financial constraints.

In January 2008, Central Sun initiated a comprehensive exploration program at Mestiza including data compilation, line cutting, geological mapping and induced polarization surveys. Diamond drilling of 2,500m is planned to test targets outlined in this program.

Central Sun has an exploration team of Nicaraguan geologists, technicians, and support personnel located at the Limón mine and at Mestiza. This team is directly responsible for the exploration programs within the mineral concessions. Diamond drilling services for the current exploration program is provided by external drilling

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contactors. Outside services, particularly for geophysical surveys and certain geological specialties, are contracted to independent consultants as required.

### **EXPLORATION POTENTIAL**

Extensive areas of high-level argillic and silica alteration, along with the presence of unexplained, high-grade, auriferous quartz boulders in the southern portion of the Limón mineral concession indicates exploration potential for hidden vein mineralization. Drill hole intercepts of quartz vein gold mineralization associated with this alteration, such as at Babilonia Sur, along the Pozo Bono Fault and the Victoria Zone have been previously identified for follow-up exploration drilling (Gareau, 2004).

A number of conceptual exploration ideas, focussed on the southern portion of the Mina El Limón mine concession, have been suggested by Central Sun for field investigation. These are discussed above under the separate section of Deposit Types.

The Limón Mine is a gold producer and on-going exploration by Central Sun continues to extend known zones of gold mineralization along strike of the existing veins, such as the western extension of the Talavera Main Vein and the southern extension of Santa Pancha. The mine has an excellent record of replacing production and expanding reserves. In addition a number of target areas as shown in Figure 10-1 have been identified in zones of hydrothermal alteration. The most prominent of these are:

#### ***TALAVERA OUESTE***

The primary target is the extension of the Talavera Sur structure. A significant intersection of 18.8 g Au/t over 7.3 m (true width) in quartz vein is reported from Drill Hole 3301. This is along the projected southwest extension of the Talavera Sur structure. Underground holes previously drilled to test the extension of the Talavera Sur target resulted in encountering the new Talavera III (TIII) Vein. Recent drilling included Hole 3300, which intersected two adjacent zones of 4.3 g Au/t over 2.3 m (true width) and 7.6 g Au/t over 2.7 m (true width). These intersections are interpreted to represent the HW and FW segments of the TIII vein, adjacent to the Victoria Vein.

10-3

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#### ***TALAVERA VICTORIA***

Previous drilling has intersected 15.8 g Au/t over 36.0 m, at a depth of approximately 300 m below the surface, in Drill Hole 3235, and 7.7 g Au/t over 15.8 m in Drill Hole 3211. Both drill holes are situated along the flank of hydrothermal alteration along a ridge, some 5 km west of the Limón mill.

#### ***ESTE DE TALAVERA SUR***

This target area is the potential extension to the east of the Talavera Sur structure.



***EAST OF SEO***

Drilling in this area near the main Talavera Vein suggests that the structure remains open to the northeast.

***MORALES EXTENSION***

DDH 1763 intersected 6.85 g Au/t over 2.4m and DDH 1761, 8.0 g Au/t over 1.60m. This zone has similar characteristics as Veta Nueva.

***POZO BONO EXTENSION***

Two holes have tested this area with one hole intersecting 10.15 g Au/t over 1.0 m. Follow-up drilling is planned.

***BABILONIA SUR***

Diamond drilling in the past had intersected a wide zone of low-grade gold, of 0.56 g Au/t over 15.6 m, with intervening higher grades. Follow-up drilling did not replicate earlier results however compilation of historical drill data indicates that the initial follow-up drilling was poorly placed to test this target; hence, it remains a valid exploration target for the future. It appears that this wide intersection is likely in a hole drilled down dip of the vein.

***SANTA PANCHA SUR***

This target is the potential southern extension of the Santa Pancha orebody that is currently been mined.

10-4

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In addition to the above targets, sampling of mineralized boulders in 2004 detected a gold- and clay-mineral anomalous zone in an area known as Santa Rosa-Uval 1.5 km to 3 km southwest of the Limón mill. Drilling beneath these areas, however, did not locate significant mineralization. This target is being re-evaluated geologically to determine if an alternative source is possible.

***MESTIZA***

Figure 10-2 shows the major vein structures that have been identified on the Mestiza property. Most of the previous work has been directed towards the Tatiana vein however other structures in the area have good potential to host significant gold mineralization.

10-5

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## **11 DRILLING**

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Central Sun carries out the current diamond drilling program through a combination of in-house and external contractor crews. Systematic testing of the gold bearing zones was started by Black Hawk and earlier operators, by diamond drill holes spaced 25 m to 50 m apart. This was followed by driving declines and drifting along the various mineralized zones. To date, 389,000 m (3,369 holes) of surface and underground drilling has been completed on the property.

The procedures used during the diamond drilling programs are as follows:

- Holes drilled to intercept gold mineralization at shallow depth are set-up to produce HQ-sized core to insure good core recovery in the weathered rock. Deeper holes, where weathering is not a concern, are completed to produce NQ-sized core.
- The collar locations of all drill holes are surveyed and marked in the field. A Pajari survey instrument is used to provide control information on the directional deviation (both azimuth and inclination) of each hole. The number of measurements taken per hole is dependent upon the hole length and included at a minimum a measurement at the bottom and top of each hole, and for each 100-metre interval down the hole. No significant deviation problems have been encountered at Santa Pancha, which is in keeping with survey results in the Limón area since in-hole surveying was initiated in 1994 (Gareau, 2004).
- Lithologic logging is done on drill core and geotechnical observations are made by company geologists. This includes marking lithologic contacts, descriptive geology, core angles, core diameter, down hole inclination, percent core recovery record, true thickness calculations and graphic log depicting all down-hole data including assay values. Until 2007, all information is recorded on hand written logs. For the 2008 program, direct logging using the GEMCOM LOGGER system has been implemented. Photographs are taken of all exploration drill core. All previous drill hole information has been entered into a digital database and new holes are added to the database as they are logged.

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## 12 SAMPLING METHOD AND APPROACH

Materials sampled for resource and reserve estimation for Talavera and Santa Pancha include drill core, underground workings and surface trenches. Core size varies from HQ and/or NQ for most surface holes to BQTK for most underground holes. Drill core recovery at Limón is generally very good except locally in fault zones. All samples are collected by, or under the supervision of, a geologist.

The methodology of sampling of the drill core, underground openings or surface material which has been used by Central Sun for all work on the property is described below:

- For diamond drill holes, mineralized drill core intervals to be sampled are identified and marked by the geologist. Sample lengths vary from 0.5 m to 1.5 m. Visual indicators of the intervals to be sampled includes quartz veins, silicified breccias, silicified rock and other altered zones established for the Limón district by TMSA geologists. Sample intervals are selected based on changes in mineralization style, and are normally extended for two metres into unmineralized rock. Marked sample intervals are split in half using a saw or a mechanical splitter. A technician collects a continuous sample of the sawn core.
- Underground development workings that expose mineralized veins are routinely sampled using continuous chip samples taken at waist height perpendicular to vein contacts (for resource estimation assay data from these samples are projected on the horizontal plane). Samples are taken for each round of advance, giving a sample spacing of approximately three metres along the vein strike. The complete width of the development drift is sampled. A sample is normally taken for each metre of vein width, and sample lengths may vary depending on the width of the vein and changes of geology. Sampling is by a trained technician under the supervision of the mine geologist.
- Materials sampled as part of ongoing exploration activities include soils, boulders, rock outcrops, trenches and drill core. All samples are taken by or under the supervision of a geologist. Exploration samples of rock outcrops and boulders are normally taken as discontinuous chip samples while trench samples are taken as continuous chip samples. These exploration sample materials are used to detect the presence of precious metals for target identification, and are not normally used for resource estimation.

- Trench samples are taken as continuous chip samples of the exposed bedrock and back fill materials. Trench sample results are only used for the estimation of the near surface (open-pit) mineral resources.
- Sample lengths for both drill core and trenches are normally one metre, but vary from 0.5 m to 1.5 m, reflecting changes in the observed geology. Each sample is assigned and tagged with a unique sample number.

The drill hole and underground sampling procedures employed by Central Sun conform to industry standards.

## **13 SAMPLE PREPARATION, ANALYSES AND SECURITY**

### **SAMPLE PREPARATION AND ASSAYS**

Rock and core samples are crushed, pulverized, and fire assayed for gold and silver on-site at the Limón mine laboratory. In the laboratory, there are separate crushing and pulverizing circuits for the mine grade control samples and exploration samples.

All assays used in the Limón Mine resource and reserve estimates were done at the Limón Mine laboratory located near the mill, warehouse and office complex. Quality control includes the use of blanks, duplicates, standards and internal check assays by the Limón Mine laboratory, and external check assays performed at ACME Analytical Laboratories Ltd. (ACME) of Vancouver, B.C., Canada, conducted independently by the exploration group and the laboratory manager. The laboratory currently uses a number of standard samples with the assay values certified by an external laboratory, Lakefield Research Limited (Lakefield) of Canada. The very fine-grained nature of the gold in the Limón mining district greatly reduces sampling and assay variability related to coarse gold (“nugget effect”) and allows for good reproducibility of assays. To date only one occurrence of visible gold has been reported from the Limón Mine. The sample preparation and assay protocols are presented in Figure 13-1.



#### **ASSAY QUALITY ASSURANCE AND QUALITY CONTROL**

The quality assurance procedures and assay protocols followed by Central Sun for underground and drill core samples at the Limón Mine were reviewed in previous years by independent consultants and were found to conform to industry accepted practices (Scott Wilson RPA, 2005). These procedures are, as follows:

- Samples are handled only by the Central Sun and TMSA authorized personnel. Samples from the mining operation are delivered by the mine geologist or technician directly to the mine laboratory each day upon completion of the underground sampling.
- All drill core from surface and underground drill holes is taken one or more times per shift from the drill rigs directly to a drill logging and sampling area within the secured and guarded mine property by authorized mine or exploration personnel. Within 48 hours, the material core intervals (e.g. potentially mineralized intervals) are photographed, logged and sampled; and the samples are delivered directly to the mine laboratory.
- Each sample is assigned a unique sample number that allows it to be traced through the sampling and analytical procedures and for validation against the original sample site. The second half of the split core is stored on-site as a control sample, available for review and re-sampling if required.

Sample preparation and assays are carried out at the Limón Mine laboratory. The procedures used at this laboratory, including the reagents and apparatus used for the assays, are similar to those used at many commercial laboratories in Canada. In particular, they include:

- Crushing the split sample to 10 mesh and grinding it to 200 mesh.
- Assays carried out on 29.2 g (1 assay-ton) sub-samples.
- Cupelling after adding soda at 650° C.
- Determination of the gold and silver content by gravimetric finish.

#### **CHECK ASSAYS**

Check assays and quality control-quality assurance (QA/QC) procedures are followed at the Limón mine laboratory. These include internal check assays by the Limón Mine laboratory, and external check assays performed at ACME, which is ISO 9001-2000

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certified. The check assays are conducted independently by the exploration group and the Limón laboratory manager, and the standard samples are certified by Lakefield. In 2008 Central Sun instituted a program whereby 10% of pulps are regularly checked at ALS Chemex Laboratories in Vancouver, British Columbia and certified external standards are inserted into each batch.

Standard procedures for QA/QC in the Limon Laboratory are as follows:

- The laboratory manager inserts standard samples, duplicate samples and blanks routinely. One blank and one standard sample are inserted in every batch of 24 assays. Duplicates are inserted every tenth sample.
- The laboratory manager inserts blind duplicate pulps and sends pulp samples to an external laboratory for checking.

*Scott Wilson RPA reviewed the check assay programs in their report dated February 24, 2005 and commented as follows: "External check assays for the 2004 drill campaign at Santa Pancha were performed at ACME. A total of 82 sample pulps and 23 sample rejects were submitted to ACME for check assay. In addition; eight duplicate, four blanks and four control standard samples were also included for quality control by TMSA exploration staff. The same samples sent to ACME were resubmitted to the Limón laboratory for blind internal check assays."*

*"A review of the blanks shows no evidence or concerns with contamination in the sample preparation and assay procedure. In particular, these results indicate that:*

- *The duplicates show an acceptable precision both for the Limón laboratory and for ACME.*
- *The reject check assay results show good comparison between the two laboratories with no apparent bias.*
- *The ACME pulp check assays show a tendency to report comparable, but consistently lower values for assays greater than 8.0 g/t, however, the control standards submitted with the blind checks to the Limón laboratory show no apparent bias in the Limón assays.*

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*The Limón laboratory also carries out QA/QC checks on a set of standards. These range in concentrations from a low of 1 g Au/t to more than 8 g Au/t, and are internal standards prepared by the Limón laboratory. Internal check assays are monitored on a daily basis. For a medium-grade standard having an average grade of 4.05 g Au/t, and a standard deviation of 0.1174 g Au/t, the mine laboratory carried out 136 determinations during the month of November 2004, and results are shown in Figure 13-3. These results show that:*

- *87 assays (64%) were within one standard deviation ( $\pm 1$ ) of the mean.*
- *49 assays (36%) were within two standard deviations ( $\pm 2$ ) of the mean.*
- *None of the assays were more than two standard deviations ( $\pm 2$ ) of the mean.*

*The check assay results compare well with the Limón Mine laboratory gold assays, and that the Limón assay results are acceptable and suitable for estimation of Mineral Resources and Mineral Reserves."*

A review and analysis of the check assay results from 2006 and 2007 was carried out by the authors in the course of preparing this updated technical report. Data is available for each month for both years for blanks, duplicates, standards and external checks. Graphs showing results of duplicates and external checks are shown for representative months of both years are shown in Figures 13-2 and 13-3 and Figures 13-4 and 13-5, respectively. The results show excellent consistency between both duplicate samples and external checks. Similar results were obtained in comparison to standards. The authors confirm that the Limon assay results are acceptable and suitable for estimation of mineral resources and mineral reserves.

### SAMPLE SECURITY

The procedures for sample security are discussed under assay quality assurance and quality control. The sample security procedures at Limón Mine are in keeping with industry standards.

13-5











## 14 DATA VERIFICATION

### DATA VERIFICATION BY CENTRAL SUN

During the drilling campaigns data verification and quality control is done by TMSA personnel. The quality and reliability of the data obtained from ongoing programs is reviewed and verified by TMSA staff geologists each time there is an update of the resource for any particular zone. Dr. William N. Pearson, P. Geo. Executive Vice President, Exploration, who is a Qualified Person in accordance with National Instrument 43-101, performed a second verification prior to finalizing the updated resource estimate.

In previous years Mineral Reserve and Mineral Resource audits were conducted by an external, independent consultant that included random checks on the assay database against original assay certificates. In 1999, this consultant determined that there were no material inaccuracies in the assay database and that Black Hawk's methods and procedures are within North American industry standards. Scott Wilson RPA's 2003 and 2005 due diligence review revealed no changes in methods or procedures since the time of the independent consultant's report in 1999.

Scott Wilson RPA as part of their due diligence in 2003, collected three independent samples from drill core to confirm the general level of the TMSA laboratory assays, and had them assayed at SGS Laboratories (SGS) in Don Mills, Ontario. The samples were taken from the remaining half core from two drill holes. Scott Wilson RPA concluded that the samples confirmed the presence of gold and silver values at essentially the same order of magnitude as the El Limon laboratory assays.

For the 2005 report, Scott Wilson RPA collected a total of nine (9) samples, four from underground workings of the Talavera Vein and five samples of split core from diamond drill holes which have tested the Santa Pancha deposit, and sent them to SGS

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Laboratories, for independent assays for gold. Table 14-1 provides the sample description and assay results.

**TABLE 14-1 SCOTT WILSON RPA INDEPENDENT SAMPLING RESULTS  
Central Sun Gold – Limón Mine**

RPA Sample No.	From (m)	To (m)	Interval (m)	RPA g Au/t	TMSA g Au/t	Remark
70801			12.16	70.35		Channel sample, TWP (Talavera) vein, Level 153
70802			6.61			Channel sample, TWP (Talavera) vein, Level 153
70803			3.38	4.11		Channel sample, TWP (Talavera) vein, Level 153
70804			14.70			Channel sample, TWP (Talavera) vein, Level 153
A026355	29.66	30.59	0.93	10.43	3.74	Drill core, Hole No. 3147, Santa Pancha P1HW vein
A026358	30.59	31.52	0.93	41.21	21.36	Drill core, Hole No. 3147, Santa Pancha P1HW vein
A026359	31.52	32.45	0.93	71.17	72.92	Drill core, Hole No. 3147, Santa Pancha P1HW vein
A026360	107.02	108.05	1.03	10.41	5.52	

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						Drill core, Hole No. 3169, Santa Pancha P1HW vein
A026361	108.05	109.11	1.06	4.36	3.43	Drill core, Hole No. 3169, Santa Pancha P1HW vein
			Note: Samples 70801 and 70802 represent old sample No. 22744, and samples 70803 and 70804 represent old sample No. 22745.			

As in 2003, the 2005 Scott Wilson RPA samples confirmed the presence of gold values at essentially the same order of magnitude as the Limón laboratory assays. In fact, some of the SGS values were slightly higher than the Limón laboratory results. The differences are considered to be due to the variability in gold between the two halves of the core, and are not cause for concern, in Scott Wilson RPA's view.

14-11

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As part of their due diligence, Scott Wilson RPA also carried out a detailed review of diamond drill logs for Hole No. 3147, 3169, 3144, 3170 and 3224 of cross section 13795N, of the Santa Pancha deposit. Scott Wilson RPA considered the drill hole logging and data recording procedures to be in keeping with industry standards.

In January 2008, Central Sun implemented GEMCOM software and the LOGGER system for entry of logging data directly into a computer during the process of logging drill core. This approach substantially reduces errors that typically arise from the entry of data from paper to digital form. All exploration drill core at Limon is now logged in this manner.

14-12

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## 15 ADJACENT PROPERTIES

There is no significant work being carried out on properties adjacent those of Central Sun's in the Limon Mine or Mestiza areas with the exception of local guirisero (artisanal miners) activity.

15-1

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## 16 MINERAL PROCESSING AND METALLURGICAL TESTING

The Limón mill is a nominal 1,000 tonnes per day CIP gold recovery plant. Run of mine (ROM) ore is hauled by truck from the Talavera Mine (4km from the process plant) and the Santa Pancha Mine (6km from the process plant) and stockpiled in front of the primary crusher or dumped directly into the 36-tonne capacity dump hopper feeding the jaw crusher. The hopper is fitted with a stationary grizzly to limit the top size to the crusher. When required, a front-end loader transfers ore from the accumulated stockpile into the hopper. A variable speed apron feeder draws the ore from the dump hopper at a nominal rate of 55 tonnes per hour to feed the primary jaw crusher. The primary crusher is operated on a three shift per day, seven days per week schedule. The crusher produces a minus 150 mm, crushed ore product. The crusher discharge conveyor delivers the ore to the crushed ore stockpile located near the semi-autogenous grinding (SAG) mill feed hopper via a plough and chute.

A variable speed belt feeder draws the ore from SAG mill feed hopper at a nominal rate of 42 tonnes per hour onto the SAG mill feed conveyor, then delivers it to the SAG mill. The SAG mill discharge fines are combined with the discharge from the ball mill in the cyclone feed pumpbox. Lime is also added to the cyclone feed pumpbox. A cyclone feed pump feeds the mill discharges to three operating hydrocyclones. The cyclone underflow flows by gravity to the ball mill feed chute. Water is added automatically to the cyclone feed pumpbox to maintain a set-point cyclone feed density. A vibrating screen cleans the cyclone overflow of trash before it flows to the thickener tanks.

Approximately 36 hours of leach residence time is provided by the three leach tanks at 40% to 45% solids thickener tanks underflow density. Pure oxygen is injected through a special injector, in lieu of using compressed air, a process that improves recovery by 5%. The leached slurry overflows from a leach tank into the carbon-in-pulp ("CIP") carousel circuit, comprising of six tanks on a step down elevation gradation, to allow the

16-1

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slurry to gravity flow. Carbon is moved every two days by pumping out the slurry to the loaded carbon vibrating screen. The loaded carbon batch from the loaded carbon screen is collected in the acid wash tank to clean the carbon of calcium and other inorganic contaminants. After acid washing, the acid is neutralized and the alkalinity is increased. The carbon batch is then advanced to the carbon stripping vessel. Following stripping, the carbon is washed with water to cool the carbon and to recover all of the gold bearing solution. Washed and stripped carbon is then regenerated in a standard rotary kiln and returned to the CIP circuit.

The pregnant solution is circulated through the electrowinning cell then back into the pregnant solution tank. The electrowinning cell design is a sludge type where the majority of the gold is washed to the cell bottom and collected by flushing with a water hose into the filter feed pumpbox. The remaining gold cathodes and gold sludge filter cake are then both smelted to doré in the refinery furnace.

The production records for the Limón Mill from 2003 to 2007 as well as the Life of Mine Plan for 2007 to 2011, are summarized in Tables 18-1 and 18-3, respectively, in Section 18. Recent operations have demonstrated that the mill is capable of sustaining a rate of 1,200 tonnes per day. Productivity of the mill, however, until recently has been limited by the mine production. Life of Mine Plan projections of mill performance, are consistent with past achievements.

Metallurgical test work for several of the mineralized zones at Santa Pancha was completed in the Limón laboratory. Metallurgical recovery tests, based on the typical operating conditions in the Limon mill, predict an average 82.0% recovery. The test results compare well with gold recoveries obtained from the processing of open-pit material mined adjacent to Pozo 4 at Santa Pancha in 1998 and 1999 (Gareau, 2004). With plant upgrades and improved maintenance practices, recoveries of 84% are expected to be achieved.

16-2







# 17 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

## MINERAL RESOURCES

In 2005 Scott Wilson RPA carried out an audit of the Mineral Reserves and Mineral Resources at Limón, performed a number of checks to verify the various procedures and numerical calculations used in earlier estimates and completed some independent sampling as detailed in their report dated February 24, 2005 that is filed on Sedar. Scott Wilson RPA was of the opinion that the Central Sun resource and reserve estimates were in accordance with the Mineral Resource/Reserve Classification as recommended by the CIM Committee on Mineral Resources/Reserves.

The present update of the reserves and resources was completed by Central Sun mine geology and engineering personnel under the supervision of Dr. William N. Pearson, P.Geo. and Mr. Graham Speirs, P.Eng. Both individuals are Qualified Persons as defined under National Instrument 43-101. The updated mineral reserve and mineral resource estimate as at December 31, 2007 incorporated results from the in-fill underground diamond drilling completed in 2007. Methodology employed was the same as used by Scott Wilson RPA except that the gold price was adjusted to \$US550 per ounce for mineral reserves and cutoff grades adjusted for both mineral reserves and remaining resources.

Table 17-1 lists Mineral Reserves and Mineral Resources as at December 31, 2007. The Mineral Resources are in addition to the Mineral Reserves. There are areas of higher-grade mineralization within the overall Mineral Resources and Mineral Reserves. Appendix I contains representative plans and cross sections of Talavera, Santa Pancha and a longitudinal section of the Tatiana Vein at Mestiza.

17-1

**TABLE 17-1 MINERAL RESERVES AND MINERAL RESOURCES**

**Central Sun – Limón Mine and Mestiza Project**

**As at December 31, 2007**

**Mineral Reserves**

<b>Deposit</b>	<b>Category</b>	<b>Tonnes</b>	<b>Grade (g Au/t)</b>	<b>Contained Ounces Au</b>
Talavera	Proven	85,900	5.34	14,800
	Probable	75,500	4.46	10,800
Santa Pancha	Proven	63,400	7.01	14,300
	Probable	811,600	4.96	129,400
Veta Nueva	Probable	182,500	5.71	33,500
Open Pits	Proven	7,000	5.91	1,300
	Probable	155,100	2.63	13,100
Subtotal	Proven	156,400	6.04	30,400
Subtotal	Probable	1,224,600	4.75	186,900
<b>Total Underground</b>	<b>Proven &amp; Probable</b>	<b>1,381,000</b>	<b>4.89</b>	<b>217,200</b>

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<b>Additional Mineral Resources</b>				
Talavera	Measured	9,500	6.92	2,100
	Indicated	30,500	5.20	5,100
Santa Pancha	Indicated	281,500	4.60	41,600
Veta Nueva	Indicated	42,100	7.71	10,400
Open Pits	Measured	20,500	3.60	2,400
Subtotal	Measured	30,000	4.65	4,500
Subtotal	Indicated	354,100	5.02	57,200
<b>Total</b>	<b>Measured &amp; Indicated</b>	<b>384,000</b>	<b>4.99</b>	<b>61,600</b>
Talavera	Inferred	305,000	6.52	63,900
Santa Pancha	Inferred	912,000	5.72	167,800
Veta Nueva	Inferred	42,000	7.12	9,600
Open Pits	Inferred	32,000	4.10	4,300
Mestiza	Inferred	558,000	8.80	158,600
<b>Total</b>	<b>Inferred</b>	<b>1,849,000</b>	<b>6.81</b>	<b>404,600</b>

17-2

Notes:

- 1 CIM definitions were followed for estimation of reserves & resources.
- 2 Mineral Reserves are estimated at a cutoff grade of 3.8 g Au/t. Additional Mineral Resources which exclude reserves are estimated at a cutoff grade of 2.7 g Au/t.
- 3 Mineral Reserves are estimated using an average long-term gold price of US\$550 per ounce.
- 4 A minimum vein width of 2.4 m was used, and a minimum mining width of 3.0 m.
- 5 Dilution added was 0.3m each side (total 0.6m) at 0 grade.
- 6 Specific Gravity is 2.60.

These resources in the opinion of the authors have been estimated in accordance with the Mineral Resource/Reserve Classification as recommended by the CIM Committee on Mineral Resources/Reserves and referenced in NI 43-101.

**DATABASE**

Mineral reserve and resource estimates for the Limón Mine are based on data from underground face chip sampling and mapping and from underground and surface diamond drill holes. The drill hole data are placed in files for each drill hole and stored digitally. The underground information is recorded in data books and plotted manually on level plans. All drill core, survey, geological and assay information used for the resource and reserve estimates is verified and approved by the TMSA geological staff and maintained as an on-site database.

Scott Wilson RPA previously inspected some of the drill hole files and underground sampling records and found them to be in keeping with industry standards. Central Sun regularly verifies the database internally, as discussed in a previous section.

**ASSAY QUALITY ASSURANCE AND QUALITY CONTROL**

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All assays used in the Talavera and Santa Pancha resource and reserve estimates are done at the Limón laboratory located at the mine site. The procedures for QA/QC of assays are presented, as follows:

- The laboratory inserts standard samples, duplicate samples and blanks routinely. One blank and one standard sample are inserted in every batch of 24 assays. Duplicates are inserted every tenth sample. The laboratory currently uses two

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standard samples with the assay values certified by an external laboratory, Lakefield Laboratories, Lakefield, Ontario.

- In addition, the laboratory manager inserts blind duplicate pulps and sends pulp samples to an external laboratory, ACME, for checking. For samples from outside the mine area, duplicates are submitted by exploration staff to ACME for check assays.

Scott Wilson RPA in 2003 and 2005 and Central Sun in 2007 and 2008 have reviewed the quality assurance/quality control (QA/QC) data generated by the Limón mine laboratory and by the exploration staff. This information is compiled monthly and is regularly reported as part of Central Sun's monthly mine site and exploration reports. For the period from 2002 to 2007, most duplicate assays were within 10% of the original assay, for assays over 2 g Au/t. For assays less than 2 g Au/t, reproducibility is mostly within 25%. For the external check assays, results are mostly within 15% to 20%. The QA/QC procedures at the Limón laboratory are therefore considered acceptable.

### MINERAL RESOURCE ESTIMATION PROCEDURES

After interpretation of cross sections and level plans for the Talavera and Santa Pancha deposits, TMSA geology staff constructs a vertical longitudinal section for each vein. The longitudinal sections show the mine levels, raises, stopes, pillars and other workings, underground chip sample assays and true widths across the vein (averaged over strike lengths of generally 20 m to 30 m), drill hole intercepts with grade and true thickness of the vein, and pertinent geological features such as faults.

The procedures for estimating Mineral Resources are presented, as follows:

- Data from diamond drill holes, surface trench samples and underground channel samples are plotted on detailed cross sections, at a scale of 1:500, at 30 m intervals including all assay data. These data provide the basis for the geological interpretation and estimation of average grades of resource blocks.
- Resources are estimated for blocks superimposed on the longitudinal sections. The block heights generally correspond to actual or planned level and sublevel intervals of 15 m to 30 m. In some cases vertical heights are shorter where the blocks represent mineable pillar material between stopes. The strike length of

17-4

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blocks is generally 20 m to 30 m, corresponding to the intervals over which underground chip sample assays and true widths are averaged. In some of the veins, larger blocks are used; up to 50 m vertical height and strike length.

- Block volume is calculated using the vertical height, strike length and true width with an adjustment for dip of the vein.
- Block tonnage is calculated by multiplying the block volume with a specific gravity of 2.6 t/m<sup>3</sup>. The 2.6 factor is based on 20 tests in the Limón mill that gave an average of 2.62 g/cm<sup>3</sup>; 356 determinations at the mine laboratory that gave an average of 2.58 g/cm<sup>3</sup>; and 82 tests at ACME laboratory in Canada that gave an average of 2.55 g/cm<sup>3</sup>. The tests were done from 1999 to 2001. More recent tests at ACME on Santa Pancha samples confirm the same specific gravity applies to that

deposit indicating that  $2.6 \text{ t/m}^3$  is an appropriate factor.

- Average gold grades and true vein widths of the blocks are based on the underground chip sampling, projected down or up dip, or drill holes within and/or adjacent the blocks. Where blocks are projected up or down from drifts, both chip sampling and drill holes are used for the block estimate; the underground sampling is weighted 2:1 to the drill hole results. When uncertainly exists in relation to older data, blocks have been classified as Inferred Mineral Resources.
- For resource estimation, drill hole intercepts have no minimum width for inclusion. Chip samples are included at a minimum width of 2.4 m, and a minimum mining width of 3.0 m is used to estimate the average grade of a resource block.
- High -grade gold assays are cut to 25 Au g/t. These cutting levels are based on inspection of frequency histograms of assays for the different veins. This practise is reviewed regularly however it is difficult to reconcile cutting factors to mill production figures because of the number of different veins that constitute the mill feed.
- A minimum grade of 3.8 g Au/t for inclusion of blocks as mineral resource for underground reserve block configuration. A lower cutoff grade of 2.7 g Au/t is used for reporting additional mineral resources.

## MINERAL RESERVES

Mineral Reserves are estimated for blocks for which a mine plan exists at the Talavera and Santa Pancha mines. Talavera is mined by longitudinal open stoping, and Santa Pancha is mined by cut & fill methods. Mineral Reserves have been estimated for

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21 veins, or portions of veins, in the Talavera, Santa Pancha and Veta Nueva vein systems.

Mineral Reserve and Mineral Resource estimates at the Limón Mine are made only for gold grade. Silver grades are considered too low to warrant resource estimation, though minor quantities of silver are produced as a by-product of the mining operations.

## DILUTION

The procedures for estimating Mineral Reserves are presented, as follows:

- For the mineral resource blocks defined as described in the previous section, true vein widths are diluted to a minimum width of 2.4 m. The vein width is then diluted to a minimum mining width of 3.0 m.
- If the original true width is less than 2.4 m, dilution is added at zero grade to bring the minimum mining width to 3.0 m.
- If the original true width is 2.4 m or greater, 0.6 m of dilution is added at zero grade.
- A second dilution of 8% is added to the tonnage and grade of each block at zero grade.
- The grade is further adjusted by a factor (mine call factor) derived from the previous year's mill reconciliation. For the 2007 reserve estimate, the grade adjustment factor is 0.92, based on reconciliation of 2006 operating results. This is consistent with mine call factors in previous years.

Reconciliation of production to mineral reserve blocks and to mill production indicates that the above methodology provides reliable and accurate estimates of reserves on which to base mine planning.

## EXTRACTION

At Talavera, mine reserve blocks are forecast with pillars and expected mine losses already removed. It is generally assumed that 100% of the ore in the mine reserve blocks

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will be extracted. A few blocks in the Life of Mine Plan have extractions less than 100% due to proximity to mined out areas.

At Santa Pancha, the full width of the ore is mined, and extraction is estimated to be 95%. Blocks incorporating sill pillars are reduced to 85% extraction, and those near major faults or old workings range from 50% to 70% extraction.

Historical and recent results suggest that there is potential for mining gains during operations.

#### **CUT-OFF GRADE**

The cutoff grade of 3.8 g Au/t on reserve blocks has been estimated based on a US\$550 gold price and operating costs of US\$70 per tonne. The cutoff grade used for additional resources is 2.7 g Au/t.

#### **CLASSIFICATION**

The Mineral Reserves and Mineral Resources of the Talavera and Santa Pancha deposits are classified into Proven and Probable categories (for Mineral Reserves) and Measured, Indicated, and Inferred categories (for Mineral Resources) based on drill hole spacing, assay information from samples collected along underground drifts and cross sections, and apparent continuity of mineralized lenses. The Mineral Reserves and Mineral Resources are estimated at cut-off grades of 3.8 g Au/t for the Mineral Reserves and at 2.7 g Au/t for the additional Mineral Resources.

At both the Talavera and Santa Pancha mines, proven mineral reserves are located between or within 15 m of underground drifts with geological and assay information. Proven reserve blocks are up to 30 m by 30 m on longitudinal sections. Probable mineral reserves include blocks that are within 25 m of a drift and 30 m by 30 m blocks with at least one drill hole or adjacent to blocks defined by drill holes or drifts with geological continuity of the vein.

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#### **RESERVE REPLACEMENT**

In past years, the Limón Mine has had a good record of replacing mineral reserves during mining by finding new veins, outlining extensions to existing veins and by converting Mineral Resources to Mineral Reserves. Table 17-3 shows the record of reserve replacement over the last nine years.

**TABLE 17-2 RESERVE REPLACEMENT**

##### **Central Sun Gold – Limón Mine**

<b>Year</b>	<b>Reserve At End Of Year ('000 tonnes)</b>	<b>Mill Feed For Year</b>	<b>Reserve Replacement</b>	<b>Replacement As % Of Mill Feed</b>
1998	1,001.5			

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Year	Reserve At End Of Year ('000 ounces)	Mill Feed For Year	Reserve Replacement	Replacement As % Of Mill Feed
1999	1,029.3	361.4	389.2	108%
2000	1,047.6	348.9	367.2	105%
2001	968.6	349.4	270.4	77%
2002	973.6	314.6	319.6	102%
2003	754.6	284.1	65.1	23%
2004	1,786.8	341.2	1,373.4	403%
2005	1,299.3	311.4	-176.1	-57%
2006	1,178.0	295.6	174.3	59%
2007	1,381.0	287.7	490.7	171%
1998	278.5			
1999	270.5	77.5	69.5	90%
2000	266.8	102.2	98.5	96%
2001	209.4	78.6	21.2	27%
2002	193.9	63.8	48.3	76%
2003	147.5	52.1	5.7	11%
2004	297.6	54.6	204.7	375%
2005	223.1	47.0	-27.5	-59%
2006	199.3	41.8	18.0	43%
2007	217.2	47.2	65.1	138%

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It can be seen that the Limon mine has a successful history of replacement of reserve tonnes and ounces from 1998 to 2007, with the exception of 2005. During 2004, Central Sun increased the amount of the tonnage and contained gold from the previously estimated Mineral Reserves by 250% and 163% reflecting the major focus on exploration drilling that year.

Table 17-4 shows the conversion of Inferred Mineral Resource to Mineral Reserve in 2007.

**TABLE 17-3 2007 RESOURCE TO RESERVE CONVERSION**

**Central Sun Gold – Limón Mine**

Zone/Vein	2006 Inferred Mineral Resources		2007 Mineral Reserves		Conversion (%)	
	Tonnes	g Au/t	Tonnes	g Au/t	Tonnes	Gold
Talavera	199,000	7.34	79,500	3.54	40	19
Santa Pancha	609,100	6.71	188,300	5.90	31	27
Veta Nueva	46,800	7.16	8,100	3.50	17	8
Open Pits	11,300	4.17	189,200	2.36	1674	948
<b>Total</b>	<b>861,000</b>	<b>6.85</b>	<b>465,000</b>	<b>4.02</b>	<b>54</b>	<b>32</b>

Note: Totals may not add up exactly due to rounding.

The good record of reserve replacement in recent years suggests that the mine life can be further extended by conversion of existing resources to reserves as well as outlining extensions to existing veins in the immediate mine areas.

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## 18 OTHER RELEVANT DATA AND INFORMATION

### MINE OPERATIONS

The lengthy operating history at the Limón Mine provides a solid base from which to estimate future performance. Recent production history for the Limón Mine is presented in Table 18-1.

**TABLE 18-1 RECENT MINE PRODUCTION**

#### Central Sun Gold – Limón Mine

	<u>Units</u>	<u>2007</u>	<u>2006</u>	<u>2005</u>	<u>2004</u>	<u>2003</u>	<u>2002</u>
Mill Feed	(*000 t)	287.7	295.6	311.4	341.2	284.1	315.0
Head Grade	(g Au/t)	5.1	4.4	4.7	5.1	5.7	6.2
Recovery	(%)	78.5	83.3	83.8	84.6	88.1	86.8
Gold Recovered	(oz)	36,702	34,341	39,091	46,135	45,851	55,388

The Life of Mine Plan is set out in Table 18-2. The Santa Pancha mine will account for an increasing amount of the overall production with supplementary production from open pits and Veta Nueva in addition to the Talavera mine.

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**TABLE 18-2 2007 MINE PRODUCTION**

#### DETAILS

#### Central Sun Gold – Limón Mine Underground

Mine Month	Tonnes	Grade (g Au/t)
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January	14,637	5.31
February	14,882	5.01
March	17,975	7.03
April	14,318	7.21
May	14,492	6.71
June	17,403	5.73
July	11,754	6.40
August	17,076	5.82
September	19,462	5.16
October	17,472	4.27
November	11,713	6.18
December	20,797	6.88
<b>Total</b>	<b>191,981</b>	<b>5.96</b>

**Open Pit**

Jan – Dec.

2007	91,482	2.72
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<b>Total 2007</b>	<b>283,463</b>	<b>4.91</b>
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**TALAVERA MINING METHOD**

The Talavera underground mine was developed with an access ramp driven from the surface to reach the 91 m and 100 m levels in 1991, and was further deepened during the following years to reach the 280 m level in 2001 and 300 m level in 2002. The ramp system branches on 135 m level into a West ramp giving access to the Talavera II, Oeste and Talavera Sur veins and into an East ramp, giving access to the Talavera Principal, Talavera Este, Ligia, and Santa Emilia veins. The mining methods used are longitudinal open stoping for the primary stopes and sub-level retreat for the pillar recovery. Stopes are backfilled with unconsolidated development waste. Development historically has been top down, with sill pillars left at regular intervals. The Talavera mining operation is fully

mechanized. It uses trackless equipment that includes four articulated haul trucks, each of 15 tonnes capacity, two pneumatic jumbos and one hydraulic electric jumbo, four six-yard production scooptrams equipped with remote controls, two 3½-yard development scooptrams, as well as a number ground support and service vehicles. Production drilling is performed with two “In The Hole” (ITH) pneumatic longhole drills, and one top hammer longhole drills. The mine equipment is adequate to support the future 450 tonnes per day operation. Ore is transported from the stopes to an underground ore chute, where trucks are loaded for haulage out of the mine to the Limón processing plant, four kilometres away. Three raises provide the necessary ventilation to the mine, as well as emergency escape routes (Figures 18-1 and 18-2).

The primary stopes are prepared by developing sub-levels in the vein, at 15 m intervals, from an access drift driven in the footwall, parallel to the vein. The 15 m spacing between levels was found to be the optimum interval to achieve both productivity and reduced dilution. From the access parallel drift, crosscuts are driven on approximately 60 m centres to the ore and the sub-level is opened up from the footwall to the hanging wall of the vein. An undercut is developed in both directions from the crosscut while an uppercut is prepared in the same manner on the upper level, at a vertical distance of 15 m. This effectively leaves 11 m from the back of the lower level to the floor of the upper level. A slot connecting both levels is then cut at each end of the stopes. The slot raises are driven conventionally, or using the ITH drill and the “Drop Raising” method, which consists of drilling longholes from the uppercut to the undercut and blasting in a retreat fashion. The slot raises are advanced an average of 3.2 metres per blast. Slot raises are 2.2 metres square in section. Typical stope preparation takes approximately two months to complete, once access to the block is available.

Stope production begins with ore blasted in vertical slices using the slot as the free face. Remote control scooptrams are used as the stopes are mined longitudinally without draw points to minimize development. The minimum planned stope width is three metres. The blasting pattern is 1.2 m by 1.5 m, with the outside holes drilled 0.30 m

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inside the hanging wall and footwall contacts. The equipment used is the ITH rig, drilling 98.4 mm diameter holes. Backfill with unconsolidated development waste begins once the level is mined and there is a need to mine the overlying level.

As the ramp deepens, new stopes are developed underneath previously mined blocks. Sill pillars are thus required to allow access to new, lower ore blocks. In this case, the upper level of the lower block is developed 15 m below the main haulage level of the upper block, leaving an 11 m pillar. This pillar is mined over the backfilled lower stope (i.e. after the extraction and backfilling of both the upper and lower blocks) by a sublevel retreat method employing holes drilled upward, removing the blasted ore with remote controlled scooptrams. Depending on the ore thickness, a remnant pillar may be left for support, varying between two metres and five metres, but rarely more than three metres. The slot raise in this method is driven as a conventional raise. Drilling of the pillars is done with the top hammer drills (Tamrock Solo A405 drills, an Atlas conventional track drill and, occasionally, with the ITH drill), drilling holes of 63.5 or 76.2 mm.

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**SANTA PANCHA MINING METHOD**

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The Santa Pancha deposit extends up to 190 metres below relatively flat-lying terrain. The vein width ranges from 3 m to 16 m, averaging eight metres, and the dip varies from 65° to 75°. Ground conditions are expected to be good in the footwall and in the ore, however, in the hangingwall, parallel structures contribute to poorer rock quality than that seen in Talavera.

The mining method utilized for Santa Pancha is sub level stoping, using both unconsolidated waste and cemented rock for backfill. This method will produce less hangingwall exposure than current longhole stoping methods used at Talavera, and should provide better dilution control.

Access from surface is via a 5 m high by 4.5 m wide ramp, driven at a grade of 12.5%, and located in the footwall (Figure 18-3). Horizontal levels will be driven at 15 m intervals, and cross-cuts into the ore driven from the levels.

The primary stopes are prepared by developing sub-levels in the vein, at 15 m intervals, from an access drift driven in the footwall, parallel to the vein. The 15 m spacing between levels was found to be the optimum interval to achieve both productivity and reduced dilution. From the access parallel drift, crosscuts are driven on approximately 60 m centres to the ore and the sub-level is opened up from the footwall to the hanging wall of the vein. An undercut is developed in both directions from the crosscut while an uppercut is prepared in the same manner on the upper level, at a vertical distance of 15 m. This effectively leaves 11 m from the back of the lower level to the floor of the upper level. A slot connecting both levels is then cut at each end of the stopes. The slot raises are driven conventionally, or using the ITH drill and the "Drop Raising" method, which consists of drilling longholes from the uppercut to the undercut and blasting in a retreat fashion. The slot raises are advanced an average of 3.2 metres per blast. Slot raises are 2.2 metres square in section.

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Stope production begins with ore blasted in vertical slices using the slot as the free face. Remote control scooptrams are used as the stopes are mined longitudinally without draw points to minimize development. The blasting pattern is 1.2 m by 1.5 m, with the outside holes drilled 0.30 m inside the hanging wall and footwall contacts. The equipment used is the ITH rig, drilling 98.4 mm diameter holes. Backfill with cemented development rock begins once the level is mined every 5 meters along the vein strike.

Waste rock for backfill is supplied from underground development waste (stockpiled on surface near the portal) or from Santa Pancha open pit waste, located approximately 1.4 km away. Waste rock will be mixed on surface with 5 to 6.5% Portland Standard cement mixed with water at at 0.7:1 to 0.8:1 ratio and then trucked underground. Equipment will be transferred from Talavera as production there winds down. Some major additional equipment purchases are contemplated for mining Santa Pancha, including a hydraulic jumbo. The expansion of the mine involves increased jumbo drilling requirements, and may require higher utilization of existing equipment, with correspondingly higher maintenance costs.

Previous mining on the Santa Pancha vein system indicated a need for substantial dewatering to lower the water table. TMSA reports that volumes up to 1,500 GPM are being pumped out of the mine. Pumped water will be collected in a surface settling and cooling pond, tested for contaminants, and released into a nearby creek. Communities downstream are expected to benefit from a reliable water supply (the creek normally runs dry in the dry season).

Fresh air enters the mine at the portal, draw down the ramp, onto the main levels, and exhaust up the existing shafts (Pozos). The surface exhaust fan is 250 HP, 72" diameter, located in level 90, close to existing Shaft No.2. Auxiliary ventilation fans draw air from this loop and ventilate working areas. Drop raises are utilized to move air from level to level as required.

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Development began in January 2005 and commercial production was established in March of 2007. Detailed planning of stope layouts, ventilation plans, and electrical layouts are available. A geomechanics expert was consulted in late 2006 to provide with technical recommendations on stopes dimensioning, specifications on cemented rock backfill and a rock mass classification of different areas of the mine.

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Figures 18-3 and 18-4 outline development work at Santa Pancha. Figure 18-5 shows development work at Veta Nueva.

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**OPEN PIT MINING**



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Current surface production is small-scale (Figure 18-6). TMSA reports that future open pit mining will be near surface, with low stripping ratios. Excavation is by dozer and backhoe – drilling and blasting is not always necessary. Haulage is performed by road trucks that move ore to the central mill complex. Open pit waste will be used in the construction of tailings dams and for backfill at Santa Pancha.

Lower-grade open pit ore has been used in the past to keep the mill operating at 1,050 tpd when higher-grade underground ore production experiences shortfalls, and this practice is expected to continue until Santa Pancha ore is available.

### **MANPOWER**

As of December 2007, the Limón Mine employed 453 people, including temporary contractors, and the Managua office. Hourly employees belong to one of three unions, whose bargaining agreements are negotiated every two years. Different strikes along the year by one of the unions limited production for 2007.

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**LIFE OF MINE PLAN**

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Future production, detailed in Central Sun's Limón Life of Mine Plan (LOMP) of January 1, 2008 is summarized in Table 18-3. The LOMP is based on the Limón Mineral Reserves as of December 31, 2007.

**TABLE 18-3 LIMÓN MINE, LIFE OF MINE PLAN**

### Central Sun Gold – Limón Mine

	Units	2008	2009	2010	2011	2012
<b>Talavera</b>	('000 t)	100	61			161
Grade		5.2	4.5			4.9
Veta Nueva				90	92	182
Grade				5.7	5.7	5.71
<b>Santa Pancha</b>	('000 t)	165	219	234	257	875
Grade		5.7	5.6	4.7	4.7	5.11
<b>Open Pit</b>						
	('000 t)	66	70	26		162
Grade	(g Au/t)	2.6	2.9	2.9		2.8
<b>Mill</b>	('000 t)	331	350	350	349	1,380
Grade	(g Au/t)	4.9	4.9	4.8	5.0	4.9
Recovery	(%)	82	82	82	82	82
<b>Gold</b>	<b>(oz)</b>	<b>43,028</b>	<b>44,921</b>	<b>44,499</b>	<b>45,689</b>	<b>178,136</b>

## ENVIRONMENTAL CONSIDERATIONS

Central Sun reports that an Environmental Impact Study for mining of the Santa Pancha deposit has been submitted and approved. TMSA was issued an operating permit (Resolucion Administrativa Numero 03-2005) on January 31, 2005, from MARENA, the Ministry of the Environment.

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## COMPLIANCE

Central Sun reports that it operates the Limón Mine in compliance with all applicable requirements and reports that it has not received any non-compliance orders by regulators. Under the purchase agreement in 1994, TMSA has no obligations for environmental damages caused by the operations prior to 1994; however, it does have the obligation to mitigate as required.

## TAILINGS MANAGEMENT

Tailings from the mill are deposited in an impoundment area (Santa Rosa) that was established in 1998 after the old area reached capacity. The impoundment area lies within the Santa Rosa drainage, upstream of the old tailing disposal facilities. The Santa Rosa impoundment area was completed in the fall of 1998.

The pond is designed so that no solution is discharged to the environment; instead, the decanted water from the tailings pond is re-circulated to the mill. During part of the year, the impoundment area has a positive water balance and excess tailings pond water volume is reduced through an evaporation system (Central Sun, 2005).

## TAILINGS DAM

The impoundment area dam has been built in three stages. Since the initial Stage I in 1998, the dam has been raised in three lifts – five metres in March 2000, three metres in June 2002, and another lift in 2004. After one more three-metre lift, scheduled for spring 2005, TMSA staff calculates that the impoundment will have the capacity required to the end of 2007.

Construction of a new tailings impoundment area will be necessary to meet the tailings storage requirements of the current Life of Mine Plan. A site to the west of the current facility has been selected. TMSA reports that design and permitting will begin shortly.

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## CLOSURE

Central Sun reports that there are no closure requirements (including financial assurance) for the mine, shop, mill, and offices area, as these are considered by the government to be of historic and tourism interest.

There are minimal closure requirements for the tailings dam. The final lift design includes stabilization of the slopes and a reforestation plan has already been filed with the government. TMSA has had good success in revegetating the older tailings impoundments. Prior to construction of the new impoundment area, an environmental impact study was completed and approved in June 1998 by MARENA, the Ministry of Environment, with the following conditions:

- Preparation of a Closure plan of the old (North) tailings area;
- Monitoring wells must be installed above and below the facility to monitor groundwater quality;
- Discharges of process water must be monitored and meet the criteria of Decree 33-95 which provides water quality guidelines for discharge of industrial wastewater;
- Monitor the condition and performance of the facility; and
- Personnel responsible for the tailings disposal facility must be trained to safely operate the facility.

Central Sun reports that it is in compliance with all of these requirements. It is reported that the government has accepted, in writing, the closure of the old tailings area.

A program of re-vegetation of the old tailings is in progress. Re-vegetation on the tailings occurs naturally at a very rapid rate due to the favourable climate and the retention of water within the former tailings cells. A reforestation program, currently underway, significantly reduces the potential for erosion, as well as the requirement for rehabilitation. Local varieties of trees have been planted in two areas and a third area is the site of a vegetable crop. The area surrounding the mine is annually subject to heavy rainfall in October and November. Prior to its merger with Central Sun, Black Hawk had

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constructed overflow channels on all of the old tailings cells in order to eliminate erosion during the rainy season.

The Limón mine closure costs were estimated by an independent consultant. Subsequently, they were modified by TMSA to better reflect local wage rates and past experience. This estimate does not include the Santa Pancha underground and open pit mines, or the proposed new tailings impoundment area, because the estimate pre-dates these developments. Central Sun is in the process of estimating closure costs for Santa Pancha.

**CAPITAL AND OPERATING COST ESTIMATES**

Capital and operating costs have been estimated by mine staff, based on historical costs.

Capital costs for Talavera include deferred development, equipment rebuilds, and miscellaneous materials. Santa Pancha capital costs include deferred development, ventilation system installation, pumping systems, equipment purchases & rebuilds, and electrical systems. Deferred development costs are calculated on a cost per metre basis, using actual material costs from developing ramps at Talavera and Santa Pancha. Infrastructure capital costs include tailings dam construction, light vehicles and buildings/farm. Reclamation costs are based on TMSA's closure estimate, with \$100,000 added by Scott Wilson RPA to cover reclamation of Santa Pancha and the new tailings pond, which were not included in TMSA's estimate. No contingency has been applied to capital costs. The capital costs are summarized in Table 18-4.

Talavera and infrastructure costs are well-known and predictable. Santa Pancha costs will depend on efficient execution of the production schedule. Reclamation estimates are based on past experience on the mine site.

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**TABLE 18-4 LOMP CAPITAL COSTS**

<b>Central Sun Gold – Limón Mine</b>		
<b>Area</b>	<b>Item</b>	<b>('000s)</b>
<b>Talavera&amp;Veta Nueva</b>	Deferred Development	2,275
	Ventilation	65
	Pumping	60
	Equipment	287
	Electrical	40
<b>Santa Pancha</b>	Deferred Development	1,516
	Ventilation	65
	Pumping	300
	Equipment	459
	Electrical	50
<b>Infrastructure</b>	Tailings Dams	2,650
	Light Vehicles	140
	Buildings/Farm	75
<b>Closure</b>	Reclamation	1,036
<b>TOTAL</b>		<b>9,018</b>

Operating costs for the Limón Mine are based on past experience, with the exception of Santa Pancha mining costs, which were developed from first principles by TMSA staff. Unit operating costs are summarized in the Table 18-5.

Talavera mining cost projections are approximately 8% lower than previous years, due to haulage savings from a new underground truck chute, reduced reliance on expatriate supervision, and increased use of low-cost ANFO in place of high-cost high explosives.

Normally, longhole mining would be expected to be lower-cost than cut & fill mining. Comparing Talavera costs to Santa Pancha costs, however, the opposite is true, due to the difference in vein widths. Talavera averages close to two metres, while Santa Pancha averages close to eight metres. The increased tonnes per vertical meter allows cut

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& fill mining to be more productive than narrow-vein longhole methods. In areas where Santa Pancha is narrow, unit costs are expected to be higher.

**TABLE 18-5 LOMP UNIT OPERATING COSTS**  
**Central Sun Gold – Limón Mine**

<b>Item</b>	<b>Units</b>	<b>LOMP Average</b>
Talavera Mining	\$/t Talavera ore	41.73
Santa Pancha Mining	\$/t Santa Pancha ore	26.56
Open Pit Mining	\$/t Open Pit ore	13.83
Total Mining	\$/t milled	28.59
Milling	\$/t milled	16.50
G&A	\$/t milled	18.32
<b>Total</b>	<b>\$/t milled</b>	<b>63.43</b>

Operating costs should be as predicted, subject to normal operating variation. Santa Pancha mining costs remain unproven, and may vary by a greater amount, however, , within the bounds of the sensitivity testing (see Sensitivity Analysis below).

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## ECONOMIC ANALYSIS

Central Sun has prepared a Life of Mine Plan that schedules production of the Mineral Reserves (as of January 1, 2008). The mine life is forecast to be approximately four years, ending in the 4th quarter of 2011. Projection of the pre-tax cash flow is shown in Table 18-6. The key input parameters are:

- Production of 991 tonnes per day (based on 327 days per annum).
- Reserve and Resource Base: Mineral Reserves of 1.38 million tonnes at an average grade of 4.89 g Au/t. The Mineral Resources are additional to the Mineral Reserves.
- Total production: 1.29 million tonnes @ 5.43 g Au/t.
- Annual gold production: 46,000 ounces, average.
- Metallurgical recovery of 82.0%.
- Gold price of \$837 per ounce.
- Silver revenue assumed to be not material.
- Revenue is recognized at the time of production.
- Operating costs: \$63.43 per tonne milled.
- Capital costs: \$9.02 million.

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**GLOBAL MARKETS**

The principal commodities produced at the Limón Mine (gold and silver by-product) are freely traded, at prices that are widely known, so that prospects for sale of any production are virtually assured. RPA used a gold price of \$375 per ounce for the Base Case.

The Nicaraguan Cordoba has shown a steady decline against the US dollar over the past few years:

- December 31, 2007 – 1 US dollar = 19.22 Cordobas
- December 31, 2006 – 1 US dollar = 18.57 Cordobas
- December 31, 2005 – 1 US dollar = 17.21 Cordobas
- December 31, 2004 – 1 US dollar = 16.24 Cordobas
- December 31, 2003 – 1 US dollar = 15.43 Cordobas

For costs originally estimated in Cordobas (for example, labour), Central Sun applies an inflation factor of 6% per annum before converting to US dollars.

**CASH FLOW ANALYSIS**

The undiscounted pre-tax cash flow totals \$33.9 million. The unit cash operating cost is \$541 per ounce of gold. Capital expenditures are estimated to total \$55 per ounce, and royalties are forecast to total \$50 per ounce, over the remaining mine life. The total cash cost of production, including operating, capital, and royalties, is estimated to be \$646 per ounce.

Central Sun's physical and cost data are consistent with operations during the past several years. In view of recent gold prices ranging from \$900 per ounce to \$1,000 per ounce, the Limón Mine is expected to generate a positive cash flow for the period detailed in the Life of Mine Plan.

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**TABLE 18-6 LIMÓN MINE, CASH FLOW MODEL**

<b>PRODUCTION</b>	<b>UNITS</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>PLAN TOTAL</b>
<b>UNDERGROUND</b>							
ORE MINED (FULL OPERATING COST) TM			331,000	350,000	350,000	349,000	1,380,000
GOLD GRADE	gpt		4.93	4.87	4.82	4.97	4.90
<b>TOTAL ORE MINED</b>	<b>TM</b>		<b>331,000</b>	<b>350,000</b>	<b>350,000</b>	<b>349,000</b>	<b>1,380,000</b>
<b>AVG. GRADE</b>	<b>gpt</b>		<b>4.93</b>	<b>4.87</b>	<b>4.82</b>	<b>4.97</b>	<b>4.90</b>
<b>MILLING</b>							
FEED TONNES	TM		331,000	350,000	350,000	349,000	1,380,000

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GOLD GRADE	gpt	4.97	3.97	4.09	4.85	4.46
RECOVERY	%	82.0%	82.0%	82.0%	82.0%	82.0%
GOLD BULLION	OUNCES	43,028	44,921	44,499	45,689	178,136
GOLD IN CARBON	OUNCES					
<b>RECOVERED OUNCES</b>	<b>OUNCES</b>	<b>43,028</b>	<b>44,921</b>	<b>44,499</b>	<b>45,689</b>	<b>178,136</b>
SILVER BULLION	OUNCES					
<b>GROSS INCOME</b>						
NET REALIZED GOLD PRICE PER OUNCE	US \$	900	850	800	800	837
<b>GOLD REVENUE</b>	<b>US \$</b>	<b>38,725,217</b>	<b>38,182,650</b>	<b>35,598,864</b>	<b>36,551,244</b>	<b>149,057,976</b>
<b>COST OF PRODUCTION</b>						
MINING	US \$	10,409,619	11,007,150	11,007,150	10,975,701	43,399,620
MILLING	US \$	6,007,650	6,352,500	6,352,500	6,334,350	25,047,000
ADMINISTRATION	US \$	6,436,948	7,197,143	7,197,143	7,156,075	27,987,309
<b>TOTAL COST</b>	<b>US \$</b>	<b>22,854,217</b>	<b>24,556,793</b>	<b>24,556,793</b>	<b>24,466,126</b>	<b>96,433,929</b>
<b>UNIT COST PER TONNE</b>						
MINING	US\$/TM	31.45	31.45	31.45	31.45	31.45
MILLING	US\$/TM	18.15	18.15	18.15	18.15	18.15
ADMINISTRATION	US\$/TM	19.45	20.56	20.56	20.50	20.28
<b>COST PER TONNE</b>	<b>US \$</b>	<b>69.05</b>	<b>70.16</b>	<b>70.16</b>	<b>70.10</b>	<b>69.88</b>
<b>COST PER OUNCE</b>	<b>US \$</b>	<b>531.15</b>	<b>546.67</b>	<b>551.86</b>	<b>535.49</b>	<b>541.35</b>
<b>GROSS PROFIT/LOSS OF PRODUCTION</b>						
	US \$	<b>15,871,000</b>	<b>13,625,857</b>	<b>11,042,072</b>	<b>12,085,118</b>	<b>52,624,046</b>
Repadre Royalty Expenses (3%)	US \$	1,161,757	1,145,479	1,067,966	1,096,537	4,471,739
Income Tax Advances (Advalorem 3%)	US \$	1,161,757	1,145,479	1,067,966	1,096,537	4,471,739
<b>PROFIT/LOSS of OPERATION</b>	<b>US \$</b>	<b>13,547,487</b>	<b>11,334,898</b>	<b>8,906,140</b>	<b>9,892,043</b>	<b>43,680,568</b>
<b>CAPITAL EXPENDITURE</b>						
MINE	US \$	340,500	2,935,906	761,078	761,078	661,078
MILL	US \$	394,297	1,450,000	600,000	600,000	0
INFRASTRUCTURE	US \$		215,000			215,000
CLOSURE PLAN	US \$			300,000	736,000	1,036,000
<b>TOTAL CAPITAL</b>	<b>US \$</b>	<b>734,797</b>	<b>4,600,906</b>	<b>1,361,078</b>	<b>1,661,078</b>	<b>9,754,936</b>
<b>NET CASH FLOW</b>	<b>US \$</b>	<b>-734,797</b>	<b>8,946,581</b>	<b>9,973,820</b>	<b>7,245,062</b>	<b>8,494,965</b>
Depreciation	US \$					
<b>NET PROFIT/LOSS BEFORE INCOME TAX</b>	<b>US \$</b>	<b>(734,797)</b>	<b>8,946,581</b>	<b>9,973,820</b>	<b>7,245,062</b>	<b>8,494,965</b>
Income Tax						
<b>NET PROFIT/LOSS AFTER INCOME TAX</b>		<b>(734,797)</b>	<b>8,946,581</b>	<b>9,973,820</b>	<b>7,245,062</b>	<b>8,494,965</b>
<b>CUMULATIVE NET CASH FLOW</b>		<b>(734,797)</b>	<b>8,211,784</b>	<b>18,185,605</b>	<b>25,430,667</b>	<b>33,925,632</b>

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**SENSITIVITY ANALYSIS**

Variations to the LOMP base case NPV calculated at a 5% interest rate are detailed in Table 18-7, and graphed in Figure 18-4. The cash flow is most sensitive to gold price, followed by operating cost.



TABLE 18-7 SENSITIVITY DATA

## Central Sun Gold – Limón Mine

<b>Parameter</b>	<b>Units</b>	<b>-20%</b>	<b>-10%</b>	<b>Base</b>	<b>+10%</b>	<b>+20%</b>
<b>Variables</b>						
Gold Price	\$/oz	670	753	837	921	1004
Operating Cost	\$/tonne	56	63	70	77	84
Capital Cost	\$millions	7.22	8.12	9.02	9.92	10.82
<b>NPV</b>	<b>Units</b>	<b>-20%</b>	<b>-10%</b>	<b>Base</b>	<b>+10%</b>	<b>+20%</b>
Gold Price	\$millions	11,5	22,6	33,8	44,9	56,1
Operating Cost	\$millions	35,3	34,6	33,8	33,1	32,3
Capital Cost	\$millions	47,7	40,7	33,8	26,9	19,9
Mine Life	\$millions	11,5	22,7	33,8	44,9	56,1

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FIGURE 18-7 CASH FLOW SENSITIVITY GRAPH

## 19 CONCLUSIONS

Based on the review of the current production and past exploration data, it is concluded that:

- The procedures used in assaying, and Mineral Reserve and Mineral Resource estimation, are in keeping with industry standards and are appropriate for the deposit and mining methods.
- The targets set out in the Life of Mine Plan for four years commencing January 1, 2008 are achievable. Annual production should average 44,500 ounces per year over the remaining four years of reserves.
- The Life of Mine Plan cash flow is most sensitive to gold price and operating cost. The current gold prices ranging from \$US900 to \$US\$1000 per ounces support a robust mining operation.
- Historic and recent experience at the Limon mine indicates that there is excellent potential to outline additional reserves in the mining areas as well as outline extensions to vein systems.
- A number of promising exploration targets have been outlined which warrant continued follow up drilling and surface exploration. There is excellent potential to substantially increase resources on the Limon mine property.
- The geological environment at Mestiza and La India is very prospective and warrants further exploration

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## 20 RECOMMENDATIONS

It is recommended that:

- Ongoing exploration efforts at the mines continue with the goal of extending the mine life by conversion of resources to reserves and by delineating extensions to existing veins in the immediate mine area.
- Exploration be continued to test other target areas within trucking distance of the mill.
- Continue exploration program in progress at Mestiza and expand the program to include the complete La India concession.
- More regional exploration be carried out to evaluate the potential for significant gold deposits on other concessions held by Central Sun in the Limon area.

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## 22 SIGNATURE PAGE

This report entitled “Technical Report on Mineral Resources and Mineral Reserves, Limón Mine and Mestiza Areas, Nicaragua” and dated March 31, 2008 was prepared by and signed by the following authors:

*Original signed by:*

*“William N. Pearson”*

Dated at Toronto, Ontario  
March 31, 2008

William N. Pearson, Ph.D., P.Geo.  
Executive Vice President, Exploration  
Central Sun Mining Inc.

*Original signed by:*

*“Graham A. Speirs”*

Dated at Toronto, Ontario  
March 31, 2008

Graham A. Speirs, P.Eng.  
Chief Operating Officer  
Central Sun Mining Inc.

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## 23 CERTIFICATE OF QUALIFICATIONS

**WILLIAM N. PEARSON, PH.D., P.GEO.**

I, William N. Pearson, Ph.D., P.Geo. do hereby certify that:

## Edgar Filing: CENTRAL SUN MINING INC. - Form 6-K

1. I am Executive Vice President, Exploration with Central Sun Mining Inc. ("Central Sun") of Suite 500, 6 Adelaide Street East, Toronto, ON, M5C 1H6.
2. I am a graduate of the University of British Columbia in 1974 with a Bachelor of Science Honours degree in Geology, of Queens University, Kingston, Ontario with a Masters of Science degree in Economic Geology in 1977 and of Queen's University with a Doctor of Philosophy in Economic Geology in 1980.
3. I am registered as a Professional Geoscientist (P.Geo.) in the Provinces of Ontario (Reg. No. 0001) and British Columbia (Reg. No. 18540).
4. I have worked as a Geologist for a total of 34 years since my graduation. My relevant experience for the purpose of the Technical Report is:
  - Review and reporting as a consultant and company executive on exploration and mining projects in 16 countries in North America, South America, Central America, Europe, East Asia and Australia for due diligence and regulatory requirements
  - Have extensive experience in gold exploration in Central America
  - Previously and presently managing exploration programs for epithermal gold deposits
5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI43-101.
6. I am responsible for overall preparation of the this report entitled "Technical Report on Mineral Resources and Mineral Reserves, Limon Mine and Mestiza Areas, Nicaragua prepared for Central Sun Mining Inc. dated March 31, 2008, "Technical Report" including all sections except Sections 16, 17 (Mineral Reserves) and 18.
7. I visited the Limón Mine and Mestiza project from October 3 to 5, 2007, October 12 to 22 (several return trips) and February 13 to 15, 2008. Since October 1, 2007 I have supervised all aspects of exploration for Central Sun Mining including supervision of on-going work at the Limon mine and Mestiza project.
8. I have had no prior involvement with the property that is the subject of the Technical Report.

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9. As of the date hereof, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
10. I am not independent of Central Sun applying the tests set out in Section 1.4 of NI43-101.
11. I have read NI 43-101F1, and the Technical Report has been prepared in compliance with NI43-101 and Form 43-101F1.
12. I consent to the filing of this Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of this Technical Report.

Original signed by:

“William N. Pearson”

Dated at Toronto, Ontario  
March 31, 2008

William N. Pearson, Ph.D., P.Geo.  
Executive Vice President, Exploration  
Central Sun Mining Inc.

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**GRAHAM SPEIRS, P.ENG.**

I, Graham A. Speirs, P. Eng., do hereby certify that:

1. I am a Chief Operating Officer with Central Sun Mining Inc. (“Central Sun”) and work out of the Managua Office; Canal 10 de TV, 1C al Norte, 1.5 C al Oeste, Casa #613, Bolonia, Managua, Nicaragua.
2. I am a graduate of the Laurentian University, Sudbury, Ontario, Canada, in 1985 with a Bachelor of Science degree in Mining Engineering.
3. I am registered as a Professional Engineer (P.Eng.) in the Provinces of Ontario (Reg. #43804806).
4. I have worked as a Mining Engineer for a total of 23 years since my graduation. My relevant experience for the purpose of the Technical Report is:
  - Review and reporting as a consultant for Kilborn-SNC Lavalin, AMEC, GEMIN on several mining operations and Projects around the world for due diligence, regulatory requirements, scoping studies, prefeasibility studies and definitive feasibility studies.
  - Senior Mine Engineer for several projects built by J.S. Redpath Ltd. around the world.
  - Construction Manager for construction of mines built in North America, Chile, Papua New Guinea, Peru.
  - Mine operator for open pit and underground mines operated in Peru, Costa Rica, and Nicaragua.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI43-101.
6. I am responsible for Sections 16, 17, 18 of this report entitled “Technical Report on Mineral Resources and Mineral Reserves, Limon Mine and Mestiza Areas, Nicaragua prepared for Central Sun Mining Inc. dated March 31, 2008, “Technical Report”.
7. I visited the Limón the Mine at least once a month and I am in daily communication with the operation from Oct., 2006 to present. I visited the Mestiza project from Oct. 19th to 20th, 2006.
8. I have had no prior involvement with the property that is the subject of the Technical Report.

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9. As of the date hereof, to the best of my knowledge, information and belief the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

10. I am not an independent of Central Sun applying the tests set out in section 1.5 of National Instrument 43-101.

11. I have read NI 43-101F1, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

12. I consent to the filing of this Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of this Technical Report.

*Original signed by:*

*“Graham A. Speirs”*

Dated at Toronto, Ontario  
March 31, 2008

Graham A. Speirs, P. Eng.  
Chief Operating Officer  
Central Sun Mining Inc.

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## 24 APPENDIX

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**EXHIBIT 99.2**







