

Occurrence Details

Occurrence Number: 105A 012 Occurrence Name: Sa Dena Hes-Main Zone Occurrence Type: Hard-rock Status: Deposit Date printed: 4/28/2025 7:34:29 PM

General Information

Primary Commodities: lead, silver, zinc Secondary Commodities: fluorite Aliases: Sa Dena Hes, Mt. Hundere, South Showing, Jewel Box Deposit Type(s): Manto Polymetallic Ag-Pb-Zn Location(s): 60°31'4" N - -128°52'39" W NTS Mapsheet(s): 105A10 Location Comments: Location digitized from map in AR092541 Hand Samples Available: Yes Last Reviewed:

Capsule

Work History

Staked as PJ and OP cl (79569) in July/62 by Frances River Syndicate (Canex Aerial Exploration Ltd, Newconex Canadian Exploration Ltd, Kerr Addison Mines & Anglo-Huronian Ltd), which built a road and explored with trenching and 6 holes (443 m) in 1963. The fringing Tom cl (86929) were staked by Conwest Exploration Company Ltd in 1963.

The property was later transferred to a new company, Mt Hundere Mines Ltd, and optioned to Atlas Explorations Ltd, which performed bulldozer trenching and geochem and geophysical surveys in 1966. Atlas changed its name to Cima Resources Ltd in 1974 and restaked as Mica cl (YA416) in Aug/76. Cima added 103 Cima, etc cl (YA45288) and explored with bulldozer trenching and 18 holes (900 m) in 1979 and a further 26 holes (1300 m) in 1980. A feasibility study in 1980 recommended production at 227 tonnes/day. Cima entered a joint venture with Canadian Natural Resources Ltd in 1981 and drilled 19 holes (797 m) in 1981 and 9 holes (422 m) in 1982.

The property was sold in 1984 to Canamax Resources Inc, which performed remapping and geochemical sampling later in the year in conjunction with work on the adjoining Atilla (Minfile Occurrence #105A 013) occurrence. Canamax added Hun cl (YA71386) to the west in 1984-85, carried out geochemical and geophysical (mag, IP, and airborne EM) surveys in 1985 and drilled 37 holes (5468 m) in 1985, 30 holes in 1986, 14 holes (3990 m) in 1987, and 10 holes (2929 m) in 1988. Canamax added more Hun claims in Jun/88 and sold its interest to Hillsborough Resources Ltd in Apr/88, subject to a 10% net profits interest. Hillsborough transferred the Cima and Mica claims to 833051 Ontario Ltd in May/89. Frame Mining Corporation Ltd tied on Thunder cl 1-22 (YB16288) & Hawk cl 1-8 (YB16310) in Aug/89 and transferred them to Curragh Resources Inc in Nov/89. Diamond drilling in 1989 totaled 29 078 m in 155 holes.

In 1990, 104 more Hun claims were added, and the property was expanded to include the Eagle cl (YB16685), also held by Curragh. The joint venture was expanded to include the Kaska Nation, which was given an option to purchase 5% by December, 1993. A production decision was announced, and construction began with the collaring of two adits on Jewelbox Hill: an upper exploration/ventilation adit and a lower development/haulage adit.

Initial underground exploration consisted of a crosscut which intersected the upper ore body 65 m from the upper portal, and a drift which followed the hanging wall of the ore for 55 m. Underground and surface drilling continued into the late fall of 1990 with 4244 m of drilling in 125 holes. The underground drilling (74 holes - 2120 m) tested a mineralized chimney which connects the upper and lower skarn zones.

After 10 months of construction, the concentrator and haul road were completed, and production from the Jewelbox Hill zone commenced in July, 1991 at a rate of 1500 tonnes/day. In 1991 the company mined 172 345 tonnes of ore and recovered 44 998 tonnes of lead-zinc concentrate, containing an average combined grade of 20.2 %. The following year the company mined 527 411 tonnes of ore and recovered 125 228 tonnes of lead zinc concentrate, containing an average combined grade of 18%. The concentrate contained significant silver credits. Exploration drilling for 1992 totalled 16 460 m in 79 holes, and the Burnick zone on North Hill (Minfile 105A 013) was explored with a short adit. Curragh Resources changed its name to Curragh Inc. in May/92.

The mine and mill were shut down Dec 2/92, primarily as a result of low metal prices. In Dec/93, a partnership of Teck Corporation Ltd, Cominco Ltd and Korea Zinc Company Ltd offered to purchase the Sa Dena Hes property from the receivers Coopers and Lybrand Ltd, subject to court and regulatory approval. The sale to Teck and Cominco was completed in Mar/94 with Korea Zinc granted the right to acquire a 50% interest in the mine.

In Aug/97 the consortium considered re-opening the mine during a rise in base metal prices but a subsequent down-turn in prices led to the cancellation of the project. The property is presently on care and maintenance status.

Cominco's 1999 Annual Report lists a proven and probable reserve (pre-NI 43-101) and a MEASURED+ INDICATED resource. Teck Cominco's 2003 to 2005 Annual Reports lists an INDICATED resource. Later reports do not list the property.

Capsule Geology

At Mt Hundere, several high grade zinc-lead-silver replacement zones occur along contacts between Lower Cambrian limestone and phyllite. At the start of production, "proven plus probable" reserves stood at approximately 3.9 million tonnes in 5 main zones, with an average grade of 3.9 g/t Pb, 12.7% Zn and S8 g/t Ag. In addition 1.2 million tonnes of sulphide mineral inventory grading 5.2% Pb, 12.5% Zn and 84 g/t Ag was assigned to "possible reserves". A further 527 000 tonnes of oxide material containing 8.1% Pb, 12.7% Zn and 109 g/t Ag was also identified. The ore is coarse-grained and free of most impurities. The waste rock and tailings are non-acid generating due to the limestone host rock and the negligible amount of pyrite or pyrrhotite in low grade mineralization in both the ore and the low grade mineralization.

Beneath Jewelbox Hill, the Upper and Lower mineralized replacement zones form lensoid bodies 1 to 15 m thick in two sheared, brecciated limestone layers with locally developed cavernous porosity. A chimney of high grade mineralization connects the Upper and Lower replacement zones. Other mineralization is contained in the Main zone, the East zone and the Gribbler zone, as well as in the Attila and Burnick zones beneath North Hill. Zinc to lead ratio is 2:1 in all zones except the Burnick, where it is 30:1. Based on drilling up to May 1990, the average grade is estimated at about 16.6% combined Zn-Pb.

On Jewelbox Hill the main ore type consists of coarse actinolite-diopside-quartz-andradite skarn with massive sphalerite and galena. Copper-iron skarns and replacement bodies containing magnetite, chalcopyrite, pyrrhotite and minor pyrite and hematite also occur locally. The highest silver values on the property come from prograde diopside-rich skarn on the east side of Jewelbox Hill. Two vertical, ENE trending faults filled with quartz-fluorite breccia occur near the ore, and some fluorite extends into the ore.

The mineralization at Mt Hundere is epigenetic and is believed to be the product of retrograde thermal metamorphism related to a buried intrusion inferred from the presence of a dome-shaped uplift in the Mt Hundere area (Abbott, 1977). The only igneous rocks outcropping on the property are quartz-albite porphyry dykes. D. Sinclair obtained a 50 Ma K/Ar age from one such dyke on North Hill. The property currently (?) hosts probable mineral reserves of 1 400 000 tonnes, grading 2.5% lead, 10.2% zinc and 44 g/t silver and indicated mineral resources (possible reserves) of approximately 700 000 tonnes grading 4.6% lead, 11.8% zinc and 56 g/t silver.

Cominco's 1999 Annual Report lists a proven and probable reserve (pre-NI 43-101) of 1.3M tonnes grading 10.1% Zn and 2.3% Pb and a MEASURED+ INDICATED resource of 0.7M tonnes grading 11.9% Zn and 4.6% Pb.

Teck Cominco's 2003 to 2005 Annual Reports lists an INDICATED resource of 2.19M tonnes grading 10.4% Zn and 2.6% Pb.

Work History

Work History					
Date	Work Type	Comment			
12/31/1997	Studies	Consortium examined property with aim of re-opening mine.			
12/31/1991	Development, Surface	Production commenced in July, 1991 at a rate of 1,500 tonnes/day.			
12/31/1991	Development, Surface				
12/31/1990	Drilling	One hundred twenty five holes, 4,244 m.			
12/31/1990	Development, Surface				
12/31/1990	Development, Surface	Amount of work done: 2,800 m.			
12/31/1989	Drilling	One hundred fifty five holes, 29,078 m.			
12/31/1988	Drilling	Ten holes, 2,929 m.			
12/31/1987	Drilling	Fourteen holes, 3,890 m.			
12/31/1986	Drilling	Twenty holes, 3,094 m.			
12/31/1985	Drilling	Thirty seven holes, 5,468 m.			
12/31/1985	Ground Geophysics	Also IP survey.			
12/31/1984	Geology				
12/31/1982	Drilling	Eight holes, 422 m.			
12/31/1981	Drilling	Nineteen holes, 797 m.			
12/31/1980	Drilling	Twenty six holes, 1,300 m.			
12/31/1979	Drilling	Eighteen holes, 900 m.			
12/31/1979	Trenching				
12/31/1966	Geochemistry				
12/31/1966	Ground Geophysics	Also IP survey.			
12/31/1966	Trenching				
12/31/1963	Drilling	Six holes, 433 m.			
12/31/1963	Development, Surface				
12/31/1963	Trenching				
12/13/1985	Geochemistry				
12/13/1985	Airborne Geophysics				
12/1/1986	Development, Surface				
12/1/1984	Geochemistry				
12/1/1984	Geochemistry				
12/1/1982	Studies				
12/1/1982	Lab Work/Physical Studies				
12/1/1981	Trenching				
12/1/1981	Other				
12/1/1981	Geochemistry				
12/1/1981	Geology				
12/1/1980	Studies				
12/1/1980	Other				
12/1/1980	Geochemistry				
12/1/1980	Geochemistry				
12/1/1980	Geology				

Assessment Reports that overlap occurrence

Number	Year	Title	Worktypes	Drilled	Drilled
092947	1990	Mt. Hundere Surface Drilling	Diamond - Drilling	123	4244.34
<u>092847</u>	1990	[Diamond Drilling Report on Hundere Property]	Diamond - Drilling	52	9396.50
<u>092930</u>	1988	[Mt. Hundere Diamond Drilling on Jewelbox Hill and the North Showing]	Diamond - Drilling, Diamond - Drilling	24	8846.50
<u>092593</u>	1988	1988 Drilling Report	Diamond - Drilling	28	5501
<u>092541</u>	1988	1988 Drilling Report	Diamond - Drilling	28	5501
<u>091927</u>	1986	Mt. Hundere Property	All Weather Road - Development, Surface, Diamond - Drilling, Drill Core - Geochemistry	20	3094
<u>091784</u>	1985	Mt. Hundere Diamond Drilling	Diamond - Drilling, Drill Core - Geochemistry	13	2018.79
<u>091615</u>	1984	Mt. Hundere Geochemical Report	Silt - Geochemistry, Soil - Geochemistry		
<u>091470</u>	1982	1982 Work Report Cima Mines Option Mt. Hundere Property Watson Lake Mining District Yukon Territory	Diamond - Drilling	9	317.20
<u>091745</u>	1982	1982 Work Report, Cima Mines Option, Mt. Hundere Property, Watson Lake Mining District	Diamond - Drilling, Metallurgical Tests - Lab Work/Physical Studies, Resource Estimate - Studies	8	314.10
<u>090955</u>	1981	Report on Geology, Geochemical and Diamond Drilling	Diamond - Drilling, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Line Cutting - Other, Backhoe - Trenching	19	797
062257	1980	Mt. Hundere Property Feasibility Study Review	Feasibility - Studies		
062256	1980	Mt. Hundere Property Feasibility Study	Feasibility - Studies		
<u>090527</u>	1979	Report on 1979 Exploration Program on Mount Hundere (Mica) Property (AR 090955)	Diamond - Drilling, Detailed Bedrock Mapping - Geology, Hand - Trenching	18	468.11
<u>019586</u>	1966	Report on the Geochemical, Geological Surveys and Bulldozer Trenching of the Mt. Hundere Property	Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Backhoe - Trenching		
092066	1963	New Showing File	Prospecting - Other		
<u>091095</u>	1963	[Drilling Summary of JP and PJ Claims]	Diamond - Drilling	7	560.80

Related References

Number	Title	Page(s)	Reference Type	Document Type
ARMC000393	Report - Sa Dena Hes Mine		Property File Collection	Report
ARMC006766	Geology of the Mount Hundere lead-zinc-silver deposits, Watson Lake		Property File Collection	Geoscience Map (Geological - Bedrock)
<u>ARMC005857</u>	Map - Vertical section 1387.5N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005858	Map - Vertical section 1400N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005859	Map - Vertical section 1412.5N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005860	Map - Vertical section 1425N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005861	Map - Vertical section 1437.5N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005899	Map - Vertical section 1537.5N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005900	Map - Vertical section 1550N - Inventory Polygons with Grades - Sa Dena Hes Joint Venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005901	Map - Vertical section 1562.5N - Inventory Polygons with Grades - Sa Dena Hes Joint Venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005902	Map - Vertical section 1575N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005903	Map - Vertical section 1587.5N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005904	Map - Vertical section 1600N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005905	Map - Vertical section 1612.5N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005906	Map - Vertical section 1625N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005907	Mine map - Plan level drill hole traces - Sa Dena Hes joint jenture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005908	Mine map - Plan level 1420 underground workings - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005909	Mine map - Plan level 1395 underground workings - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005910	Mine map - Plan level 1370 underground workings - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005911	Mine map - Plan level 1340 underground workings - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005912	Mine map - Plan level 1330 underground workings - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (General)
ARMC005913	Mine map - Plan level 1420 - Geology and DDH - Level 1415 - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC005914	Mine map - Plan level 1395 - Geology and DDH - Level 1400 - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC005915	Mine map - Plan level 1370 - Geology and DDH - Level 1375 - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC005916	Mine map - Plan level 1360 - Geology and DDH - Level 1360 - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC005917	Mine map - Plan level 1340 - Geology and DDH - Level 1345 - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC005918	Mine map - Plan level 1330 - Geology and DDH - Level 1335 - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC005919	Mine map - Plan level 1290 - Geology and DDH - Level 1290 - Sa Dena Hes joint venture - Jewel Box		Property File Collection	Geoscience Map (Geological - Bedrock)

ARMC005862	Map - Vertical section 1450N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005863	Map - Vertical section 1462.5N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005864	Map - Vertical section 1475N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005865	Map - Vertical section 1487.5N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005866	Map - Vertical section 1500N - Lithologies and PD+Zn asays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005867	Map - Vertical section 1512.5N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005868	Map - Vertical section 1525N - Lithologies and Pb+2n assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005869		Property File Collection	
ARMC005870	Map - Vertical section 1537.5N - Vertical Section 1537.5N - Sa Dena Hes joint venture - Jewel Box Map - Vertical section 1550N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General) Geoscience Map (General)
ARMC005871	Map - Vertical section 1562.5N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005872</u>	Map - Vertical section 1575N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005873</u>	Map - Vertical section 1587.5N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005874	Map - Vertical section 1600N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005875</u>	Map - Vertical section 1612.5N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005876</u>	Map - Vertical section 1625N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005877</u>	Map - Vertical section 1237.5N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005878</u>	Map - Vertical section 1250N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005879</u>	Map - Vertical section 1275N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005880</u>	Map - Vertical section 1300N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005881</u>	Map - Vertical section 1312.5N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005882</u>	Map - Vertical section 1325N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005883</u>	Map - Vertical section 1337.5N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005884</u>	Map - Vertical section 1350N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005885</u>	Map - Vertical section 1362.5N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005886</u>	Map - Vertical section 1375N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005887</u>	Map - Vertical section 1387N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005888</u>	Map - Vertical section 1400N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005889</u>	Map - Vertical section 1412.5N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005890</u>	Map - Vertical section 1425N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005891</u>	Map - Vertical section 1437.5N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005892</u>	Map - Vertical section 1450N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005893</u>	Map - Vertical section 1462.5N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005894</u>	Map - Vertical section 1475N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005895</u>	Map - Vertical section 1487.5N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005896</u>	Map - Vertical section 1500N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005897</u>	Map - Vertical section 1512.5N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005898	Map - Vertical section 1525N - Inventory polygons with grades - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005847	Map - Vertical section 1237.5N - Lithologies and Pb-Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005848	Map - Vertical section 1250N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005849	Map - Vertical section 1275N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
<u>ARMC005850</u>	Map - Vertical section 1300N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005851	Map - Vertical section 1312.5N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005852	Map - Vertical section 1325N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005853	Map - Vertical section 1337.5N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005854	Map - Vertical section 1350N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005855	Map - Vertical section 1362.5N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC005856	Map - Vertical section 1375N - Lithologies and Pb+Zn assays - Sa Dena Hes joint venture - Jewel Box	Property File Collection	Geoscience Map (General)
ARMC004908	Definition study report - Mt. Hundere joint venture	Property File Collection	Report
ARMC005033	Sa Dena Hes joint venture - Jewel Box Hill mineral inventory	Property File Collection	Report
ARMC003887	Diamond drill hole coordinates and source - Mount Hundere	Property File Collection	Drill Logs
ARMC007570	Mt. Hundere maps	Property File Collection	Geoscience Map (General)
ARMC007831	Geochemical survey map - Cu, Pb, Zn - Stewart Lake - Anmac project	Property File Collection	Geochemical Map
ARMC019981	Curragh Resources Inc Mt. Hundere, Faro operations, Westray Coal, Cirque, Faro operations	Property File Collection	Report
ARMC018640	Field map - 105A/10	Property File Collection	Geoscience Map (General)
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Resource/Reserve

fear	Zone	Туре	Commodity	Grade	Tonnage	Amount	Reported A mount	43-101 Compliant	Cut-off
003	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Indicated	lead	2.6 %	2,190,000		No	Unknown	Unknowr
	resources probably exist but do not meet current National Instrument 43 - 101 s	tandards.; Teck Comin	co 2003 Annual Re	port p. 63.	Report does	not breakou	ut undergrou	nd and open	pit or by
_	Appears to be remaining resource.								
003	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Indicated	zinc	10.4 %	2,190,000		No	Unknown	Unknow
	resources probably exist but do not meet current National Instrument 43 -101 s . Appears to be remaining resource.	tandards.; Teck Comin	co 2003 Annual Re	port p. 63.	Report does	not breakou	ut undergrou	nd and open	pit or by
999	Sa Dena Hes (Underground)	Probable	zinc	10.1 %	1,300,000		No	No	unknowr
omir	nco 1999 Annual Report								
999	Sa Dena Hes (Underground)	Probable	lead	2.3 %	1,300,000		No	No	Unknow
omir	nco 1999 Annual Report.								
999	Sa Dena Hes (Underground)	Inferred	zinc	11.9 %	700,000		No	No	unknown
Comir	nco 1999 Annual Report.								
999	Sa Dena Hes (Underground)	Inferred	lead	4.6 %	700,000		No	No	unknowr
omir	nco 1999 Annual Report.								
.997	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	lead	4.6 %	700,000		No	No	Unknowr
ppro	oximate reserves remaining based on information published at time. Project Statu	is = Care and Maintena	nce. Indicated Min	eral Resou	rces = Possibl	e Reserves.;	Northern Mi	ner, 25 Aug/9	7.
997	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	lead	2.5 %	1,400,000		No	No	Unknow
ppro	oximate reserves remaining based on information published at time. Project Statu	is = Care and Maintena	nce. Indicated Min	eral Resour	rces = Possibl	e Reserves.;	Northern Mi	ner, 25 Aug/9	7.
997	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	silver	59 g/t	700,000		No	No	Unknow
ppro	oximate reserves remaining based on information published at time. Project Statu	is = Care and Maintena	nce. Indicated Min	eral Resour	rces = Possibl	e Reserves.;	Northern M	ner, 25 Aug/9	7.
997	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	silver	44 g/t	1,400,000		No	No	Unknow
ppro	oximate reserves remaining based on information published at time. Project Statu	is = Care and Maintena	nce. Indicated Min	eral Resour	rces = Possibl	e Reserves.;	Northern M	ner, 25 Aug/9	7.
997	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	zinc	11.8 %	700,000		No	No	Unknow
ppro	oximate reserves remaining based on information published at time. Project Statu	is = Care and Maintena	nce. Indicated Min		rces = Possibl	e Reserves.;	; Northern M	ner, 25 Aug/9	7.
997	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	zinc	10.2 %	1,400,000		No	No	Unknow
	eximate reserves remaining based on information published at time. Project Statu					e Reserves.;			
990	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate		8.1 %	527,000		No	No	Unknow
	reserves published at start of operations at Sa Dena Hes project. Indicated Miner onmental Evaluation, Volume 1 - Project Description, May 1990. See also Northe		Reserves, Not Defir	ned Resour	ce= Oxide Re	serves; Mt.	Hundere Dev	elopment, Ini	tial
990	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	lead	5.2 %	1,189,000		No	No	Unknow
	reserves published at start of operations at Sa Dena Hes project. Indicated Miner onmental Evaluation, Volume 1 - Project Description, May 1990. See also Northe		Reserves, Not Defir	ned Resour	ce= Oxide Re	serves; Mt.	Hundere Dev	elopment, Ini	tial
990	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	lead	3.9 %	3,864,000		No	No	Unknow
	reserves published at start of operations at Sa Dena Hes project. Indicated Miner onmental Evaluation, Volume 1 - Project Description, May 1990. See also Northe		Reserves, Not Defir	ned Resour	ce= Oxide Re	serves; Mt.	Hundere Dev	elopment, Ini	tial
990	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	lead	16.9 %	75,000		No	No	Unknow
	reserves published at start of operations at Sa Dena Hes project. Indicated Miner onmental Evaluation, Volume 1 - Project Description, May 1990. See also Northe		Reserves, Not Defir	ned Resour	ce= Oxide Re	serves; Mt.	Hundere Dev	elopment, Ini	tial
990	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	silver	109 g/t	527,000		No	No	Unknow
	reserves published at start of operations at Sa Dena Hes project. Indicated Miner onmental Evaluation, Volume 1 - Project Description, May 1990. See also Northe		Reserves, Not Defir	ned Resour	ce= Oxide Re	serves; Mt.	Hundere Dev	elopment, Ini	tial
990	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	silver	84 g/t	1,189,000		No	No	Unknow
	reserves published at start of operations at Sa Dena Hes project. Indicated Miner onmental Evaluation, Volume 1 - Project Description, May 1990. See also Northe		Reserves, Not Defir	ned Resour	ce= Oxide Re	serves; Mt.	Hundere Dev	elopment, Ini	tial
990	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	silver	58 g/t	3,864,000		No	No	Unknow
	reserves published at start of operations at Sa Dena Hes project. Indicated Miner onmental Evaluation, Volume 1 - Project Description, May 1990. See also Northe		Reserves, Not Defir	ned Resour	ce= Oxide Re	serves; Mt.	Hundere Dev	elopment, Ini	tial
990	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	silver	89 g/t	75,000		No	No	Unknow
	reserves published at start of operations at Sa Dena Hes project. Indicated Miner onmental Evaluation, Volume 1 - Project Description, May 1990. See also Northe		Reserves, Not Defir	ned Resour	ce= Oxide Re	serves; Mt.	Hundere Dev	elopment, Ini	tial
							1		
	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	zinc	12.1 %	527,000		No	No	Unknow
nviro 990 otal i	MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND) reserves published at start of operations at Sa Dena Hes project. Indicated Miner onmental Evaluation, Volume 1 - Project Description, May 1990. See also Northe	ral Resorces = Possible				serves; Mt.			

Total reserves published at start of operations at Sa Dena Hes project. Indicated Mine Environmental Evaluation, Volume 1 - Project Description, May 1990. See also Northe		serves, Not Defi	ined Resour	ce= Oxide Res	erves; Mt.	Hundere De	velopment, i	Initial
1990 MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	zinc	12.7 %	3,864,000		No	No	Unknown
Total reserves published at start of operations at Sa Dena Hes project. Indicated Mine Environmental Evaluation, Volume 1 - Project Description, May 1990. See also Northe		serves, Not Defi	ined Resour	ce= Oxide Res	erves; Mt.	Hundere De	velopment,	Initial
1990 MT. HUNDERE - TOTAL RESERVES (OPEN PIT & UNDERGROUND)	Historical Estimate	zinc	18.8 %	75,000		No	No	Unknown
Total reserves published at start of operations at Sa Dena Hes project. Indicated Mine Environmental Evaluation, Volume 1 - Project Description, May 1990. See also Northe		serves, Not Defi	ined Resour	ce= Oxide Res	erves; Mt.	Hundere De	velopment,	Initial
1990 EAST ZONE (OPEN PIT)	Historical Estimate	lead	5.4 %	129,000		No	No	Unknown
Individual zone figures. Not Defined Mineral Resource = Oxide Reserves; Mt. Hunder Jul/91.	e Development, Initial Env	ironmental Eva	luation, Volu	ume 1 - Projec	t Descriptio	on, May 1990	. See also N	orthern Miner 22
1990 GRIBBLER (UNDERGROUND)	Historical Estimate	lead	11.1 %	347,000		No	No	Unknown
Individual zone figures. Indicated Resources = Possible Reserves; Mt. Hundere Devel	opment, Initial Environme	ntal Evaluation,	Volume 1 -	Project Descri	ption, May	1990. See al	so Northern	Miner 22 Jul/91.
1990 JEWELBOX HILL (OPEN PIT & UNDERGROUND)	Historical Estimate	lead	9 %	398,000		No	No	Unknown
Individual zone figures.Indicated Resources= Possible Reserves, Not Defined Mineral Description, May 1990. See also Northern Miner 22 Jul/91.	Resource = Oxide Reserve	s.; Mt. Hundere	e Developm	ent, Initial Envi	ironmental	Evaluation,	Volume 1 - I	Project
1990 JEWELBOX HILL (OPEN PIT & UNDERGROUND)	Historical Estimate	lead	6.5 %	315,000		No	No	Unknown
Individual zone figures.Indicated Resources= Possible Reserves, Not Defined Mineral Description, May 1990. See also Northern Miner 22 Jul/91.	Resource = Oxide Reserve	s.; Mt. Hundere	e Developm	ent, Initial Envi	ironmental	Evaluation,	Volume 1 - I	Project
1990 JEWELBOX HILL (OPEN PIT & UNDERGROUND)	Historical Estimate	lead	8 %	1,448,000		No	No	Unknown
Individual zone figures.Indicated Resources= Possible Reserves, Not Defined Mineral Description, May 1990. See also Northern Miner 22 Jul/91.	Resource = Oxide Reserve	s.; Mt. Hundere	e Developm	ent, Initial Envi	ironmental	Evaluation,	Volume 1 - I	Project
1990 MAIN ZONE (OPEN PIT)	Historical Estimate	lead	7.8 %	43,000		No	No	Unknown
Individual zone figures.; Mt. Hundere Development, Initial Environmental Evaluation	, Volume 1 - Project Descr	iption, May 199	0. See also 1	Northern Miner	22 Jul/91.			
1990 MAIN ZONE (OPEN PIT)	Historical Estimate	lead	16.9 %	75,000		No	No	Unknown
Individual zone figures.; Mt. Hundere Development, Initial Environmental Evaluation	, Volume 1 - Project Descr	iption, May 199	0. See also 1	Northern Miner	22 Jul/91.			
1990 EAST ZONE (OPEN PIT)	Historical Estimate	silver	247 g/t	129,000		No	No	Unknown
Individual zone figures. Not Defined Mineral Resource = Oxide Reserves; Mt. Hunder Jul/91.	e Development, Initial Env	ironmental Eva	luation, Vol	ume 1 - Projec	t Descriptio	on, May 1990	. See also N	orthern Miner 22
1990 GRIBBLER (UNDERGROUND)	Historical Estimate	silver	106 g/t	347,000		No	No	Unknown
Individual zone figures. Indicated Resources = Possible Reserves; Mt. Hundere Devel	opment, Initial Environme	ntal Evaluation,	Volume 1 -	Project Descri	ption, May	1990. See al	so Northern	Miner 22 Jul/91.
1990 JEWELBOX HILL (OPEN PIT & UNDERGROUND)	Historical Estimate	silver	64 g/t	398,000		No	No	Unknown
Individual zone figures.Indicated Resources= Possible Reserves, Not Defined Mineral Description, May 1990. See also Northern Miner 22 Jul/91.	Resource = Oxide Reserve	s.; Mt. Hundere	e Developm	ent, Initial Env	ironmental	Evaluation,	Volume 1 - I	Project
1990 JEWELBOX HILL (OPEN PIT & UNDERGROUND)	Historical Estimate	silver	83 g/t	315,000		No	No	Unknown
Individual zone figures.Indicated Resources= Possible Reserves, Not Defined Mineral Description, May 1990. See also Northern Miner 22 Jul/91.	Resource = Oxide Reserve	s.; Mt. Hundere	e Developm	ent, Initial Env	ironmental	Evaluation,	Volume 1 - I	Project
1990 JEWELBOX HILL (OPEN PIT & UNDERGROUND)	Historical Estimate	silver	70 g/t	1,448,000		No	No	Unknown
Individual zone figures.Indicated Resources= Possible Reserves, Not Defined Mineral Description, May 1990. See also Northern Miner 22 Jul/91.	Resource = Oxide Reserve	s.; Mt. Hundere	e Developm	ent, Initial Envi	ironmental	Evaluation,	Volume 1 - I	Project
1990 MAIN ZONE (OPEN PIT)	Historical Estimate	silver	45 g/t	43,000		No	No	Unknown
Individual zone figures.; Mt. Hundere Development, Initial Environmental Evaluation	, Volume 1 - Project Descr	iption, May 199	0. See also 1	Northern Miner	22 Jul/91.			
1990 MAIN ZONE (OPEN PIT)	Historical Estimate	silver	89 g/t	75,000		No	No	Unknown
Individual zone figures.; Mt. Hundere Development, Initial Environmental Evaluation	, Volume 1 - Project Descr	iption, May 199	0. See also 1	Northern Miner	22 Jul/91.			
1990 EAST ZONE (OPEN PIT)	Historical Estimate	zinc	7.3 %	129,000		No	No	Unknown
Individual zone figures. Not Defined Mineral Resource = Oxide Reserves; Mt. Hunder Jul/91.	e Development, Initial Env	ironmental Eva	luation, Vol	ume 1 - Projec	t Descriptio	on, May 1990	. See also N	orthern Miner 22
1990 GRIBBLER (UNDERGROUND)	Historical Estimate	zinc	16.1 %	347,000		No	No	Unknown
Individual zone figures. Indicated Resources = Possible Reserves; Mt. Hundere Devel	opment, Initial Environme	ntal Evaluation,	Volume 1 -	Project Descri	ption, May	1990. See al	so Northern	Miner 22 Jul/91.
1990 JEWELBOX HILL (OPEN PIT & UNDERGROUND)	Historical Estimate	zinc	13.7 %	398,000		No	No	Unknown
Individual zone figures.Indicated Resources= Possible Reserves, Not Defined Mineral Description, May 1990. See also Northern Miner 22 Jul/91.	Resource = Oxide Reserve	s.; Mt. Hundere	e Developm	ent, Initial Envi	ironmental	Evaluation,	Volume 1 - I	Project
1990 JEWELBOX HILL (OPEN PIT & UNDERGROUND)	Historical Estimate	zinc	9.4 %	315,000		No	No	Unknown
Individual zone figures.Indicated Resources= Possible Reserves, Not Defined Mineral Description, May 1990. See also Northern Miner 22 Jul/91.	Resource = Oxide Reserve	s.; Mt. Hundere	e Developm	ent, Initial Envi	ironmental	Evaluation,	Volume 1 - I	Project
1990 JEWELBOX HILL (OPEN PIT & UNDERGROUND)	Historical Estimate	zinc	12.8 %	1,448,000		No	No	Unknown
Individual zone figures.Indicated Resources= Possible Reserves, Not Defined Mineral Description, May 1990. See also Northern Miner 22 Jul/91.	Resource = Oxide Reserve	s.; Mt. Hundere	e Developm	ent, Initial Envi	ironmental	Evaluation,	Volume 1 - I	Project
1990 MAIN ZONE (OPEN PIT)	Historical Estimate	zinc	10.8 %	43,000		No	No	Unknown
				· ·				

Individual zone figures.; Mt. Hundere Development, Initial Environmental Evaluation, Volume 1 - Project Description, May 1990. See also Northern Miner 22 Jul/91.

	1990	MAIN ZONE (OPEN PIT)	Historical Estimate	zinc	18.8 %	75,000		No	No	Unknown
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Individual zone figures.; Mt. Hundere Development, Initial Environmental Evaluation, Volume 1 - Project Description, May 1990. See also Northern Miner 22 Jul/91.

Production

Date	Commodity	Amount	Comment
12/31/1991	Zn	125226 metric tonnes	125 226 tonnes of zinc and lead concentrate with an average combined head grade of 18% (includes credit for silver content). Canadian Mines Handbook 1993-1994
12/31/1991	Pb	125226 metric tonnes	tonnage represents zinc and lead concentrate with an average combined head grade of 18% (includes credit for silver content). Canadian Mines Handbook 1993-1994.

Drill core at YGS core library

Number	Property	Year Drilled	Core Size	Photos	Data
<u>S-71</u>	Mount Hundere	1982	NQ	8	2
<u>S-72</u>	Mount Hundere	1982	NQ	2	2
<u>S-73</u>	Mount Hundere	1982	NQ	2	1