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**Ontario Geological Survey
Open File Report 6366**

**Report of Activities, 2019
Resident Geologist Program**

**Timmins Regional Resident
Geologist Report: Timmins and
Sault Ste. Marie Districts**

2020

ONTARIO GEOLOGICAL SURVEY

Open File Report 6366

Report of Activities, 2019
Resident Geologist Program

Timmins Regional Resident Geologist Report:
Timmins and Sault Ste. Marie Districts

by

E.H. van Hees, P. Bousquet, J. Suma-Momoh, C.M. Daniels, S.L.K. Hinz, C. Boucher,
P. Sword, L. Wang, S.P. Fudge, A. Millette and C. Patterson

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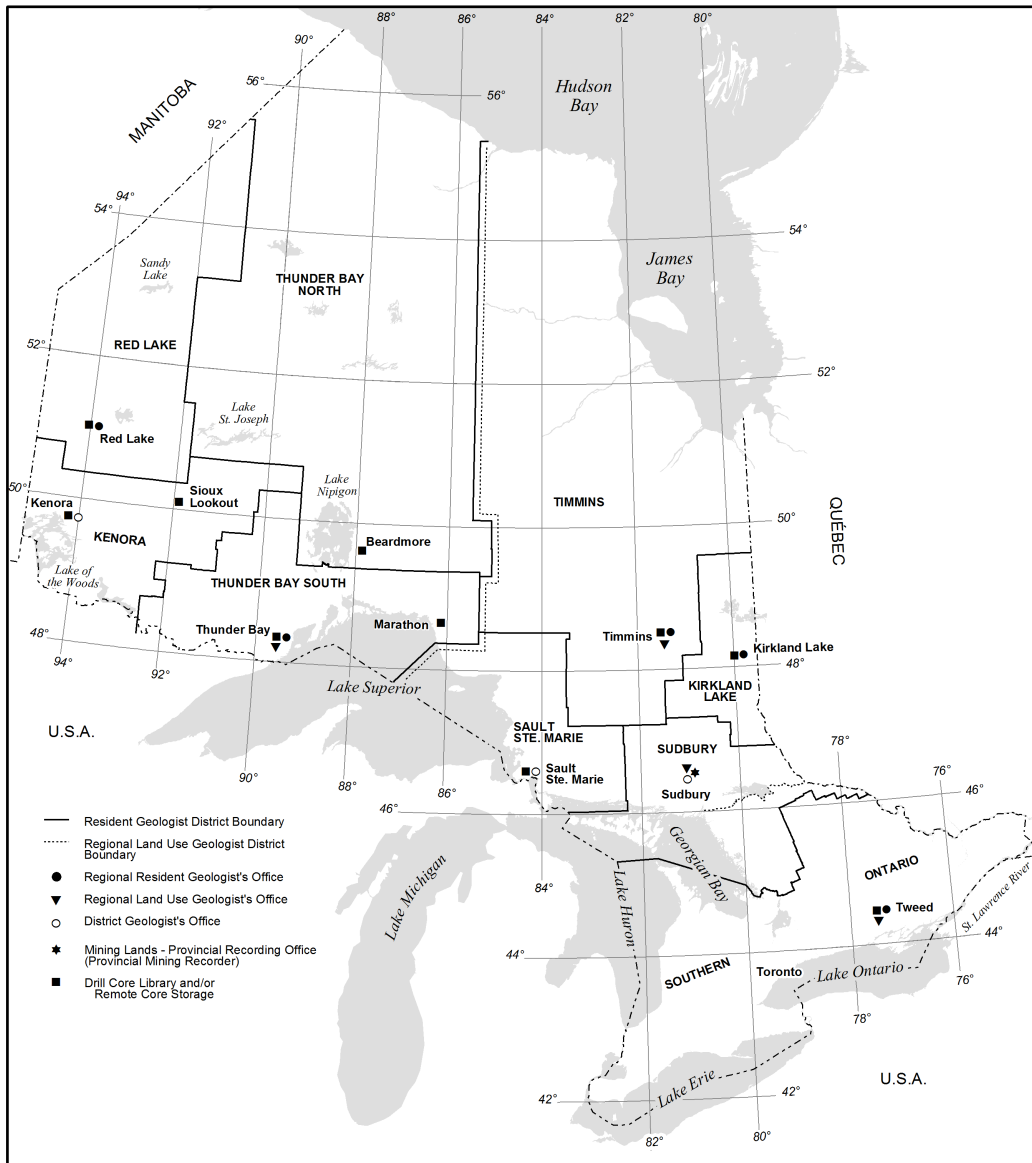
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**ONTARIO GEOLOGICAL SURVEY
RESIDENT GEOLOGIST PROGRAM
REPORT OF ACTIVITIES—2019**

**TIMMINS
REGIONAL RESIDENT GEOLOGIST REPORT**

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1. Timmins District
2. Sault Ste. Marie District



Ontario Geological Survey Resident Geologist Program

Timmins Regional Resident Geologist (Timmins District)—2019

by

**E.H. van Hees, P. Bousquet, A. Millette, C. Boucher, C.M. Daniels,
S.L.K. Hinz, S.P. Fudge, C. Patterson and L. Wang**

2020

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Timmins Regional Resident Geologist (Timmins District)—2019

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INTRODUCTION

The Timmins District (Figure 1) has 8 producing gold mines, 1 base metal mine, 1 industrial mineral producer and 1 diamond mine (Figures 2, 3, 4 and 5).

Recent mineral discoveries, known mineralized showings, as well as former and operating mines, again attracted significant exploration investment and effort in 2019. The 3 largest companies with operating mines in the Timmins District in 2018—Detour Gold Corporation, Goldcorp Inc. and Tahoe Resources Inc.—were all taken over or experienced substantial management changes in 2019. Goldcorp Inc. was taken over by Newmont Mining Corporation to form the Newmont Goldcorp Corporation (Newmont, material change report, January 14, 2019) and Tahoe Resources Inc. was taken over by Pan American Silver Corp. (Pan American Silver, Management Discussion and Analysis, November 6, 2019). Detour Gold Corporation appointed a new Chief Executive Officer at the beginning of 2019 (Detour Gold, news release, January 3, 2019) and was in the process of being acquired by Kirkland Lake Gold Ltd. at the end of 2019 (Kirkland Lake Gold, news release, December 23, 2019).

The Borden Lake (Borden Township) advanced exploration project was put into commercial production on October 1, 2019 (Newmont Goldcorp Corporation, Management Discussion and Analysis, November 5, 2019). Efforts to advance underground exploration of the Bradshaw gold deposit (Tully Township) and

process 28 600 t of stockpiled mineralized material by Gowest Gold Ltd. continued in 2019. (Gowest Gold Ltd., press release, December 20, 2019.)

Newmont Goldcorp continued work on optimizing the feasibility study of the Century open pit area (on the Dome Mine property) in 2019. The optimized feasibility study is expected to be completed during the first quarter of 2020 (Goldcorp Inc., Management's Discussion and Analysis, October 24, 2018).

IAMGOLD Corporation continued exploring the Côte Lake area in 2019 with a diamond-drilling program that discovered a new mineralized zone. The new Gosselin Zone is located about 1.5 km northeast of the Côte Gold deposit (IAMGold Corporation, press releases, March 26 and July 30, 2019).

ZEN Graphene Solutions Ltd. continued to develop the high-purity Albany graphite deposit at Pitopiko River, near Hearst, in 2019 by drilling 2 large diameter holes to collect a bulk sample of graphite-bearing mineralization from the deposit. The 110-tonne bulk sample will be used to produce several tonnes of purified graphite (90% concentration) that will be used as precursor graphene material for graphene applications testing. (Zen Graphene Solutions Ltd., press release, March 22, 2019.)

At least 28 companies and individuals continued to explore on 39 projects for a wide variety of metals and minerals of which gold remains the most sought-after commodity in the district (Figures 2, 3, 4, 5; Table 7, *see* "Advanced Exploration Activity").

Gold traded in the US\$1,300 (\pm US\$25) range between January and May of 2019 before climbing about 15% in June and July to level off at US\$1,500 (\pm US\$50) between August to December 2019 (https://www.kitco.com/scripts/hist_charts/yearly_graphs.plx, 2019). Purchasing of gold decreased by 1.03% in 2019 (www.gold.org/goldhub; January 30, 2020).

Mining claim activity in the Timmins Mining District over the past 6 years is listed in Table 1. The total number of claim units recorded during 2019 is down 8.74% compared to 2018 and the total number of active claim units decreased by 7.05% to 50 100 at the end of 2019 from 53 899 at the end of 2018 (L. Herard, Mining Lands, ENDM, email communication, February 20, 2020). The 8.74% decrease in recorded claims from 2019 to 2018, appears to coincide with the 15% decrease in exploration funding for junior mining companies between February and December 2019 (Anders 2019).

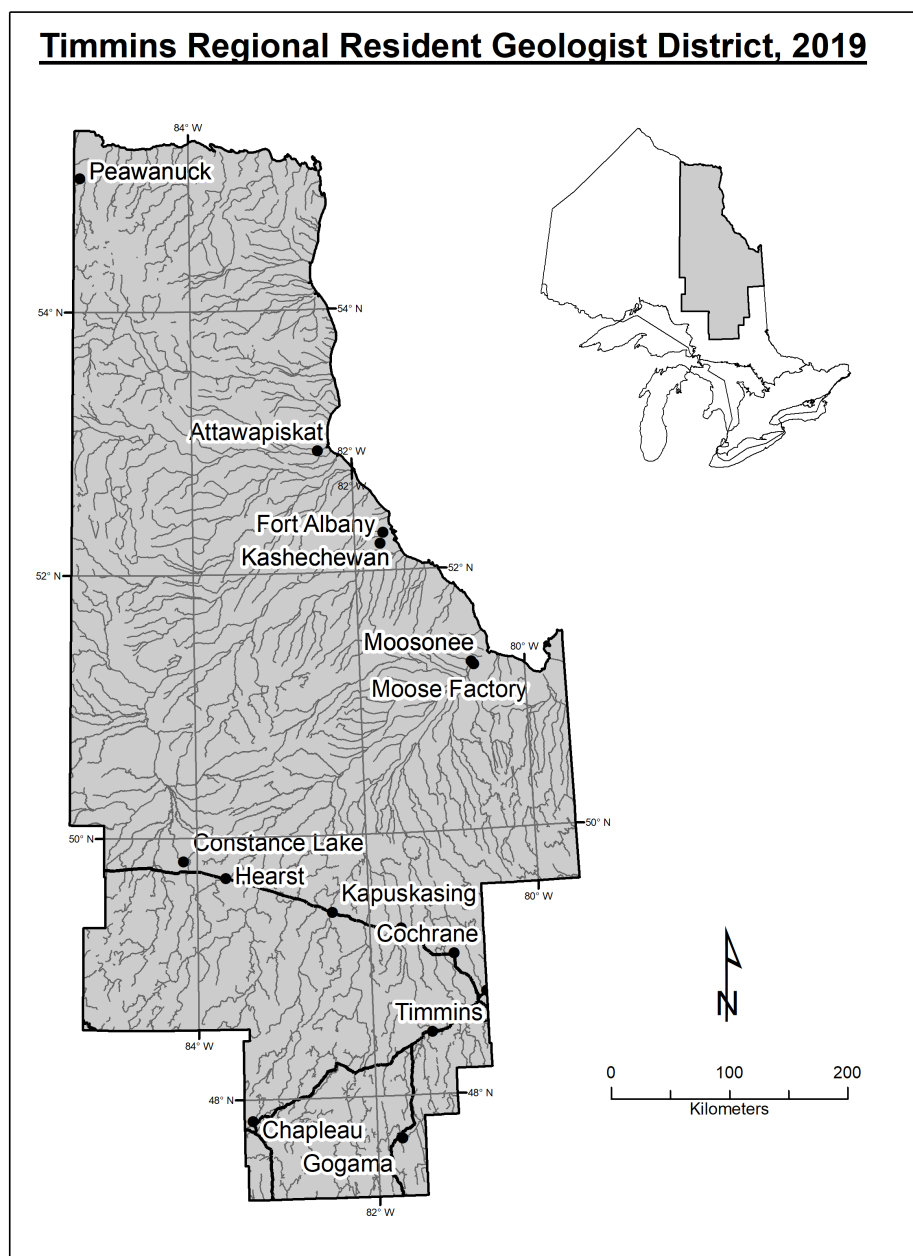
The active claims in the Porcupine camp account for 21.3% of all active claims in Ontario and is second only to Thunder Bay District, with 24.7% of all active claims. The value of assessment work filed in the Timmins District in 2019 is down 55.7% compared to the value of assessment work filed in 2017, the most recent year for which data is available. The total number of mining claims in the Timmins District indicates that it is still one of the most active exploration destinations in Ontario.

Staff of the Resident Geologist Program (RGP) were involved in the implementation of upgrades to the Ontario Mineral Exploration Information System (OMEIS). OMEIS is an intranet-based application launched in 2018 that is used by RGP and Mining Lands staff to maintain and update assessment file and drill hole data. The second phase of OMEIS was completed in 2019 and focused on the addition of new data fields to allow for the addition of unique, archival and donated materials stored in RGP offices across Ontario. Details on archival materials will be made available on GeologyOntario in a new searchable database called the Archives of the Resident Geologist Offices (ARGO) once they are catalogued in OMEIS.

Table 1. Summary of claims information in the Porcupine Mining Division, 2014–2019.

Year	Active Units	Recorded Units	Cancelled Units	Assessment Work (\$)
2019	50 100	5552	n/a	12 474 887
2018	53 899	6084	1593	n/a
2017	49 882	4593	7508	28 177 358
2016	51 905	4620	9150	19 056 056
2015	55 153	3273	10 885	22 417 049
2014	62 355	7427	12 784	39 823 696
Δ 2018–19	-7.05%	-8.74%	n/a	-55.73 (2017–19)

Δ 2018–19 = change between annual totals from 2018 to 2019.

**Figure 1.** Timmins Resident Geologist District.

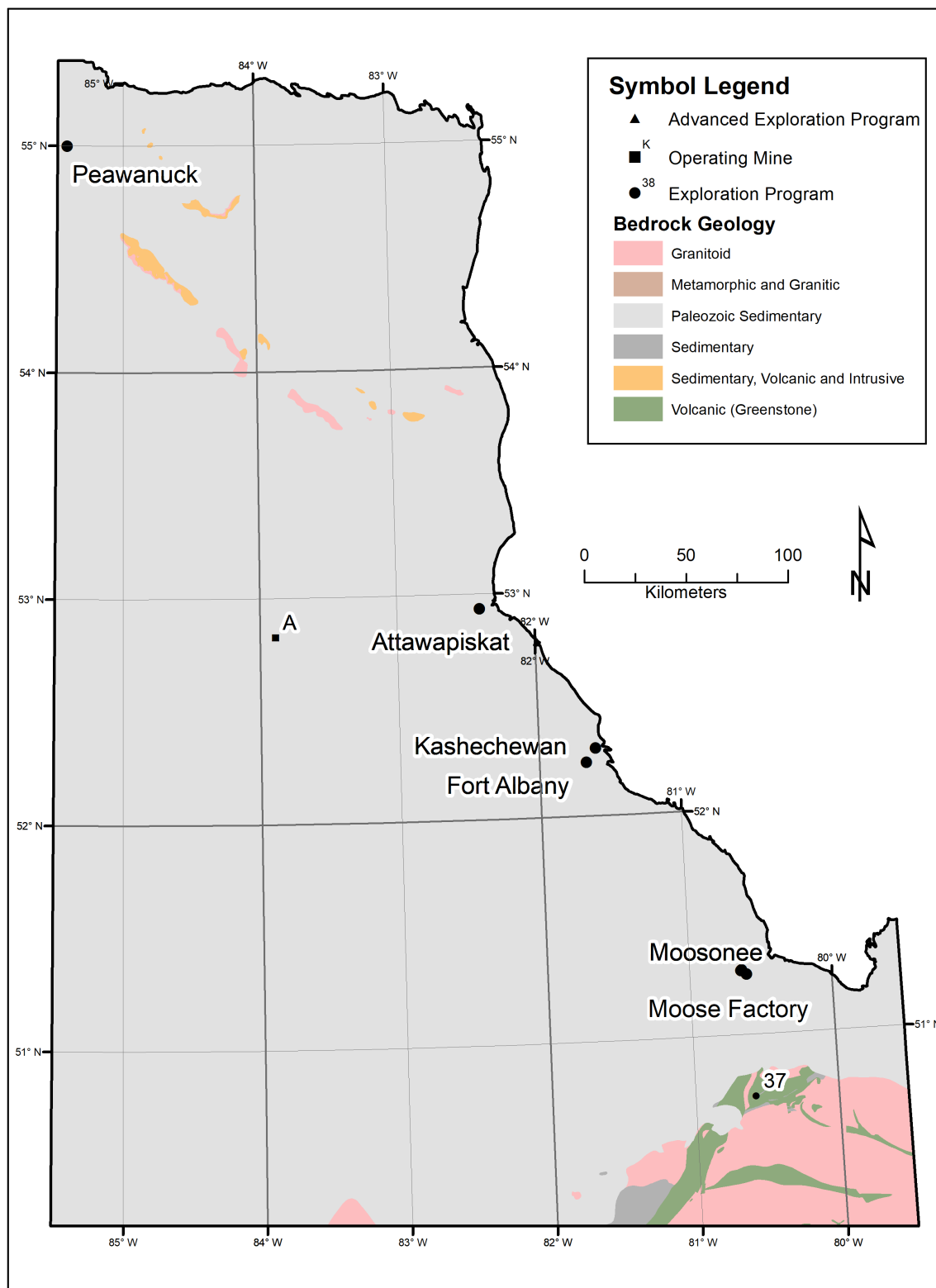


Figure 2. Exploration programs, advanced exploration and operating mines in the Timmins Regional Resident Geologist District (north part). Letter is keyed to Table 2 and number is keyed to Table 7 (see “Advanced Exploration Activity”). Geology from Ontario Geological Survey (2011).

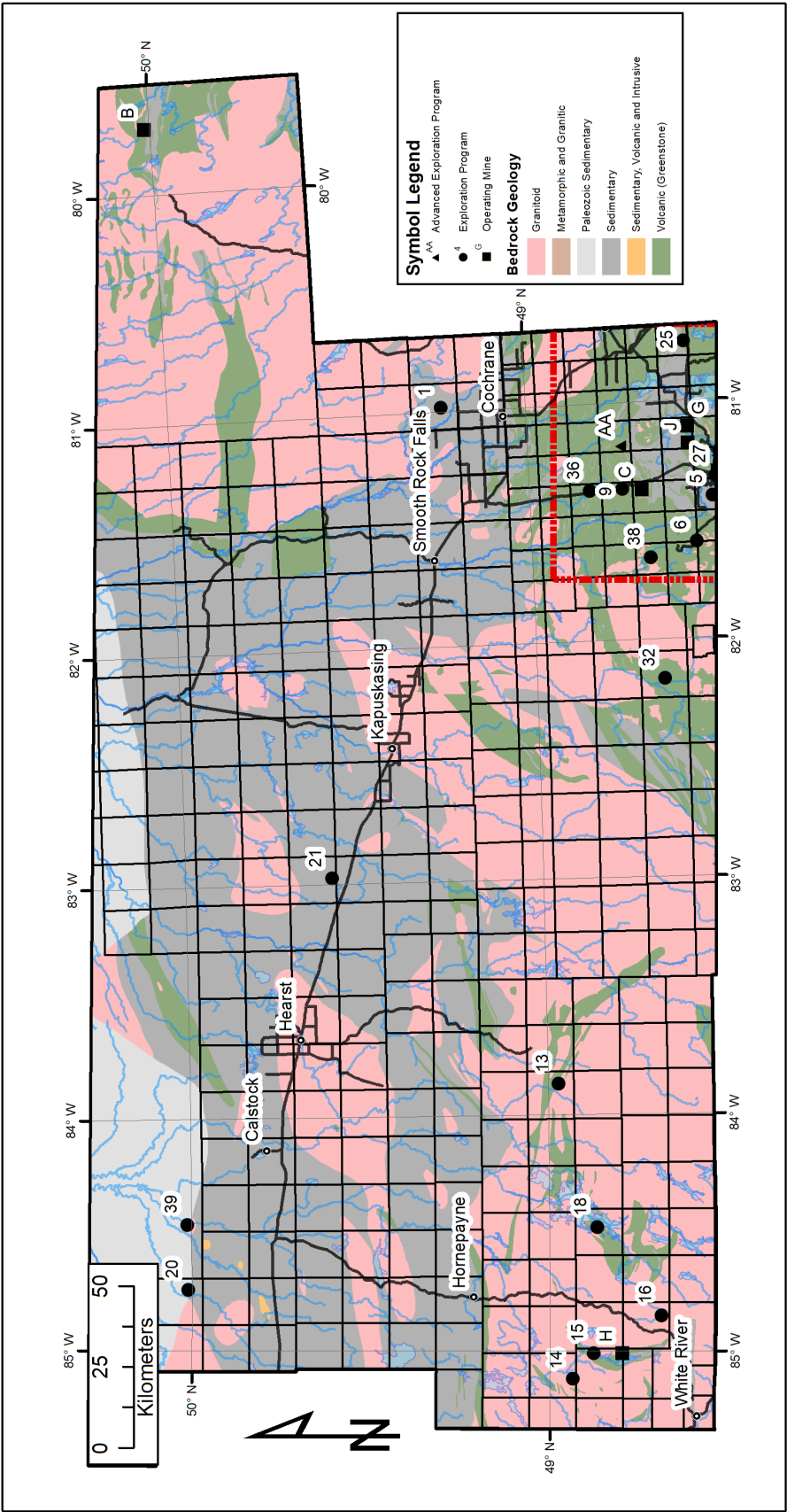
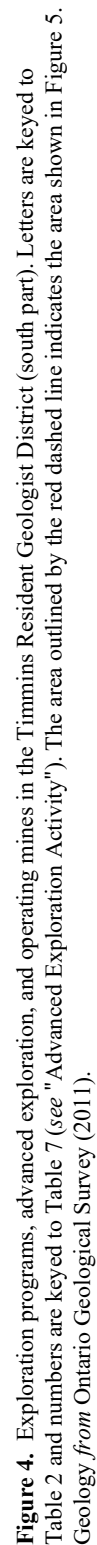


Figure 3. Exploration programs, advanced exploration and operating mines in the Timmins Resident Geologist District (central part). The area outlined by the red dashed line indicates the area shown in Figure 5. Letters are keyed to Table 2 and numbers are keyed to Table 7 (see "Advanced Exploration Activity"). Geology from Ontario Geological Survey (2011) .



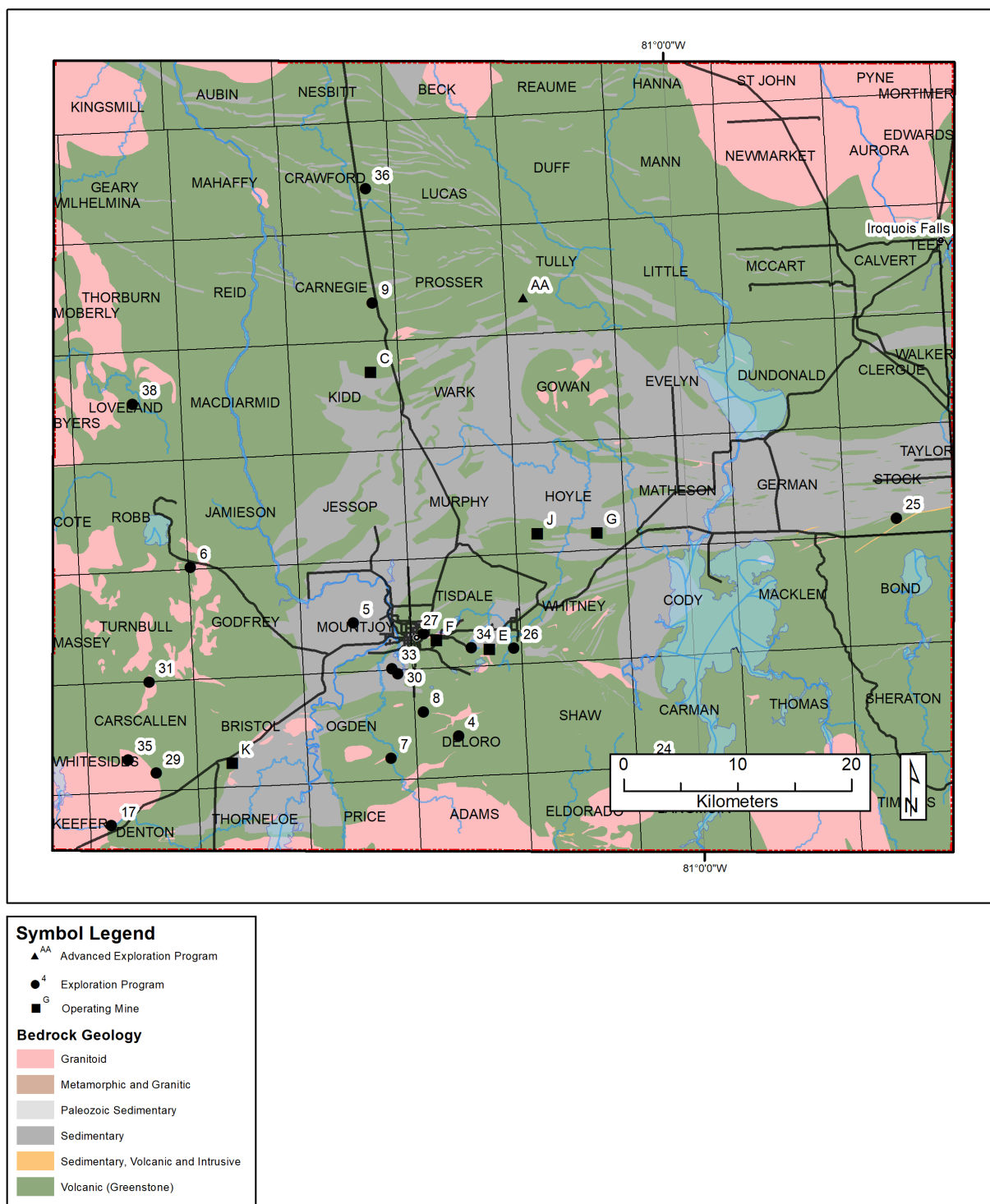


Figure 5. Exploration programs in the Timmins District. Inset for Figures 3 and 4. Letters are keyed to Table 2 and numbers are keyed to Table 7 (see “Advanced Exploration Activity”). Geology from Ontario Geological Survey (2011).

MINING ACTIVITY

Timmins District saw production from 8 gold mines (Bell Creek Mine, Borden Mine, Detour Lake Mine, Dome Mine, Hollinger Mine, Hoyle Pond Mine, Sugar Zone Mine and the West Timmins Mine), 1 base metal mine, 1 diamond mine and 1 industrial mineral mine. The Kidd Creek Mine continued producing base metals and silver. Imerys Talc produced talc from its Penhorwood Mine, and DeBeers Canada Inc. operated the Victor diamond mine, in the Far North, during the first half of 2019. The 2019 production figures for these operating mines are tabulated in Table 2. Historical gold, base metal and diamond production up to December 31, 2019, for all the mines in the Timmins District are listed in Tables 3, 4 and 5, respectively.

Table 2. Operating mine production and reserve information for 2019. Letters in first column are keyed to Figures 2, 3, 4 and 5.

Mine	Production in 2019		Reserves (Proven + Probable) at end of 2019	
	Tonnage @ Grade	Total Commodity	Tonnage	Grade
A De Beers Canada Inc. – Victor Mine	1 168 000 t @ 0.36 c/t	425 000 carats		
B Detour Gold Corp. – Detour Mine	22.0 Mt @ 0.92 g/t Au	601 566 oz Au	516 900 000 t 0.97 g/t Au	16 004 000 oz Au (12/31/2017)
C Glencore Canada Corporation – Kidd Creek Mine	1 978 000 t @ 1.75% Cu, 3.9% Zn, 36 g/t Ag	33 600 t Cu 65 900 t Zn 1 893 000 oz Ag	4 600 000 t	1.9% Cu, 3.8% Zn, 50 g/t Ag
D Newmont Goldcorp Corporation, Borden Mine	394 793 t @ 6.054 g/t gold (recovered)	65 243 oz Au		
E Newmont Goldcorp Corporation, Dome Pit (Blue Berry Hill)	43 189 t @ 0.744 g/t gold	929 oz Au (89.98% recovery)		
F Newmont Goldcorp Corporation, Hollinger Mine	2 948 055 t @ 1.313 g/t gold	110 577 oz Au (88.88% recovery)		
G Newmont Goldcorp Corporation, Hoyle Pond Mine	352 318 t @ 10.778 g/t gold	118 195 oz Au (96.81% recovery)		
H Harte Gold – Sugar Zone Mine	201 214 t @ 4.22 g/t gold	27 316 oz Au	1 607 000 t 8.52 g/t Au (Indicated)	714 200 oz Au
I Imerys – Penhorwood Mine	330 000 t @ 45.7% talc	83 200 t (25.2% yield)		
J Pan American Silver, Bell Creek Mine ¹	774 672 t @ 3.47 g/t Au	87 343 oz Au	2 400 000 t @ 4.07 g/t Au (June 2017)	315 000 oz Au
K Pan American Silver, Timmins West Mine ¹	941 189 t @ 2.96 g/t Au	89 514 oz Au	6 462 000 t @ 3.15 g/t Au (June 2017)	654 000 oz Au

Table 3. Historical gold production of mines in the Timmins Regional Resident Geologist District to December 31, 2019.

Mine	Township	Years of Production	Total milled (Tons)	Total milled (Tonnes)	Production (oz Au)	Grade ¹ (oz/t)
Ankerite (March)	Deloro	1926–1935	317 769	288 275	61 039	0.19
Aquarius	Macklem	1984, 1988–1989	139 634	126 674	27 117	0.19
Aunor (Pamour #3)	Deloro	1940–1984	8 482 174	7 694 899	2 502 214	0.29
Banner	Whitney	1927–1928, 1933, 1935	315	286	670	2.13
Bell Creek	Hoyle	1987–1991, 1992–1994	576 017	522 554	112 739	0.20
Bell Creek	Hoyle	2011–2019	3 567 009	3 235 940	418 138	0.12
Bonetal	Whitney	1941–1951	352 254	319 559	51 510	0.15
Bonwhit	Whitney	1951–1954	200 555	181 940	67 940	0.34
Borden	Cochrane	2018–2019	492 823	447 082	70 355	0.16
Broulan Porcupine	Whitney	1939–1953	1 146 059	1 039 687	243 757	0.21
Broulan Reef Mine	Whitney	1915–1965	2 144 507	1 945 464	498 932	0.23
Brown–McDade	Denton	1982	1038	942	145	0.16
Buffalo Ankerite	Deloro	1926–1953, 1978	4 993 929	4 530 416	957 292	0.19
Carshaw	Shaw	1983–1984	100 000	90 718	20 500	0.23
Cincinnati	Deloro	1914, 1922–1924	3200	2903	736	0.23
Clavos	Stock	2005–2007	188 743	171 225	24 609	0.13
Clavos	Stock	2017–2018	37 438	33 963	2164	0.06
Concordia	Deloro	1935	230	209	16	0.07
Coniarum (Carium)	Tisdale	1913–1918, 1928–1961	4 464 006	4 049 678	1 109 574	0.25
Crown (Hollinger)	Tisdale	1913–1921	226 180	205 187	138 330	0.61
Davidson–Tisdale	Tisdale	1918–1920, 1988	53 221	48 218	9739	0.18
Delnite	Deloro	1937–1964	3 847 364	3 490 270	920 404	0.24
Delnite (Open Pit)	Deloro	1987–1988	56 067	50 863	3602	0.06
DeSantis	Ogden	1933, 1939–1942, 1961–1964	196 928	178 650	35 842	0.18
Detour Lake ²	Sunday Lake area	1983–1999	17 643 085	16 005 538	1 781 858	0.10
Detour Lake ²	Sunday Lake area	2013–2019	147 151 767	133 493 838	3 526 401	0.025
Dome (incl stockpile)	Tisdale	1910–2019	119 065 098	108 014 169	16 655 432	0.14
Faymar	Deloro	1940–1942	119 181	108 119	21 851	0.18
Fuller (Vedron)	Tisdale	1940–1944	44 028	39 942	6566	0.15
Gillies Lake	Tisdale	1921–1931, 1935–1937	54 502	49 443	15 278	0.28
Goldhawk	Cody	1947	636	577	53	0.08
Goldhawk (open pit)	Cody	1980	40 000	36 287	3967	0.10
Halcrow–Swayze ³	Halcrow	1935	211	191	40	0.19
Hallnor (Pamour #2)	Whitney	1938–1968, 1981	4 226 419	3 834 143	1 645 892	0.39
Hollinger	Tisdale	1910–1968	65 778 234	59 673 011	19 327 691	0.29
Hollinger (Pamour Timmins)	Tisdale	1976–1988	2 615 866	2 373 074	182 058	0.07
Hollinger	Tisdale	2014–2019	13 058 288	11 846 239	388 807	0.03
Hoyle (Falconbridge)	Whitney	1941–1944, 1946–1949	725 494	658 157	71 843	0.10
Hoyle Pond	Hoyle	1985–2019	11 487 952	10 421 707	4 101 476	0.36
Hugh–Pam	Whitney	1926, 1948–1965	636 751	577 651	119 604	0.19
Jerome ³	Osway	1941–1943, 1956	335 060	303 961	56 893	0.17
Joburke ³	Keith	1973–1975, 1979–1981	440 117	399 267	43 571	0.10

TIMMINS DISTRICT—2019

Mine	Township	Years of Production	Total milled (Tons)	Total milled (Tonnes)	Production (oz Au)	Grade ¹ (oz/t)
Kingbridge/Gomak ³	Chester	1935–1936	1387	1258	98	0.07
Marlhill	Hoyle	1989–1991	156 800	142 247	30 924	0.20
McIntyre (Pamour Schumacher)	Tisdale	1912–1988	37 634 691	34 141 618	10 751 941	0.29
(ERG Tailings Recovery)	Tisdale	1988–1989	2 549 189	2 312 585	18 260	0.01
McLaren	Deloro	1933–1937	876	795	201	0.23
Moneta	Tisdale	1938–1943	314 829	285 608	149 250	0.47
Naybob (Kenilworth)	Ogden	1932–1964	304 100	275 875	50 731	0.17
Nighthawk	Macklem	1995–1999	1 479 607	1 342 277	175 803	0.12
Owl Creek	Hoyle	1981–1989	1 984 400	1 800 217	236 880	0.12
Pamour #1 (incl 3,4,7 and Hoyle pits)	Whitney	1936–1999	45 795 863	41 545 308	4 078 525	0.09
Pamour #1 (incl 3,4,7 and Hoyle pits)	Whitney	2005–2011, 2015–2016	19 849 938	18 007 561	741 543	0.04
Pamour (other sources)	Whitney	1936–1999	7 416 634	6 728 257	676 645	0.09
Paymaster	Deloro	1915–1919, 1922–1966	5 607 402	5 086 950	1 192 206	0.21
Porcupine Lake (Hunter)	Whitney	1937–1940, 1944	10 821	9817	1369	0.13
Porcupine Peninsular	Cody	1924–1927, 1940, 1947	99 688	90 435	27 354	0.27
Preston	Tisdale	1938–1968	6 284 405	5 701 116	1 539 355	0.24
Preston NY	Tisdale	1933	2800	2540	153	0.05
Preston (Porcupine Pete)	Deloro	1914–1915	N/A	0	314	
Preston (Porphyry Hill)	Deloro	1913–1915	46	42	312	6.78
Schumacher (Hollinger)	Tisdale	1915–1918	112 124	101 717	27 182	0.27
Stock	Stock	1989–1994, 2000	821 304	745 074	129 856	0.16
Sugar Zone	Odlum	2017–2019	326 988	296 639	50 078	0.17
Timmins West (incl 144 Gap + Thunder Creek)	Bristol	2009–2019	8 789 505	7 973 715	1 027 617	0.12
Tionaga/Smith Thorne ³	Horwood	1938–1939	6653	6036	2299	0.35
Tisdale Ankerite	Tisdale	1952	14 655	13 295	2236	0.15
Tommy Burns/Arcadia	Shaw	1917	21	19	14	0.66
Triple Lake	McArthur	1932	155	141	121	0.78
Vipond (Anglo–Huronian)	Tisdale	1911–1941	1 565 218	1 419 942	414 367	0.26
Young Shannon ³	Chester	1937, 1975	3265	2962	91	0.03
Total			552 580 071	504 524 962	76 552 370	

Notes: ¹Grade: ounce per ton gold; ²Detour Lake greenstone belt; ³Swayze greenstone belt; N/A = data not available. All metric tonnages have been converted to Imperial tons using a conversion factor of 1.1023113. Metric tonnes reported for inactive mines in this table differ from those reported in previous years because the above conversion factor from tons to tonnes was used for all calculations.

Table 4. Base metal production in the Timmins District to the end of 2019.

Mine	Township	Years of Production	Ore Milled	Grade
Alexo / Kelex	Dundonald, Clergue	1912–1919, 1943–1944 2004–2005	51 857 tons, 4923 tons, 17 398 t	4.5% Ni, 0.55% Cu, 2.3% Ni, 0.23% Cu, 0.07% Co
Canadian Jamieson	Godfrey	1966–1971	816 173 tons	2.44% Cu, 4.22% Zn
Genex	Godfrey	1966	Produced 240 tons Cu concentrate	
Jameland	Jamieson	1969–1972	509 356 tons	0.99% Cu, 0.88% Zn
Kam Kotia	Robb	1943–1944, 1961–1972	6.6 Mt	1.1% Cu, 1.17% Zn, 0.10 oz/t Ag, 0.00085 oz/t Au
Kidd Creek	Kidd	1966–2019	162 435 000 t	2.25% Cu, 5.84% Zn, 0.23% Pb, 77 g/t Ag
Langmuir #1	Langmuir	1990–1991	111 502 tons	1.74% Ni
Langmuir #2	Langmuir	1972–1978	1.1 M tons	1.43% Ni
McIntyre	Tisdale	1963–1982	10 M tons	0.67% Cu
McWatters	Langmuir	2008–2010, 2011–2012	15 361 t, 148 921 t, 153 703 t	0.55% Ni 0.50% Ni
Montcalm	Montcalm	2004–2009	3 931 610 t	1.25% Ni, 0.67% Cu, 0.051% Co
Redstone	Eldorado	1989–1992, 1995–1996 2006–2008, 2009–2010	294 895 tons, 10 228 tons, 133 295 t, 78 956 t	2.4% Ni, 1.7% Ni, 1.92% Ni, 1.11% Ni

Table 5. Historical Victor Mine production to the end of 2019.

Victor Mine	Units	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
Tonnes Processed	Tonnes (000)	1787	2112	2625	2736	3013	2961	3181	3165	2989	2962	2936	1168	31 636
Carats Recovered	Carats (000)	714	696	801	776	704	654	680	646	597	726	937	425	8355

(Mary-Anne Hildebrandt, De Beers Group, personal communication, December 19, 2019).

Base Metal Mining

GLENCORE CANADA CORPORATION – KIDD OPERATIONS

Glencore Canada Corporation operated the Kidd Creek Mine in 2019. With a depth of 3014 m, it is the deepest mine, below sea level, in the world. The mine is located 25 km north of Timmins, in Kidd Township. In 2019, mine production was estimated at 1 978 000 t, grading 3.9% Zn, 1.75% Cu and 36 g/t Ag. Total historical production for the mine is 162 435 000 t, grading 2.25% Cu, 5.84% Zn, 0.23% Pb and 77 g/t Ag (2019 production and historical production numbers to December 31, 2019 (*see* Table 4) (2019 production and historical production numbers to December 31, 2019, received from Benoit Drolet; email communication, January 15, 2020).

Total ore reserves at the end of 2019 were reported at 4 600 000 t, grading at 3.8% Zn, 1.9 % Cu and 50 g/t Ag. The Measured and Indicated Resources were reported to total 8 600 000 t, grading 4.0% Zn, 1.8% Cu and 48 g/t Ag. (Glencore – Resources & Reserves Report 2019, accessed at www.glencore.com, under Investors, Reports & Results, February 8, 2020). Mining is anticipated to continue for another 2.5 years, until mid-2022.

Glencore conducted an exploration diamond-drilling program to test the extent of mineralization below the 9800-foot level of the mine in 2019 and potentially define additional resources that can be mined and extend the life of the mine beyond 2022. That exploration program recovered 15 958 m of drill core that identified mineralization continuity to a depth of 3600 m (11 700 feet). There is insufficient data at this

time to calculate an inferred resource. Updated reporting is anticipated in 2020 (Glencore – Resources & Reserves Report 2019, accessed at www.glencore.com, under Investors, Reports & Results, February 8, 2020). The company also completed 505 m of definition drilling in the #3 mine and D mine (diamond-drilling information received from Benoit Drolet; email communication, February 5, 2020).

Glencore employs 717 people at its Kidd Creek Mine and mill complex (564 at the mine; 153 at the mill). Mark Furlotte is the General Manager, Iain Mckillip is the Mine Technical Services Manager and Benoit Drolet, Senior Resources Geologist (Benoit Drolet, email correspondence, January 15, 2020).

Diamond Mining

DE BEERS CANADA INC. – VICTOR MINE

De Beers Canada Inc. operated the Victor Mine, located 100 km west of the Attawapiskat First Nation (*see* Figure 2), during the first 2 quarters of 2019. The mine processed 1 168 000 t of ore with a grade of 0.36 cpt to produce 425 000 carats of diamonds in 2019 (*see* Table 2) (Mary-Anne Hildebrandt, De Beers Group, personal communication, December 19, 2019). The reserves and resources have been depleted and mining and milling of known reserves was completed in Q2 on May 25, 2019 (Anglo American plc, Q3 Production Report, October 22, 2019; www.mining.com, De Beers' Victor mine ends production, May 30, 2019). The total amount of diamonds recovered since the mine was put into production in 2008 is 8 355 000 carats as at May 25, 2019 (*see* Table 5).

The mine and mill complex had a maximum work force of 245 employees in 2019 but only 76 at the end of 2019 (Mary-Anne Hildebrandt, email correspondence, January 10, 2020). James Alexander is the Reclamation Superintendent and he reports to Brian Kilbride, the Victor Closure Manager (James Alexander, email correspondence, December 10, 2019). Mary-Anne Hildebrandt is the Resource Geologist, Competent Person for Mineral Resources at Victor Mine and the Attawapiskat Kimberlite Cluster, reporting to Pamela Ellemers, Manager of Technical Services for De Beers Group Technical and Sustainability – Canada (Mary-Anne Hildebrandt, email correspondence, December 10, 2019).

Gold Mining

DETOUR GOLD CORPORATION – DETOUR LAKE MINE

Detour Gold Corporation operated the Detour Lake Mine, located in the Sunday Lake area, 160 km to the northeast of Cochrane. It produced 601 566 oz of gold in 2019 from 22.0 Mt of ore milled at an average head grade of 0.92 g/t Au (92.1% recovery)(Detour Gold Corporation, news release, January 9, 2020). The total reserves at December 31, 2017, was 16 044 000 oz of gold contained in 516 Mt with a grade of 0.97 g/t Au. This reserve provides an approximate mine life of 22.6 years as of January 2018 (Detour Gold Corporation, NI 43-101, November 26, 2018).

The mine produced a total of 3 526 401 oz of gold from 133 493 838 t milled between 2013 and 2019, inclusive (*see* Table 3).

A winter drilling program with 7502 m in 26 holes to test the western extension of Zone 58N and several exploration targets east and northeast of Zone 58N, was completed in the first quarter of 2019. The drilling program west of Zone 58N was successful in delineating gold mineralization 150 m west of the current mineral resource. Further drilling east and up to 1 km northeast of Zone 58N did not intersect significant gold mineralization (Detour Gold Corporation, Management's Discussion and Analysis, May 2, 2019).

Fifty line-km of geophysical surveys were completed in the Lower Detour area (Zone 58N area and Hopper Lake area, located 11 km west of Zone 58N). This work will assist in identifying additional targets for a summer drilling program (Detour Gold Corporation, Management's Discussion and Analysis, May 2, 2019).

The Detour exploration department began conducting a large resampling program of 120 000 m of Detour Lake deposit core, in the second quarter, as part of the deposit block model reconciliation (Detour Gold Corporation, Management's Discussion and Analysis, July 30, 2019). The company reported that there is a strong positive block model reconciliation with ounces mined up 21.6% relative to mineral reserves (Detour Gold Corporation, News Release, November 14, 2019).

Final assays received for the winter drilling program in the Lower Detour area encountered similar alteration and mineralization to that found in Zone 58N. Those results triggered a 5000 m drilling program in the Lower Detour area in early August (Detour Gold Corporation, Management's Discussion and Analysis, July 30, 2019).

The mine and process plant complex had a work force of approximately 1100 employees at the end of 2019 (Adria Maillet, email correspondence, January 22, 2020). David Londono is the Mine General Manager, Andre Leite is the Technical Services Manager, Adree DeLazzer is the Exploration Manager, and John Florek, the Mine Geologist and Superintendent (John Florek, email correspondence, October 18, 2019).

HARTE GOLD CORP. – SUGAR ZONE MINE

Harte Gold published an updated Mineral Resource Estimate containing an Indicated Mineral Resource of 4 243 000 tonnes grading 8.12 g/t for 1 108 000 ounces contained gold (Harte Gold, Management's Discussion and Analysis, May 15, 2019). The company also completed a Feasibility Study that concluded a probable mineral reserve estimate of 3 879 000 tonnes grading 7.1 g/t for a total of 890 000 ounces of gold is present and that the Sugar Mine has a mine life of over 14 years (Harte Gold, Management's Discussion and Analysis, May 15, 2019).

The Sugar Zone Mine went into commercial production on January 1, 2019 (Harte Gold Corp., press release, January 8, 2019) and produced 27 316 oz of gold from 201 214 t of ore processed during the year (G. Reed; personal correspondence; January 15, 2020).

Near-mine exploration south of the Sugar Zone Mine intersected high-grade values that extended the south zone mineralization by 300 m along strike and 200 m down dip (Harte Gold, Management's Discussion and Analysis, August 14, 2019).

The mine had a work force of 174 employees (82 Harte full time, 92 contractors) at the end of December 2019 (G. Reed, personal correspondence, January 15, 2020). Gordon Reed is the General Manager, Shane Cockle is the Mine Superintendent, John Kita is the Chief Mine Geologist, Robert Kissin is the Senior Mineral Resource Geologist and David Stevenson is the Chief Exploration Geologist.

NEWMONT GOLDCORP CORPORATION – PORCUPINE GOLD MINES

Newmont Goldcorp Corporation mined and milled ore from the Borden, Hollinger and Hoyle Pond mines in the Chapleau (Borden) and Timmins areas. These operations recovered a total of 294 945 ounces of gold from 3 738 355 t with an average mill head grade of 2.699 g/t and a recovery of 90.93% during 2019 (G. Bekkers, Newmont Inc., personal communication, March 10, 2020). The Porcupine deposits were calculated to have Proven and Probable gold reserves of 8.05 million ounces in 228 410 000 t on June 30,

2017, and Measured and Indicated gold resources of 8.39 million ounces in 254 810 000 t (Goldcorp Inc., Reserves & Resources – June 2017, www.goldcorp.com, under Investor Resources, Reserves and Resources). Data for the Dome and Hollinger pits, and for the Borden and Hoyle Pond underground mines were supplied by the company (G. Bekkers, Newmont Inc., email communication, March 10, 2020) and is reported in Tables 2 and 6.

The Borden Mine entered commercial production on October 1, 2019 (Newmont Goldcorp, press release, November 5, 2019).

The mines and mill complex had a work force of 1216 employees (752 full time; 464 contractors) in 2019 (P. Chabot, Goldcorp Inc., personal communication, February 7, 2020). Marc Lauzier is the Mine General Manager, Gertjan Bekkers is the Superintendent of Technical Services and Chris Osiowy is the District Exploration Manager (Chris Osiowy, email correspondence, October 18, 2019).

The Borden Mine had a work force of 273 (46 employees and 227 contractors) (included in Goldcorp employee total) at the end of December 2019 (J. Rizzuto, email communication, February 7, 2020). Marc Lauzier is the General Manager, Javier Pari is the Mine Geologist and Chris Osiowy is the Regional Manager of Exploration (C. Osiowy, email communication, February 11, 2020).

Table 6. Goldcorp mines production for 2019 (G. Bekkers, email correspondence, March 10, 2020).

Mine	Tonnes	Grade (g/t)	Head Ounces	Recovery (%)	Recovered Ounces
Borden	394 793	6.054	76 842	84.91	65 243
Blue Berry Hill (Dome)	43 189	0.744	1 033	89.98	929
Hollinger Pit	2 948 055	1.313	124 415	88.88	110 577
Hoyle Pond	352 318	10.778	122 083	96.81	118 195
Total	3 738 355	2.699	324 373	90.93	294 945

PAN AMERICAN SILVER CORP. – LAKE SHORE GOLD DIVISION

The Lake Shore Gold Division of Pan American Silver Corp. produced a total of 176 857 ounces of gold from 1 715 860 t in 2019. This total includes 87 343 ounces of gold recovered from 774 672 tonnes of Bell Creek Mine ore and 89 514 ounces of gold recovered from 941 189 tonnes of Timmins West Mine ore. The Bell Creek ore had a head grade of 3.47 g/t Au and the Timmins West Mine ore had a head grade of 2.96 g/t Au (Al Mainville, Lake Shore Gold, email correspondence, February 21, 2020). The results are reported along with those for all the other operating mines in Table 2.

A total of 60 051 m of infill and definition diamond drilling was completed at Bell Creek during 2019 to better define mineral resources. A total of 32 078 m of infill and exploration diamond drilling was completed in the Timmins West Mine in 2019 to improve resource and reserve definition. A total of 4 997 m of diamond drilling was completed on regional projects (Al Mainville, Lake Shore Gold, email correspondence, February 21, 2020).

The Timmins mines have Reserves of 9 900 000 t containing 988 000 ounces of gold (at 3.08 g/t) and resources of 7 100 000 t containing 336 000 ounces of gold (at 3.52 g/t) at June 30, 2019 (Pan American Silver, news release, September 4, 2019).

Pan American Silver Corp. also reported Indicated Resources for the Gold River property of 700 000 t containing 117 400 ounces of gold at 5.29 g/t; the Juby property of 26 600 000 t containing

1 094 700 ounces of gold at 1.28 g/t; the Marhill property of 400 000 t containing 57 400 ounces of gold at 4.52 g/t; the Vogel property of 2 200 000 t containing 125 000 ounces of gold at 1.75 g/t; the Fenn-Gib property of 40 800 000 t containing 1 298 600 ounces of gold at 0.99 g/t and Measured and Indicated Resources for the Whitney property of 3 300 000 t containing 708 600 ounces of gold at 6.84 g/t at June 30, 2019 (Pan American Silver, news release, September 4, 2019).

The merger of Tahoe Resources Inc. and Pan American Silver was completed on February 22, 2019. The shaft deepening project at Bell Creek continued in the first half of 2019 (Pan American Silver, Management's Discussion and Analysis, August 7, 2019). The company had a work force of 698 employees (648 full time, 50 contract employees) on December 31, 2019 (A. Mainville, email communications, January 20 and February 12, 2020). Dave Bernier is the Country Manager – Canada, Courtney Nunn is the Mine Manager for Timmins West Mine, Rick Blakey is the Mine Manager for Bell Creek Mine, Dave Flesher is the Mill Manager for the Bell Creek Mill, Kara Byrnes is the Director of Technical Services – Canada, Ivan Langois is the Chief Mine Geologist at Timmins West Mine, Chris Albert is the Chief Mine Geologist at Bell Creek Mine and Alain Mainville is the Geology Manager – Canada (Exploration – Regional and Mine). (A. Mainville, email communication, November 21, 2019).

Industrial Mineral Mining

IMERYS TALC

Production of talc continued at the Penhorwood Mine in 2019, with 330 000 t of ore grading 45.7% talc being extracted from the open pit and processed through the mill on site to produce 83 200 t of talc concentrate (*see* Table 2). The talc concentrate was shipped for further processing to the company micronizing (grinding) plant in Timmins (B. Melancon, email correspondence, January 6, 2020).

The mine, mill and micronizing facility had a total work force of 65 employees including 18 salaried in 2018 (B. Melancon and J. Ladouceur, personal communication, January 6, 2020). Daniel Demers is the Mill and Concentrator Manager, Estian Coetzer is the Mine Manager, Mike Kerr is the Timmins Micronizing Plant Manager and Benoit Melancon is the Canadian Operations Manager (Benoit Melancon, email correspondence, October 18, 2019).

ADVANCED EXPLORATION ACTIVITY

GOWEST GOLD LTD. – BRADSHAW MINE

Gowest Gold has signed a binding Term Sheet with Northern Sun Mining Corp. for the use of its Redstone mill to process up to 30 000 tonnes of ore developed from the Bradshaw Project and, at the same time, terminate the milling agreement with QMX Gold Corporation to process Bradshaw ore at its Aurbel mill located in Val d'Or, Quebec. Gowest and Northern Sun have also agreed to negotiate and execute a long-term custom milling agreement of not less than 5 years (Gowest Gold Ltd., press release, October 17, 2019).

The mine was on a care and maintenance basis at the end of 2019 and has a work force of 7 employees (5 on contract). Greg Hart is the Mine Manager and Rochelle Collins is the Chief Geologist.

Table 7. Exploration activity in the Timmins District in 2019, keyed to Figures 2, 3, 4 and 5.

Abbreviations			
ADS	Airborne drone survey	GL	Geological survey
AEM	Airborne electromagnetic survey	IM	Industrial mineral testing and marketing
AMAG	Airborne magnetic survey	IP	Induced polarization survey
ARAD	Airborne radiometric survey	Lc	Line cutting
Assays	Assay data	Mag	Ground magnetic survey
Bulk	Bulk sampling	Met	Metallurgical testing
DD	Diamond drilling	OVD	Overburden drilling
DGP	Down-hole geophysics	Pet	Petrological study
ENV	Environmental study	Pr	Prospecting
EM	Ground electromagnetic survey	RES	Resistivity survey
GC	Geochemical survey	Samp	Sampling (other than bulk)

No.	Company/Individual (Property Name)	Township/Area (Commodity)	Exploration Activity
1	Alain Vallée (Vallée Côté Minerals Exploration Project)	Blount (Ag, Pt, Au)	Assays, GL, Pr, Samp
2	Brian Beyer (Beyer gold-copper property)	Zavitz, Hincks (Au, Cu)	Assays, GL, Pr, Samp
3	Central Timmins Exploration Corp (Bonar property)	Bonar Property (diamond)	GC, GL
4	Central Timmins Exploration Corp. (Deloro property)	Deloro (Au)	Assays, DD, IP
5	Central Timmins Exploration Corp. (Godfrey–Mountjoy property)	Godfrey, Mountjoy (Au)	Assays, DD, EM, Mag
6	Central Timmins Exploration Corp. (Four Corners Project)	Jamieson, Robb, Turnbull (Au, Zn, Pb, Cu, base metals)	Assays, DD, EM, Lc
7	Central Timmins Exploration Corp. (Ogden property)	Ogden, Price (Au)	DD, EM, Mag
8	DH Exploration Inc. (Deloro property)	Deloro (Ag, Au, Zn, Cu, Fe)	Assays, Pr, Samp
9	Explor Resources Inc. (Carnegie base metal property)	Carnegie (Au, Ni)	EM, Lc, IP
10	Fancamp Exploration Ltd. (Mallard property)	Mallard, Heenan (Au)	DD, GL, Lc, Pr, Samp
11	Fancamp Exploration Ltd. (Cunningham VMS)	Cunningham, Greenlaw (base metals)	GL, RES
12	GFG Resources Inc (Pen Gold Project)	Keith, Reeves, Penhorwood, Kenogaming (Au)	Assays, DD, Pr, Samp
13	Gordon N Henriksen (Pichogen property)	Walls (Au)	Assays, Samp
14	Harte Gold Corp. (Flat Lake property)	Matthews (Au, base metals)	EM
15	Harte Gold Corp. (TNT Zones)	Hambleton (Au, base metals)	DD, EM
16	Harte Gold Corp. (TT8 property)	Strickland (Au)	Assays, Samp
17	Herman Daxl	Denton (Au)	Assays, Samp
18	Hiawatha Partners (Lizar Township Claim Group)	Lizar (Au)	Mag
19	IAMGOLD Corporation (Côté Lake property)	Chester (Au)	Assays, DD
20	IM Exploration Inc (Mulloy Project)	Rowlandson, Feagan Lake area (graphite)	DD, GL, Lc, Mag, EM
21	JayCubed Explorations (McCowan property)	McCowan (Au)	Assays, GL, Pr, Samp
22	John Lelievre (Cree Lake Gold property)	Swayze, Cunningham (Au)	AEM, AMAG, ARAD
23	Jonathan Paul Camilleri (Osway Township Claim Group)	Osway (Au)	Mag
24	Kraken Gold Corp (Langmuir Carman property)	Carman, Eldorado, Langmuir, Shaw (Au)	Assays, ADS, Pr, Samp
25	McEwen Mining Inc. (Stock Mine)	Stock (Au)	Assays, DD
26	McLaren Resources Ltd. (Augdome property)	Tisdale, Whitney (Au)	DD
27	McLaren Resources Ltd. (TimGinn property)	Tisdale (Au)	DD
28	Melkior Resources Inc. (Denton property)	Denton (Au)	AMAG
29	Melkior Resources Inc. (Carscallen property)	Carscallen, Denton (Au)	AMAG, Assays, DD, DGP, Samp
30	Moneta Porcupine Mines Inc. (Ogden property)	Ogden (Au)	Assays, Pr, Samp
31	Nitinat Minerals Corporation (Lalonde Option)	Carscallen, Turnbull (Au)	AMAG

No.	Company/Individual (Property Name)	Township/Area (Commodity)	Exploration Activity
32	Pancontinental Resources Corp. (Montcalm property)	Montcalm (Au, Cu, Co, Ni, Pd, Pt, S)	Assays, DD, IP, Lc
33	Pelangio Exploration Inc (Dalton property)	Ogden, Mountjoy (Au)	AMAG, Assays, GC, GL, Pr, Samp
34	Pelangio Exploration Inc (Dome West property)	Tisdale (Au)	Assays, DD
35	Prize Mining Corporation (Carscallen property)	Carscallen (Au)	Assays, DD
36	Spruce Ridge Resources Ltd. (Crawford nickel-cobalt project)	Crawford (base metals, Ni, Pd, Pt, Co)	Assays, DD, Pet
37	VR Resources (Ranoke property)	Pickett, Morrow, Mulholland (Au, Cu)	AEM, AMAG, DD, GC
38	Western Kidd Resources Inc. (Loveland Township property)	Loveland (Zn)	Pr
39	ZEN Graphene Solutions Ltd. (Albany graphite deposit)	Pitopiko River area (graphite)	Assays, Bulk, DD, ENV, IM, Met, OVD, Samp

EXPLORATION ACTIVITY

Aurelius Minerals Inc. – Mikwam Property

Aurelius Minerals Inc. announced that its 10 hole, 3000 m Phase Three drilling program further defined gold mineralization in the Mikwam zone to a depth of 380 m and along strike. The program has identified several thicker and higher grade gold zones that occur in the hinges of a Z-shape fold structure similar to those found in the neighbouring Casa Berardi deposits. The best drill hole reported at Mikwam was hole AUL-19-30, which intersected 3.46 g/t gold over 31.5 m of near true width, including zones of 9.41 g/t Au over 4.1 m and 9.21 g/t Au over 3.1 m (Aurelius Minerals, press release, May 14, 2019).

Aurelius Minerals completed approximately 30-line kilometres of induced polarization (IP) ground geophysical surveying on and along strike of Mikwam and will use the results to define targets for future drilling programs (Aurelius Minerals, Management's Discussion and Analysis, November 27, 2019).

Central Timmins Exploration Corp. – Deloro, Godfrey and Bonar Township Projects

Central Timmins Exploration Corp. (CTEC) completed 4 diamond-drill holes in Deloro Township in late 2018. Assay results from this drilling ranged between 0.1 and 3.94 g/t gold over 0.5 m (CTEC, news release, January 21, 2019).

Godfrey Township holes 7, 8 and 9 each intersected 50 to 100 m of altered porphyry with frequent highly contorted quartz veining, occasional tourmaline and generally fine-grained pyrite. The best assay was 2.46 g/t gold over 0.6 m of core in hole 8. Geological modelling of the 3 CTEC and 4 mid-1930s drill holes, indicates that they intersected a 500 m long, greater than 50 m thick and greater than 300 m deep porphyry body. Narrow intersections of more than 1.00 g/t gold as well as wide areas of 100 to 300 ppb gold have been intersected along 400 m strike length of the porphyry.

Two holes were drilled to test a 14 m wide quartz breccia located close to the historical Dayton Porcupine gold zone in Deloro Township. Hole D-19-06 intersected 3.29 g/t gold over an estimated true width of 4.93 m, and Hole D-19-07 intersected 1.51 g/t gold over an estimated true width of 3.44 m.

Central Timmins Exploration Corp. has identified 2 strong magnetic anomalies located in Bonar Township (160 km west of Timmins) that are approximately 12 ha in size and could be either kimberlite

pipes or rare earth-bearing carbonatites. An OGS geochemical survey in 2001 discovered G9 and G10 garnets down-ice from the anomalies (Goa 2011). A Mobile Metal Ion (MMI) survey found that one of the anomalies has the same anomalous MMI Rare Earth Element (REE) signature as the C14 diamond-bearing kimberlite pipe discovered 20 km northeast of Kirkland Lake, Ontario.

GFG Resources Inc. – Pen Gold

GFG Resources Inc. diamond-drill hole PEN-18-015, one of 19 drill holes (4744 m total) completed in the fourth quarter of 2018, confirmed that the Sewell prospect contains high-grade gold mineralization, with a grade of 33.77 g/t of gold over 1.05 m that includes 63.88 g/t of gold over 0.55 m (GFG Resources, news release, January 17, 2019).

GFG Resources Inc. completed 4400 m of drilling in 15 holes, ranging in length from 150 to 300 m, to test targets in the Reeves, Jehann and Slate Rock regions and one follow-up hole at the new Crawford discovery. They reported that 4 drill holes encountered gold assays with values between 1.06 to 3.58 g/t gold over 0.5 to 1.5 m (GFG Resources, Management's Discussion and Analysis, November 7, 2019).

GFG Resources collected 1395 rock grab and channel samples to further assess priority target areas identified by previously collected geological, structural and geochemical data. Prospecting efforts, initiated by previous basal till results, identified the new "Boundary" mineralized trend that yielded 8 grab samples with assays great than 1.0 g/t gold and one sample with 6.98 g/t gold. Prospecting also confirmed that mineralization extends for 4 km along strike at Slate Rock and had a grab sample that assayed 4.0 g/t gold and a channel sample that assayed 1.96 g/t gold over 0.8 m (GFG Resources, press release, December 9, 2019). The company also collected 165 regional and infill till samples on the Pen Gold project (GFG Resources, Management's Discussion and Analysis, November 7, 2019).

Glencore Canada Corporation – Kidd Operations

Glencore Canada Corporation announced that it has initiated a diamond-drilling program to explore the extent and nature of the Kidd Creek deposit below 3000 m, from the 9600-foot level of the mine, in order to define additional economic mineralization that can extend the life of the mine (Gillis 2019). That exploration program recovered 15 958 m of drill core in 2019. The company also completed 505 m of definition drilling in the #3 mine and D mine (diamond drilling information received from Benoit Drolet, email communication, February 5, 2020).

Harte Gold Corp. – Sugar Property

Property-wide exploration has identified 3 new areas of interest called the Flat Lake, TNT and TT8 zones. The Flat Lake and TNT zones occur at the north end of the Sugar Zone property, approximately 18 km northeast and 12 km north, respectively, of the Sugar Zone Mine site. The TT8 Zone is located 17 km southeast of the Sugar Zone Mine.

The "West Lake showings" at Flat Lake have several outcrops consisting of mineralized iron formation interbedded with altered mafic and minor ultramafic volcanic rocks. Many of the outcrops host several narrow (10-15 cm) mineralized quartz veins. Anomalous gold values up to 110 ppb were obtained from limited rock sampling conducted in the area. Additional ICP results are pending for this area.

The TNT Zone has 3 mineralized showings along a 4.0 km anomalous trend. Airborne electromagnetic (EM) and magnetic surveys indicate that there are 2 separate and parallel EM and magnetic horizons. The TNT showing contains strong silica flooding and quartz veining, as well as up to 30% sulphides

consisting of pyrite, pyrrhotite, lesser chalcopyrite, molybdenum and sphalerite. Showing “A” consists of mafic metavolcanic and feldspar porphyries that have strong muscovite-sericite alteration, up to 10 to 20% quartz stringers and 1 to 3% pyrite-pyrrhotite. “Showing B” consists of sheared and altered mafic metavolcanics with 10% quartz veining and 1 to 2% pyrite-pyrrhotite.

The “TNT showing” and “A showing” are coincident with EM and magnetic anomalies. The “B showing” is associated with a magnetic low that is interpreted to indicate the existence of an altered-mineralized zone where there has been magnetite destruction. Showings “A” and “B” are located 1.0 km and 1.8 km northeast of the TNT showing, respectively.

Anomalous gold values ranging from 16 to 40 ppb to a high of 253 ppb (showing B) have been obtained from rock samples collected along the 4.0 km anomalous trend identified by geophysics and the Maximos AI technology. In addition, at the TNT showing, rock samples contain zinc and copper values up to 0.79% and 0.69%, respectively, as well as molybdenum similar to the Hemlo area. Analytical results are still pending for the showing A and B areas; however, similar base metals values are expected because comparable mineralized rocks were discovered in each of the 3 areas.

Combined, the Flat Lake and TNT zones represent a previously unknown, altered and mineralized horizon with anomalous gold and base metal values which occur along a strike length in excess of 10 km. Four diamond-drill holes have tested the area but gold results are comparable to those obtained from the rock samples (Harte Gold Corp, Management’s, Discussion and Analysis, November 14, 2019).

Seventeen chip samples collected from surface on the TT8 Zone returned gold assays (fire assay-metallic screen finish) ranging from 11.1 to 247 g/t gold over a 40 m strike length. The hanging and footwall rocks returned gold assays up to 2.64 g/t gold, indicating that the mineralized zone could be wider than currently uncovered. The best assays were obtained from a coarse-grained, heavily silicified, biotitic schist vein containing 10 to 15% pyrite and pyrrhotite and at times 1 to 2% chalcopyrite. The vein ranges from 5 to 30 cm in width and has an approximate strike and dip of 30°/20°. The vein is hosted in a metasedimentary rock unit that is thought to be a previously unrecognized eastern extension of the Nameigos greenstone belt (Harte Gold Corp., news release, December 2, 2019).

IAMGold Corporation – Côté Gold Project

IAMGold Corporation announced that exploration drilling, consisting of 28 holes and 12 300 m of core, has identified a new mineralized zone named the Gosselin Zone about 1.5 km northeast of the Côté Gold deposit (IAMGold Corporation, press releases, March 26 and July 30, 2019). Select assay results from the drilling program are reported in Table 8.

Table 8. Select assay results for Gosselin Zone.

Drill Hole	
CL15-39EXT	350.0 m grading 0.81 g/t Au
	<i>includes:</i> 15.0 m grading 2.32 g/t Au
	<i>includes:</i> 91.0 m grading 1.13 g/t Au
GOS17-05	345.0 m grading 0.68 g/t Au
	<i>includes:</i> 104.0 m grading 1.12 g/t Au
GOS18-07	130.0 m grading 0.63 g/t Au and 139.7 m grading 1.36 g/t Au
	<i>includes:</i> 132.3 m grading 1.13 g/t Au
GOS18-09	261.2 m grading 0.65 g/t Au
	<i>includes:</i> 79.0 m grading 2.11 g/t Au
	<i>includes:</i> 163.0 m grading 0.95 g/t Au
GOS19-17	342.5 m grading 0.98 g/t Au
	<i>includes:</i> 92.0 m grading 1.42 g/t Au
	<i>includes:</i> 225.0 m grading 1.34 g/t Au
GOS19-20	134.0 m grading 1.10 g/t Au
	<i>includes:</i> 1.05 m grading 110.0 g/t Au
GOS19-23	248.3 m grading 1.33 g/t Au
	<i>includes:</i> 35.5 m grading 1.92 g/t Au
GOS19-24	412.0 m grading 1.28 g/t Au
	<i>includes:</i> 1.0 m grading 168.0 g/t Au
	<i>includes:</i> 221.4 m grading 1.47 g/t Au
GOS19-27	245.0 m grading 0.85 g/t Au
	<i>includes:</i> 1.06 m grading 95.0 g/t Au
	<i>includes:</i> 1.0 m grading 31.8 g/t Au

International Explorers and Prospectors Inc. – Godfrey and Loveland Townships

International Explorers and Prospectors Inc. (IEP) filed an assessment report containing 2 new geochronology ages on their properties in the Kamiskotia area. One sample was collected from a fine-grained rhyolite outcrop near Steep Lake (NAD 83, 457119E 5373353N, Zone 17) in northwest Godfrey Township and the other is a fine-grained rhyolite tuff collected between 511 and 516 feet from Noranda drill hole FPL-89-1 (collar NAD 83, 447377E 5386170N, Zone 17) located in southwest Loveland Township (Ayer and Hamilton 2019). The Godfrey Township sample produced a zircon U/Pb age of 2704.7 ± 0.8 Ma and the Loveland Township sample has a zircon U/Pb age of 2716.1 ± 1.0 (Ayer and Hamilton 2019).

The 2704.7 ± 0.8 Ma age is interpreted to indicate that the sampled rhyolite unit is part of the Lower Blake River assemblage. This age indicates that the contact between the upper and lower Blake River assemblage is located further east than was previously thought (Ayer and Hamilton 2019; Hathaway, Hudac and Hamilton 2008). The eastward modification of the boundary better explains the age of 2705 ± 0.8 Ma from a rhyolite unit located 2.5 km south-southwest of the Genex deposit (Barrie and Davis 1990) and should help focus future exploration on a better-delineated and volcanogenic massive

sulphide (VMS)-favourable Upper Blake River stratigraphic sequence in Godfrey Township (*see* Figure 1 in Ayer and Hamilton 2019).

The 2716.1 ± 1.0 Ma age is interpreted to indicate that the sampled rhyolite unit coincides with the Kidd–Munro stratigraphic assemblage that hosts the Kidd Creek Mine (2717–15 Ma; Berger et al. 2011). This new geochronology age extends the highly prospective rock assemblage hosting the VMS deposit up to 20 km west-southwest of the Kidd Creek Mine and into the northwest corner of Robb and southwest corner of Loveland townships (Ayer and Hamilton 2019). The potential of these townships to host VMS deposits is indicated by an IEP drill hole drilled 400 m south of the geochronology sample in 2001 (Ayer and Hamilton 2019). That hole contained 3.6 m of semi-massive sphalerite and pyrite stringers that had assays up to 3.4% zinc (Ayer and Hamilton 2019).

McEwen Mining Inc. – Stock West Project

Exploration drilling on the Stock Mine property took place along a 3 km strike length with the objective of developing new resources (McEwen Mining, Management's, Discussion and Analysis, July 31, 2019). The specific areas being tested are referred to as the Stock East, Stock Deep and Stock West targets (McEwen Mining, news release, September 4, 2019).

A successful 2018 drilling program at the Stock East Zone, located 700 m from the Stock mill, led to the definition of an initial Indicated Resource estimate of 60 000 ounces of gold contained in 1.5 M tonnes grading 1.25 g/t gold. The initial resource assumed an open pit mining scenario at Stock East. Subsequent drilling has encountered higher grade mineralization, such as in hole SEZ19-15, that contained 10.9 g/t gold over 5 m, at depth in the Stock East Zone (McEwen Mining, news release, September 4, 2019).

The company announced that a drilling program has completed a total of 26 drill holes on the Stock West Zone, and assay results have been received for 22 holes. The 2 best intercepts reported are 6.7 g/t gold over 39 m in hole S19-101 (McEwen Mining, news release, October 28, 2019) and 7.7 g/t gold over 25 m in hole S19-106 (McEwen Mining, news release, December 11, 2019). The gold is hosted in a coarse-grained carbonated and silicified ultramafic rock, with visible gold observed in both quartz veinlets and in the wall rock. Gold mineralization has been intersected along a 250 m strike length and over 150 m vertically. The true thickness of mineralization varies from 5 to 25 m. Drilling is ongoing to test if the mineralization extends in all directions (McEwen Mining, news release, December 11, 2019).

Melkior Resources Inc. – Carscallen Project

Melkior Resources Inc. announced that hole CAR-19-03A intersected 23.5 g/t of gold over 8.0 m (426.0 to 434.0 m) including 372 g/t gold over 0.5 m (433.0 to 433.5 m) in a granodiorite-hosted vein. This intercept occurs approximately 150 m down-dip of the one in hole CAR-61-2010 that assayed 4.84 g/t gold over 13.3 m and is hosted in granodiorite. The intercept in hole CAR-19-03A also occurs about 70 m up-dip of the one in hole CAR-80-2012 that assayed 51 g/t gold over 3.5 m including 185.5 g/t gold over 1.0 m and is hosted in mafic volcanic rocks (Melkior Resources, news release, November 28, 2019).

NioBay Metals Inc. – James Bay Niobium Project

NioBay Metals Inc. received an exploration permit from the Ministry of Energy Northern Development and Mines (ENDM) on January 30, 2019, to drill at its James Bay Niobium Project site. The James Bay

Niobium Project is located 45 km south of Moosonee, in the James Bay Lowlands in Ontario, on Moose Cree First Nation traditional territory. Moose Cree First Nation and NioBay Metals Inc. signed a Protection Agreement that allows NioBay to proceed with its planned winter 2020 drilling program at the James Bay Niobium Project site. (NioBay Metals, news release, December 24, 2019.)

The planned drilling program will begin in the first quarter of 2020 and consists of 7 holes with a planned total length of 3400 m. The objectives of the drilling program are to; 1) test the lateral and depth extent of a high-grade zone; 2) obtain material for metallurgical tests; and 3) gather geotechnical information. The results of the program will be used to update the resource estimate of the niobium deposit and begin a Preliminary Economic Assessment.

Pancontinental Resources Corporation – Montcalm Project

Pancontinental Resources Corporation (Pancon) owns 3 contiguous properties located 65 km northwest of Timmins named the Montcalm, Gambler and Nova projects. The 3 projects cover most of the Montcalm Gabbro Complex and have a total area of 12 840 ha (Pancon, Management's Discussion and Analysis, November 28, 2018).

Ten virtual time domain electromagnetic (VTEM) anomalies on the Montcalm property were tested by 10 drill holes that produced approximately 4300 m, during the first quarter of 2019. Narrow (<1.5 m) sections of massive sulphides, net textured sulphides and sulphide stringers were intersected in 8 of the VTEM anomalies. The mineralized intervals did not return anomalous nickel-copper-cobalt assay results. (Pancon, press release, March 27, 2019.)

Pelangio Exploration Inc. – Dome West Project

Pelangio Exploration completed a single 543 m drill hole (DW19-01) on the Dome West property, located 800 m west of the proposed Dome Mine super pit, to test a prospective porphyritic intrusive sill interpreted to extend across the property from the 1000-foot level of the Paymaster Mine. The hole intersected an altered porphyry unit between 280.4 m and 322.9 m, a series of secondary porphyritic dikes and 7 pyrite-bearing quartz veins (Pelangio Exploration Inc., news release, May 28, 2019). Pelangio reported that they intersected a mineralized interval with 3.21 g/t gold over 1.25 m including 4.75 g/t gold over 0.75 m (Pelangio Exploration Inc., news release, June 13, 2019).

Spruce Ridge Resources Ltd. – Crawford Township Property

Spruce Ridge Resources Ltd. (Spruce Ridge) reported the results of a four-hole (1818 m) diamond-drilling program initiated to test geophysical targets in Crawford Township (Spruce Ridge Resources, press release, March 4, 2019). The discovery hole (CR18-01) intersected 291 m of mineralization averaging 0.293% Ni, 118 ppm Co, 0.02 g/t Pd and 0.011 g/t Pt. Drill holes CR18-03 and CR18-04 ended in mineralization with increasing grade (Spruce Ridge Resources, Management's Discussion and Analysis, December 30, 2019).

Spruce Ridge also completed petrographic and scanning electron microscope (SEM) study of the core in order to identify the nickel- and cobalt-bearing minerals. These include, in order of decreasing abundance, pentlandite, heazlewoodite, awaruite, minor godlevskite, an unknown cobalt-nickel-iron sulphide and an unknown copper-iron-palladium-platinum oxide (approximate composition 40 wt% Cu, 15 wt% Pd and 1 wt% Pt). Pentlandite is the dominant sulphide mineral and typically contains 3 to 4 wt% Co. Mineral

grain size varies from 5 to 100 microns and most of the cobaltiferous pentlandite reports to the coarsest fraction (Spruce Ridge Resources, news release, June 11, 2019).

Additional analysis of 12 core samples found that 77% of the cobalt and 62% of the nickel are liberated by an aqua regia digestion compared to a sodium peroxide fusion. These recovery percentages are interpreted as indicating the abundance of cobalt-nickel sulphide, oxide and metals, with the balance occurring as silicates (Spruce Ridge Resources, news release, June 11, 2019).

ZEN Graphene Solutions Ltd. – Albany Graphite Deposit

ZEN Graphene Solutions Ltd. announced that it has completed its winter drilling program on the Albany Graphite Project and that 2 large-diameter drill holes were completed and produced 263 m of core. The 110-tonne bulk sample will be used to produce several tonnes of purified graphite (90% concentration) that will be used as precursor graphene material for graphene applications testing. (Zen Graphene Solutions Ltd., press release, March 22, 2019.)

RESIDENT GEOLOGIST STAFF AND ACTIVITIES

The Timmins Resident Geologist Office was staffed by E. van Hees, Regional Resident Geologist, P. Bousquet, District Geologist, and as District Geological Assistant, the following: L. Wang, in January 2019, A. Millette from February until October, and C. Boucher from October until the end to the year. In early January 2019, P. Bousquet finished a secondment as the Mineral Deposit Inventory Geoscientist, when he was replaced by S. Hinz until the end of year. L. Wang continued on his contract as District Geological Assistant from the beginning of January to the end of February 2019. Three students, H. Brommecker, C. Maren and C. Bushen, provided field and office support under the 2019 Summer Employment Opportunities Program between early May and the end of July.

The Timmins (South Porcupine) office serves as the northeast regional centre for the Resident Geologist Program. M. Smyk was the Senior Manager between January and November 2019, after which time R. Millar became the acting Senior Manager for the rest of 2019. T. Gomwe was the Northeast Regional Manager of the Resident Geologist Program during 2019. C. Daniels is the Northeastern Regional Land Use Geologist from January 2019 until late July 2019, when she became acting Land Use Planning and Policy Coordinator. The position of Northeastern Regional Land Use Geologist was then filled by P. Bousquet until the end of the year. C. Patterson returned to his home GIS/Data Specialist position for Northeastern Ontario starting in March 2019. S. Fudge served as Northwestern Regional Land Use Geologist for the month of January 2019. She then went back to her home position of Geoscience Data Processor from February until April 2019. A. Millette took the position of Geoscience Data Processor in October. C. Caron is the Administrative Assistant and Co-ordinator for the Resident Geologist Program.

The office added 69 and updated 209 Mineral Deposit Inventory (MDI) points in the Timmins Mining District (*see* Table 20). Assessment files received in 2019 are listed in Table 9 and publications received are listed in Table 17.

The office undertook 5 projects in 2019:

1. Geochemical characterization of massive sulphide deposits in the Timmins District and Ontario;
2. Lithogeochemical sampling and analysis of drill core in 16 townships that straddle the Pipestone Fault;
3. Examining areas where VMS might occur in the KamKotia area northwest of Timmins;

4. Scanning mine closure files into a digital format; and
5. Putting hard copy certificates of lithogeochemical data, generated by mining companies and individuals who sampled core archived in the Drill Core Library during the mid-1980s and 1999, into a digital format in Microsoft® Excel® spreadsheets.

Project 1 was initiated in 2016 when cobalt values greater than 1000 ppm were discovered in a massive sulphide sample collected from the Genex Mine property. Additional research indicates that the chemistry of the massive sulphide mineralization in general might not have been fully characterized. Subsequently, more than 100 massive sulphide samples were collected from volcanogenic massive sulphide (VMS), copper-nickel and other massive sulphide deposits and submitted to Geoscience Laboratories (GeoLabs) in Sudbury for analysis. Some results from these samples were used to write 4 “Recommendations for Exploration” included in the 2017 and 2018 Report of Activities (van Hees, Bousquet et al. 2017; van Hees, Pace et al. 2018; van Hees 2018a, 2018b). A total of 230 massive sulphide samples were collected for this project between 2017 and the end of 2019. This information will be written up in an Open File Report in 2020.

Project 2 is the sampling of drill core stored in the Remote Drill Core Storage Site to map the lithogeochemistry of 16 townships that straddle the Pipestone Fault. The project is expected to take 3 to 4 years to complete and will generate 3 maps that will characterize the rock and alteration types buried beneath 10 to 30 m of clay overburden that covers most of the area. About 600 samples have been collected and submitted to GeoLabs for assay. Results for some of these samples were received in 2018 and 2019 and the balance are expected 2020.

Project 3 continued to examine the area around KamKotia and is described in “2019–2020 Recommendations for Exploration” (Bousquet 2020).

Project 4 involved the scanning of most of the Mine Closure files and is described in the “Data Scanning” section of the report.

Project 5 was initiated in August 2019 and completed by the end of 2019. The data was obtained from 799 samples that were collected from drill core in the same 16 townships that are part of the lithogeochemical sampling program that straddle the Pipestone Fault. The newly digital data will be combined with the newly generated lithogeochemical data to produce alteration maps of the study area. See the write-up in the “Digitizing of Drill Core Library Data” section below.

Table 9. Assessment files received in the Timmins District in 2019.

Abbreviations							
AMAG	Airborne magnetometer	PDRILL	Diamond drilling				
ARAD	Airborne radiometric	PHOTO	Air photo and remote imagery interpretation				
ASSAY	Assaying and analyses	PMAN	Manual labour				
AVLF	Airborne electromagnetic very low frequency	PMECH	Mechanical				
CHNL	Channel sampling	PROSP	Prospecting by license holder				
GCHEM	Geochemical	PSTRIP	Overburden stripping				
GEOL	Geological survey/mapping	PTRENCH	Bedrock stripping				
GLCOMP	Compilation and interpretation - geology	ROCK	Rock sampling				
GR	Resistivity	SEDMT	Lake and/or stream sediment sampling				
IP	Induced polarisation	SOIL	Soil sampling				
LC	Line cutting	VLF	Electromagnetic very low frequency				
MAG	Magnetic/magnetometer survey	RECON	Reconnaissance				
MMI	Mobile metal ion survey						

File Id	Township/Area	Performed For	Property	Year	Work Type	Work Approved	Other File Identifier
20000017302	Abraham	Harte Gold Corp.	Sugar Zone property	2017 - 2018	VLF	\$26 940	44255
20000015960	Blount	Alain G J Vallee	420 Mining Exploration Project	2017 - 2018	ASSAY, PSTRIP, ROCK	\$2182	19326, 2182
20000016937	Blount	Alain G J Vallee	Vallee Cote Minerals Exploration Project	2017 - 2018	ASSAY, PMAN	\$6102	25916
20000017024	Blount	Alain Vallee	Vallee Cote Minerals Exploration Project	2018 - 2019	ASSAY, GEOL, PROSP, ROCK	\$668	40330
20000017254	Carman, Eldorado, Langmuir, Shaw	Kraken Gold Corp.	Langmuir Carmen property	2016 - 2019	ASSAY, PHOTO, PROSP, ROCK	\$14 876	41589
20000017207	Carnegie	Explor Resources Inc.	Carnegie Base Metal property	2019	VLF, LC	\$8300	37097
20000017206	Carnegie	Explor Resources Inc.	Carnegie Base Metal property	2019	VLF, LC	\$11 800	37096
20000017093	Carnegie	Explor Resources Inc.	Carnegie Base Metal Project	2019	IP	\$16 200	35889
20000016437	Carscallen	Falconbridge Ltd.	Kamiskotia property	2006	ASSAY, PDRILL	\$24 400	2.37193, T-5630
20000017243	Carscallen, Turnbull	Nitinat Minerals Corporation	Lalonde option	2019	AMAG	\$13 500	40174
20000017027	Chester	Iamgold Corp.	Chester property	2017	ASSAY, CHNL, PDRILL, PMECH	\$108 567	40475
20000016977	Chester	Iamgold Corporation	Cote Gold Project	2017 - 2018	ASSAY, PDRILL	\$5 882 309	34693
20000017018	Chester	Iamgold Corporation	Chester property	2017	ASSAY, PDRILL	\$321 908	39918
20000017133	Clergue	C Villeneuve Construction Co. Ltd.	Claim 532889	2018	AMAG	\$5 300	30713
20000016952	Cody, Macklem, Matheson	Moneta Porcupine Mines Inc.	Night Hawk Lake Project	2017 - 2018	ASSAY, PDRILL	\$89 963	27795
20000017121	Cunningham	Skead Holdings Ltd.	Cunningham property	2018	PROSP, ROCK	\$8885	30227
20000017080	Dale	Timothy Martel	Dale property	2018	IP	\$40 438	35193
20000016318	Deloro	Central Timmins Exploration Corp.	Deloro-Lynx property	2018	AMAG	\$5100	25991

TIMMINS DISTRICT—2019

File Id	Township/Area	Performed For	Property	Year	Work Type	Work Approved	Other File Identifier
20000017253	Deloro	DH Exploration Inc.	Deloro property	2017 - 2019	ASSAY, PROSP, ROCK	\$7592	41475
20000017257	Denton	Melkior Resources Inc. / Ressources Melkior	Denton property	2019	AMAG	\$24 427	41946
20000017162	Denton	Herman Daxl	No specific property name	2017 - 2019	ASSAY, SOIL	\$9028	32721
20000017038	Dore, Coppel, Cunningham, Denyes, Garnet, Heenan, Mallard, Marion, Newton, Swayze	GFG Resources	Dore Gold Project	2018	PHOTO	\$46 946	41165, 41166, 41167, 41168, 41169
20000016961	Feagan Lake Area	Empire Metals Corp.	Feagan Lake West Graphite prospect	2018	AMAG	\$31 784	28641
20000017107	Fripp	Herman Daxl	Splitrock River property	2017	ASSAY, GEOL, SOIL	\$27 200	36640
20000015958	Fripp, Musgrove	Hermann Daxl	Jules Lake Area	2016 - 2018	ASSAY, SEDMT	\$31 800	18475
20000017208	Gamey, Borden, Cochrane	Goldcorp Borden Limited	Borden gold deposit	2018	ASSAY, SOIL	\$236 691	37186
20000017311	Godfrey	Central Timmins Exploration Corp.	Godfrey–Mountjoy property	2019	ASSAY, PDRILL	\$69 299	45439
20000017177	Greenlaw, Cunningham	Teck Resources Ltd.	Ridout Lake property, Ridout South property	2017	ASSAY, GEOL, ROCK	\$38 206	29448
20000017303	Hambleton	Harte Gold Corp.	Sugar Zone property	2018 - 2019	VLF	\$33 566	44256
20000017123	Hambleton, Gourlay	Harte Gold Corp.	Wolf Zone property	2017 - 2018	ASSAY, GCHEM, SOIL	\$139 489	30253
20000017112	Hambleton, Gourlay, Odlum, Strickland	Harte Gold Corp.	Sugar Zone property	2014 - 2017	GR, IP, LC, MAG, VLF	\$326 187	29461
20000017309	Hambleton, Odlum	Harte Gold Corp.	Sugar Zone property, Wolf Zone property	2017	ASSAY, PDRILL	\$5 103 378	44428
20000017135	Hambleton, Odlum	Harte Gold Corp.	Dayohessarah Lake property	2017 - 2018	ASSAY, PROSP, SOIL	\$139 489	30747
20000017011	Heenan	Fancamp Exploration Ltd.	Mallard gold property	2018	ASSAY, GEOL, LC, PROSP, SOIL	\$25 231	39429
20000016975	Jamieson	International Explorers and Prospectors	Jameland property	2018	ASSAY, PDRILL	\$23 788	33482, 33510
20000017265	Jamieson, Robb	Central Timmins Exploration Corp.	Four Corners Project	2019	VLF, LC	\$6000	42408
20000017147	Jamieson, Robb	Central Timmins Exploration Corp.	Four Corners property	2017 - 2018	ASSAY, MMI, SOIL	\$8383	31406
20000017026	Keith, Kenogaming, Muskego, Penhorwood, Reeves, Sewell	GFG Resources	Pen Gold Project	2018	GEOL, MAG, SOIL	\$750 971	40470
20000017272	Lackner	2586189 Ontario Ltd.	Lackner Township REM Exploration Mining property	2018	PROSP, ROCK	\$2770	42633
20000016948	Langmuir	Uranium Valley Mines Ltd.	Porcupine Miracle Pprospect	2017	VLF	\$8407	27478

File Id	Township/Area	Performed For	Property	Year	Work Type	Work Approved	Other File Identifier
20000016945	Langmuir	Uranium Valley Mine Ltd.	Porcupine Miracle prospect	2017	IP, MAG	\$42 916	27389
20000017108	Little	Gowest Gold Ltd.	Pipestone East property	2018	PDRILL, ROCK	\$59 663	29136
20000016960	Little, Prosser, Tully	Gowest Gold Ltd.	Pipestone East property, Prosser property	2017 - 2018	GR, IP	\$223 742	28582
20000017136	Lizar	Christopher Brent Patrie	Lizar property	2018	IP	\$52 714	30756
20000017028	Lizar	Hiawatha Partners	Lizar Township Claim Group	2019	MAG	\$29 000	40497
20000017305	Loveland	Western Kidd Resources Inc.	Loveland Township property	2019	PROSP	\$3850	44309
20000017256	Macklem	St Andrew Goldfields Ltd.	Nighthawk	2017	ASSAY, PDRILL, ROCK	\$307 642	41839
20000016954	Mallard	Fancamp Exploration Ltd.	Mallard Project	2018	AEM, AMAG	\$92 345	27974
20000017019	McCowan	JayCubed Explorations	McCowan property	2017 - 2019	ASSAY, GEOL, PROSP, ROCK	\$9549	39938
20000017039	Montcalm	Pancontinental Resources Corp.	Montcalm property	2019	IP, LC	\$21 145	41188
20000017029	Montcalm	Pancontinental Resources Corp.	Montcalm property	2019	ASSAY, PDRILL	\$516 824	40733
20000016179	Montcalm	Pancontinental Resources Corporation	Montcalm property	2018	AEM	\$79 666	24775, 24777
20000016319	Mountjoy, Ogden	Central Timmins Exploration Corp.	Mountjoy Project - River Group	2017	MMI	\$1320	26156
20000016278	Musgrove	Richard Stroz	K-29 property	2018	ASSAY, GEOL, PROSP, ROCK, SOIL	\$16 186	25125
20000016058	Nova	Pancontinental Resources Corp.	Nova property	2018	ASSAY, GEOL, PROSP, SOIL	\$41 531	23044
20000017131	Odlum, Abraham, Cooper, Gourlay, Hambleton, Johns, Mosambik, Nameigos, Strickland, Tedder	Harte Gold Corp.	Sugar Zone property	2018	ASSAY, GEOL, ROCK	\$213 720	30560
20000017122	Odlum, Gourlay, Hambleton, Strickland	Harte Gold Corp.	Sugar Zone property, Wolf Zone property	2016	ASSAY, PDRILL	\$905 513	30250
20000017308	Odlum, Hambleton, Strickland	Harte Gold Corp.	Dayohessarah Lake property	2017	ASSAY, PDRILL	\$418 646	44423
20000017307	Ogden	Moneta Porcupine Mines Inc.	Ogden property	2019	ASSAY, PROSP, ROCK	\$5802	44415
20000017074	Osway	Jonathan Paul Camilleri	Osway Township Claim Group	2018 - 2019	MAG	\$6388	34727, 39569
20000016950	Penhorwood, Kenogaming, Reeves	GFG Resources Inc.	Pen Gold Project	2017	ASSAY, GLCOMP, RECON, ROCK	\$535 008	27681, 27863

File Id	Township/Area	Performed For	Property	Year	Work Type	Work Approved	Other File Identifier
20000017125	Rollo	Richmond Minerals Inc.	Ridley (Swayze) property	2017 - 2018	AMAG, GR, IP	\$61 569	30303
20000017031	Stock	Herman Daxl	Stock property	2018	ASSAY, SOIL	\$15 200	40785
20000016993	Stock	St Andrew Gold Fields Ltd.	Taylor West	2017 - 2018	ASSAY, PDRILL	\$94 324	26739
20000017099	Swayze	Kencana Technical Services Inc.	C1 Mortimer property	2017	ASSAY, PDRILL, PSTRIIP	\$70 000	36065
20000017166	Swayze, Cunningham	John Leliever	Cree Lake Gold property	2019	AMAG, ARAD, AVLIF	\$5712	33097
20000016057	Thorneloe, Bristol	Lake Shore Gold Corp.	144 South Zone	2016 - 2018	ASSAY, PDRILL	\$948 783	22983
20000016951	Tisdale, Murphy	Moneta Porcupine Mines Inc.	North Tisdale Project	2017 - 2018	ASSAY, PDRILL	\$135 593	27739
20000017283	Walls	Gordon N Henriksen	Pichogen property	2019	ASSAY, ROCK	\$66 737	43228
20000017238	Yeo	Iamgold Corporation	Watershed property	2017 - 2018	ASSAY, CHNL, GEOL, PDRILL, PMECH, PTRENCH	\$102 532	39794
20000017015	Zavitz, Hincks	Brian Beyer	Beyer gold-copper property	2017 - 2019	ASSAY, GEOL, PROSP, ROCK	\$90 740	39579

Remote Drill Core Storage Site

The Remote Drill Core Storage Site (RDCSS) in Timmins continued to undergo a rejuvenation program in order to improve access to the core and overall functionality of the facility. During the summer of 2019, a vegetation control program was completed on the RDCSS in order to maintain the property. No core was reboxed in 2019.

PROPERTY EXAMINATIONS

Table 10 lists the property visits conducted by RGP staff in the Timmins District during 2019.

Table 10. Property visits conducted by the Timmins District Geologist and staff in 2019.

Number	Client – Occurrence	Location
1	Andre Cousineau	Val Rita
2	Smoky Fall area	Acres, Clay and Kipling townships
3	West Quartz Lake property	Fripp Township

Mr. Andre Cousineau

LOCATION

Mr. Andre Cousineau, of Val Rita, Ontario, brought a fragment of a boulder that he had collected from a locality in the Timmins Mining District, to the Resident Geology Office (RGO) in late March of 2019 in order to establish if he had found a meteorite. Initial examination indicated that it was not a meteorite.

Subsequent study, including a trip to Andre's house in Val Rita, has shown that his sample is a large piece of unusually well-mineralized float (Figure 6). The location of the float is known to the Timmins RGP office but not provided in order to protect Andre's interest. Anyone interested in learning more about this material should contact Andre directly by email at andysask2008@hotmail.com.



Figure 6. On left, the 140 kg mineralized boulder; right, octahedral crystal in polished slab.

EXAMINATION

Preliminary examination and testing of a fist-size sample brought to the RGP office by Mr. Cousineau indicated that the material had a red streak, silvery metallic luster and was strongly magnetic in places. These features led to the sample being tentatively classified as a piece of iron formation. Subsequent examination of the large boulder at Andre's home indicated that it has a very high specific gravity, probably in excess of 5.0, as well as small pockets that appear to be filled with small crystals. Examination of a polished slab identified red octahedral and white crystals (*see* Figure 6, right photo).

CHEMICAL ANALYSIS OF SAMPLE

The sample obtained from Mr. Cousineau was submitted to GeoLabs in Sudbury for analysis, by the Timmins RGP office. Although the sample was thought to be an iron formation that might contain gold and silver, it was analyzed for a suite of elements that were being used for an ongoing Volcanogenic Massive Sulphide study. The best results, reported in Table 11, are an average of duplicate analyses. Results that exceed the upper detection limit (Detect Limit – High) for the analytical method used are reported in bold text and underlined. Those four results are reported for information purposes only and are not considered to indicate a precise composition of the sample.

Table 11. Select chemical analysis of the Cousineau float sample.

Units	S wt%	Ag ppm	Au ppm	Pd ppm	Pt ppm	As ppm	Bi ppm	Cd ppm	Co ppm	Cu ppm	Ni ppm	Pb ppm	Sb ppm	Te ppm	Zn ppm
Detect Limit - Low	0.003	2	0.002	0.014	0.006	0.7	0.02	0.02	0.03	7	16	0.2	0.009	0.2	2
Detect Limit - High	54.0	75	5000	4.80	11.0	1800	700	50	20000	250000	475000	75000	500	40	450000
19-EvH-1	1.6	<u>252</u>	3.79	4.43	2.22	442	<u>714</u>	<u>>50</u>	94	<u>718760</u>	3338	34922	3.6	31.4	10929

MINERALOGICAL ANALYSIS OF SAMPLE

The sample submitted to GeoLabs in Sudbury was also analyzed using X-ray diffraction (XRD) and scanning electron microscopy (SEM) using semiquantitative analysis. These studies indicated that the sample consists primarily of the mineral cuprite (CuO). The sample also contained small amounts of tenorite (CuO), anhydrite CaSO₄, gypsum CaSO₄·2H₂O and magnetite (Fe₃O₄). An additional phase composed of Cu, Pb and O was also observed with the SEM but it could not be matched to the XRD pattern. This phase would be considered a minor to trace component of the sample.

Smokey Falls Area

LOCATION AND ACCESS

Four locations were visited within 15 to 30 km of the Smokey Falls power plant, using a MNRF helicopter, to follow up on a recommendation made in 2017, after a visit to the Douglas Clay property (van Hees et al. 2017), to collect additional sediment samples and test for rare earth element (REEs) concentrations that might have been derived from the Clay-Howells carbonatite deposit. The sites that were visited and sampled are located in Acres, Clay and Kipling Townships (*see* Table 12, Figure 7).

Table 12. Locations, Quaternary geology and descriptions of samples collected near Smoky Falls.

Sample #	Location Name	UTM Easting ¹	UTM Northing ¹	Quaternary Unit ²	Grain Size	Colour
19-EvH-7	REE Site 1	422523	5553518	27	clay	grey
19-EvH-8	REE Site 1	422523	5553518	27	clay	grey
19-EvH-9	REE Site 1	422523	5553518	27	clay	grey
19-EvH-6	REE Site 2	434755	5512095	24	clay	grey
19-EvH-10	REE Site 3	396805	5547320	27	sand	grey
19-EvH-11	Radiometric	398755	5551690	21	silt	hematite red

¹ UTM co-ordinates in North American Datum 1983 (NAD83), Zone 17.

² Unit numbers keyed to Figure 7.

SAMPLE CHEMISTRY

Six samples were collected and were submitted to GeoLabs in Sudbury for analysis using the IMC-100 method. The chemical composition of the 6 samples collected are reported in Table 13. Sample 19-EvH-11, a sediment sample with silt-size particles and a hematite red colour, has the highest concentration of total rare earth elements (TREE) of 809 ppm. That sample also has high Ba, Ga, Nb, Ta, Ti, V and Zr. The higher Th and U concentrations in sample 19-EvH-11, compared to the other 5 samples, probably accounts for the anomalous radiometric reading obtained in Acres Township by the Ontario Geological Survey airborne survey in 2016 (Ontario Geological Survey 2016) and that was measured on the ground using a handheld scintillometer (325 counts per second).

INTERPRETATION

The chemistry of sample 19-EvH-11 is comparable to that of the Clay-Howells carbonatite samples analyzed by Sage (1988). If that interpretation is correct, then the area sampled consists of sediment derived from the Clay-Howells carbonatite as suggested in the 2018 Report on Activities (van Hees et al.

2018) or it is underlain by an unrecognized carbonatite intrusion. The area within 5 km of the site where sample 19-EvH-11 was collected in Acres Township was open for staking at the time this report was written (February 7, 2020).

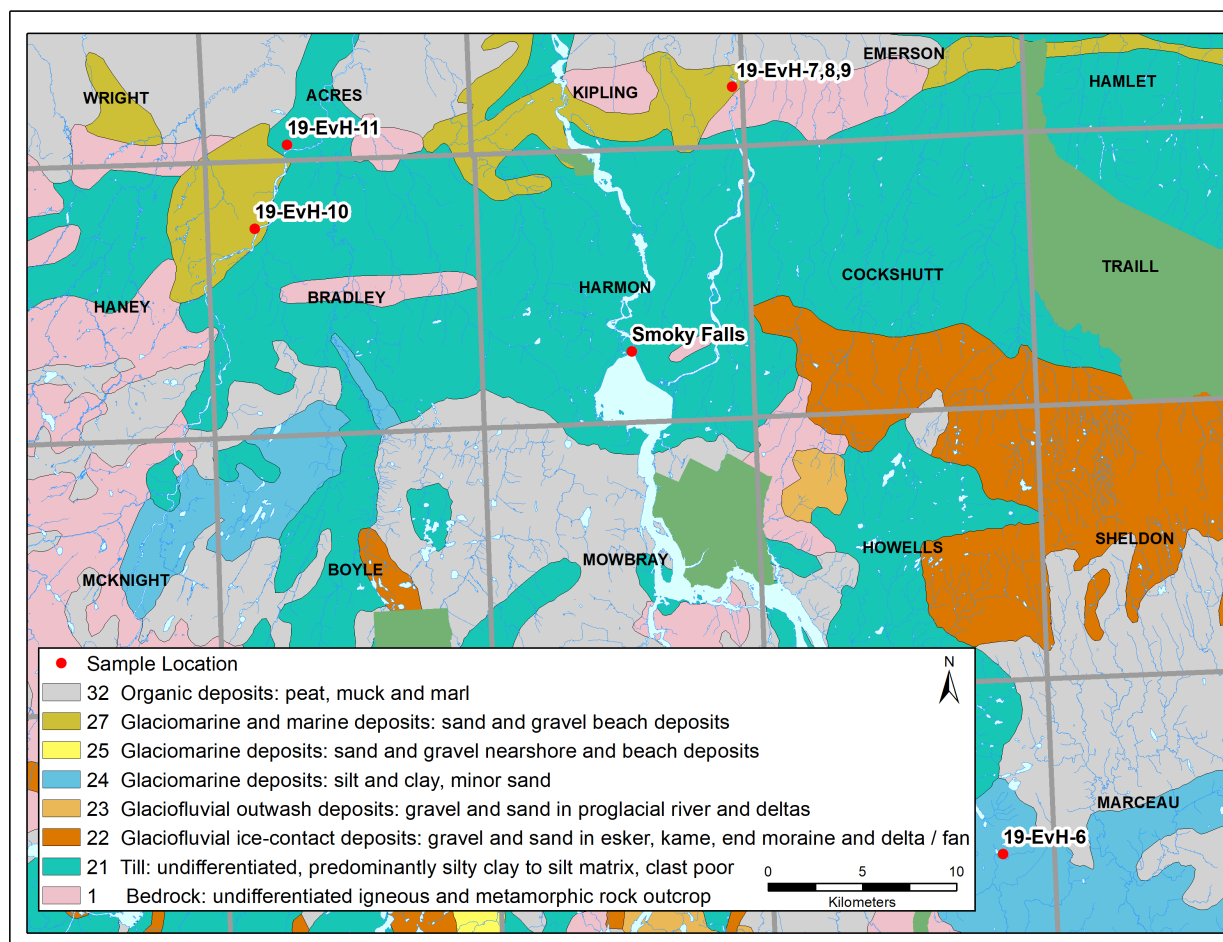


Figure 7. Soil samples collected plotted on the Quaternary geology of the Smoky Falls area. Geology from Ontario Geological Survey (2000).

Table 13. Chemical composition of soil samples collected from sites near Smoky Falls.

Sample Units Det Limit	Ce ppm 0.12	Pr ppm 0.007	Er ppm 0.007	Dy ppm 0.009	Ce ppm 0.12	La ppm 0.1	Lu ppm 0.002	Nd ppm 0.06	Pr ppm 0.014	Sc ppm 1.1	Sm ppm 0.026	Tb ppm 0.0023	Tm ppm 0.0019	Y ppm 0.05	Yb ppm 0.009	TREE ppm 2
19-EvH-06	41.61	1.904	1.069	0.6983	2.375	0.3714	20.7	0.156	17.43	4.803	3.184	0.3241	0.1528	11.02	1.024	113
19-EvH-07	43.55	2.063	1.222	0.7111	2.591	0.4162	21.9	0.169	18.59	5.024	3.341	0.3631	0.1787	12.45	1.176	121
19-EvH-08	30.57	1.380	0.799	0.5701	1.800	0.2820	15.5	0.112	13.15	3.549	5.1	0.2458	0.1135	8.25	0.756	84
19-EvH-09	84.83	3.614	1.990	1.2323	4.716	0.7189	44.9	0.269	35.48	9.909	12.4	0.6500	0.2877	20.78	1.850	230
19-EvH-10	23.31	1.068	0.600	0.4122	1.338	0.2104	12.5	0.080	10.00	2.761	3.7	0.1803	0.0867	6.42	0.543	65
19-EvH-11	355.26	8.320	4.281	4.2607	10.955	1.5629	194.3	0.553	114.02	35.047	16.2	15.462	0.6068	43.19	3.900	809

Sample ID Units Det Limit	Bi ppm 0.47	Cd ppm 0.013	Co ppm 0.13	Cu ppm 1.4	Mo ppm 0.08	Ni ppm 0.7	Pb ppm 0.18	Sb ppm 0.04	Sn ppm 0.16	Zn ppm 1.8	In ppm 0.0018	Rb ppm 0.11	Sr ppm 0.6
19-EvH-06	<0.47	0.065	7.58	12.3	0.29	20.1	10.94	0.12	0.68	30.9	0.0197	58.29	268.2
19-EvH-07	<0.47	0.082	8.91	15.4	0.30	25.0	9.93	0.18	0.78	37.0	0.0237	55.04	228.7
19-EvH-08	<0.47	0.055	5.81	8.5	0.25	15.1	9.63	0.09	0.48	23.6	0.0147	48.56	265.7
19-EvH-09	<0.47	0.074	17.02	22.9	0.62	44.5	18.97	0.25	1.56	70.3	0.0447	112.73	226.1
19-EvH-10	<0.47	0.037	4.28	4.7	0.34	14.9	7.00	0.09	0.33	15.0	0.0105	34.17	231.2
19-EvH-11	<0.47	0.043	18.68	12.2	2.17	64.8	7.46	0.19	1.47	40.7	0.0638	118.77	645.9

Sample ID Units Det Limit	Ba ppm 0.8	Be ppm 0.04	Cr ppm 3	Cs ppm 0.013	Ga ppm 0.04	Hf ppm 0.14	Li ppm 0.4	Nb ppm 0.03	Ta ppm 0.007	Th ppm 0.018	Ti ppm 7	Tl ppm 0.002	U ppm 0.011	V ppm 0.8	W ppm 0.05	Zr ppm 6
19-EvH-06	445.8	0.96	53	1.522	11.59	3.55	17.5	5.74	0.373	5.808	1886	0.334	1.169	43.8	0.45	147
19-EvH-07	382.2	0.98	56	1.875	10.71	3.15	22.4	6.76	0.408	5.975	2194	0.311	1.309	50.1	0.51	133
19-EvH-08	395.9	0.86	41	0.975	10.35	2.65	12.1	4.23	0.259	3.841	1420	0.274	0.848	31.7	0.23	114
19-EvH-09	657.4	1.89	98	4.206	19.65	4.33	60.4	11.32	0.834	12.358	3574	0.627	1.906	91.6	0.87	177
19-EvH-10	290.9	0.70	34	0.593	7.80	1.19	9.9	4.18	0.243	2.814	994	0.166	0.728	25.5	0.37	51
19-EvH-11	955.35	4.50	97	2.042	18.76	4.63	36.9	312.40	15.275	35.414	6568	0.175	6.126	110.3	3.44	371

West Quartz Lake Property, Fripp Township

LOCATION AND ACCESS

The property is located on the south shore of the east branch of Quartz Lake (Figure 8). The area is accessible by truck by travelling down Pine Street South / Naybob Road for 28 km, turning right on a bush road of a recently logged area. Drive for 13 km down that road to reach the end in a recently lumbered area. A bush road bridge was pulled out in the fall of 2019 and the area is no longer accessible by road.

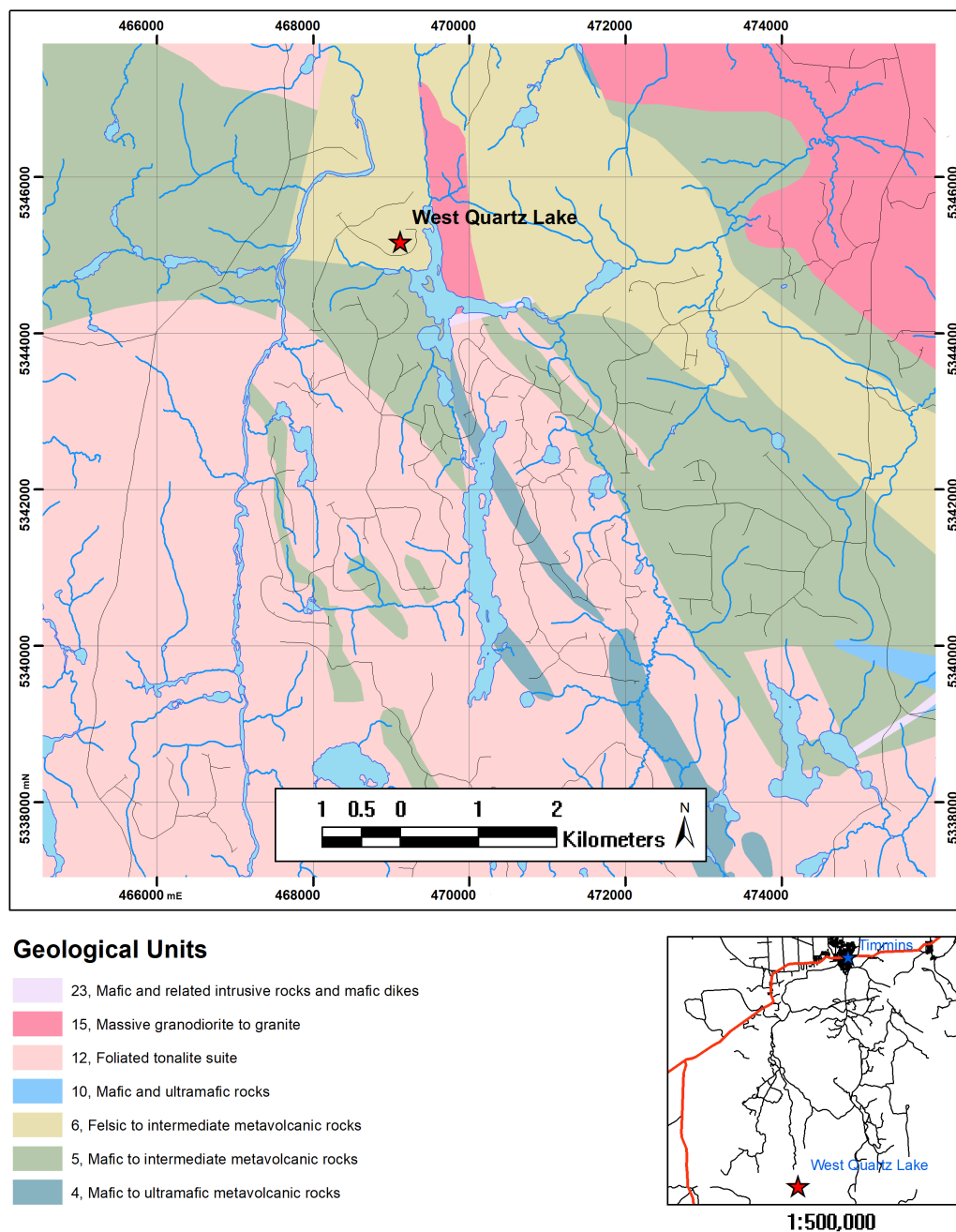


Figure 8. Bedrock geology and location of the West Quartz Lake property. Geology from Ontario Geological Survey (2011).

PREVIOUS WORK

The property was first explored by Quartz Lake Mines Limited in the 1920s through trenching and sampling. Hollinger Consolidated Gold Mines Ltd. mapped the property, performed some ground geophysics and rock sampling in 1962. O’Leary Malartic Mines Ltd. drilled one hole on the north side of the east branch of the lake in 1964. In the same year, Nipiron Mines Ltd. mapped the property and did some ground geophysics. Airborne geophysics were performed in 1983 by Samim Canada. R. Garneau did another airborne electromagnetic and magnetic survey in 1988. From 1991 to 1997, D. Tichinoff explored the property through ground geophysics and drilled one drill hole on the north side of the east arm of Quartz Lake. D.M. Lefort did prospecting, sampling and assaying in 2009–2010.

GEOLOGY

West Quartz Lake: Easting 469229 Northing 5345834

The area is characterized by clusters of outcrops consisting of intermediate to felsic metavolcanic rocks (Figure 9). The surface of the outcrops are pinkish-white with evident schistosity having a strike and dip of $280^{\circ}/80^{\circ}$. Epidote has been spotted on the outcrop. Some quartz eyes of up to 5 cm^2 are dispersed across the outcrop. Iron staining is perceived associated with more chloritic tuffs. Outcrops to the north consist of amphibolites.

West Quartz Lake: Easting 469155 Northing: 5345026

This outcrop is composed of an amphibolite (mafic metavolcanic rock?). The rock itself is dark black to greenish on surface. Its grain size is fine and some sulphide grains are present. Iron staining is present. The area is crossed by a diabase dike having a strike and dip of $360^{\circ}/85^{\circ}$. Quenching texture is evident in the dike.



Figure 9. Felsic to intermediate tuffs and flows, West Quartz Lake, Fripp Township.

DATA SCANNING

Digitizing of Mine Closure Plans

In 2019, the RGP continued digitizing and cataloging 1210 envelopes containing hard-copy Mine Closure Plans that date back to 1910 and are archived in the Timmins District office. The RGP is creating scanned digital copies of the Plans in order to facilitate accessing and backing up of these unique data and maps. The Plans contain information about the geology, assay results, location of diamond-drill holes and mine openings such as stopes, drifts and raises that might present a hazard to future users of the property. Knowledge about the location and shape of underground workings obtained from these Plans might prove useful in the future for a number of reasons, including safety-related issues in open pits being developed on properties that have a history of mining activity.

A 2018 inventory completed by the Geoscience Data Processor indicates that there are approximately 5500 maps contained in the Plan envelopes. To date, 812 envelopes, or 83%, of the maps have been scanned, catalogued and stored as TIFF image files. A total of 696 envelopes were completed in 2019. A summary of information collected from the scanned plans is listed in Appendix A.

Digitizing of Donated Data

In 2019, the RGP continued to digitize, catalogue and make accessible the hard-copy information archived in the Timmins RGP filing system. This information consists of 1276 files donated to the RGP by companies and individuals. This information includes maps and reports dating back to 1909 (Resident Geologist's Files, Timmins District, South Porcupine) that document the results of airborne surveys, rock and soil assaying, data compilations, diamond drilling, electromagnetic surveys, feasibility studies, geological mapping surveys, prospecting, sampling, stripping, trenching and underground exploration work.

A 2017 inventory completed by the Geoscience Data Processor indicated that there are approximately 60 000 report pages and 10 000 maps contained in the Timmins donated data files that account for 33 m (24.4%) out of 135 m of shelving used to store files in the data storage system. To date, 7.7% of the donated files (about 2.8 m of shelving) have been scanned, catalogued and stored as PDF and TIFF files. Figure 10 indicates the locations on which these documents report. A summary of information collected from the donated files scanned in 2019 can be found in Appendix B.

Documentation of Timmins donated files in 2019 included the collection of property location information as well as recording detailed metadata for 233 scanned maps and mine plans. The scanning of the maps and reports produced 22.40 Gb of digitized TIFF images and 2.20 Gb of PDF files, respectively. A total of 16 files were donated digitally or scanned and catalogued in 2019. The majority of donated files added to the catalogue in 2019 were those that were donated to the RGP the same year.

Prior to 2018, the Timmins District Geological Assistants collected metadata for 619 scanned maps and mine plans, tracked donated files in a Microsoft® Access® database and scanned 5.5% of donated files. Scanning of donated documents, internally generated data, mine plans, photographs, rock suites and other unpublished materials of interest to clients are collectively referred to as the “Archives of the Resident Geologists Office” (ARGO) initiative that is now underway. Many of the documents contained in ARGO are one-of-a-kind and could contain data that might generate new exploration ideas or projects. As of the end of 2019, archive files can be catalogued through the Ontario Mineral Exploration Information System (OMEIS) internal database. As the metadata for these files are entered into OMEIS, more information will be made available to the public on www.geologyontario.mndm.gov.on.ca.

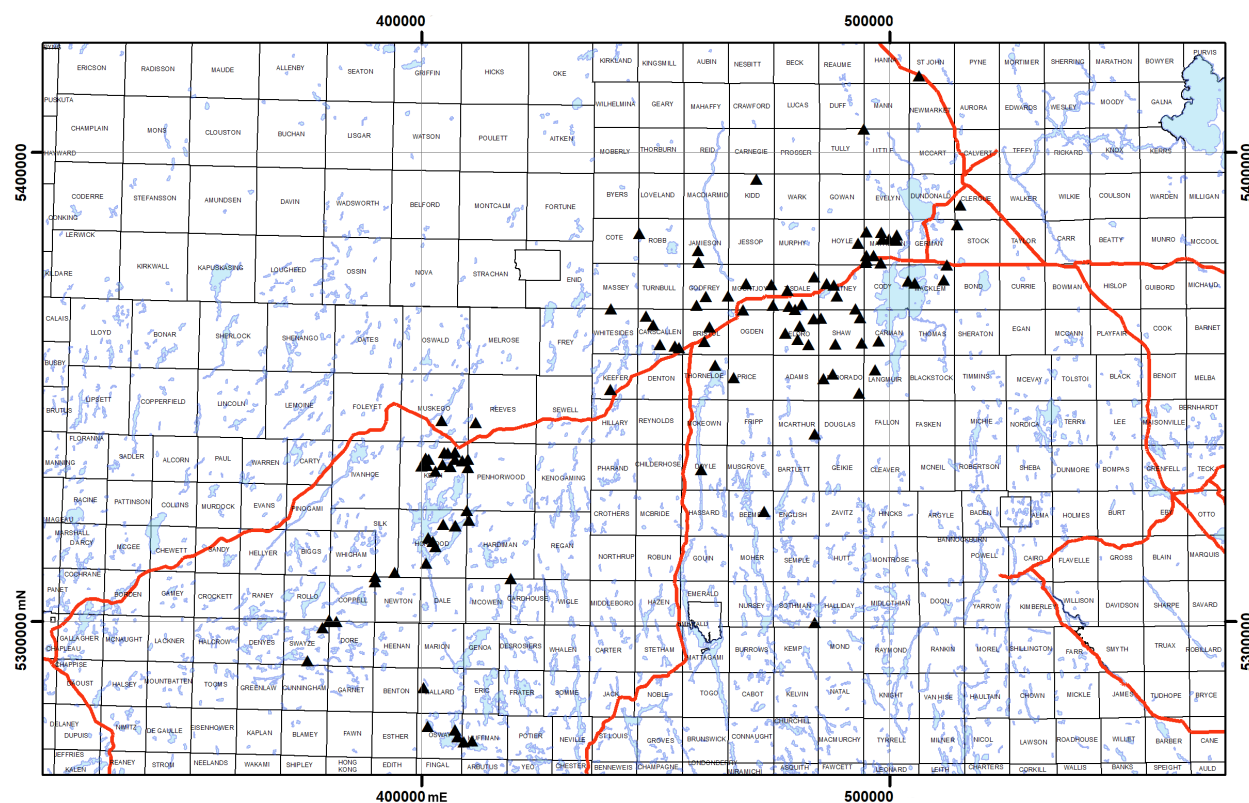


Figure 10. Location of scanned donated data files for the Timmins Mining District.

Digitizing of Drill Core Library Data

PIPESTONE FAULT STUDY AREA

The Timmins Mining District had a Drill Core Library that was staffed by a librarian and an assistant between 1985 and 1997. The Drill Core Librarian permitted both companies and individual clients to examine and sample drill core stored in the District Core Library provided that a sampling record was completed and a copy of the analytical certificate(s) was given to the Core Library. A paper copy of the assay certificate, as well as the sampling record, were put in the envelope that held the log for the drill hole that was sampled. A list of the holes that have assay results, a copy of the assay results and sampling records were not available in a digital format or immediately accessible to the public (records are stored in the RGP office where a client requires RGP staff assistance to access them) prior to this project.

The RGP initiated a lithogeochemical sampling program in 2017 to study the bedrock alteration in 16 townships that straddle the Pipestone Fault Zone because the bedrock in the area is largely covered by 10 to 30 m of Pleistocene clay. The Drill Core Library records for all holes in the 16-township study area were examined and 799 samples with assay data were identified (*see* Table 14). Most of these samples had whole rock geochemical data and many also had minor or trace element data. The information for these samples was stored in a Microsoft® Excel® spreadsheet for each township. That information is available from the staff in the Timmins RGP office and might become available online in the future.

Table 14. Samples with geochemical data converted to digital format per township.

Township	# Samples
Carnegie	352
Clergue	10
Dundonald	27
Evelyn	32
German	2
Gowan	32
Jessop	0
Kidd	30
Little	59
Matheson	15
Murphy	1
Prosser	98
Stock	0
Tully	143
Wark	30
Total	799

RECOMMENDATIONS FOR EXPLORATION

Grabbing a VMS Deposit by the Tail

GEOLOGY OF BIMODAL–MAFIC VOLCANOGENIC MASSIVE SULPHIDE DEPOSITS

Most Canadian volcanogenic massive sulphide (VMS) deposits are the bimodal–mafic type and account for the majority of VMS mineralization mined in Canada (Galley, Hannington and Jonasson 2007). They are found at the contact between rhyolite and pillow basalts and immediately above stockwork feeder zones (Figures 11 and 12). These deposits have average and median sizes of 6.3 million and 113.9 million tonnes, respectively, and an average grade of 1.7% Cu, 5.1% Zn, 0.6% Pb, 45 g/t Ag and 1.4 g/t Au (Galley, Hannington and Jonasson 2007). Sphalerite and chalcopyrite typically account for 75% and 25%, respectively, of the economic minerals in these deposits. These VMS deposits are zoned with the chalcopyrite occurring proximal to the stockwork feeder zone and the sphalerite distal (Franklin and Duke 1991). Stockwork feeder zones generally extend a few hundred metres stratigraphically below VMS deposits and are mappable but their diameters decrease with increasing distance from the deposit (Franklin and Duke 1991). Stockwork feeder zones typically have a chlorite core and a sericite rim (Franklin and Duke 1991). A geochemically altered halo, characterized by sodium and calcium depletion and potassium, magnesium and iron addition, is frequently present and extends out for 200 to 500 m from stockwork feeder zones (Lambert and Sato 1974; Date, Watanabe and Sacki 1983).

HISTORICAL EXPLORATION AND DRILLING STRATEGY

Historically, exploration for VMS deposits involved flying airborne magnetic and electromagnetic surveys over a geologically favourable target area and plotting the flight path on air photos to establish an approximate location of geophysical anomalies. Geophysical targets that met criteria associated with a VMS deposit were then selected for further exploration. Ground with a geophysical anomaly was either staked on open Crown land (usually a block of 4 claims) or acquired from a land owner. The exact

location of the anomaly was pinpointed by conducting ground magnetic and electromagnetic surveys on a grid cut over the claims. A VMS deposit must contain massive or semi-massive pyrite, pyrrhotite, chalcopyrite or graphite in order to be recognized by magnetic or electromagnetic surveys. The source of a geophysical anomaly was frequently tested by a single drill hole. Mineralized zones dominated by sphalerite, such as the Kidd Creek deposit, are often not recognized by magnetic and electromagnetic surveys (Donohoo, Podolsky and Clayton 1970; Bleeker and Hester 1999). Such deposits can be identified by gravity surveys that, until recently, were too expensive to be utilized routinely (Donohoo, Podolsky and Clayton 1970; Bleeker and Hester 1999; van Hees 2017).

Testing the cause of a geophysical anomaly usually involved drilling through the pillow basalt hanging wall rocks to pierce the basalt–rhyolite contact where bimodal–mafic-type VMS deposits occur (*see* Figures 11 and 12). A pattern of 12 or 15 holes (3 rows of 4 holes or 3 rows of 5 holes), respectively, drilled to pierce a contact at 150 m centres (Figures 12 and 13), to find a 250 by 300 m VMS deposit, would require about 10 000 m of core. This drilling approach and pattern has an 8% and 25% chance of encountering massive and marginal mineralization, respectively (*see* Figures 12 and 13). Moving holes 50 m to the left in Figures 12 and 13 can double the probability of encountering massive sulphide from 8 to 16% but decreases the probability of finding marginal mineralization from 25 to 16%. That means there is a 65% chance of not encountering any mineralization for the above scenario.

ALTERNATIVE EXPLORATION DRILLING STRATEGY

An alternative approach to locating VMS deposits by drilling to pierce the basalt–rhyolite contact is to drill in the rhyolite footwall rocks to locate stockwork feeder zones that lie stratigraphically below the deposits. This approach would involve drilling holes just inside the rhyolite footwall rocks (≤ 50 m away) and parallel to the basalt–rhyolite contact, in order to identify either a 200 to 500 m wide geochemical alteration halo or the mineralogically zoned stockwork feeder zone at its centre (Figures 13 and 14). Alteration in a halo increases with closer proximity to the centre of a stockwork feeder zone and can act as a vector toward mineralization. Once a stockwork feeder zone is identified, it should be relatively easy to locate and explore for VMS mineralization at a basalt–rhyolite contact.

The benefits of trying to locate a stockwork feeder zone by exploring the footwall rhyolite below the basalt–rhyolite contact is that it has a higher probability of success and requires fewer metres of drilling. A single hole drilled in a footwall rhyolite can evaluate the same area tested by 5 holes drilled to pierce the basalt–rhyolite contact (*see* Figure 13). A single, 1000 m long hole will produce core that all comes from geologically interesting rock and requires about 70% less footage to explore the same area tested by 5 drill holes having a total length of 3600 m. Additionally, drilling to pierce the basalt–rhyolite contact at 5 locations only produces a few metres of geologically interesting core at the contact. Three holes drilled in the rhyolite parallel to the basalt–rhyolite contact beneath the 12 pierce points plotted in Figure 12 would have a 33% (1 in 3) chance to encounter the stockwork feeder zone. Locating the stockwork feeder zone would likely identify the location of the VMS deposit that stratigraphically overlies it.

An additional benefit of trying to locate the stockwork feeder zone by drilling in the footwall rhyolite is that the drill hole(s) might identify mineralization at the bottom of a hole or between 2 drill holes (*see* Figure 14). Additionally, encountering a much larger geochemical alteration halo might provide a vector toward a stockwork feeder zone (*see* Figure 14).

POSSIBLE APPLICATIONS

Possible applications where drilling footwall rhyolites might help find a VMS stockwork feeder zone include exploration projects (1) in current and past-producing mines that exploited VMS deposits; (2) where previous drilling programs have defined favourable geology; (3) where drill holes have

encountered zinc mineralization that might be the distal part of a VMS deposit; (4) that have been drilled but still have untested gravity or electromagnetic geophysical anomalies; and (5) only tested by a single, short (~150 m) drill hole.

Current or past-producing mines that exploited VMS deposits, such as those near the Kamiskotia Mine or in the Noranda camp, where the deposit geology is well understood, have the greatest potential to locate new stockwork feeder zones by drilling in the footwall rhyolite. The presence of multiple ore bodies in large VMS deposits (e.g., Walker and Mannard 1974) supports the possibility that smaller deposits could host additional undiscovered ore bodies.

Drilling in footwall rhyolites could also identify stockwork feeder zones in areas where the location of a basalt–rhyolite contact has been defined by previous exploration drilling. A well-defined geological setting would permit footwall drill holes to be well positioned. The Rusty Hill project in Prosser Township has multiple drill holes and might be a possible candidate for such an approach (Darke and Kelly 1963).

Drilling footwall rhyolites could also identify stockwork feeder zones in areas where previous drilling programs have encountered zinc assays. National Exploration Ltd. drilled a target in the southwest corner of Prosser Township that encountered silver assays up to 15.5 g/t over 2.3 m and numerous zinc assays greater than 0.25 wt% over 0.76 m (Amendolagine 1964). These results might indicate that they encountered the distal part of a zinc-rich VMS deposit that is not accompanied by a geophysical conductor.

Drilling footwall rhyolites could also identify feeder zones in areas where there are untested gravity anomalies. The Halfmoon Lake exploration project, located northwest of Kamiskotia Lake, is such a target that is owned by International Explorers and Prospectors.

Drilling through footwall rhyolites could also identify feeder zones in areas where geophysical targets have been tested by a single, short diamond-drill hole. Carnegie Township, located immediately north of Kidd Township and the Kidd Creek Mine, was tested by at least 96 drill holes that had an average length of 222 m (728 feet). Those holes tested at least 46 geophysical conductors by piercing basalt–rhyolite contacts. Although many of the geophysical conductors were tested by only a single drill hole, they encountered 8 mineralized intersections assaying more than 0.25 wt% zinc over 0.76 m. The drill holes that encountered zinc mineralization might indicate the margin of a massive sulphide deposit and benefit from additional exploration drilling in the footwall rhyolites.

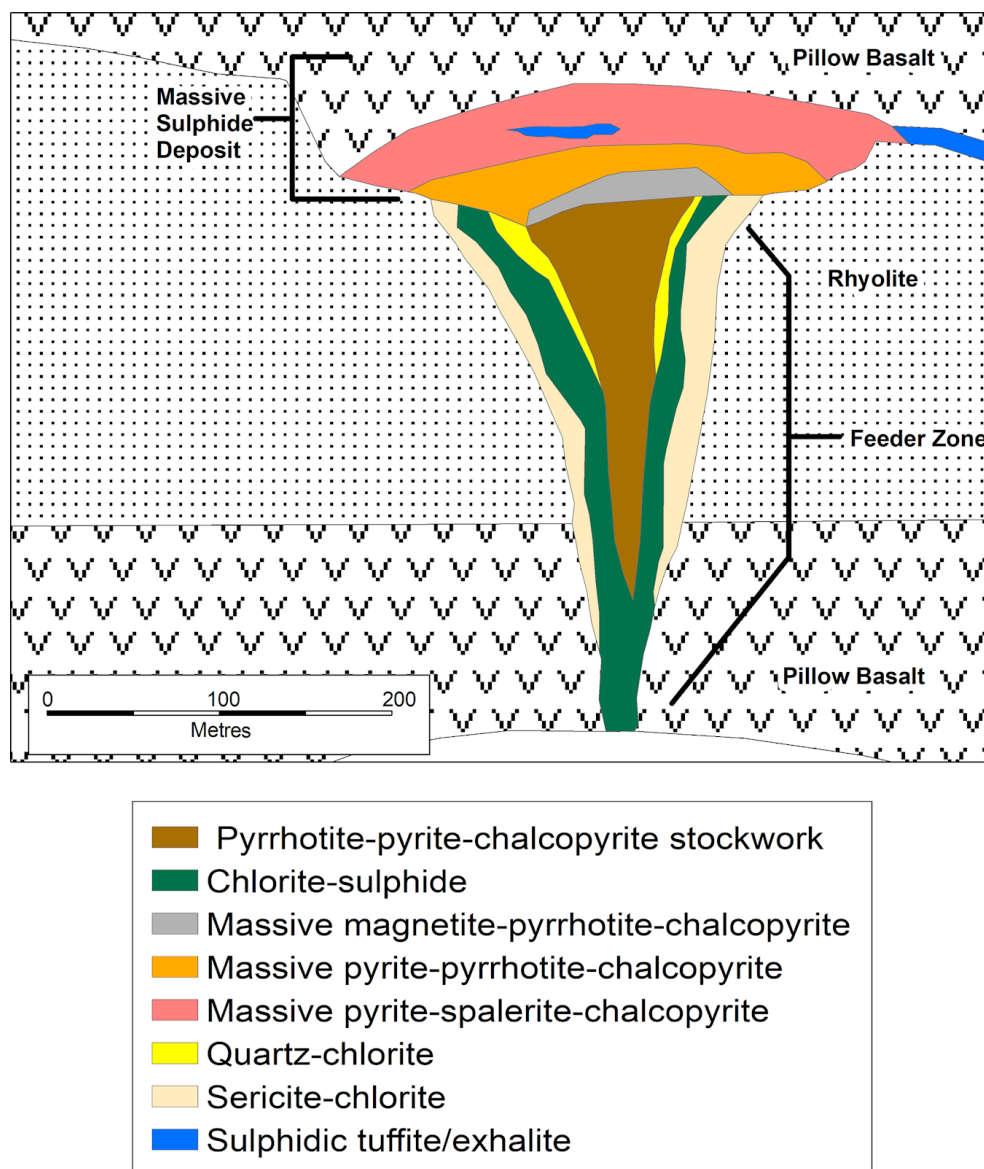


Figure 11. A cross section of a bimodal-mafic-type VMS deposit (*after* Galley, Hannington and Jonasson 2007). Legend also applies to Figures 12, 13 and 14.

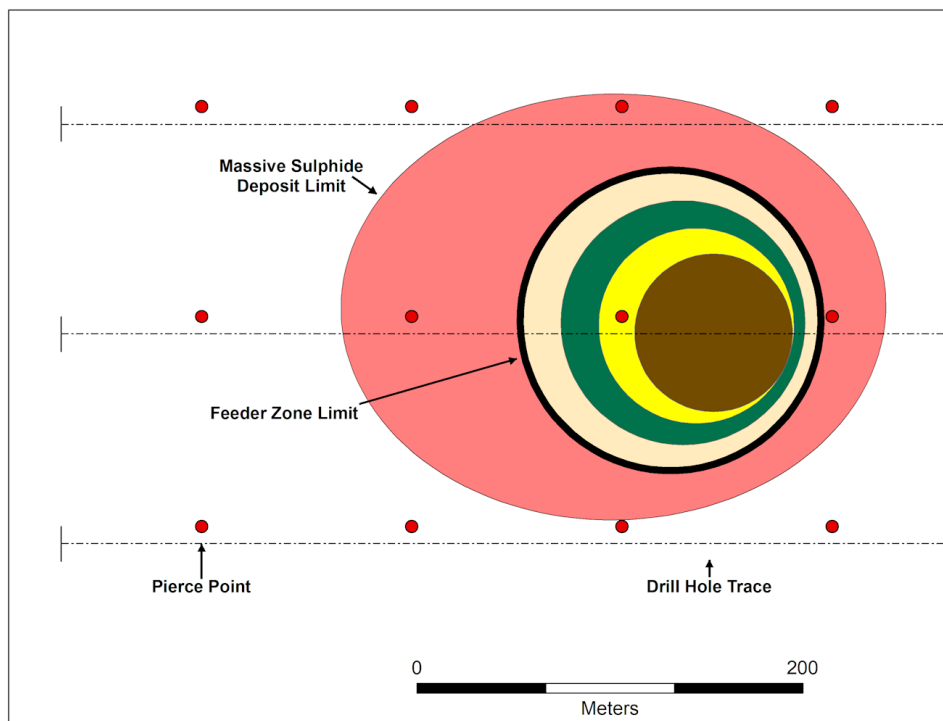


Figure 12. Plan view of a bimodal-mafic-type VMS deposit with the stockwork feeder zone located directly under the massive sulphide zone. Twelve drill holes piercing the basalt-rhyolite contact plane to explore for VMS mineralization (red dots) and 3 drill holes are drilled parallel to the basalt-rhyolite contact (3 dashed lines). See Figure 11 for legend.

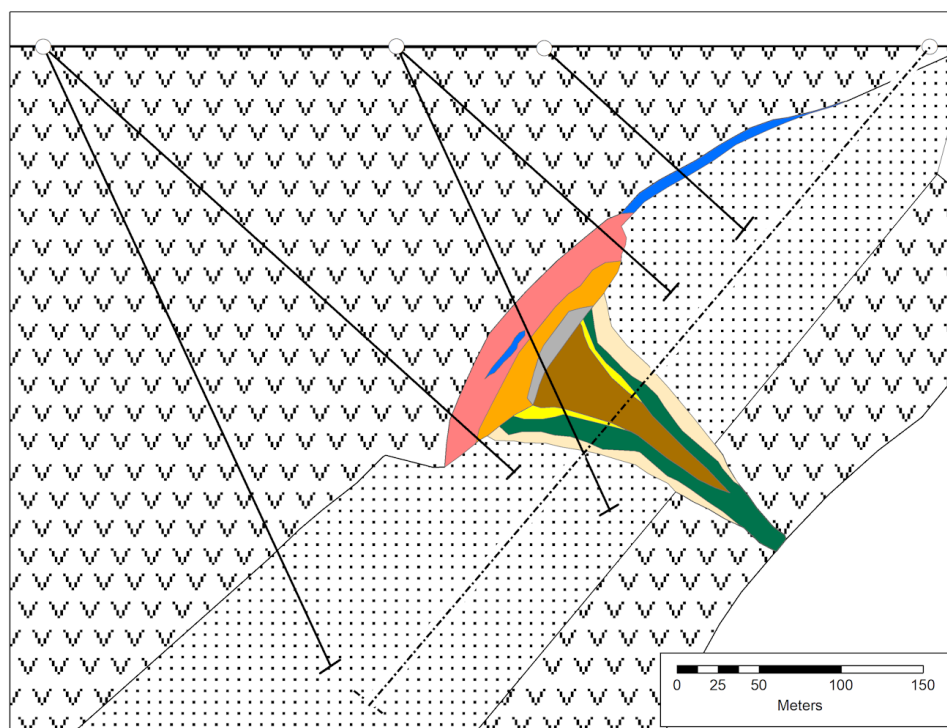


Figure 13. Cross-section diagram with 5 drill holes laid out to explore for VMS mineralization by piercing the basalt-rhyolite contact and 1 hole drilled in footwall rhyolite (dashed line), parallel to the basalt-rhyolite contact, to search for an underlying feeder zone. See Figure 11 for legend.

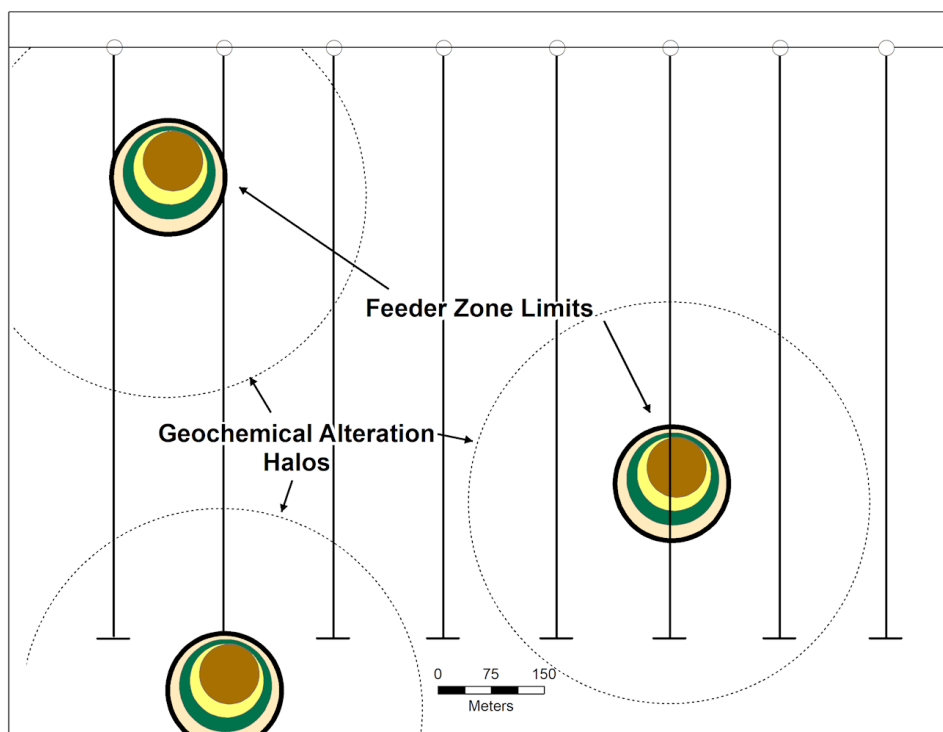


Figure 14. Cross-section diagram with 8 holes drilled in the footwall rhyolite that encountered feeder zones directly or just their margins. These drill holes also have a high probability of encountering much larger geochemical alteration halos around the stockwork feeder zone (inside dotted lines). Increasing alteration closer to the feeder zones could provide a vector toward the zones and VMS deposits. See Figure 11 for legend.

Kamiskotia Gabbroic Complex: Looking at it Under a Different Lens

The area of Kamiskotia Lake, located 25 km northwest of the City of Timmins, is renowned for the presence of volcanogenic massive sulphides deposits (Barrie 2000). These deposits are sitting in the Kamiskotia Volcanic Complex (KVC), which surrounds the Kamiskotia Gabbroic Complex (KGC). Diamond-drilling conducted on the 4-Corners property by Claim Post Inc. encountered something peculiar in hole CP-10-12: a magnetite dike (Daxl 2010). According to the assessment file, the massive magnetite dike had an apparent thickness of 3.56 m and returned an assay of 63.4% Fe, 0.84% TiO₂ and 774 ppm V (Daxl 2010). Which begs the question—where is this dike coming from? Suspicions are aimed at the Kamiskotia Gabbroic Complex and its potential to host vanadium deposits.

GEOLOGY

The Kamiskotia Gabbroic Complex spans the northeastern Carscallen, northern Whitesides, eastern and central Massey, northeastern Enid, central Côté, southern Robb, western and northern Turnbull, and western Godfrey townships (Barrie 1992). The Complex consists of 4 zones as defined in Barrie (1992): a partly layered, olivine-bearing cumulate Lower Zone (LZ); gabbro-norite and anorthositic gabbro-norite cumulate of the Middle Zone (MZ); partly layered, ferroan gabbro-norite, anorthositic gabbro-norite and hornblende gabbro cumulates of the Upper Zone (UZ); and granophyric rocks of intermediate and felsic composition above and along strike with the UZ (Barrie 1992; Hart 1984).

The Kamiskotia Gabbroic Complex shares many similarities to other well-known complexes, such as the Bushveld Complex (South Africa), the Stillwater Complex (United States of America) and Bell River and

Doré Lake Complexes (Quebec) (Barrie 2000). There are outcrops of the KGC southwest of Kamiskotia Lake forming a noticeable elevation. This area shows as a magnetic high (Wolf 1970), probably related to the Upper Zone ferroan gabbro-norite. Cumulus magnetite crystals, which can be found in the Upper Zone, may contain up to 2.5% V_2O_3 (Barrie 1990).

This cumulus magnetite could be a vanadiferous titanomagnetite (VTM) deposit (Fisher 1975). The VTM deposits are associated with mafic igneous intrusions that are deep-seated stratiform sheets or complex intrusive bodies. The minerals forming the orebody crystallized with the rock-forming minerals in the magma and are disseminated, forming large masses or are segregated in extensive layers (Fisher 1975). The bodies can also be plugs or dikes that are injected as solutions or melts into these forms.

The dike interpreted from the assay of core in drill hole CP-10-12 can be theorized to be such a body. It may have been formed with the Kamiskotia Gabbroic Complex. The area showing a strong magnetic anomaly southwest of Kamiskotia Lake was sampled by Barrie (2000), and again in the summer of 2019 (Figure 15). The samples returned assays of Fe_2O_3 from 1.28 to 19.19%, TiO_2 from 1.11 to 3.23%, and vanadium from 318 to 808 ppm, or from 0.058% V_2O_5 to 0.15% V_2O_5 (Table 15). Approximately 500 m separate the sample collection locations of Barrie (2000) and that of the summer of 2019. It is expected the mineralized zone would extend down to the occurrence documented in the Mineral Deposit Inventory, Walcoro Porcupine Mines Claim 31360 (MDI42A12SE00019), as the report by Bradshaw (1984) identifies the presence of disseminated magnetite on the property. The property lies within the magnetic anomaly in Wolf (1970). With this limited data for the Walcoro property, it is surmised that the magnetite is vanadiferous at that location.

RECOMMENDATION

The Kamiskotia Gabbroic Complex does show potential for vanadium. The location of the mineralization, concordant with ilmenite as affirmed in Middleton (1973), is associated with the strong magnetic anomalies as shown in Wolf (1970) and Ontario Geological Survey (2003). The grades from the samples are situated at the low end of the values from selected vanadium deposits of the world published in Kelley et al. (2017; *see* Table 15). However, further research could identify zones of higher mineralization, and maybe discover mineralization related to platinum group elements.

Table 15. Samples from the Kamiskotia Gabbroic Complex, southwest of Kamiskotia Lake, Timmins Mining District.

Sample	Zone	Easting	Northing	Fe_2O_3 (%)	TiO_2 (%)	V (ppm)	V_2O_5 ¹ (%)
84-402 ²	17	451370	5377800	12.80	1.11	318	0.058
84-406 ²	17	451340	5377920	17.30	2.29	860	0.16
PB-2019-14	17	451817	5378370	19.19	3.23	808	0.15

¹Calculated through stoichiometry

²From Barrie (2000)

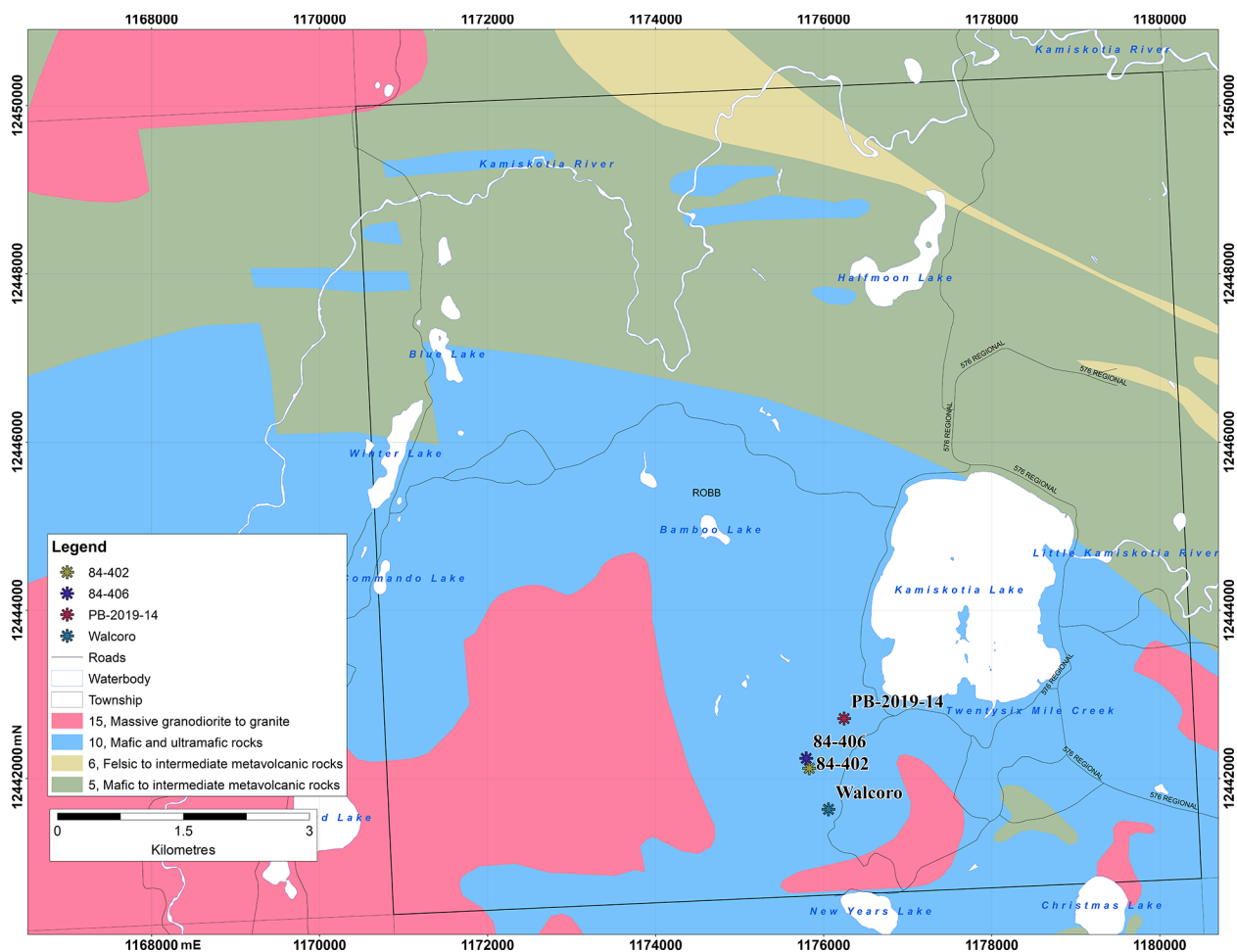


Figure 15. Bedrock geology of Robb Township with locations of samples and the Walcoro occurrence (recorded in the Mineral Deposit Inventory), Timmins Resident Geologist District. Geology from Ontario Geological Survey (2011).

VMS Horizon in Côté Township and the Kamiskotia Volcanic Complex

Highlights:

- New development in last year's recommendation for exploration
- Rhyolite found in drill core in the proposed target area
- Geochemistry suggests an environment favorable for VMS deposits

In the follow-up of last year's recommendation for exploration (Bousquet 2018), more data has been released on the rhyolite sample collected in the field. Additionally, some results from core samples stored at the Timmins District Core Library are worth highlighting.

The rhyolite sample was found along the Whitesides esker in Côté Township. Initial results indicated the rhyolite may be strongly altered because of a high calculated Ishikawa alteration index of 91% (Ishikawa et al. 1976; Bousquet 2018). It was suggested, from its location (Figure 16, NAD 83, Zone 17, 445159E 5379576N), together with its size and angular nature, that the sample probably originated from a point located 5 to 10 km north from the point of collection (Bousquet 2018).

FURTHER RESULTS

Trace element analysis (using X-ray fluorescence and inductively coupled plasma mass spectrometry) reveal interesting results (Table 16). Barium content is above the upper limit of detection, while the cadmium and zinc contents are 2.5 times the average crust concentration (Wedepohl 1995). This suggests that the silicified rhyolite may have formed in a favorable environment for volcanogenic massive sulphide (VMS) deposits. This is also supported by the felsic volcanic rock classification diagram (Zr/Y) in Figure 16, where the samples of the rhyolite boulder plot inside the area of overlap between the FIIIa and FIV fields. These rhyolites are known to be found in environments favorable for VMS formation (Hart, Gibson and Leshner 2004).

Core from a drill hole in the Côte Township target area (Bousquet 2018) was found in the Timmins District Core Library. The Tesluk property, located in this township, was explored in the 1960s and some of the core ended up in the Timmins Core Library, like hole 65-10 (*see* Figure 16). The drill hole collar is located at 445900E 5484305N (Zone 17); Timmins Core Library identification number is TI3194. Hole 65-10 core is telescoped, and only 2 pieces of rock core were present. A sample of rhyolite and a sample of basalt were collected for analysis. The rhyolite composition of hole 65-10 (*see* Table 16) shows comparable values to the rhyolite boulder collected in Côte Township. Furthermore, it plots in the same area of the FIIIa and FIV fields (*see* Figure 17) according to Hart, Gibson and Leshner's (2004) classification of felsic volcanic rocks. The basalt in hole 65-10 returned anomalous values in copper and zinc compared to the average crust values from Wedepohl (1995). Similar anomalies are observed in the vicinity of VMS-type copper–zinc deposits. This reinforces the suggestion of the presence of a favorable environment for VMS deposits in the area as concluded by Bousquet (2018).

RECOMMENDATION

The target area in northern Côte Township seems promising for volcanogenic massive sulphide as suggested by Bousquet (2018) and from the results from drill hole 65-10 on the Tesluk property. It is recommended that further research be done using geophysics and geochemistry to identify targets at depth (van Hees et al. 2017). It is important to note that the depth of overburden recorded in the drill holes of that region is over 80 feet (24.3 m; Tesluk 1965), which may be a significant obstacle.

Table 16. Trace element chemistry for the altered rhyolite (4 samples from the same boulder) and for samples taken from drill hole 65-10 drilled on the Tesluk property in Côte Township. The numbers in parentheses for the rhyolite samples are plotted on Figure 17.

Trace elements	Ba ppm (ICP-MS)	Cd ppm (ICP-MS)	Cu ppm (XRF)	Nb ppm (XRF)	Ni ppm (XRF)	Sr ppm (XRF)	Y ppm (XRF)	Zn ppm (XRF)	Zr ppm (XRF)
Silicified rhyolite (1)	1701.6	0.92	10.5	20.419	2.5	53.4	41.6	153.9	95
Silicified rhyolite (2)	>1740	0.56	6.5	21.058	<0.7	60	67.22	686.1	94
Silicified rhyolite (3)	>1740	0.48	5.2	20.72	0.9	59.9	40.8	852.8	93
Silicified rhyolite (4)	>1740	0.29	5.3	21.681	0.7	56.6	57.57	937.7	94
Tesluk property, H 65-10, 325ft Rhyolite (5)			15	21.1	4.1	28.4	67	124	106.5
Tesluk Property, H 65-10, 350ft Basalt			111	2.7	63.4	185.4	18.1	517	81.9

Analytical methods: ICP–MS, inductively coupled plasma mass spectrometry; XRF, X-ray fluorescence.

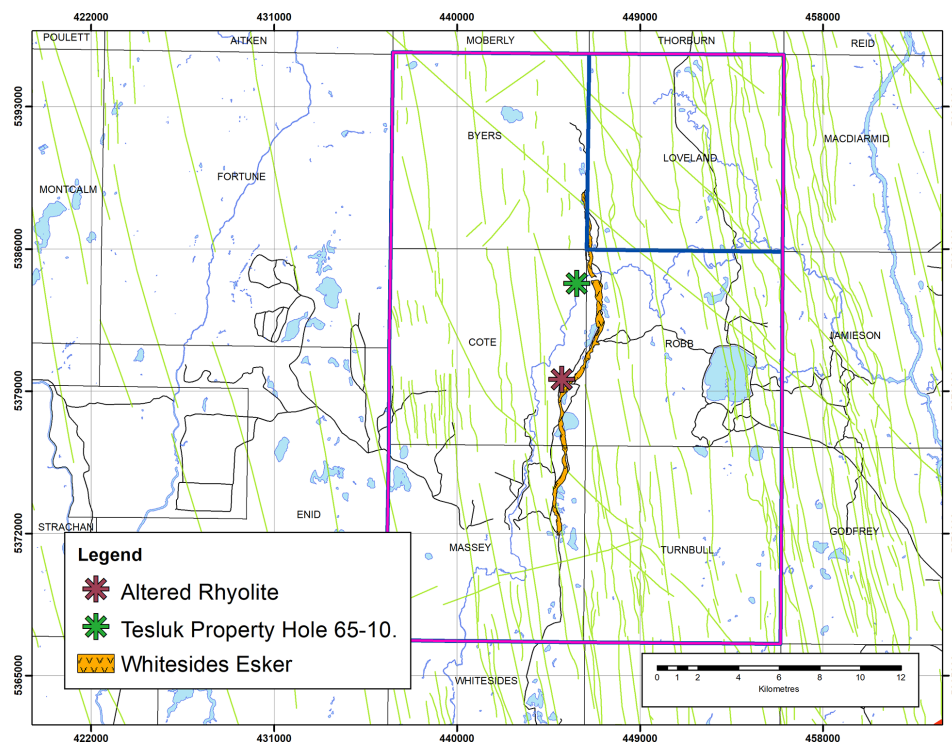


Figure 16. Spatial location of drill hole 65-10 relative to the altered rhyolite collection point, in Côté Township, Timmins Resident Geologist District.

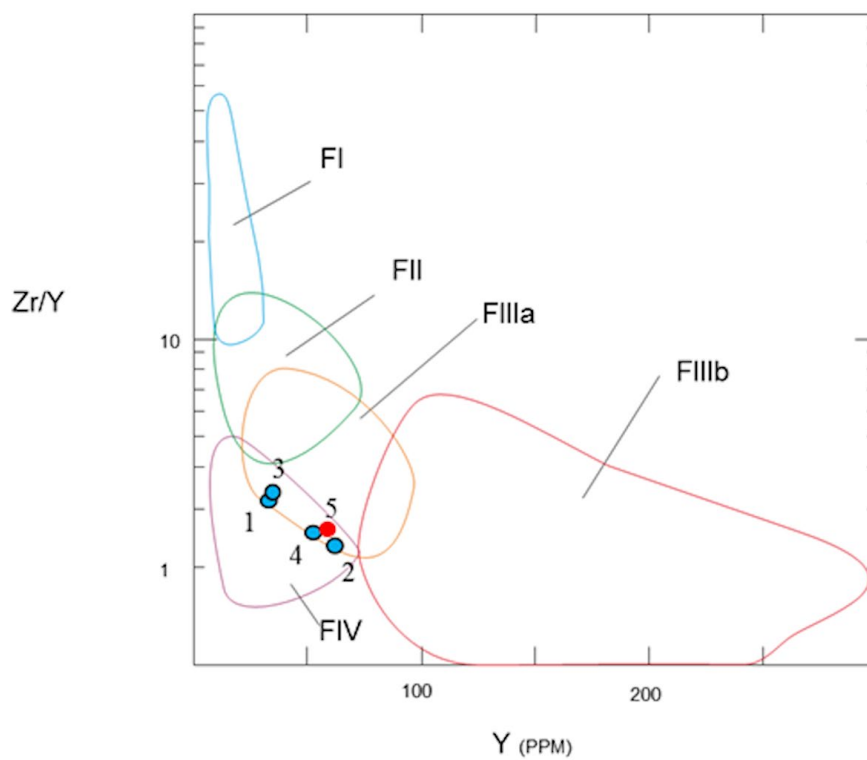


Figure 17. Zr/Y vs Y plot showing the classification of the rhyolite samples collected in Côté Township, Timmins Resident Geologist District (classification zones modified from Hart 2016; Leshner et al. 1986; and Hart, Gibson and Leshner 2004). Rhyolite sample numbers keyed to the numbers in parentheses in Table 16. Boulder rhyolite samples are the light blue dots (1 to 4) and Hole 65-10 rhyolite is the red dot (5).

OGS ACTIVITIES AND RESEARCH BY OTHERS

Four Ontario Geological Survey (OGS) field projects were conducted in the Timmins District in 2019 and are described in the following publications:

1. Project NE-19-002. Preliminary Geology of Reeves and Sewell Townships, Northern Swayze Area, Abitibi Greenstone Belt (Vice and MacDonald 2019);
2. Project NE-19-003. Preliminary Geology and Mineral Potential of Heenan and Benton Townships and Part of Esther Township, Swayze Area, Abitibi Greenstone Belt (Gemmell and Szumylo 2019);
3. Project NE-17-007. Tectonometamorphic History of the Wawa–Abitibi Terrane: Crustal Differentiation and Low-Grade Metamorphism in the Kapuskasing Uplift (Kendrick, Yakymchuk and Duguet, 2019);
4. Project NE-18-008. Soil Gas Compositional Changes and Electrical Field (SP) Responses at the Edges of the Thorn North Forest Ring (Hamilton et al. 2019); and
5. Ontario Geological Survey 2019. Airborne Magnetic and Electromagnetic Surveys, Reid–Mahaffy Airborne Geophysical Test Site Surveys (1999–2017); Ontario Geological Survey, Geophysical Data Set 1111— Revised.

Metal Earth

1. Terrane-scale Crustal Sampling of the Wawa Subprovince, Superior Craton (Mole and Thurston 2019); and
2. Assessing the Potential for Metal Mobility During Lower Crustal Evolution, Kapuskasing Structural Zone, Ontario (Estrada, Tinkham and Jørgensen 2019)

Academic research activities in the Timmins District in 2019 are listed below. Publications received in the Timmins District Geologist office during 2019 are listed in Table 17.

- J. Dyer, a BSc candidate at Laurentian University, is working with Dr. Dan Kontak on Characterizing gold mineralized host rocks in the new Gosselin deposit of the Archean Cote Gold (Au-Cu) deposit.
- Nicolas Estrada, PhD candidate in Earth Sciences, Laurentian University, is working with Ross Sherlock on tectonothermal evolution of the middle-lower Abitibi–Wawa crust and the role of melt mobility on metal transport, Kapuskasing uplift, Ontario.
- Thomas Gemmell (ERGMS-OGS), PhD candidate in Earth Sciences, Laurentian University, is working with Dr. Harold Gibson and Dr. Bruno LaFrance on base metal metallogeny of the southern Swayze area of the Abitibi greenstone belt (officially started September 2018).
- Evan Hastie (ERGMS-OGS), PhD candidate at the Harquail School of Earth Sciences, Laurentian University, is working with Dr. Bruno LaFrance and Dr. Daniel Kontak on gold metallogeny of the southern Swayze greenstone belt, Abitibi Subprovince.
- Klaus Kluster, PhD candidate in Earth Sciences, Laurentian University, is working with Dr. Mike Leshner on the metallogenesis of polymetallic Cr and Ni-Cu-PGE systems in the Superior Province.
- Kelly Malcolm, MSc candidate in Earth Sciences, Laurentian University, is working with Dr. Daniel Kontak and Dr. Doug Tinkham on a petrographic, geochemical, and geochronological study of a high-grade, intrusion-related gold deposit, Lower Detour Lake (58N zone), Abitibi Subprovince.

- Blake Mowbray, MSc candidate in Earth Sciences, Laurentian University, is working with Harold Gibson and Phil Thurston on the supracrustal stratigraphy, mineralogy, mineralization, metamorphism, alteration and structure of the Jefferson prospect, Swayze greenstone belt.
- Connor Small, MSc candidate in Earth Sciences, Laurentian University, is working on the Rundle Intrusive Complex, Abitibi greenstone belt: investigating oxidation processes related to gold mineralization in an Archean alkaline intrusive Setting in the Swayze greenstone belt.
- Jason Wosniak, MSc candidate in Geology and Planetary Science, Western Ontario, is working with Dr. Bob Linnen on the controls of gold mineralization at the Gold River Trend, Timmins West area, Ontario.
- Nicholas Arndt and Marion Garçon (a post-doctorate fellow) from Université Grenoble Alpes in France, continue to do geochemical analysis (trace element and Nd-Hf isotopes) on metasedimentary rock samples collected from the Porcupine Camp to try to estimate the composition of the crust that was eroded in the Archean in the Superior Province.
- Michelle Gehringer (post-doctorate fellow) from University of Kaiserslautern, Stefan Weyer from University of Hanover in Germany and Eva Stueeken are working on the geochemistry of graphitic schists from the Timmins Camp.

Table 17. Publications received by the Timmins District Geologist office in 2019.

Title	Author	Type and Year of Publication
Report of Activities 2018, Resident Geologist Program, Red Lake Regional Resident Geologist Report: Red Lake and Kenora Districts	A.F. Lichtblau, C. Ravnaas, S.O. Lewis, R.D. Tuomi, S.P. Fudge, T.K. Pettigrew and K. Wiebe	Ontario Geological Survey, Open File Report 6351, 2019
Report of Activities 2018, Resident Geologist Program, Thunder Bay North Regional Resident Geologist Report: Thunder Bay North District	R.M. Cundari, G.F. Paju, S.L.K. Hinz, R.D. Tuomi, S.P. Fudge and T.K. Pettigrew	Ontario Geological Survey, Open File Report 6352, 2019
Report of Activities 2018, Resident Geologist Program, Thunder Bay South Regional Resident Geologist Report: Thunder Bay South District	M.A. Puumala, D.A. Campbell, R.D. Tuomi, S.P. Fudge, T.K. Pettigrew and S.L.K. Hinz	Ontario Geological Survey, Open File Report 6353, 2019
Report of Activities 2018, Resident Geologist Program, Timmins Regional Resident Geologist Report: Timmins and Sault Ste. Marie Districts	E.H. van Hees, P. Bousquet, A. Bustard, R.E. Pressacco, C.M. Daniels, S.P. Fudge, J. Walker, L. Streit, L. Wang, P. Sword and C. Patterson	Ontario Geological Survey, Open File Report 6354, 2019
Report of Activities 2018, Resident Geologist Program, Kirkland Lake Regional Resident Geologist Report: Kirkland Lake and Sudbury Districts	P.J. Chadwick, A.S. Péloquin, J. Suma-Momoh, C.M. Daniels, P. Bousquet, C.A. Kennedy and N. Sabiri	Ontario Geological Survey, Open File Report 6355, 2019
Report of Activities 2018, Resident Geologist Program, Southern Ontario Regional Resident Geologist Report: Southeastern and Southwestern Ontario Districts, and Petroleum Operations Centre	A.C. Tessier, P.S. LeBaron, A.C. Smith, D.A. Laidlaw, P. Bousquet and L. Fortner	Ontario Geological Survey, Open File Report 6356, 2019
Summary of Field Work and Other Activities, 2019	Ontario Geological Survey	Ontario Geological Survey, Open File Report 6360, 2019

MINERAL DEPOSITS NOT BEING MINED

Mineral deposits not being mined in the Timmins District are listed in Table 18.

Table 18. Mineral deposits not being mined in the Timmins District in 2019.

Abbreviations					
AF	Assessment Files	MDC	Mineral Deposit Circular [No.15–]		
AR	Annual Report		[formerly Mineral Resources Circular, No.1–14]		
CAMH	Canadian and American Mines Handbook [since 2000–2016]	MDIR	Mineral Deposit Inventory record		
Cg.....	Carbon Graphite	MLS	Mining Lands, Sudbury		
CMH	Canadian Mines Handbook [up to and including 2003–2004]	MR	Mining Recorder		
GR	Geological Report	NM	The Northern Miner		
MD&A	Management's Discussion and Analysis	OFR	Open File Report		
		PC	Personal Communication		

Deposit Name/ Township	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Albany Graphite deposit Pitopiko River area MDI000000001484	Graphite	Total Indicated Resource: 25.1 Mt @ 3.89% Cg; Total Inferred Resource: 20.1 Mt @ 2.2% Cg	Zenyatta Ventures Ltd.	NI 43-101 Rpt. 9/07/2015	Diamond drilling in 2013
Augdome property Tisdale Tp. MDI42A06NE00086	Au	Historical resource: 140 000 tons @ 0.15 oz/t Au	McEwen Mining Inc.	CMH 1986–87 p.50 McLaren Resources Inc. January 4, 2018	Last active 1987 Diamond drilling, 2017
Block A property West of Sunday Lake MDI32L04SW00012	Au	Measured and Indicated Resource estimate: 136.3 Mt grading 0.6 g/t Au (4 866 000 oz Au); Inferred Resource estimate: 2.5 Mt @ 1.23 g/t Au (99 000 oz Au)	Detour Gold Corporation	Detour Gold Corporation NI 43-101 Rpt. 4/02/2014	Diamond drilling 2013-2014 Measured and Indicated 136.3 Mt averaging 1.11 g/t gold, for 4 866 000 oz. Inferred Resource: 2.5 Mt averaging 1.23 g/t Au, for 99 000 oz Au
Paymaster Project, Advanced Exploration Project (Producing Mine) Whitney Tp. MDI42A11SE00021	Au	Indicated Resources (2013): 5 135 000 tons average 0.047 oz/t gold for 242 000 oz gold. Inferred Resource (2013): 1 781 000 t, averaging 0.065 oz/t gold for 115 000 oz/t	McEwen Mining Inc.	Tahoe Resources Inc. 14/01/2014	Diamond drilling 2009–2014; Technical Report filed; Past producer 1915–1965.
Buffalo Ankerite property (past producer) Deloro Tp. MDI42A06NW00011 MDI42A06NW00015	Au, Ag	Indicated Resource (open pit and underground): 3.82 Mt @ 2.37 g/t Au (292 800 oz) underground; 3.27 Mt @ 4.76 g/t Au; Inferred Resource (open pit): 2.74 Mt @ 2.31 g/t. (203 400 oz); U/G Inferred Resource (underground) 2.81 Mt @ 4.05 g/t Au for 367 100 oz. Au	McEwen Mining Inc.	NI 43-101 Rpt. 05/06/2014	Past producer 1939–53. Diamond drilling 2007–14
Carshaw property Shaw Tp. MDI42A06NE00016	Au	145 250 t @ 5.17 g/t Au (proven and probable)	Marshall Minerals Corp.	CMH 2001, p.234	Inactive
Clay-Howells Fe-REE Project Clay and Howells Tp. MDI42G16SE00006	Fe, REE	Inferred Resource: 8 477 000 t @ 0.73% total rare earth oxides, 0.13% Nb ₂ O ₅ , 44.17% Fe ₂ O ₃	Canada Rare Earth Corporation	NI 43-101 Rpt. 26/09/2011	Purchase and corresponding sale of 16 500 t of rare earth concentrate over a 3 year period

Deposit Name/ Township	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Côté Lake deposit Chester Tp. MDI41P12SW00036	Au	Indicated Resource: 355 400 000 t @ 0.87 g/t Au (9 970 000 contained oz); Inferred Resource: 112 800 000 t @ 0.67 g/t Au (2 430 000 contained oz)	IAMGOLD Corporation	CMH 2016–2017 p.226	Diamond drilling 2015
Clavos Gold Mine (past producer) Stock and German Tp. MDI42A10SW00046	Au	Indicated Resource: 1 258 400 tonnes @ 4.81 g/t (194 600 ounces) Inferred Resource: 796 000 tonnes @ 4.7 g/t (120 000 ounces)	In Receivership with Deloitte	NI 43-101 Rpt 12/04/2013	
Lexam VG Gold Corp Tisdale Tp. MDI42A11SE00011	Au	Open pit resources Measured: 452 000 t @ 2.44 g/t Au (35 500 oz); Indicated open pit: 0.12 Mt @ 2.43 g/t Au (9300 oz) Underground resources Indicated: 3 356 000 t @ 4.91 g/t Au (4400 oz) Underground resources Inferred: 0.05 Mt @ 4.0 g/t Au (6600 oz). OP indicated 0.12 Mt averaging 2.43 g/t Au for 9300 oz U/G Indicated Resources 30 Kt; averaging 4.91 g/t Au for 9300 oz. U/G Inferred Resource 50 Kt averaging 4.2 g/t Au for 6600 oz.	McEwen Mining Inc.	NI 43-101 Rpt. 01/06/2014	Diamond drilling 2010–2014
Northern Ontario Project Ogden Tp. MDI42A06NW00025	Au	Albitite Zone: 72 212 tons @ 0.229 oz/t Au (probable; non-NI 43-101 compliant); Hydrothermal Zone: 334 308 tons @ 0.19 oz/t Au (estimated non-NI 43-101 compliant)	Osisko Mining Inc.	Lateegra Gold Corp. press release 08/02/2010	Diamond drilling 2012–13 (DD-18-6686 m)
Detour Lake West Gold Project West of Sunday Lake area MDI32L04SW00016	Au	Measured Resource: 0.3 Mt @ 0.93 g/t Au (9 000 000 oz.) Indicated Resource: 30 600 000 t @ 0.88 g/t Au (870 000 oz)	Detour Gold Corporation; Exploration Project along Sunday Lake, 7 km east of Detour Gold	Detour Gold NI 43-101 Rpt. 01/25/2016 (1 732 244 oz)	Active
Dundonald South deposit Dundonald Tp. MDI42A10NW00039	Ni	Inferred Resource: 116 000 t @ 3.16% Ni (3658 t Ni)	Transition Metals Corp.	NI 43-101 Rpt. 30/01/2009	Inactive
Extender Minerals (past producer) Penhorwood Tp. MDI42B01SE00004	Ba	Historical resource: 100 000 t @ 95% Barite	Extender Minerals of Canada Ltd.	Assessment file	Inactive

Deposit Name/ Township	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Fuller Project Tisdale Tp. MDI42A06NW00030	Au	Total Indicated (open pit): 6 239 000 t @ 0.056 oz./t Au (351 000 oz.); Total Inferred (open pit): 3 911 000 t @ 0.063 oz/t Au (247 000 oz.); Underground resource Indicated: 0.33 Mt @ 5.77 g/t Au (61 000 oz. Au); Inferred: 0.82 Mt @ 4.97 g/t Au (135 000 oz.)	McEwen Mining Inc.	NI 43-101 Rpt. 05/06/2014	Diamond drilling Tisdale and Deloro 2011–14; Jan 2014 – filed technical report; June 2011–14: diamond drilling. Dec 31, 2014 – McEwen Mining Inc. May2006, technical report. 2011–14 drilling, filed technical report O/P Indicated Resource of 5.33 Mt averaging 1.68 g/t Au for 290 000 oz; U/G Indicated: 0.33 Mt, average 5.76 g/t Au for 61 000 oz. gold. O/P Inferred Resource: 2.7 Mt averaging 1.3 g/t Au for 112 000 oz. gold.
144 Gap deposit Thorneloe Tp. MDI42A05NE00121 MDI42A05SE00065	Au	Indicated Resource: 1 734 000 t @ 5.41 g/t Au (301 700 oz) Inferred Resource: 1 914 000 t @ 5.19 g/t Au (1 027 800 oz)	Tahoe Resources Inc.	CMH 2014–2015 p.407	Diamond drilling 2010–12 - Indicated
Goose Lake Iron Prospect Shaw Tp. MDI42A06NE00038	Fe	100 000 000 t @ 68.8% Fe (historical resource)	Timnor Iron Ore	Assessment file	Diamond drilling 2013
Hart Prospect Eldorado Tp. MDI42A06SE00065	Ni, Cu	Total Indicated Resource: 1 546 000 t @ 1.40% Ni, 0.10% Cu (47 779 000 lb. Ni); Total Inferred Resource: 322 000 t @ 1.26% Ni, 0.08% Cu (899 000 lb Ni)	Regal Resources Inc.	CMH 2016–2017 p.358	Diamond drilling 2012
James Bay Niobium Project (Argor Carbonatite) West of Marberg Creek Area MDI42I15SE00004	Nb ₂ O ₅	Total Indicated Resource: 28 800 000 t @ 0.53 Nb ₂ O ₅ (305 000 000 lb Nb ₂ O ₅) Total Inferred Resource: 27 900 000 t @ 0.51 Nb ₂ O ₅ (285 000 000 lb Nb ₂ O ₅)	Niobay Metals Inc.	NI 43-101 Rpt. 12/12/2017	Last active 1969
Jerome Gold Mine (past producer) Osway Tp. MDI41O09SE00005	Au	Inferred Resource: 18 737 000 t @ 1.71 g/t Au (1 030 489 oz)	IAMGOLD Corporation	Augen Gold Corp. NI 43-101 Rpt. 18/07/2011	Diamond drilling 2010
Kabinakagami Lake Occurrence Lizar Tp. MDI42C16NW00004	Fe	10 100 000 t @ 66.5% Fe	Crown Land	MDC011	Staked 2014

Deposit Name/ Township	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Alexo and Kelex Mines property Clergue Tp. MDI42A10NW00044	Ni, Cu, Co	Alexo and Kelex Indicated Resources (open pit and underground) 473 000 t averaging 0.96% Ni, 0.04% Cu 0.03% Co, 0.01 g/t Au, 0.03 g/t Pt, and 0.07 g/t Pd for 9.92 million lbs nickel, 46 000 lbs copper and 37 000 lbs cobalt. Kelex U/G Inferred Resource 66 000 t averaging 0.82% Ni, 0.04% Cu, 0.04% Co, 0.01 Au, 0.01 g/t Pt and 0.02 g/t Pd for 1 190 000 lbs. nickel, 60 000 lbs. copper and 30 000 lbs. cobalt.	Canadian Arrow Mines Limited	NI 43-101 Rpt. 10/08/2012	Past producer. Dewatering, stripping 2012
Kenilworth (Naybob) Mine Ogden Tp. MDI42A06NW00022	Au	North Zone unclassified: 138 900 tons in 13 areas, grades up to 0.25 oz./t Au; South Zone unclassified: 600 000 tons @ 0.23 oz./t Au	Goldcorp Canada Inc. and Metals Creek Resources Corp. JV	Assessment file	Diamond drilling 2009–2014
Kenty Mine Swayze Tp. MDI41O15SE00029	Au	Historical resource: #9 vein has possible resource of 43 300 t @ 4.7 g/t Au	Joshua Gold Resources Inc.	Assessment file	Active
Kidd #3 Zone Chester Tp. MDI41P12SW00122	Au	Historical resource: 408 000 t @ 9.9 g/t Au	IAMGOLD Corporation	OGS OFR5912	Inactive
Kipling Kaolin Kipling Tp. MDI42J01NE00005	kaolin, silica sand, ball clay	Historical resource: 30 000 000 t	James Bay Kaolin Corporation	OGS OFR5918	Inactive
Langmuir deposit Langmuir Tp. MDI42A06SE00099	Ni, Cu, PGE	Indicated Resource (W4 deposit, open pit and underground): 677 000 lbs. averaging @ 1.00% Ni, 0.06% Cu, for 14 813 000 lbs. Ni. and 989 000 lbs Cu; Inferred Resource 3 360 000 lbs Ni and 210 000 lbs Cu.	Rogue Resources Inc.	NI 43-101 Rpt. 06/01/2010	Past producer
Langmuir #2 North deposit Langmuir Tp. MDI42A06SE00006	Ni, Cu	Indicated Resource: 8 324 000 t @ 0.40% Ni, Inferred Resource: 1 017 000 t @ 1.38% Ni	Rogue Resources Inc.	NI 43-101 Rpt. 06/01/2010	Past producer
Loveland property Loveland Tp. MDI42A12NE00028	Cu, Ni, PGE	Cominco Zone: 130 000 tons @ 0.68% Ni, 0.73% Cu (historical resource) Hollinger Zone: 422 000 tons @ 0.71% Ni, 0.42% Cu (historical resource)	Moneta Porcupine Mines Inc.	Amador Gold Corp. website 19/01/2011	Diamond drilling 2010
Lucas Gold Project Lucas Tp. MDI42A14SE00005	Au	136 077 t @ 3.4 g/t Au (drill indicated)	Noble Mineral Exploration Inc.	Assessment file	Diamond drilling 2012
Martison Lake deposit South of Ridge Lake MDI42J06SW00004	phosphate, REE	Measured and Indicated Resources (Anomaly A): 62 284 000 t @ 23.6% P ₂ O ₅ , 0.34% Nb ₂ O ₅ Inferred resource: 55 677 000 t @ 21.9% P ₂ O ₅ , 0.34% Nb ₂ O ₅	Petrus Resources Ltd.	NI 43-101 Rpt. 16/05/2008	Reverse circulation drilling 2011–12
Multi Minerals Zone 3 and 4 McNaught Tp. MDI41O14SE00024	phosphate, niobium	Historical resource: 37 000 000 t @ 0.17% Nb ₂ O ₅ and 21.3% apatite	6378366 Canada Inc., 6070205 Canada Inc.	OGS Study 32	Sampling 2010
Multi Minerals Zone 6 McNaught Tp. MDI41O14SE00011	iron, phosphate, niobium	Historical resource: 4 557 000 t @ 69.9% magnetite, 21.88% apatite, 0.12% Nb	6378366 Canada Inc., 6070205 Canada Inc.	OGS Study 32	Sampling 2010

Deposit Name/ Township	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Murgold-Chesbar property (Chester 1 property) Chester Tp. MDI41P12SW00073	Au	Historical measured resource: 144 500 t grading 14.7 g/t Au	IAMGOLD Corporation	Northville Gold Corporation Rpt 08/06/2002	Bulk sampling 2010
Nemegosenda property Chewett Township MDI42B03SE00005	Nb ₂ O ₅	Inferred resource: 11 000 000 tons @ 0.46% Nb ₂ O ₅ (non- compliant)	Sarissa Resources Inc. (Nio-Star Corp.)	Sarissa Resources Inc. NI 43-101 Rpt. 21/07/2009	Diamond drilling 2014
Nighthawk Lake property Cody Tp. MDI42A10SW00059	Au	Historical resource: 91 729 t @ 6.06 g/t Au	Moneta Porcupine Mines Inc.	OGS OFR6006	Past producer. Inactive
North Rundle property Newton Tp. MDI41O16NW00002	Au	Historical estimated resource: 16 830 t @ 7.1 g/t Au	First Mining Finance Corp.	NI 43-101 Rpt. 01/02/2011	Inactive
Onakawana Lignite Dyer Tp. MDI42I11SW00002	Lignite	21 Mt @ 5246 BTU	Onakawana Development Ltd.	OGS OFR5111	Inactive
Owl Creek (East) Hoyle Tp. MDI42A11SE00006	Au	Historical assay resource: 3 019 685 t @ 7.17 g/t Au	Goldcorp Canada Ltd.	OGS OFR5985	Inactive
Owl Creek (West) Hoyle Tp. MDI42A11SE00006	Au	Inferred Resource: 327 230 t @ 7.14 g/t Au	Goldcorp Canada Ltd.	OGS OFR5985	Inactive
Paymaster Project Tisdale Tp. MDI42A06NW00002	Au	Total Indicated Resource (open pit) 5 135 000 tons @ 0.047 oz/t Au (242 000 oz.) Total Inferred Resource: 1 781 000 tons averaging @ 0.065 oz/t Au for 115 000 oz. Au	McEwen Mining Inc. 61% and Goldcorp Canada Inc. 39%	NI 43-101 Rpt. 05/06/2014	Diamond drilling 2009–2014
Porcupine West property Bristol and Ogden Tp. MDI42A06NW00200	Au	Total Indicated Resource: 4 283 000 t @ 1.55g/t Au (213 000 oz) Total Inferred Resource: 1 140 000 t @ 2.09 g/t Au (77 000 oz) Underground Indicated Resources: 4 420 000 t averaging 2.79 g/t Au for 396 000 oz.; Inferred Resource: 5 185 000 t @ 2.36 g/t Au for 393 000 oz.	Explor Resources Inc.	NI 43-101 Rpt. 07/01/2013	Diamond drilling 2017
Radio Hill Iron property Penhorwood Tp. MDI42B01NE00026	Fe	Historical Resource: 296 000 t raw magnetite @ 25.58% Fe	Rogue Resources Inc.	NI 43-101 Rpt. 30/04/2010	Diamond drilling and metallurgical testing 2012
Redstone Mine Eldorado Tp. MDI42A06SE00080	Ni	Inferred Resource 737 000 t @ 1.57% Ni (25 519 000 lb Ni)	Regal Investments Inc.	MD&A 31/12/2012	Property under care and maintenance
Rundle Mine Newton Tp. MDI41O16SW00003	Au	Measured and Indicated: 349 000 t @ 7.88 g/t Au; Inferred Resource: 267 000 t @ 6.68 g/t Au	First Mining Finance Corp.	NI 43-101 Rpt. 01/02/2011	Inactive
Sangold Gold Project Keith Tp. MDI42B01NE00012	Au	126 515 t @ 12.78 g/t Au; 1 616 770 g (51 986 oz) Au	PGM Ventures Corporation / Kalwea Financial Corp.	CMH 2001	Diamond drilling 2005
Shunsby property Cunningham Tp. MDI41O10NE00056	Cu, Pb, Zn	Total mineral inventory 4 000 000 tons @ 0.59% Cu and 2.56% Zn	BWR Exploration Inc.	Assessment file	Diamond drilling 2014

TIMMINS DISTRICT—2019

Deposit Name/ Township	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Sothman Nickel property Sothman Tp. MDI41P14SE00005	Ni	317 515 t @ 0.89% Ni (0.5% cut-off)	Glencore Canada Corporation		Inactive
Texmont deposit Bartlett Tp. MDI42A03NE00002	Ni	Historical Measured and Indicated: 2 893 000 tons @ 0.92% Ni @ 0.70% Ni cut off (26 757 contained tons)	Fletcher Nickel Inc.	Fletcher Nickel Inc. prospectus 14/05/2007	Diamond drilling 2009
TTM-Timmins Talc- Magnesite deposit Adams Deloro Tp. MDI42A06SW00024	Magnesite, Talc	A Zone Core, Indicated Resource: 12 728 000 t @ 52.1% magnesite, 35.4% talc; Inferred Resource: 18 778 000 t @ 53.1% magnesite, 31.7% talc; A Zone Fringe, Indicated Resource: 5 003 000 t @ 34.2% magnesite, 33.4% talc	Globex Mining Enterprises Inc.	NI 43-101 Rept. 16/04/2012	Infill and geotechnical drilling (DD-46-7000 m) 2013
Thunderwood JV Hoyle Tp. MDI42A11SE00113	Au	327 230 t @ 7.14 g/t Au (assay)	Goldcorp Canada Ltd.	OGS OFR5985	
Timmins North Tully Tp. MDI42A11NE00034	Au	Indicated Resource to 350 m 362 090 t @ 8.0 g/t Au (93 140 oz) Total Inferred Resource: 592 070 t @ 7.3 g/t Au (139 880 oz)	SGX Resources Inc.	NI 43-101 Rpt. 19/10/2010	Diamond drilling 2013
Upper Whitney deposit Whitney and Price Tp. MDI42A11SE00019	Au	Total Measured and Indicated Resource: 3 219 000 t @ 6.85 g/t Au (708 600 oz.); Inferred Resource: 995 000 t @ 5.34 g/t Au (170 700 oz)	Tahoe Resources Inc. and Goldcorp Canada Inc.	Temex Resources Corp. NI 43-101 Rpt. 14/01/2014	Diamond drilling DD-13-1600 m, 2016. Hosts former producing mines Hallnor; Broulan Reef; Bonwhit and Hugh Pam. Produced a total of 2.4 million oz. gold.
Bell Creek Complex (Vogel-Schumacher property) Hoyle Tp. MDI42A11SE00124	Au	Indicated Resource: 2 219 000 t @ 1.75 g/t Au (125 000 contained oz); Inferred resource: 1 459 000 t @ 3.6 g/t Au (168 800 oz)	Tahoe Resources Inc.	NI 43-101 Rpt. 14/06/2011	Diamond drilling 2010; 2015 – 39 700 oz.; 2014 – 43 400 oz.
Warren Township Anorthosite Warren Tp. MDI42B02NW00001	Anorthosite	858 504 t @ 30.92% Al (drill indicated)	Avalon Advanced Materials Inc.	Assessment file	Permitted 2012
Watershed Gold property Chester Tp. MDI000000001866	Au	Inferred Resource: 4 300 00 t @ 1.22 g/t Au (cut-off grade 0.3 g/t)	Trelawney Auger Acquisition Corp.	Press release; March 9, 2016	Diamond drilling 2015
Whitney Talc- Magnesite deposit Whitney Tp. MDI000000000349 MDI42A06NE00020	Magnesite, Talc	54 076 357 t Measured and Indicated Resources; 43 000 000 t Inferred Resource; grades from 43.5 to 51% talc; 25 to 38% magnesium minerals	General Magnesium Corp.	OGS Study 28	Surface mining test 2015

Abbreviation: DD-18-6686 m = 18 diamond-drill holes totalling 6686 m.

REGIONAL LAND USE GEOLOGIST ACTIVITIES—NORTHEAST REGION

Land-Use Planning Activities

The northeast Regional Land Use Geologist, based in Timmins, co-ordinates input into land-use planning activities in the Sault Ste. Marie, Timmins and Kirkland Lake Resident Geologist districts and the part of the Sudbury District that is north of the French River. The northeast Regional Land Use Geologist position was staffed in 2019 by Catherine Daniels, *P.Geo.*, from January to June, and Pierre Bousquet, *P.Geo.*, from August to year-end.

The boundaries of the Regional Land Use Geologists' regions are indicated on Figure 18. Readers interested in Regional Land Use Geologist activities in the portion of the Sudbury or Sault Ste. Marie Resident Geologist districts that are within the southern Regional Land Use Geologist's region are advised to review the annual Report of Activities for Southern Ontario.



Figure 18. Extent of the Regional Land Use Geologists' ("RLUG") areas of responsibility (red lines indicate the regional boundaries; grey lines indicate the municipal boundaries).

The objective of the position is to ensure that geoscience information is considered in policy and land-use planning decisions. The geoscience information relates to

- mineral-related values and economic opportunities
- natural geological and mining-related hazards
- renewable and non-renewable energy sources
- groundwater resources

Program activities that support this objective include helping develop, deliver and administer provincial policies, practices and procedures; and providing advice and guidance to municipalities, agencies and others involved in, or affected by, land-use planning regarding geoscience-related matters.

In 2019, the northeast Regional Land Use Geologist dealt with a variety of land-use planning issues throughout the northeast region. The following sections summarize the work that was done.

CROWN LANDS

The Ministry of Energy, Northern Development and Mines (ENDM) engages with the Ministry of Natural Resources and Forestry (MNRF) when Crown land-use planning activities have the potential to impact provincial mineral interests, or to expose those using Crown lands to natural geological or mining-related hazards. These activities relate to forest management planning; energy and other major infrastructure projects; Far North land-use planning; proposals to modify existing parks or create new ones; and various other initiatives related to Crown land use.

Crown Land Disposition

The northeast Regional Land Use Geologist provided support to multiple ministries in the evaluation of potential lands for agriculture dispositions in northeastern Ontario. Geoscience information was prepared and provided for this initiative.

Forest Management Planning

The forest management planning process involves consideration of a wide range of values, including mineral values, in the context of forestry activities, and the relevance of legislation other than the *Crown Forest Sustainability Act*, such as the *Mining Act*. The northeast Regional Land Use Geologist provided input into the development of the following Forest Management Plan:

- Abitibi River Forest Management Plan 2022–2032

Approved Forest Management Plans, with detailed information about annual operations, including plans for creating new access routes or decommissioning existing routes, and maps showing forest access roads, are posted on the MNRF Web site (www.efmp.lrc.gov.on.ca/eFMP/home.do).

Far North Land Use Planning

The Far North Land Use Planning Initiative is about working with First Nations to identify where development may occur and where land will be dedicated to protection in the Far North of Ontario (*see* www.ontario.ca/page/far-north-land-use-planning-initiative). The Far North encompasses 42% of Ontario's land mass in an area generally north of the areas where forest management planning is done (for the planning area boundary, *see* www.ontario.ca/rural-and-north/far-north-ontario). Detailed information about

Far North Land Use Planning Initiative and the *Far North Act* is available (see www.ontario.ca/page/far-north-land-use-planning-initiative).

All but a few First Nation communities are working on a range of land-use planning activities, although they are not all at the same stage in the planning process.

In 2019, the northeast Regional Land Use Geologist

- along with the Land Use Planning and Policy Co-ordinator participated in the Mushkegowuk Planning Forum in Timmins to discuss the use of geoscience, relating to community health, safety, mineral potential, aggregate, infrastructure development, and groundwater, in regard to land-use planning decisions
- provided information and support to the MNRF Far North Branch with regard to the mineral sector and geoscience, applied to the Constance Lake First Nation Community-Based Land Use Plan

Withdrawal Orders

Other work related to Crown land use in the northeast region may include reviews of applications for withdrawal of lands from staking under Section 35 of the *Mining Act*. Applications may be for mining rights only, surface rights only and for both mining and surface rights. The northeast Regional Land Use Geologist ensured that mineral potential, mineral sector activity and mining-related hazards were identified and considered before decisions were made regarding proposed withdrawal application reviews for provincial parks, conservation reserves and forest reserves.

Aggregates

The northeast Regional Land Use Geologist co-ordinated with the Earth Resources and Geoscience Mapping Section of the OGS to review and provide current geological data for an aggregate study for the area of St. Charles, Ontario.

MUNICIPAL AND PRIVATE LANDS

The Ministry of Energy, Northern Development and Mines supports municipal and private land-use planning through the One Window Planning Service, led by the Ministry of Municipal Affairs and Housing (MMAH). When requested, the northeast Regional Land Use Geologist provides input into, and reviews, draft Official Plans, Official Plan Amendments, draft plans of subdivision and consent (severance) applications to ensure that provincial mineral interests, natural geological hazards and mining-related hazards are appropriately considered in the planning process.

Municipal Planning

The Provincial Policy Statement (PPS), which guides municipal planning in Ontario, is issued under the provisions of the *Planning Act*. The PPS was last modified in 2014. The revision includes enhanced provisions to help ensure that municipal Official Plans recognize mining operations and areas with significant mineral potential, so that they can be protected from incompatible land uses.

As a participant in MMAH's One Window Planning Service for Official Plans and their amendments, the northeast Regional Land Use Geologist provides comments, mineral values mapping and other input as required for Official Plans and Official Plan Amendments. In 2019, the northeast Regional Land Use

Geologist provided maps and Official Plan comments for the municipalities of Sudbury East, Desbarats to Echo Bay, Sault North, the Town of White River and the Town of James, as listed in Table 19.

In addition, information was provided, and reviews were done, in conjunction with 8 by-law amendments, and 12 consent (severance) applications, as listed in Table 19.

Table 19. Municipal planning initiatives with ENDM input, northeastern Ontario, 2019.

Consent (Severance)
Consent, Sudbury East Planning Board (4)
Consent, Coleman, Township of (4)
Consent, Poitras and Wyse, Unincorporated Townships of
Consent, Lorrain, Unincorporated Township of
Consent, City of Temiskaming Shores
Consent, First Brook, Unincorporated Township of
Completed Official Plans and Related Initiatives
By-law, Tisdale Township, City of Timmins (2)
By-law, Deloro Township, City of Timmins
By-law, throughout the municipality, City of Timmins
By-law, Murphy Township, City of Timmins
By-law, Mountjoy Township, City of Timmins
By-law, Lebel, unincorporated township
By-law, Temiskaming Shores
Official Plans and Related Initiatives Under Development
Sudbury East Planning Board
Desbarats to Echo Bay Planning Board
James, Township of
White River, Town of
Sault North Planning Board

First Nations

In addition to doing work related to Far North land-use planning, the northeast Regional Land Use Geologist provided information on mineral occurrence sites, past or present mining and exploration activity, geology and mineral potential for 2 sites in northeastern Ontario Treaty Land Entitlement Claims.

Other Activities

The northeast Regional Land Use Geologist also undertook other related work in 2019, as outlined below.

MINISTER'S ORDERS

In 2019, the northeast Regional Land Use Geologist with the Land Use Policy and Planning Co-ordinator, engaged in discussions with MMAH to determine if there is the need for a review of Minister Zoning Orders in the Wawa–Dubreuilville area and in Sudbury: the Minister's Zoning Orders are Ontario Regulation (O.Reg.) 102/89 and O.Reg. 834/81, respectively.

CLASS ENVIRONMENTAL ASSESSMENTS

Class Environmental Assessments (“Class EAs”) are documents that set out a standard environmental assessment process to evaluate the potential environmental effects of a project. There are currently 11 Class EAs in effect in Ontario (www.ontario.ca/page/class-environmental-assessments-approved-class-ea-information), relating to the development of new infrastructure, such as dams, transmission lines, pipelines, highway corridors, commuter rail stations and bus terminals, and sewer and water facilities; the establishment of new parks and conservation reserves; forest management plans; and Crown land dispositions.

The northeast Regional Land Use Geologist worked with staff from MNRF and other ministries to ensure that relevant geoscience information and provincial mineral interests were identified and accommodated early in the planning process of projects subject to Class EAs. In 2019, feedback was provided for reviews of the following Class EA projects within northeastern Ontario:

- Transmission line: line between Hunta switching station and Abitibi Canyon switching station
- Transmission line: relocation of transformer station, Copper Cliff Customer Transformer Station
- Sewer facility: Township of White River Municipal Sewage Lagoon
- Pipeline: North Shore LNG project, municipalities of Manitouwadge, Marathon, Schreiber, Terrace Bay and Wawa
- Pipeline: Gazoduq proposed natural gas pipeline project
- Transportation: rehabilitation of highways 65 and 66 and bridge rehabilitation
- Transportation: Washagami Lake Bridge project
- Transportation: Highway 552, replacement of the Robertson Creek culvert
- Transportation: rehabilitation of Highway 144 from Highway 661
- Transportation: rehabilitation of Highway 17

GUIDANCE MATERIALS

In 2019, the northeast Regional Land Use Geologist was called upon by partner ministries to review and provide input on proposed, new or updated policies, and/or supporting guidance materials.

- government information session attended as a Community of Practice member for the federal Leaders In Environmental Assessment Facilitation (LEAF), regarding the proposed changes to federal legislation with regards to Environmental Assessments.

MINERAL DEPOSIT COMPILATION GEOSCIENTIST— NORTHEASTERN ONTARIO

The Mineral Deposit Compilation Geoscientists (MDCG) investigate and document mineral deposits and occurrences across the province. Through field visits, comprehensive literature research and personal research, they work with regional and district Resident Geologist Program staff to ensure that the Mineral Deposit Inventory (MDI) database is regularly updated. Regular updates are required to ensure that the Ministry of Energy, Northern Development and Mines is using the most up-to-date information in making land-use planning and policy decisions. Records for certain areas are reviewed and updated in support of bedrock geology mapping and other field work conducted by the Earth Resources and Geoscience Mapping Section (ERGMS) of the Ontario Geological Survey. For 2019, S.L.K. Hinz was the acting northeastern Ontario MDCG.

The MDI database is a dynamic compilation of over 19 000 records describing most of the known mineral occurrences in Ontario. It is an important reference tool for explorationists interested in exploring and acquiring mining properties in Ontario. When used in conjunction with other spatial databases generated by the Ontario Geological Survey, it provides additional tools for making mineral discoveries in Ontario.

As described below, MDI record information was provided during 2019.

- Timmins District:
 - complete updates were compiled and entered for Benton, Clergue, Esther and Heenan townships
 - MDI records compilation for land-use planning decisions in the Timmins District
- Sault Ste. Marie District:
 - updates focussed on areas of increased mining and exploration activity
 - 1 new MDI was added based on a property visit completed during the summer of 2018
 - MDI records compilation for land-use planning decisions in the Sault Ste. Marie District
- Kirkland Lake District:
 - some production numbers in the Cobalt area were updated
 - compilation and synthesis of MDI points in the northern part of the district following a field visit by RGP staff
 - 1 new MDI record was added based on a property visit completed during the summer of 2019
 - MDI records compilation for land-use planning decisions in the Kirkland Lake District
- Sudbury District:
 - complete township updates were compiled and entered for Hart and Ermatinger townships
 - other miscellaneous MDI points were updated following requests by ERGMS staff
 - MDI records compilation for land-use planning decisions in the Sudbury District
- Southern Ontario Region (Southeastern Ontario and Southwestern Ontario districts):
 - updates focussed on zinc properties visited and described in 2018 by Southern Ontario RGP staff
 - Methuen Township is in the process of being completed and updated

Total contributions to the MDI database in 2019 included 247 updated records, 22 records deleted and 7 new records. A breakdown of the provincial records revised by office is provided in Table 20.

Table 20. Mineral Deposit Inventory records revision in northeastern and southern Ontario in 2019.

Resident or District Office	Updates	Deletions	New
Kirkland Lake	42	8	1
Sault Ste Marie	18	3	1
Southern Ontario	58	2	2
Sudbury	25	8	0
Timmins	104	1	3
Total	247	22	7

The publicly available version of the MDI database is updated monthly and is available from the OGS online data warehouse, GeologyOntario (www.ontario.ca/geology). The Mineral Deposit Inventory can also be viewed geographically using the OGSEarth application (www.ontario.ca/ogsearth), which helps users discover data through the Google Earth™ mapping service. The activity reports on mineral exploration, available using the OGSEarth application, includes monthly and year-to-date listings of the MDI records that have been updated.

ACKNOWLEDGMENTS

Information on past activities reported in the text was obtained from assessment files and other files in the Timmins Resident Geologist Office, unless noted otherwise. Information on current mining and exploration activities was provided by individual prospectors and exploration and mining company personnel, compiled from assessment files and obtained from public information sources, company websites and SEDAR®.

The manuscript has benefitted from a review and comments made by Paula Takats, a Geoscience Editor, and Marg Rutka, the Senior Geoscience Editor working with OGS Publication Services.

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APPENDIXES

Appendix A. Summary of mine shut down plans scanned and catalogued by the end of 2019.

Appendix B. Summary of donated files scanned and catalogued by the end of 2019.

Appendix A. Summary of mine shut down plans scanned and catalogued by the end of 2019.

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Hallnor Mines Limited	MP0001	2	MP0001_1 to MP0001_2	Halcrow	1933 to 1935	Assay plan for 270 to 354 ft. Levels; composite level plan map
Gomack Mines Limited	MP0002	2	MP0002_1 to MP0002_2	Chester	1936 to 1937	Level plan of First Level
Young Shannon Gold Mines	MP0003	6	MP0003_1 to MP0003_6	Chester	1936	No. 20 Vein; Composite plan map of channel sampling; level plans First and Second Levels
Swayze-Huycke Gold Mines	MP0004	2	MP0004_1 to MP0004_2	Cunningham	1934	Mine plan and blacksmith shop
Goldhawk Porc Mines Limited	MP0005	3	MP0005_1 to MP0005_3	Cody	1946 to 1947	Surface plan showing buildings; composite plan; shaft plan
Hollinger Consolidated Gml	MP0006	3	MP0006_1 to MP0006_3	Cody	1935	Nighthawk property underground workings; Claim 9333
Porcupine Peninsula Gold Mines Limited	MP0007, MP0008, MP0009, MP0010	37	MP0007_1 to MP0010_18	Cody	1946 to 1977	Level plans show mine buildings, #2 winze, proposed exploration and development, diamond drill holes and assay plans, east-west long section along 1000n co-ord line looking north, surface plans (200', 300' and 425'), 80-88 zone surface diamond-drill plan, ore reserves section (no. 1, 2 and 4 vein looking north), long. Section and ore calc sheet looking north (central and north zone) and old mine level plans (180, 300, 425, 525 and 625 Level)
Nighthawk Pen Mines Limited	MP0011, MP0012	13	MP0011_1 to MP0012_7	Cody	1922 to 1929	Surface plan - showing buildings, plans showing 80, 180, 300, 425, 525 and 625 ft. Level
Clifton Porcupine Mines Limited	MP0013	5	MP0013_1 to MP0013_5	Deloro	1921 to 1923	Underground dev. (75 ft. and 200 ft.) and underground workings (90 and 200 ft. Level)
Delnite Mines Limited	MP0014	6	MP0014_1 to MP0014_6	Cody	1955 to 1963	Level plan at 125 ft, No. 3 shaft, vertical section looking west through 5000 west and 4800 west coordinate
Faymar Porcupine Gold Mines	MP0015	3	MP0015_1 to MP0015_3	Cody	1939 to 1942	Composite development progress plan and longitudinal vertical projection of main ore zone (east-west looking north)
Hallnor Mines Limited	MP0016 to MP0034, INCLUSIVE	77	MP0016_1 to MP0034_4	Cody	1938 to 1977	Ventilation plans, level plans, lifts shown, vertical projection (looking N30°W), surface plans show buildings, raise location, water lines and level plans
Jodelo Gold Mns Limited	MP0035	2	MP0035_1 to MP0035_2	Deloro	1941	Mine workings
March Gold Mines Limited	MP0036	1	MP0036_1	Deloro	1930	Composite map showing stopes (later became Buffalo Ankerite)
McLaren Porcupine Gold Mines	MP0037	6	MP0037_1 to MP0037_6	Cody	1936	Plan of mine workings, claim outline, workings map on claim no. hr1080 shows building and pit location and workings map on claim no. hr828 shows road
Furness Gold Mines Limited	MP0038	4	MP0038_1 to MP0038_4	Deloro, Shaw	1927 to 1928	W. James property mine workings of part Claim No. 887 and 125 level

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Rea Consolidated Mines Limited	MP0038	1	MP0038_5	Tisdale	1912	Underground workings of Rae mines 200, 300, 400 ft. levels (later became Coniaurum Mine Ltd.)
Nakhodas Mining Company	MP0039	10	MP0039_1 to MP0039_10	Tisdale	1941 to 1942	Fuller property longitudinal vertical projection and plan -109 stope, plans of underground workings and longitudinal vertical projection and plan – A, B, C and D stope
Ont Porc Goldfield Development Company Limited (Coniaurum Goldale)	MP0040	1	MP0040_1	Tisdale	1912	Plan main shaft No.1 Level (Claim No. 13042)
Van-Packer Mines of Canada Limited	MP0041	1	MP0041_1	Deloro	1952	Open pit (shows Pit "A") Claim No. P-6886
Harlin Nickel Mines Limited	MP0042	1	MP0042_1	Dundonald	1943	Harlin nickel development work on 40 ft. Level (1943 Development in Brown)
Cuniptau Mines Limited	MP0043	2	MP0043_1 to MP0043_2	Clergue, Dundonald	1936	Alexo Mine plans and sections of workings 75, 40, 120 and 265 ft. Levels
Onakawana Lignite Development	MP0044	2	MP0044_1 to MP0044_2	Dyer	1943	Onakawana Lignite - surface plan and Sections AB, C-D
Fatima Mine	MP0045	1	MP0045_1	Bartlett, Geikie	1960	Assay plan for 450 ft. Level and additional 3rd level plan
Texmont Mines Limited	MP0046, MP0047	10	MP0046_1 to MP0047_4	Dundonald	1960 to 1972	First to fifth level plans, first level geology plan, longitudinal section looking east, assay plan - fourth level and 742 ft. Level (coloured)
Irrington Mining Company Limited	MP0049, MP0050	7	MP0049_1 to MP0050_2	Godfrey	1966	Surface plans show mine buildings and "C" raise, composite and longitudinal plan and section, 125 Level plan and Claims P19292, 19290, P27216, P27215 (shaft)
Lee Gold Mines Limited	MP0051	4	MP0051_1 to MP0051_4	Greenlaw	1934	Lee Lake property ideal section through no. One Shaft and survey plan of 125 and 250 ft. Levels
Hollinger Consolidated Gold Mines Limited	MP0052	6	MP0052_1 to MP0053_2	Horwood	1937	Smith-Thorne property (Tianoga Gold Mines Ltd.) underground map, sections of Levels 200, 325, 575 ft. Claim 25339; underground composite
Tionaga Gold Mines Limited	MP0053	2	MP0053_3 to MP0053_4	Horwood	1939	Plan of underground workings 200, 325, 450, 570, 700 ft. Levels
Consolidated Morrison Explorations Limited	MP0054	1	MP0054_1	West of Marberg Creek Area	1968	Perimeter survey of Claim 11 plan
Canadian Jamieson Mines Limited	MP0056	13	MP0056_1 to MP0056_13	Godfrey	1971	Mine plan shows mine buildings, longitudinal sections north, south and centre zones, first to fifth level plans
Joburke Gold Mines Limited	MP0059	4	MP0059_1 to MP0059_4	Keith	1947 to 1948	Mine composite plan, surface plan of Joburke Gold Mines property - shows mine buildings, 250 ft. and 375 ft. Level plans
Mining Corporation Of Canada (1964) Limited	MP0059	7	MP0059_5 to MP0059_11	Keith	1975	New Joburke Gold Mines Ltd. surface plan (written shutdown notice attached), longitudinal sections Main Zone and North Zone, Plans 85,125, 250 and 375 ft. Levels

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Ecstall Mining Limited	MP0060 to MP0067 INCLUSIVE	101	MP0060_1 to MP0067_5	Kidd	1970 to 1976	Kidd Creek Mine, Texas Gulf Sulphur Company, cross sections, longitudinal sections, level plans (800 ft. Level to 2920 Level), sublevel plans, shafts, ramps, conveyors, open pit, cross-section of underground development looking north and east, underground development in relation to open pit, pit plan showing toe outlines and surface plan
Noranda Mines Limited	MP0068 to MP0073 INCLUSIVE	114	MP0068_1 to MP0073_45	Langmuir	1970 to 1978	Langmuir Mine, site plan - preliminary, layout of steel headframe and bins, topographic map Timmins 42a/6e) showing road development to Langmuir Mine site, aggregate of surface crushing plant plans, mine site showing surface buildings, shaft sections and longitudinal projection, first to eighth level plans, sublevel plans, surface plans showing buildings, longitudinal projections, mine site plan (attached letter) and claim plan
Porcupine Miracle Mines Limited	MP0074	1	MP0074_1	Langmuir	1915	Shaft no. 2 and 105 ft. Level
Campbell Red Lake Mines Limited	MP0075	5	MP0075_1 to MP0075_5	Sunday Lake Area	1982 to 1983	Detour Lake Joint Venture building plans (lab, gatehouse, warehouse, shops and admin.) and heating and ventilation flow diagrams
Hiawatha Gold Mines Limited	MP0076, MP0077	3	MP0076_1 to MP0077_2	Lessard	1939	Geological plan (overview of claim map attached) and 275 ft. Level plan
Campbell Red Lake Mines Limited	MP0078 TO MP0082 INCLUSIVE	29	MP0078_1 to MP0082_2	Detour Lake	1980 to 1982	Detour Lake Joint Venture site plans, building plans and sections, ore storage bins duct work and dust collector arrangement plan, piping layout, heating, ventilation and a/c flow diagrams, concentrator plans, process flowsheets (crushing and grinding, gold cyanidation and carbon-in-pulp process, carbon stripping and gold recovery and copper recovery)
Getty Resources Limited	MP0083, MP0084, MP0087	43	MP0083_1 to MP0084_14 and MP0087_1 to MP0087_17	Tisdale	1984 to 1988	Getty - Davidson Tisdale Joint Venture (Davidson Tisdale Mines Ltd.) site plans, tailings dyke and project locations; survey of south claim block; composite level plans, surface drill plan; surficial geology; geology of 1st to 5th level, ramp plan and sub drift; geology main zone and east extension; DD location plans, underground DD; location maps and longitudinal sections
Aquarius Porcupine Gold Mines	MP0085	5	MP0085_1 to MP0085_5	Macklem	1948	Plan of 400 ft. Level of Block "O", 525 ft. Level of Block "I-E", 525 ft. Level of Block "I-N" And 525 ft. Level of Block "O"
Polaris Gold Mines Of Canada Limited	MP0086	1	MP0086_1	Mountjoy	1929	Section - sketch of shaft
Jessop-Seery Mine	MP0088	2	MP0088_1 to MP0088_2	Horwood	1928	Sketch showing rock pit from a proposed shaft and sampling assay plan
Rundle Gold Mines Limited	MP0089	4	MP0089_1 to MP0089_4	Newton	1941 to 1942	150 ft. and 300 ft. Level plans and complete diamond-drill hole and dev. Adv
De Santis Porcupine Mines Limited	MP0090, MP0091	15	MP0090_1 to MP0091_5	Ogden	1940 to 1941	Level plans 200, 300, 400, 575, 700, 800, 900, 1050 and 1175 Level
Hayden Gold Mines Limited	MP0092	1	MP0092_1	Ogden	1917	North-south vertical section and plan
Kenilworth Mines Limited	MP0093, MP0094	7	MP0093_1 to MP0094_4	Deloro, Ogden	1965	Long section, 100, 300, 400, 500 and 700 ft. Level plans

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Naybob Gold Mines Limited	MP0095 TO MP0099 INCLUSIVE	35	MP0095_1 to MP0099_1	Deloro, Ogden	1942 to 1948	Claim Plan Showing Surface Buildings, Composite Plan and Longitudinal Section Of South Vein System, Underground Diamond Drill Plan, Longitudinal Sections and Level Plans (300 ft. Level to 1275 ft. Level)
Ridgedome Mines Limited	MP0100	8	MP0100_1 to MP0100_8	Deloro, Ogden	1930	Surface plans showing locations of no.1 Shaft, mine, plants and buildings, plan and vertical section of Shafts no.1 and no.2, map showing Veins no. 2 and 3 and sample locations and map showing Vein No.4 and position of porphyry intrusion
Thomas Gold Mining Company Limited	MP0101	2	MP0101_1 to MP0101_2	Ogden	1924	Geological map (sketch of dome and surface buildings)
Novamin Resources Incorporated	MP0102	8	MP0102_1 to MP0102_8	Newton, Dale	1984 to 1988	Sulpetro Minerals Ltd. Rundle Mine surface diamond drilling and survey plan, geology maps (decline Leg I to Leg IV) survey back plugs locations shown, Shaft Zone and 300 ft. Level geology
Jerome Gold Mines Limited	MP0103, MP0104, MP0105	12	MP103_1 to MP105_4	Osway	1943 to 1945	Composite plans of 200, 350, 500 ft. Levels (East, West and Central sections), development plans 650, 800 and 1100 ft. Levels (east and west sections) and longitudinal sections Main Vein Zone
Novamin Resources Limited	MP0106	10	MP106_1 to MP106_10	Newton	1987	Rundle Project site plans, ramp sections and plans, shaft section, 46 m Level layout survey locations shown, 150 ft. level (46 metre Level) face, chip and diamond-drill assays included
Canadian Johns Manville	MP0107	2	MP107_1 to MP107_2	Reeves, Penhorwood	1976 to 1977	Topographic maps of mine area- old and new open pit
Johns-Manville Mining & Trading Limited	MP0108	5	MP0108_1 to MP0108_5	Penhorwood	1964 to 1976	Reeves Mine property plan (pit locations and claims), no. 1 Shaft at 140 and 252 ft. Level; West Pit plan and sections
Canadian Johns Manville	MP0108	1	MP0108_6	Penhorwood	1976	Penhorwood Talc Mine Pit plan
Malga Porcupine G.M. Limited	MP0109	2	MP0109_1 to MP0109_2	Shaw	1946	Elevation - Shaft and 185 ft. Level plan
The Shaw Porcupine Gold Mines Limited	MP0110	3	MP0110_1 to MP0110_3	Shaw	1931	125 Level plan (drifts north and south in ore body and crosscuts to east) and section of shaft with rock types
Carshaw Porcupine Gold Mines Limited	MP0111	2	MP0111_1 to MP0111_2	Shaw	1951	Surface plan shows mine buildings and 125 ft. Level plan
Arcadia Gold Mines Limited	MP0112	1	MP0112_1	Shaw	1938	Surface and underground plan (shows mine buildings)
Orofino Mines Limited	MP0113	3	MP0113_1 to MP0113_3	Silk	1950 to 1951	150 ft. Level and section, plan of workings at 150 and 275 ft. Levels
Excello Mines Limited	MP0114	3	MP0114_1, to MP0114_3	Shaw, Deloro	1935	Mine workings and surface buildings
Aunor Gold Mines Limited	MP0115, MP0116	19	MP0115_1 to MP0116_11	Deloro	1960 to 1976	Schematic composite projection, ventilation plans and level plans (750 to 4600 ft. Levels)
Aunor Gold Mines Ltd.	MP0117*	8	MP0117_1 to MP0117_8	Deloro	1960 to 1976	Level plans (4300, 4900 and 625 - 750 ft. Levels) and Level ventilation plans (2900 to 3300 and 3625 to 4000 ft. Levels)
Aunor Gold Mines Ltd.	MP0118*	39	MP0118_1 to MP0118_39	Deloro	1953	Vertical long section looking due North, Aunor Ankerite Party Wall (Sheet no. 1, Levels 800 to 1100 ft., Sheet no. 2, Levels 400, 600 and 700 ft.), Vertical Cross Sections no. 1 to no. 30 and A to P looking North 58 degrees 35 feet East

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Aunor Gold Mines Ltd.	MP0119*	29	MP0119_1 to MP0119_29	Deloro	1953 to 1976	Composite progress plan, composite section ore body; Level plans for 625 to 4300 ft. Levels; Level ventilation plans for 3750 to 4000 ft. Levels; tailings dams map
Buffalo Ankerite Gold Mines Ltd.	MP0120*	8	MP0120_1 to MP0120_8	Deloro	1918 to 1936	Underground workings central shaft, plan of mine workings claims 60 and 61, progress of development (shafts, claims 60 - 62), plan no. 1 vein system (200 to 600 levels and drift progress), plan no. 5 vein system (250 to 600 ft. levels) and composite plan of workings (later Buffalo Ankerite)
Buffalo Ankerite Gold Mines Ltd.	MP0121*	8	MP0121_1 to MP0121_9	Deloro	1953	Long section North veins, north veins sheet #2, surface claims, level plans for 300, 365, 550, 600, 675 and 725 ft. Levels
Buffalo Ankerite Gold Mines Ltd.	MP0122*	6	MP0122_1 to MP0122_6	Deloro	1950	Surface plan, surface claims, Level plans 1850, 2000, 2950 and 3100
Buffalo Ankerite Gold Mines Ltd.	MP0123*	8	MP0123_1 to MP0123_10	Deloro	1949 to 1953	Long Section showing south veins no. 2 and no. 3, vein no. 6, stopes, shafts and winzes; Level plans for 250, 300, 365, 425 and 475 ft. Levels; surface claims; south veins (no. 1, no. 4 and no. 5); long section North veins bearing due north
Buffalo Ankerite Gold Mines Ltd.	MP0124*	7	MP0124_1 to MP0124_7	Deloro	1952	Level plans with geology for 1050, 2000, 2500, 3450, 3600, 3750 and 3900 ft. Levels; DD in 1952
Buffalo Ankerite Gold Mines Ltd.	MP0125*	4	MP0125_1 to MP0125_4	Deloro	1953	Level plans 1050, 1250, 2800 and 3250 ft. Levels showing surface claims
Buffalo Ankerite Gold Mines Ltd.	MP0126*	4	MP0126_1 to MP0126_4	Deloro	1953	Level plans 1400, 1550 and 1700 ft. Levels showing surface claims
Buffalo Ankerite Gold Mines Ltd.	MP0127*	5	MP0127_1 to MP0127_5	Deloro	1953	Level plans 2650, 3750, 3900, 800, 875, 950 and 1000 ft. Levels
Buffalo Ankerite Gold Mines Ltd.	MP0128*	3	MP0128_1 to MP0128_3	Deloro	1953	Level plans 3300, 3450 and 3600 ft. Levels
Buffalo Ankerite Gold Mines Ltd.	MP0129*	4	MP0129_1 to MP0129_4	Deloro	1952 to 1953	1700 ft. level plan with geology (diamond drilling only during 1952), 2350 ft. Level plan showing surface claims and 2500 ft. Level plan with claims
Central Porcupine Mines Ltd.	MP0130*	6	MP0130_1 to MP0130_6	Tisdale	1935 to 1949	Progression plans and level plans (1000 West section, 1000 ft. Level and 650 ft. sub Level)
Consolidated West Dome Lake Mine	MP0131*	2	MP0131_1 to MP0131_2	Tisdale	1926	Plan of workings and stope sections
Coniaurum Gold Mines Ltd.	MP0132*	3	MP0132_1 to MP0132_3	Tisdale	1961	Level plans 1750, 2000, 2250 and 2300 ft. Levels
Coniaurum Gold Mines Ltd.	MP0133*	2	MP0133_1 to MP0133_2	Tisdale	1961	Level plans 400, 500 and 700 ft. Levels
Coniaurum Gold Mines Ltd.	MP0134*	3	MP0134_1 to MP0134_3	Tisdale	1961	Level plans 1000, 1500 and 1250 ft. Levels
Coniaurum Gold Mines Ltd.	MP0135*	2	MP0135_1 to MP0135_2	Tisdale	1948 to 1961	Surface plans showing claims
Coniaurum Gold Mines Ltd.	MP0136*	3	MP0136_1 to MP0136_3	Tisdale	1949 to 1961	Level plans for 5250 and 5500 ft. Levels; long section showing porphyry bodies and mine workings
Coniaurum Gold Mines Ltd.	MP0137*	3	MP0137_1 to MP0137_3	Tisdale	1961	Level plans for 4500, 4750 and 5000 ft. Levels
Coniaurum Gold Mines Ltd.	MP0138*	3	MP0138_1 to MP0138_3	Tisdale	1961	Level plans for 3750, 4000 and 4250 ft. Levels
Coniaurum Gold Mines Ltd.	MP0139*	3	MP0139_1 to MP0139_3	Tisdale	1961	Level plans for 3000, 3250 and 3500 ft. Levels
Coniaurum Gold Mines Ltd.	MP0140*	3	MP0140_1 to MP0140_3	Tisdale	1961	Level plans for 2450, 2500, 2600 and 2750 ft. Levels

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Coniaurum Gold Mines Ltd.	MP0141*	3	MP0141_1 to MP0141_3	Tisdale	1959	Level plans for 2450, 3500 and 3750 ft. Levels
Coniaurum Gold Mines Ltd.	MP0142*	3	MP0142_1 to MP0142_3	Tisdale	1959	Level plans 1500, 1750 and 2000 ft. Levels
Coniaurum Gold Mines Ltd.	MP0143*	3	MP0143_1 to MP0143_3	Tisdale	1959	Level plans for 2250, 2300, 4500 and 5000 ft. Levels
Coniaurum Gold Mines Ltd.	MP0144*	3	MP0144_1 to MP0144_3	Tisdale	1959	Surface geology, long projection and 3250 ft. level plan
Coniaurum Gold Mines Ltd.	MP0145*	3	MP0145_1 to MP0145_3	Tisdale	1959	Level plans for 2500, 2600, 2750 and 3000 ft. Levels
Coniaurum Gold Mines Ltd.	MP0146*	3	MP0146_1 to MP0146_3	Tisdale	1953 to 1959	Surface geology, surface plan and 5500 ft. level plan
Coniaurum Gold Mines Ltd.	MP0147*	3	MP0147_1 to MP0147_3	Tisdale	1959	Level plans for 400, 500, 700 and 1000 ft. Levels
Coniaurum Gold Mines Ltd.	MP0148*	3	MP0148_1 to MP0148_3	Tisdale	1959	Level plans for 1250, 4250 and 4750 ft. Levels
Coniaurum Gold Mines Ltd.	MP0149*	3	MP0149_1 to MP0149_3	Tisdale	1955 to 1959	Level plans for 4000, 5250 and 6800 ft. Levels
Crown Chartered Gold Mine	MP0150*	1	MP0150_1	Tisdale	1912	Surface plan showing claim and 100 level plan
Dome Mines Ltd.	MP0151*	6	MP0151_2 to MP0151_6	Tisdale	1911 to 1971	Level plans (100, 200 and 2122), Composite plan (level 39 to 160), Level plans North Dome Mines, plan of workings and shafts
Dome Mines Ltd.	MP0152*	4	MP0152_1 to MP0152_4	Tisdale	1913	Level plans for First, Third and 50 ft. Levels); surface plan (updated from 1971 series)
Dome Mines Ltd.	MP0153*	3	MP0153_1 to MP0153_3	Tisdale		Fifth, Sixth and Seventh level plans
Dome Mines Ltd.	MP0154*	3	MP0154_1 to MP0154_3	Tisdale		Eighth, Ninth and Tenth level plans
Dome Mines Ltd.	MP0155*	3	MP0155_1 to MP0155_3	Tisdale		Seventh, Eighth and Ninth level plans
Dome Mines Ltd.	MP0156*	4	MP0156_1 to MP0156_4	Tisdale		First, Third, Fifth and Sixth level plans
Dome Mines Ltd.	MP0157*	4	MP0157_1 to MP0157_4	Tisdale		Section through no. 3 internal shaft, no. 5 winze, no. 6 internal shaft and no. 7 internal shaft
Dome Mines Ltd.	MP0158*	7	MP0158_1 to MP0158_7	Tisdale	1971 to 1975	Fifteenth level plans, thirty-sixth level plan and sections through no. 3 shaft, no. 5 winze, no. 6 internal shaft and no. 7 shaft
Dome Mines Ltd.	MP0159*	3	MP0159_1 to MP0159_3	Tisdale	1965	Thirty-fourth, thirty-fifth and thirty-seventh level plans
Dome Mines Ltd.	MP0160*	4	MP0160_1 to MP0160_4	Tisdale	1971	Level plans Twenty-Ninth, Thirtieth, Thirty-Second and Thirty-Third Level showing position of no. 7 shaft
Dome Mines Ltd.	MP0161*	4	MP0161_1 to MP0161_4	Tisdale	1971	Twenty-Sixth, Twenty-Seventh, Twenty-Eighth and Twenty-Ninth Level plans
Dome Mines Ltd.	MP0162*	4	MP0162_1 to MP0162_4	Tisdale	1971	Twenty-Third, Twenty-Fourth and Twenty-Fifth Level plans
Dome Mines Ltd.	MP0163	4	MP0163_1 to MP0163_4	Tisdale	1971	Nineteenth, Twentieth, Twenty-First and Twenty-Second Level plans
Dome Mines Ltd.	MP0164*	4	MP0164_1 to MP0164_4	Tisdale	1971	Fifteenth, Sixteenth, Seventeenth and Eighteenth Level plans
Dome Mines Ltd.	MP0165*	4	MP0165_1 to MP0165_4	Tisdale	1971	Eleventh, Twelfth, Thirteenth and Fourteenth Level plans
Dome Mines Ltd.	MP0166*	5	MP0166_1 to MP0166_5	Tisdale	1971 to 1972	Seventh, Eighth, Ninth and Tenth level plans

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Dome Mines Ltd.	MP0167*	4	MP0167_1 to MP0167_4	Tisdale	1971	Surface plan and level plans for Third, Fifth and Sixth Levels
Dome Mines Ltd.	MP0168*	4	MP0168_1 to MP0168_4	Tisdale	1971	Thirtieth, Thirty-First and Thirty-Second Level plans
Dome Mines Ltd.	MP0169*	5	MP0169_1 to MP0169_5	Tisdale		Thirty-First, Thirty-Fourth, Thirty-Fifth and Thirty-Seventh Level plans
Dome Mines Ltd.	MP0170*	4	MP0170_1 to MP0170_4	Tisdale		Twenty-Second, Twenty-Third and Twenty-Fourth Level plans
Dome Mines Ltd.	MP0171*	4	MP0171_1 to MP0171_4	Tisdale		Twenty-fifth, twenty-sixth, twenty-seventh and twenty-eighth level plans
Dome Mines Ltd.	MP0172*	4	MP0172_1 to MP0172_4	Tisdale		Nineteenth, twentieth and twenty-ninth level plans
Dome Mines Ltd.	MP0173*	4	MP0173_1 to MP0173_4	Tisdale		Fourteenth, sixteenth, seventeenth and eighteenth level plans
Dome Mines Ltd.	MP0174*	4	MP0174_1 to MP0174_4	Tisdale	1923	Level plans (Eleventh, twelfth and thirteenth) and plan of underground
Hollinger Consolidated Gold Mines	MP0175*	5	MP0175_1 to MP0175_5	Tisdale	1968	Long section A and E
Hollinger Consolidated Gold Mine	MP0176*	6	MP0176_1 to MP0176_6	Tisdale	1968	Long sections A, A A-1, A C and A C-1
Hollinger Consolidated Gold Mine	MP0177*	4	MP0177_1 to MP0177_4	Tisdale	1968	Long sections A B, A B-1 and A C
Hollinger Consolidated Gold Mine	MP0178*	4	MP0178_1 to MP0178_4	Tisdale	1953 to 1968	Level plans 1100, 1250, 300 and 425.
Hollinger Consolidated Gold Mine	MP0179*	4	MP0179_1 to MP0179_4	Tisdale	1968	Mine work plan and level plans for 425, 675, 800 and 950 ft. Levels
Hollinger Consolidated Gold Mine	MP0180*	4	MP0180_1 to MP0180_4	Tisdale	1954 to 1968	Mine work plans 300, 1100, 1400 (LWA) and 1550 ft. (LWA) Levels
Hollinger Consolidated Gold Mine	MP0181	4	MP0181_1 to MP0181_4	Tisdale	1951 to 1968	Mine plans 675, 800, 950 (LWA) and 1250 ft. levels (LWA)
Hollinger Consolidated Gold Mine	MP0182	6	MP0182_1 to MP0182_6	Tisdale	1968	Long sections A A-1, A B, A -1 -1 and A- 2 and A 7-2
Hollinger Consolidated Gold Mine	MP0183	6	MP0183_1 to MP0183_6	Tisdale	1968	Long sections A-1, A 1 A, A 2 and A 2-2
Hollinger Consolidated Gold Mine	MP0185	6	MP0185_1 to MP0185_6	Tisdale	1968	Long sections A 3-2, A 3-3, A 4 and A 4-1
Hollinger Consolidated Gold Mine	MP0186	7	MP0186_1 to MP0186_7	Tisdale	1968	Long sections A 2-1, A 4, A 5, A 5 and Z-5
Hollinger Consolidated Gold Mine	MP0187	7	MP0187_1 to MP0187_7	Tisdale	1968	Long sections Z-5, Z-5-1, Z-5-2, Z-5-3, Z-5-4 and Z-6
Hollinger Consolidated Gold Mine	MP0188	8	MP0188_1 to MP0188_8	Tisdale	1968	Long sections Z-6, Z-7, Z-7-1, Z-7-1-A
Hollinger Consolidated Gold Mine	MP0189	7	MP0189_1 to MP0189_7	Tisdale	1968	Long sections E, E-1, Z-7-1-1 and mine plan 3200 ft. Level

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Hollinger Consolidated Gold Mine	MP0190	8	MP0190_1 to MP0190_8	Tisdale	1968	Long sections E,F, F-1, F-2 and G
Hollinger Consolidated Gold Mine	MP0191	7	MP0191_1 to MP0191_7	Tisdale	1968	Long sections H, I, J, J-1, L and L
Hollinger Consolidated Gold Mine	MP0192	6	MP0192_1 to MP0192_6	Tisdale	1968	Long sections L, M and N
Hollinger Consolidated Gold Mine	MP0193	7	MP0193_1 to MP0193_7	Tisdale	1968	Long sections N, O and P
Hollinger Consolidated Gold Mine	MP0194	7	MP0194_1 to MP0194_7	Tisdale	1968	Long sections P, Q, R and S
Hollinger Consolidated Gold Mine	MP0195	8	MP0195_1 to MP0195_8	Tisdale	1968	Long sections T, T-1, U and V
Hollinger Consolidated Gold Mine	MP0196	8	MP0196_1 to MP0196_8	Tisdale	1968	Long sections V, V-1, W and X
Hollinger Consolidated Gold Mine	MP0197	8	MP0197_1 to MP0197_8	Tisdale	1968	Long sections Y, Y-1, Z and Z-1
Hollinger Consolidated Gold Mine	MP0198	7	MP0198_1 to MP0198_7	Tisdale	1968	Long sections Z-1, Z-1-1, Z-2, Z-4-2, Z-5
Hollinger Consolidated Gold Mine	MP0199	8	MP0199_1 to MP0199_8	Tisdale	1968	Long sections Z-3-1, Z-4, Z-4-A, Z-4-1 and Z-4-2
Hollinger Consolidated Gold Mine	MP0200	8	MP200_1 to MP200_8	Tisdale	1968	Long sections C, Z-2-1, Z-3 and Z-3-1
Hollinger Consolidated Gold Mine	MP0201	8	MP201_1 to MP201_8	Tisdale	1968	Long sections B, B-A, C and C-1
Hollinger Consolidated Gold Mine	MP0202	8	MP202_1 to MP202_8	Tisdale	1968	Long section B-A, B-1, B-2, C and C-1
Hollinger Consolidated Gold Mine	MP0203	8	MP0203_1 to MP0203_8	Tisdale	1968	Long section C-2, D, D-A and D-1
Hollinger Consolidated Gold Mine	MP0204	8	MP0204_1 to MP0204_8	Tisdale	1968	Long sections D-1, D-1-1, D-2, D-3
Hollinger Consolidated Gold Mine	MP0205	5	MP0205_1 to MP0205_5	Tisdale	1968	Mine plan for levels 425, 675, 800, 9000, 1100, 1250, 2750 and 5150
Hollinger Consolidated Gold Mine	MP0206	5	MP0206_1 to MP0206_5	Tisdale	1968	Mine plan levels 1700, 1850, 2000, 2300 and 2450
Hollinger Consolidated Gold Mine	MP0207	6	MP0207_1 to MP0207_6	Tisdale	1968	Mine plan for 1400, 3350, 3500, 3650, 3950, 4100, 4250, 4550 and 4850 ft. Levels
Hollinger Consolidated Gold Mine	MP0208	4	MP0208_1 to MP0208_4	Tisdale	1954 to 1968	Mine plan for levels 100, 200 and 550ft. Levels as well as mine workings

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Hollinger Consolidated Gold Mine	MP0209	4	MP0209_1 to MP0209_4	Tisdale	1968 to 1976	Mine plan for levels 100 and 550 as well as surface plans and elevation
Hollinger Consolidated Gold Mine	MP0210	2	MP0210_1 to MP0210_2	Tisdale	1968	Surface plans including mine buildings as well as length width and assay
Hollinger Consolidated Gold Mine	MP0211	8	MP0211_1 to MP0211_8	Tisdale	1968	Long sections Z-1, Z-2, Z-3, Z-4, Z-5 and Z-8
Hollinger Consolidated Gold Mine	MP0212	7	MP0212_1 to MP0212_7	Tisdale	1968	Long sections Z-2, Z-3 and Z-4
Hollinger Consolidated Gold Mine	MP0213	8	MP0213_1 to MP0213_9	Tisdale	1968	Long sections Z-2, Z-3, Z-4-5, Z-7, Z-7-2 and A-7-1-1
Hollinger Consolidated Gold Mines	MP0214	8	MP0214_1 to MP0214_8	Tisdale	1968	Long section Z-1, Z-1-1, Z-1-2, Z-7-1, Z-8, Z-8-1 and Z-9
Hollinger Consolidated Gold Mines	MP0215	7	MP0215_1 to MP0215_7	Tisdale	1968	Long sections Z-1, Z-1-1, Z-4-4, Z-5-1, Z-5-1-1
Hollinger Consolidated Gold Mines	MP0216	7	MP0216_1 to MP0216_7	Tisdale	1968	Long sections Z-3-1, Z-3-2, Z-4-1, Z-4-2 and Z-4-3
Hollinger Consolidated Gold Mines	MP0217	8	MP0217_1 to MP0217_8	Tisdale	1968	Long sections Z-3-A, Z-3-1, Z-6, Z-7, Z-7-1 and Z-7-1-1
Hollinger Consolidated Gold Mines	MP0218	8	MP0218_1 to MP0218_8	Tisdale	1968	Long sections, Z, Z-2-1, Z-2-2, Z-5-2, Z-5-3 and Z-6
Hollinger Consolidated Gold Mines	MP0219	8	MP0219_1 to MP0219_8	Tisdale	1968	Long sections C-1, C-2, D, Z, Z-6
Hollinger Consolidated Gold Mines	MP0220	8	MP0220_1 to MP0220_8	Tisdale	1962 to 1968	Long sections D-1, D-1-A, D-2, D-3 and E
Hollinger Consolidated Gold Mines	MP0221	7	MP0221_1 to MP0221_7	Tisdale	1968	Long sections D-2-1, D, D-A, D-2, D-3 and H
Hollinger Consolidated Gold Mines	MP0222	8	MP0222_1 to MP0222_8	Tisdale	1968	Long sections B, A-B-1, B, B-A, B-A-1 and B-1
Hollinger Consolidated Gold Mines	MP0223	8	MP0223_1 to MP0223_8	Tisdale	1968	Long sections AA, C, A-B, B, B-A and C
Hollinger Consolidated Gold Mines	MP0224	8	MP0224_1 to MP0224_8	Tisdale	1968	Long sections A, C-1, A-1, A-2, A-2-A, A-3-4 and A-5-1
Hollinger Consolidated Gold Mines	MP0225	8	MP0225_1 to MP0225_8	Tisdale	1968	Long sections A-A-1, A-2-A-1, A-2-1, A-3-3, A-4-1, A-9 and A-10

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Hollinger Consolidated Gold Mines	MP0226	8	MP0226_1 to MP0226_8	Tisdale	1968	Long sections A-2-1-1, A-3-1-1, A-7-1, A-7-1-1, A-8-1, A-9, A-11 and A-12
Hollinger Consolidated Gold Mines	MP0227	8	MP0227_1 to MP0227_8	Tisdale	1968	Long sections A A-2, A-1, A-1-1, A-1-2, A-3 and A-3-1
Hollinger Consolidated Gold Mines	MP0228	9	MP0228_1 to MP0228_9	Tisdale	1968	Long sections A-1, A, X-1, A-2-1-2, A-2-1-3, A-2-2 and A-3-2
Hollinger Consolidated Gold Mines	MP0229	8	MP0229_1 to MP0229_8	Tisdale	1968	Long sections A-3, A-2, A-2-1, A-2-1-3, A-2-2, A-2-3, A-3-3 and A-5-1
Hollinger Consolidated Gold Mines	MP0230	10	MP0230_1 to MP0230_10	Tisdale	1968	Long sections A-1-1, A-A-1, I-1, A-1-2-A, A-4, A-4-1, A-4-2, A-5-A and A-7-2
Hollinger Consolidated Gold Mines	MP0231	9	MP0231_1 to MP0231_9	Tisdale	1968	Long sections 44, 97 south, F, G, M, N and U-1 as well as mine plan level 1400
Hollinger Consolidated Gold Mines	MP0232	8	MP0232_1 to MP0232_8	Tisdale	1968	Long sections C-A, W-1, Z1-3, A-2-1-1, A-7-A, A-7-2 and A-8-1
Hollinger Consolidated Gold Mines	MP0233	8	MP0233_1 to MP0233_8	Tisdale	1968	Long sections 0, V, A-4, A-7 and A-8
Hollinger Consolidated Gold Mines	MP0234	8	MP0234_1 to MP0234_8	Tisdale	1968	Long sections A, A-3-1-1, A-3-1-1-A, A-5 and A-6
Hollinger Consolidated Gold Mines	MP0235	9	MP0235_1 to MP0235_9	Tisdale	1950	Shaft elevations as well as long sections W, A-2-3, A-3, A-1-2 and A-5; and mine plan for 3500 level
Hollinger Consolidated Gold Mines	MP0236	8	MP0236_1 to MP0236_8	Tisdale	1968	Long sections E-I, F, H-1, H-2, I and J
Hollinger Consolidated Gold Mines	MP0237	8	MP0237_1 to MP0237_8	Tisdale	1968	Long sections I, K, P, Q and T
Hollinger Consolidated Gold Mines	MP0238	8	MP0238_1 to MP0238_8	Tisdale	1968	Long sections G, R, S, S-1 and T
Hollinger Consolidated Gold Mines	MP0239	8	MP0239_1 to MP0239_8	Tisdale	1968	Long sections E, E-1, F-1, H, I, J-1 and M
Hollinger Consolidated Gold Mines	MP0240	8	MP0240_1 to MP0240_8	Tisdale	1968	Long sections C-1, L, L-1, M, W-1, X-1, Y and C
Hollinger Consolidated Gold Mines	MP0241	8	MP0241_1 to MP0241_8	Tisdale	1968	Long sections 0, X, X-1-1, Y, A-7, B-A and C

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Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Hollinger Consolidated Gold Mines	MP0242	8	MP0242_1 to MP0242_8	Tisdale	1968	Long sections Aa, A-B, UXM, V, X and A-5-A
Hollinger Consolidated Gold Mines	MP0243	8	MP0243_1 to MP0243_8	Tisdale	1968	Long sections P, Q-1, U, V, X, Y and Y-1
Hollinger Consolidated Gold Mines	MP0244	6	MP0244_1 to MP0244_6	Tisdale	1968	Long sections O, P, U and U-1
Gillies Lake-Porcupine Gold Mine	MP0245	2	MP0245_1 to MP0245_2	Tisdale	1938	Map of the southeast part of claim P.13427
Kerr Lake Mining Company	MP0246	1	MP0246_1	Tisdale	1923	Surface plan
Moneta Porcupine Mines Limited	MP0247	6	MP0247_1 to MP0247_6	Deloro and Tisdale	1940 to 1963	Composite plan, surface plan and proposed waste pass raise and vertical section through north corner of shaft
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0248	8	MP0248_1 to MP0248_8	Tisdale	1972	Level plans 50, 100, 200, 300, 400, 500, 600 and 700
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0249	8	MP0249_1 to MP0249_8	Tisdale		Level plans 50, 100, 200, 300, 400, 500, 600 and 700
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0250	9	MP0250_1 to MP0250_9	Tisdale		Level plans for 50, 100, 200, 300, 400, 500, 600, 700 and 800 ft. Levels
Newray Mine	MP0251	1	MP0251_1	Tisdale	1923	Level plan for 400 ft. Level
New York Porcupine Mines Limited	MP0252	2	MP0252_1 to MP0252_2	Tisdale	1927 to 1929	Level plans 125, 250, 250 and 375 ft. Levels
Midcamp Mines Limited	MP0253	2	MP0253_1 to MP0253_2	Tisdale	1951 to 1953	Progress plan and composite plan maps
Nakhodas Mining Company	MP0254	1	MP0254_1	Tisdale	1941	Underground level plan
Naybob Gold Mines Limited	MP0255	1	MP0255_1	Ogden	1943	Long section showing stopes
Mcintyre Mines Limited and Juniper Mines	MP0256	6	MP0256_1 to MP0256_6	Tisdale	1916 to 1936	Composite maps of mine workings as well as mine plans for levels 400, 600 and 800
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0257	9	MP0257_1 to MP0257_9	Tisdale		Level plans for 3125, 3250, 3500, 3625, 3750, 5825, 5975 ft. Levels

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0258	8	MP0258_1 to MP0258_8	Tisdale		Level plans for 2750, 2875, 3000, 3875, 4025 and 4325 ft. Levels
Aunor Gold Mines Limited and Pamour Porcupine Mines Limited	MP0259	7	MP0259_1 to MP0259_7	Deloro	1977	Map of tailings dams and level plans for 1375, 1625, 1750, 3375 and 3875 ft. Levels
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0260	8	MP0260_1 to MP0260_8	Tisdale		Level plans for 1750, 1875, 2000, 2125, 2250, 2375, 2500 and 2625 ft. Levels
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0261	8	MP0261_1 to MP0261_8	Tisdale		Level plans for 1125, 2625, 3259, 3375, 3875, 4475, 4625 and 6700 ft. Levels
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0262	9	MP0262_1 to MP0262_9	Tisdale		Level plans for 900, 1000, 1250, 1375, 1500, 1625, 1750, 2600 and 2800 ft. Levels
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0263	10	MP0263_1 to MP0263_10	Tisdale		Level plans for 2750, 3000, 3125, 5375, 5675, 5825, 5975, 6125 and 6275 ft. Levels
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0264	8	MP0264_1 to MP0264_8	Tisdale		Level plans for 1875, 2000, 2125, 2375, 2500, 4925, 5525 and 6575 ft. Levels
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0265	11	MP0265_1 to MP0265_11	Tisdale	1972	Level plans for 2125, 2250, 2375, 2500, 2625, 2750, 2875, 3000, 3125, 3250 and 3375 ft. Levels
Pamour Porcupine Mines Limited	MP0266	7	MP0266_1 to MP0266_7	Tisdale		Level plans for 4175, 4325, 4475, 4625, 4775 and 5525 ft. Levels
Pamour Porcupine Mines Limited	MP0267	5	MP0267_1 to MP0267_5	Tisdale		Level plans for 1750, 6825, 6975, 7125 and 7275 ft. Levels
Pamour Porcupine Mines Limited	MP0268	6	MP0268_1 to MP0268_6	Tisdale		Level plans for 5675, 5825, 5975 and 6125 ft. Levels
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0269	12	MP0269_1 to MP0269_12	Tisdale	1972	Level plans for 3500, 3625, 3750, 3875, 4025, 4175, 4325, 4475, 4925 and 5075 ft. Levels

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
McIntyre Mines Limited and Pamour Porcupine Mines Limited	MP0270	12	MP0270_1 to MP0270_12	Tisdale	1972	Level plans for 5225, 5375, 5525, 5675, 5825, 5975 and 6275 ft. Levels
McIntyre Mines Limited and Pamour Porcupine Mines Limited	MP0271	10	MP0271_1 to MP0271_10	Tisdale		Level plans for 4625, 4775, 4925, 5075, 5225, 5375, 5525 and 6125 ft. Levels
McIntyre Mines Limited and Pamour Porcupine Mines Limited	MP0272	11	MP0272_1 to MP0272_11	Tisdale	1972	Level plans for 800, 900, 1000 1125, 1250, 1375, 1500, 1750, 1875 and 2000 ft. Levels
McIntyre Mines Limited and Pamour Porcupine Mines Limited	MP0273	8	MP0273_1 to MP0273_8	Tisdale		Level plans for 1625, 2125, 2875, 3125, 3875, 4175 and 4325 ft. Levels
McIntyre Mines Limited and Pamour Porcupine Mines Limited	MP0274	10	MP0274_1 to MP0274_10	Tisdale		Level plans for 5975, 6125, 6275, 6425, 6575, 6700, 6825 and 6975 ft. Levels
McIntyre Mines Limited and Pamour Porcupine Mines Limited	MP0275	8	MP0275_1 to MP0275_8	Tisdale		Level plans for 800, 900, 1000, 1250, 1375 and 1625 ft. Levels
McIntyre Mines Limited and Pamour Porcupine Mines Limited	MP0276	12	MP0276_1 to MP0276_12	Tisdale		Level plans for 3500, 3625, 3750, 4025, 4175, 4325, 4775, 5075, 5225, 6125, 6425 and 7725 ft. Levels
McIntyre Mines Limited and Pamour Porcupine Mines Limited	MP0277	7	MP0277_1 to MP0277_7	Tisdale		Level plans for 2250, 5525, 6575, 6700, 6825 and 6975 ft. Levels
McIntyre Mines Limited and Pamour Porcupine Mines Limited	MP0278	7	MP0278_1 to MP0278_7	Tisdale		Level plans for 2875, 5825, 7125, 7275, 7425, 7575 and 7875 ft. Levels
McIntyre Mines Limited	MP0279	7	MP0279_1 to MP0279_7	Tisdale		Level plans for 1375, 1500, 1750, 1875, 3375, 5225 and 5975 ft. Levels
McIntyre Mines Limited and Pamour Porcupine Mines Limited	MP0280	7	MP0280_1 to MP0280_7	Tisdale	1972	Section map of shafts 4 & 5 as well as level plans for 6275, 6425, 6575, 7425 and 7575 ft. Levels
Pamour Porcupine Mines Limited	MP0281	9	MP0281_1 to MP0281_9	Tisdale		Level plans for 1625, 1875, 2000, 2125, 2250, 2375, 6700 and 6825 ft. Levels

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Mcintyre Mines Limited	MP0282	11	MP0282_1 to MP0282_12	Tisdale	1912 to 1916	Underground and surface plan of claim number 13307; Underground composite map of the southern half of claim 15512051; underground composite map of claim 13307; underground composite map of claim 13308; composite map of Levels 4, 8 and 10
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0283	11	MP0283_1 to MP0283_11	Tisdale	1972	Level plans for 6425, 6525, 6575, 6700, 6825, 6975, 7275 and 7425 ft. Levels
Mcintyre Mines Limited	MP0284	11	MP0284_1 to MP0284_11	Tisdale	1956 to 1972	Surface plan for vertical section; level plans for 7575, 7725 and 7875 ft. Levels; Section of shafts 6, 7, 10, 11, 12, 14, 15 and 16
Pamour Porcupine Mines Limited	MP0285	2	MP0285_1 to MP0285_4	Tisdale		Level plans for 2875, 3000, 3125 and 3250 ft. Levels
Pamour Porcupine Mines Limited	MP0286	6	MP0286_1 to MP0286_6	Tisdale		Level plans for 4925, 5075, 5225, 5375, 5525 and 6125 ft. Levels
Pamour Porcupine Mines Limited	MP0287	8	MP0287_1 to MP0287_8	Tisdale		Level plans for 2500, 2625, 2750, 3500, 3625, 3750, 3875 and 4025 ft. Levels
Paymaster Consolidated Mines	MP0288	10	MP0288_1 to MP0288_10	Tisdale	1952 to 1954	Level plans for 60, 100, 120, 180, 200, 300 and 400 ft. Levels as well as long sections of shaft four veins 8, 18, 19 and 3-24
Paymaster Consolidated Mines	MP0289	11	MP0289_1 to MP0289_11	Tisdale	1952 to 1954	Level plans for 2825 and 2950 ft. Levels showing shaft 5 as well as surface and geological plans for shafts 2,3,4,5 and 6
Paymaster Consolidated Mines	MP0290	10	MP0290_1 to MP0290_10	Tisdale	1955 to 1966	Level plans for 3900, 3950 and 4075 ft. Levels showing shaft 5; shaft 5 projections for veins 3-24, 27, 31 and 36; openings to above workings, including buildings, hazard and claim posts; DD plan
Paymaster Consolidated Mines	MP0291	10	MP0291_1 to MP0291_10	Tisdale	1951 to 1954	Level plans for 1740, 2575, 3100, 3250 and 3450 ft. Levels showing shafts 2,3, 5 and 6; surface plan showing shafts 5 and 6
Paymaster Consolidated Mines	MP0292	10	MP0292_1 to MP0292_10	Tisdale	1952	Level plans for 1400, 1550, 1700 and 2000 ft. Levels showing shafts 2 and 3; veins of shaft 6
Paymaster Consolidated Mines	MP0293	15	MP0293_1 to MP0293_15	Tisdale	1935 to 1940	Composite plan maps and maps of shafts 5 and 6
Paymaster Consolidated Mines	MP0294	21	MP0294_1 to MP0294_21	Tisdale	1956	Level plans for 100, 120, 300, 400, 500, 525, 600, 675, 750, 800, 900, 1050, 1200, 1225, 1325, 1400, 1425, 1740, 1910, 2075, 2575 ft. Levels shafts 5 and 6
Paymaster Consolidated Mines	MP0295	22	MP0295_1 to MP0295_22	Tisdale	1956	Level plans 60, 100, 120, 2575, 2825, 2575, 2575, 2950, 3075, 3200, 3325, 3575, 3450, 3700, 3950, 4075 of shafts 2,3 5 and 6

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Paymaster Consolidated Mines	MP0296	12	MP0296_1 to MP0296_12	Tisdale	1966	Shaft projections for shaft five, veins 18 to 21; Level plans for 3325, 3450, 4575, 3600, 3700 and 3750 ft. Levels
Paymaster Consolidated Mines	MP0297		MP0297_1 to MP0297_10	Tisdale	1952	Shaft projections for shafts 5 and 6, veins 1, 3-24, 24, 27, 31 and 36
Paymaster Consolidated Mines	MP0298	13	MP0298_1 to MP0298_13	Tisdale	1951	Shaft 5 projections for veins 14, 18, 19, 23, 27 and 28; level plans for 3750, 3825 and 4075 ft. Levels
Paymaster Consolidated Mines	MP0299	14	MP0299_1 to MP0299_14	Tisdale	1966	Level plans for 3075, 3150, 3200, 3300, 3950, 4075, 4525 and 4675 ft. Levels
Paymaster Consolidated Mines	MP0300	10	MP0300_1 to MP0300_10	Tisdale	1951	Level plans for 300, 400, 500, 525, 600, 675, 750 and 2450 ft. Levels
Paymaster Consolidated Mines	MP0301	13	MP0301_1 to MP0301_13	Tisdale	1950 to 1966	Long sections; level plans for 100, 200, 300, 400, 475, 50, 525, 600 and 675 ft. Levels; closing plans
Paymaster Consolidated Mines	MP0302		MP0302_1 to MP0302_12	Tisdale	1966	Shaft 5 and winze 6 projections, including veins 3-24, 19, 23, 24, 25, 27, 31 and 36
Paymaster Consolidated Mines	MP0303	26	MP0303_1 to MP0303_26	Tisdale	1955 to 1956	Level plans for 100, 120, 180, 200, 300, 400, 500, 505, 600, 675, 750, 800, 900, 1050, 1200, 1225, 1325, 1400, 1450, 1575, 2200, 2325, 2450, 2700, 2825, 3000, 3200, 3325, 3450, 3575, 3600, 4075 ft. Levels
Paymaster Consolidated Mines	MP0304	13	MP0304_1 to MP0304_13	Tisdale	1954 to 1966	Surface plan and level plans for 2450, 2575, 2700, 2825 and 2850 ft. Levels
Paymaster Consolidated Mines	MP0305	11	MP0305_1 to MP0305_11	Tisdale	1952	Mine plans for 3075, 3100, 3200, 3250, 3325, 3450, 3575 and 3700 ft. Levels
Paymaster Consolidated Mines	MP0306	9	MP0306_1 to MP0306_9	Tisdale	1952	Levels for 1910, 2000, 2075, 2200, 2325 and 2450 ft. Levels
Paymaster Consolidated Mines	MP0307	8	MP0397_2 to MP0397_9	Tisdale	1951	Section of shaft 5 showing veins 3-24, 14, 18, 19, 23, 24, 27 and 28
Paymaster Consolidated Mines	MP0308	10	MP0308_1 to MP0308_10	Tisdale	1951 to 1952	Sections of shafts 5 and 6 showing veins 18 and 19; Level plans for 60, 100, 120, 180, 200 and 300 ft. Levels
Paymaster Consolidated Mines	MP0309	11	MP0309_1 to MP0309_11	Tisdale	1952	Level plans for 1400, 1450, 1575, 1700, 1740 and 1910 ft. Levels; shafts 2,3,5 and 6
Paymaster Consolidated Mines	MP0310	2	MP0310_1 to MP0310_2	Tisdale	1927	Correspondence and surface plan
Paymaster Consolidated Mines	MP0311	10	MP0311_1 to MP0311_10	Tisdale	1950 to 1952	Level plans for 750, 800, 900, 1050, 1200, 1225 and 1325 ft. Levels; shafts 5 and 6

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Paymaster Consolidated Mines	MP0312	11	MP0312_1 to MP0312_11	Tisdale	1966	Projection of vein 37; level plans of 1740, 1910, 2075, 2200, 2325, 2450, 2950 and 3000 ft. Levels of shafts 5 and 6
Paymaster Consolidated Mines	MP0313	11	MP0313_1 to MP0313_11	Tisdale	1952	Level plans for 3825, 3950 and 4075 ft. Levels; sections of veins 3, 8, 14 and 28
Paymaster Consolidated Mines	MP0314	10	MP0314_1 to MP0314_10	Tisdale	1951	Level plans of 2700, 3450, 3575, 3825, 3950 and 4075 ft. Levels for shaft 5; section of vein 8 shaft 5
Paymaster Consolidated Mines	MP0315	11	MP0315_1 to MP0315_11	Tisdale	1951	Level plans of 2200, 2325, 2450, 2575, 2700, 2825, 2950, 3075, 3200 and 3325 ft. Levels of shaft 5
Paymaster Consolidated Mines	MP0316	12	MP0316_1 to MP0316_12	Tisdale	1966	Level plans of 4075, 4225, 4375, 4525, 4825, 4975, 5125, 5575, 5725 and 6025 ft. Levels
Paymaster Consolidated Mines	MP0317	15	MP0317_1 to MP0317_15	Tisdale	1966	Veins 1, 3-24, 3, 8, 10, 12, 14, 21, 28-14, 27 and 28; level plans 5275, 5425 and 5575
Paymaster Consolidated Mines	MP0318	12	MP0318_1 to MP0318_12	Tisdale	1966	Level plans of 800, 900, 1050, 1200, 1225, 1325, 1400, 1450, 1575 and 1740 ft. Levels
Paymaster Consolidated Mines	MP0319	16	MP0319_1 to MP0319_16	Tisdale	1966	Level plans of 60, 100, 120, 180, 200, 300, 400, 500, 525, 600, 675, 750, 800 and 900 ft. Levels
Paymaster Consolidated Mines	MP0320	10	MP0320_1 to MP0320_10	Tisdale	1950 to 1951	Level plans of 38, 1575, 1740, 1910, 2075 and 2575 ft. Levels
Paymaster Consolidated Mines	MP0321	11	MP0321_1 to MP0321_11	Tisdale	1951	Level plans of 750, 800, 900, 1050, 1200, 1225, 1325, 1400 and 1450 ft. Levels
Paymaster Consolidated Mines	MP0322	20	MP0322_1 to MP0322_20	Tisdale	1942	Composite plan maps for shafts 3, 4 and 5
Paymaster Consolidated Mines	MP0323	12	MP0323_1 to MP0323_12	Tisdale	1950 to 1955	Level plans of 100, 200, 800, 3900, 2700 and 4266 ft. Levels; long sections of veins 1, 3, 4, 5, 7, 10, 21 and 22
Paymaster Consolidated Mines	MP0324	12	MP0324_1 to MP0324_12	Tisdale	1949 to 1954	Level plans 400, 475 and 600 of 2 & 3; long sections of veins 3-24, 14, 27, 28 and 36; Surface geology maps
Paymaster Consolidated Mines	MP0325	7	MP0325_1 to MP0325_7	Tisdale	1952	Level plans 2575 and 2700 ft. Levels
Porcupine Davidson Gold Mines	MP0326	2	MP0326_1 to MP0326_2	Tisdale	1919 to 1924	Davidson level composite map; workings map
Preston Mines Limited	MP0327	10	MP0327_1 to MP0327_10	Tisdale	1951 to 1960	Surface buildings map; level plans 15, 17, 18, 25, 29 and 33
Preston Mines Limited	MP0328		MP0328_1 to MP0328_9	Tisdale	1951 to 1967	Cross section of number 2 surface shaft and number 3 internal shaft; Level plans 11, 12, 16, 24 and 26

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Preston Mines Limited	MP0329	13	MP0329_1 to MP0329_13	Tisdale	1951 to 1956	Level plans 8, 9, 13, 14, 15, 16, 20, 21 and 30
Preston Mines Limited	MP0330	11	MP0330_1 to MP0330_11	Tisdale	1950 to 1967	Level plans 17 21, 22, 23, 25, 27 and 28
Preston Mines Limited	MP0331	8	MP0331_1 to MP0331_8	Tisdale	1951 to 1962	Level plans 1300, 1400, 1600, 1800, 1900 and 2000
Preston Mines Limited	MP0332	7	MP0332_1 to MP0332_7	Tisdale	1951 to 1964	Level plans 1, 2, 9, 10, 12 and 13
Preston Mines Limited	MP0333	11	MP0333_1 to MP0333_11	Tisdale	1951 to 1958	Level plans 3, 4, 5, 6, 7, 9, 10, 11 and 13
Preston Mines Limited	MP0334	3	MP0334_1 to MP0334_3	Tisdale	1951 to 1959	Section map of shaft 3, closing plans mine location Preston East Dome; level plan 27
Rea Consolidated Gold Mines	MP0335	4	MP0335_1 to MP0335_4	Tisdale	1912	Composite map of underground workings; Kingsmill shaft section
Vipond Consolidated Mines Limited	MP0336	12	MP0336_1 to MP0336_12	Tisdale	1939	Level plans 100, 200, 300, 400, 500, 600, 733, 866, 1000, 1200 and 1450
Vipond Consolidated Mines Limited	MP0337	9	MP0337_3 to MP0337_11		1933	Level plans 100, 200, 300, 400, 500, 600, 733, 866, 1000, 1200 and 1450
Whelpdale Porc Mns L	MP0339	1	MP0339_1	Tisdale	1918	Level plans 35 and 100
New Hope Porc Mine	MP0340	10	MP0340_1 to MP0340_10	Turnbull	1965	Long sections; level plans 200, 325, 450, 575, 700, 800, 925, 1050 and 1175
Tisdale Ank Au Mn Co	MP0341	1	MP0341_1	Tisdale	1953	Geological map of the property
Bonetal Gold Mns Ltd	MP0342	5	MP0342_1 to MP0342_5	Whitney	1965	Stop showings at zone 1; compilation plan and long section at zone2; diamond drill hole plan at 2160 level; geological plan level 2 at 275 feet
Boneta Gold Mines Limited	MP0343	3	MP0343_1 to MP0343_3	Whitney	11965	Surface plan; Geological plan for level 1 at 175 feet, level 3 at 400 feet and level 4 at 512 feet;
Broulan Reef Mines Limited	MP0344	4	MP0344_1 to MP0344_4	Whitney	1953 to 1954	composite map; surface plan; level plans 630 and 650
Broulan Reef Mines Limited	MP0345	10	MP0345_1 to MP0345_10	Whitney	1953 to 1988	Correspondence as well as geological plans for One to Four Levels and 755 ft. Level
Broulan Reef Mines Limited	MP0346	7	MP0346_1 to MP0346_7	Whitney	1965	Level plan 350 and geological plans of levels 970, 1120, 1870, 2050, 2200 and 2500
Broulan Reef Mines Limited	MP0347	5	MP0347_1 to MP0348_5	Whitney	1965	Level plans 200, 500 and 650; geological plans for levels 1570, 1720, 2600 and 2650
Broulan Reef Mines Limited	MP0349	6	MP0349_1 to MP0349_6	Whitney	1965	Geological plans for levels 800, 1270, 1420, 23500 and 2500; compilation level plan long section map showing stopes
Canusa Mine and Scottish Ontario Mines	MP0350	6	MP0350_1 to MP0350_6	Whitney	1929 to 1930	Elevation and section map; shaft and underground plan
Hollinger Consolidated Gold Mines Limited	MP0351	4	MP0351_1 to MP0351_4	Whitney	1937	Underground workings maps; map of the northwest quarter of the southern half of lot 2, concession 6 of Whitney township at the 200 ft. Level
Hoyle Mining Co. Ltd.	MP0352	10	MP0352_1 to MP0352_10	Whitney and Cody	1948	Long section; level plans of 200, 400, 600, 800, 100, 1200, 1400 and 1800 ft. Levels
Hoyle Mining Co. Ltd.	MP0353	11	MP0353_1 to MP0353_11	Whitney and Cody	1939 to 1948	Level plans of 200, 400, 600, 800, 1200 and 1600 ft. Levels; composite plan map

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Pamour Porcupine Mines Limited, Hughes Porcupine Mine and North Whitney Mines Limited	MP0354	7	MP0354_1 to MP0354_7	Whitney	1912 to 1976	Maps showing claims 13096 and 13097
North Whitney Mines Limited	MP0355	4	MP0355_1 to MP0355_4	Whitney	1940	Plan and section underground map; map of underground workings;
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0356	7	MP0356_1 to MP0356_7	Tisdale and Whitney	1959 to 1974	Level plans 1600, 1800, 2400 and 3375; surface plan map; long section
Pamour Porcupine Mines Limited	MP0357	5	MP0357_1 to MP0357_5	Whitney	1973 to 1974	Level plans 200, 400, 800 and 2000; long section
Pamour Porcupine Mines Limited	MP0358	1	MP0358_1	Tisdale	1973	Long section
Mcintyre Mines Limited and Pamour Porcupine Mines Limited	MP0359	3	MP0359_1 to MP0359_3	Tisdale and Whitney	1955 to 1973	Level plans 2000 and 2200; surface plan
Pamour Porcupine Mines Limited	MP0360	4	MP0360_1 to MP0360_4	Tisdale	1972 to 1974	Surface plan; level plans 200, 2400 and 2800
Pamour Porcupine Mines Limited	MP0361	4	MP0361_1 to MP0361_5	Tisdale and Whitney	1974	Level plans 800, 1000, 1200, 1400 and 1800
Pamour Porcupine Mines Limited	MP0362	5	MP0362_1 to MP0362_5	Tisdale and Whitney	1973 to 1974	Level plans 600, 1000, 1200, 1400 and 1600
Pamour Porcupine Mines Limited	MP0363	9	MP0363_1 to MP0363_9	Tisdale and Whitney	1973 to 1974	Level plans 600, 2200, 2600, 2800, 3400 and miscellaneous inactive levels
Pamour Porcupine Mines Limited	MP0364	10	MP0364_1 to MP0364_10	Whitney	1977	Level plans 100, 200, 1600, 1800, 2000, 2200, 2400, 2600, 2800, 2900, 3000 and 3100 of shaft 3
Pamour Porcupine Mines Limited	MP0365	8	MP0365_1 to MP0365_9	Whitney	1977	Surface plan showing buildings and tailing dams; long sections; level plans 400, 600, 800, 1200 and 1400
Pamour Porcupine Mines Limited	MP0366	7	MP0366_1 to MP0366_7	Whitney	1977 to 1979	Level plans 400, 600, 1000, 1600, 2600, 2900 and 3100
Pamour Porcupine Mines Limited	MP0367	3	MP0367_1 to MP0367_3	Whitney	1968	Level plans 100, 200, 800 and 1200
Pamour Porcupine Mines Limited	MP0368	7	MP0368_1 to MP0368_7	Whitney	1971 to 1979	Long projection of vein 51 east showing stopes; level plans 1000, 14000 and 2600; surface plan
Pamour Porcupine Mines Limited	MP0369	5	MP0369_1 to MP0369_5	Whitney		Level plans 1600, 1800, 2000, 2200 and 2400
Pamour Porcupine Mines Limited	MP0370	4	MP0370_1 to MP0370_4	Tisdale		Level plans 100, 200, 1000, 1200 and 1400

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Pamour Porcupine Mines Limited	MP0371	7	MP0371_1 to MP0371_8	Tisdale		Level plans 600, 800, 2800, 2900, 3000 and 31000; long section and long projection of no. 51 east vein showing stopes
Pamour Porcupine Mines Limited	MP0372	3	MP0372_1 to MP0372_3	Whitney	1977 to 1979	Level plan of inactive levels; surface plan showing buildings
Pamour Porcupine Mines Limited	MP0373	5	MP0373_1 to MP0373_5	Whitney	1979	Level plans 1800, 2000, 2200, 2400 and 2800
Porcupine United Mines	MP0374	1	MP0374_1	Tisdale		Composite map
Porcupine United Mines	MP0375	1	MP0375_1	Tisdale		Composite map
Porcupine Lake Gold Mining Company	MP0376	9	MP0376_1 to MP0376_10	Whitney	1914 to 1940	Surface and underground composite maps; service plan, plan of underground working at 280 level;
Porcupine Keora Mining Company Limited	MP0377	2	MP0377_1 to MP0377_2	Whitney	1920 to 1925	Section plan; Level plans 102, 147 and 195 of claims LO 357 and LO 358
Scottish Ontario Mines and Canusa Mine	MP0378	1	MP0378_1	Whitney	1912	Mine plan
Paymaster Consolidated Mines	MP0379	9	MP0379_1 to MP0379_11	Tisdale	1952 to 1956	Level plans 60, 100, 120, 180, 200, 300 and 2575; geological section map
Paymaster Consolidated Mines	MP0380	10	MP0380_1 to MP0380_10	Tisdale	1955	Level plans 400, 500, 525, 600, 675, 1050, 1200, 12225 and 1325
Paymaster Consolidated Mines	MP0381	11	MP0381_1 to MP0381_11	Tisdale	1955	Level plans 600, 675, 750, 800, 900, 1050, 2700, 2825, 2950 and 3075
Paymaster Consolidated Mines	MP0382	10	MP0382_1 to MP0382_10	Tisdale	1955	Level plans 2075, 2200, 2325, 2450 and 2575
Paymaster Consolidated Mines	MP0383	6	MP0383_1 to MP0383_6	Tisdale	1955	Level plans 1400, 1450, 1757, 1740 and 1910
Dome Mines Limited	MP0384	4	MP0384_1 to MP0384_4	Tisdale	1960	Surface plan and levels plans first, third and fifth levels, showing shafts two and 3
Dome Mines Limited	MP0385	4	MP0385_1 to MP0385_4	Tisdale	1960	Level plan for fourteenth, fifteenth, sixteenth and seventeenth levels
Dome Mines Limited	MP0386	4	MP0386_1 to MP0386_4	Tisdale	1960	Level plan for levels 28 showing shaft 6, 29, 12 showing shaft 3 and the southern portion of the twenty third level
Dome Mines Limited	MP0387	5	MP0387_1 to MP0387_5	Tisdale	1960	Level plans 19, 20, 21 and 22
Dome Mines Limited	MP0388	5	MP0388_1 to MP0388_5	Tisdale	1960	Level plans 10, 11 showing shaft 3 and 18; plan showing Dome and Paymaster boundary of shaft 3
Dome Mines Limited	MP0389	5	MP0389_1 to MP0389_5	Tisdale	1960	Sixth, seventh eighth, ninth and twenty-third level plans
Dome Mines Limited	MP0390	4	MP0390_1 to MP0390_4	Tisdale	1960 to 1971	Thirty-sixth, thirty-seventh level plans showing shaft 7; twenty-third and twenty fourth level plans
Dome Mines Limited	MP0391	5	MP0391_1 to MP0391_5	Tisdale	1960 to 1971	Tenth, twelfth, twenty-fifth, twenty-sixth and thirty-fifth level plans
Dome Mines Limited	MP0392	4	MP0392_1 to MP0392_4	Tisdale	1974	Seventeenth, eighteenth, twentieth and thirtieth level plans showing no. 6 shaft and no. 5 winze

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Dome Mines Limited	MP0393	4	MP0393_1 to MP0393_4	Tisdale		Tenth, eleventh, sixteenth and twenty-third level plans showing No. 6 shaft
Dome Mines Limited	MP0394	5	MP0394_1 to MP0394_5	Tisdale	1960 to 1974	Fourteenth, fifteenth, twenty-third and twenty-seventh level plans
Dome Mines Limited	MP0395	4	MP0395_1 to MP0395_4	Tisdale		Thirteenth, nineteenth, twenty-first and twenty-second level plans showing no. 4 Winze
Dome Mines Limited	MP0396	7	MP0396_1 to MP0396_7	Tisdale	1960 to 1975	Section maps of no. 3, no. 5 and no. 6 as well as no. 5 winze; twelfth, thirteenth and twenty-ninth level plans
Hollinger Consolidated Gold Mines	MP0397	3	MP0397_1 to MP0397_3	Whitney	1968	Level plans 3350, 3500 and 3950 ft.
Hollinger Consolidated Gold Mines	MP0398	4	MP0398_1 to MP0398_4	Whitney	1968	Level plans for 2900, 3050, 3200 and 4550 ft. levels
Hollinger Consolidated Gold Mines	MP0399	3	MP0399_1 to MP0399_3	Whitney	1968	Level plans for 2000, 2450 and 5300 ft. Levels
Hollinger Consolidated Gold Mines	MP0400	4	MP0400_1 to MP0400_4	Whitney	1968	Level plans for 1850, 2150, 2300 and 5450 ft. Levels
Hollinger Consolidated Gold Mines	MP0401	5	MP0401_1 to MP0401_5	Whitney	1968	Level plans for 1400, 4700, 4850, 5000 and 5150 ft. Levels
Hollinger Consolidated Gold Mines	MP0402	4	MP0402_1 to MP0402_4	Whitney	1968	Level plans 3650, 3800, 4100 and 4250 ft. Levels
Hollinger Consolidated Gold Mines	MP0403	2	MP0403_1 to MP0403_2	Whitney	1968	Level plans 1550 and 2600 ft. Levels
Hollinger Consolidated Gold Mines	MP0404	3	MP0404_1 to MP0404_3	Tisdale and Whitney	1968	Long section J; level plans for 2750 and 4400 ft. Levels
Hollinger Consolidated Gold Mines and Kam-Kotia Gold Mines	MP0405	1	MP0405_1	Robb	1928	Level plan for 150 ft. Level
Mattagami Lake Gold Mine	MP0406	1	MP0406_1	Tisdale	1977	Surface plan
Argor Exploration Limited	MP0407	1	MP0407_1	South Bluff Creek	1968	Cross cut map and map showing Alpha B shaft
Kam-Kotia Mines Limited	MP0408	2	MP0408_1 to MP0408_2	Robb	1973	Location plan and longitudinal section maps
Rideout River Claims	MP0409	1	MP0409_1	Cunningham	1910	Topography map of claims
Mcintyre Porcupine Mines Limited	MP0410		MP0410_1	Tisdale		Composite level plan
Quebec Sturgeon Mines and St. Andrews Gold Fields	MP0411	7	MP0411_1 to MP0411_7	Stock		Map showing overburden depths; surface plan and map of relative surface contours; section maps looking northwest, northeast and north; level plan of 200 ft. Level;

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Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Rundle Mines Limited Novamin Resources Limited	MP0412	15	MP0412_1 to MP0412_15	Newton	1987	Collar house power distribution plan; appendix; surface and unground single line diagrams; surface cable routing plan; hoist schematic; hoist wire diagrams; shaft schematic and wiring diagrams; hoist house lighting plan and equipment layout; claim location map
Mcintyre Porcupine Mines Limited and Pamour Porcupine Mines Limited	MP0413	5	MP0413_1 to MP0413_5	Tisdale		Level plans for 50, 100 and 200 ft. Levels
Mcintyre Porcupine Mines Limited and Pamour Porcupine Mines Limited	MP0414	6	MP0414_1 to MP0414_6	Tisdale		Level plans for 900, 1000 and 1125 ft. Levels
Mcintyre Porcupine Mines Limited and Pamour Porcupine Mines Limited	MP0415	6	MP0415_1 to MP0415_6	Tisdale		Level plans for 600, 700 and 800 ft. Levels
Mcintyre Porcupine Mines Limited and Pamour Porcupine Mines Limited	MP0416	6	MP0416_1 to MP0416_6	Tisdale		Level plans for 300, 400 and 500 ft. Levels
Mcintyre Porcupine Mines Limited and Pamour Porcupine Mines Limited	MP0417	6	MP0417_1 to MP0417_6	Tisdale		Level plans for 1250, 1375 and 1500 ft. Levels
Pamour Porcupine Mines Limited	MP0418	6	MP0418_1 to MP0418_6	Tisdale		Level plan for 1675, 1750, 1875, 200, 2125 and 2250 ft. Levels
Pamour Porcupine Mines Limited	MP0419	6	MP0419_1 to MP0419_6	Tisdale		Level plans for 2375, 2500, 2625, 2750, 2875 and 3000 ft. Levels
Pamour Porcupine Mines Limited	MP0420	6	MP0420_1 to MP0420_6	Tisdale		Level plans for 3125, 3250, 3375, 3500, 3625 and 3750 ft. Levels
Pamour Porcupine Mines Limited	MP0421	6	MP0421_1 to MP0421_6	Tisdale		Level plans for 3875, 4025, 4175, 4325, 4475 and 4625 ft. Levels
Pamour Porcupine Mines Limited	MP0422	5	MP0422_1 to MP0422_5	Tisdale		Level plans for 4775, 4925, 5075, 5225 and 5375 ft. Levels
Mcintyre Porcupine Mines Limited and Pamour Porcupine Mines Limited	MP0423	5	MP0423_1 to MP0423_5	Tisdale		Level plans for 5525, 5675 and 5825 ft. Levels

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Mcintyre Porcupine Mines Limited and Pamour Porcupine Mines Limited	MP0424	6	MP0424_1 to MP0424_6	Tisdale		Level plans for 5975, 6125, 6275 and 6425 ft. Levels
Mcintyre Porcupine Mines Limited and Pamour Porcupine Mines Limited	MP0425	6	MP0425_1 to MP0425_6	Tisdale		Level plans 6575, 6700, 6825 and 6975 ft. Levels
Mcintyre Porcupine Mines Limited and Pamour Porcupine Mines Limited	MP0426	6	MP0426_1 to MP0426_7	Tisdale		Level plans for 7125, 7275, 7425, 7575, 7725 and 7875 ft. Levels
Imperial Working	MP0427	1	MP0427_1	Ogden	1946	Map of Imperial Working' Chishol Claims showing the Imperial Shaft
Desantis Porcupine Mines Limited	MP0428	1	MP0428_1	Ogden	1940	Workings plan
Kenilworth Mines Limited	MP0429	1	MP0429_1	Deloro	1965	Level plan of 200 ft. Level
Kam-Kotia Mines Limited	MP0430	4	MP0430_1 to MP0430_4	Robb	1972 to 1973	Level plans for no. one, two three, four and five Levels
Kam-Kotia Mines Limited	MP0431	4	MP0431_1 to MP0431_4	Robb	1973	Level plans for no. five, six, seven, eight and nine Levels
Kam-Kotia Mines Limited	MP0432	4	MP0432_1 to MP0432_4	Robb	1972	Level plans no. one, two, three, four, nine and ten levels showing composite section looking north
Kam-Kotia Mines Limited	MP0433	4	MP0433_1 to MP0433_4	Robb	1972	Level plans for no. four, five, six, seven and eight Levels including composite section looking north
Kam-Kotia Mines Limited	MP0434	3	MP0434_1 to MP0434_3	Robb	1944	Level plans for 150 ft. and no. Eight, nine and ten Levels including composite section looking north
Kam-Kotia Mines Limited	MP0435	6	MP0435_1 to MP0435_6	Robb	1944 to 1974	Plan of final pit operations; 100 ore pass raise, 200 escape and vent raise, and 101-67 escape raise plans; 101 B stope extension; collar of no. one shaft
Kam-Kotia Mines Limited	MP0436	2	MP0436_1 to MP0436_2	Robb	1944 to 1972	Surface map; area geology map showing the location of surface diamond drill holes
Campbell Red Lake Mines Detour Lake Joint Venture	MP0439	2	MP0439_1 to MP0439_2	Sunday Lake Area	1980	Reagent preparation and utilities flow sheets
Pamour Porcupine Mines Limited	MP0440	3	MP0440_1 to MP0440_3	Whitney	1977	Vertical longitudinal projection of ore reserves blocks for Pamour-Hoyle; geological pl of 1800 ft. level of the eastern side of Pamour and adjacent properties
Mining Corporation of Canada Limited	MP0441	21	MP0441_1 to MP0441_21	Tisdale	1988	Assorted colour photos of vent raise and shaft cap, portal no. 1 shaft, no cone shaft, horseshoe shaft and vert shaft
Dome Mines Limited	MP0442	5	MP0442_1 to MP0442_5	Tisdale	1987	Process flowsheet for tailings and backfill preparation; process flowsheet for electrowinning, refinery and utilities; process flowsheet for carbon stripping and reactivation; process flowsheet for leaching and carbon-in-pulp (CIP) process

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Dome Mines Limited	MP0443	9	MP0443_1 to MP0443_9	Tisdale	1986 to 1987	Ground floor plans at 1025'-7.5", 1037' and 1048'-3" Levels; general arrangement of mill building, sections A-A, B-B, C-C, D-D, E-E, F-F, G-G and H-H; plan and section of slimes thickener
Dome Mines Limited	MP0444	4	MP0444_1 to MP0444_4	Tisdale	1987	Ground floor plan of existing mill buildings; operational floor plan at 1014'-6", 1023'-10.5", 1028'-10.5", 1043'-1.5" and 1017'-7.5" Levels; sections A-A, B-B and C-C;
Dome Mines Limited	MP0445	2	MP0445_1 to MP0445_2	Tisdale	1987	Structural notes and definitions
Dome Mines Limited	MP0446	2	MP0446_1 to MP0446_3	Tisdale	1987	structural construction concrete notes and grounding layout
Dome Mines Limited	MP0447	6	MP0447_1 to MP0447_6	Tisdale	1987	Ground floor plan, upper floor plan, roof plan, section A-A; architectural elevations
Dome Mines Limited	MP0448	3	MP0448_1 to MP0448_3	Tisdale	1987	Building foundation plan; footing and pier schedule concrete and reinforcement details; wall elevation concrete reinforcement details
Dome Mines Limited	MP0449	4	MP0449_1 to MP0449_4	Tisdale	1987	Wall elevation concrete reinforcement details, build found section details; cement storage silo foundation concrete reinforcement details
Dome Mines Limited	MP0450	4	MP0450_1 to MP0450_4	Tisdale	1987	Mill expansions plans for the roof, anchor bold, crane runway and elevation on lines no. four and six
Dome Mines Limited	MP0451	3	MP0451_1 to MP0451_3	Tisdale	1987	Elevation on lines 8A, 2A, M, T, K, U, R, P1 and 2B; floor plans at 1025 to 1030 ft. Levels
Dome Mines Limited	MP0452	3	MP0452_1 to MP0452_3	Tisdale	1987	Floor plans at 1037,1048 and 1052 ft. Levels; Stair details
Dome Mines Limited	MP0453	2	MP0453_1 to MP0453_2	Tisdale	1987	Structural steel housing over leach tank plans
Dome Mines Limited	MP0454	3	MP0454_1 to MP0454_3	Tisdale	1987	Structural steel housing over leach tank plans; modification to existing mill line J
Campbell Red Lake Mines Detour Lake Joint Venture	MP0455	4	MP0455_1 to MP0455_5	Sunday Lake Area	1981	General site plan; building location plan; crusher and grinder flowsheet; gold cyanide carbon-in-pulp (CAP) flowsheet
Campbell Red Lake Mines Detour Lake Joint Venture	MP0456	4	MP0456_1 to MP0456_4	Sunday Lake Area	1980	Gold recovery from carbon stripping flowsheet copper recovery circuit flowsheet; utilities flowsheet; reagent preparation flowsheet
Campbell Red Lake Mines Detour Lake Joint Venture	MP0457	5	MP0457_1 to MP0457_5	Sunday Lake Area	1981 to 1982	Heat, ventilation and air-conditioning flow diagram; pipe layout in boiler room plans and sections; wash and rinse reactivating kiln plans; bullion furnace ducts and fans plan; dust containment system and reagent mixing ductwork plans and sections
Campbell Red Lake Mines Detour Lake Joint Venture	MP0458	4	MP0458_1 to MP0458_4	Sunday Lake Area	1980 to 1981	Concentrator ground floor, operations floor and upper floor plans; gold processing plant general plan
Campbell Red Lake Mines Detour Lake Joint Venture	MP0459	3	MP0459_1 to MP0459_3	Sunday Lake Area	1981	Concentrator sections A-A, B-B, C-C, D-D, E-E, F-F and G-G
CAMPBELL RED LK MNS	MP0460	3	MP0460_1 to MP0460_3	Sunday Lake Area	1981 to 1982	Concentrator floor plan; pre-leach thick pump hose; chorine handling and storage building plans and sections

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Campbell Red Lake Mines Detour Lake Joint Venture	MP0461	4	MP0461_1 to MP0461_4	Sunday Lake Area	1981 to 1982	Crusher building plans and sections; administration, laboratory and gate house building elevations; ground floor and second floor plans
Campbell Red Lake Mines Detour Lake Joint Venture	MP0462	3	MP0462_1 to MP0462_3	Sunday Lake Area	1981	Interbuilding galleries conveyor geometry plan and sections; ore storage in and feed and discharge plans and sections
Campbell Red Lake Mines Detour Lake Joint Venture	MP0463	3	MP0463_2 to MP0463_4	Sunday Lake Area	1981 to 1982	warehouse and shop vent flow diagram; administration, laboratory and gatehouse buildings flow diagram; heat and ventilation floor plans
Aunor Gold Mines Limited	MP0464	6	MP0464_1 to MP0464_6	Deloro	1960	Level plans for 875-1000, 1125-1250, 1375-1500, 1625-1875, 1725-1875 and 2000-2125 ft. Levels
Aunor Gold Mines Limited	MP0465	6	MP0465_1 to MP0465_6	Deloro		Ventilation plans for 125, 250, 275, 500, 625 and 750 ft. Levels
Aunor Gold Mines Limited	MP0466	6	MP0466_1 to MP0466_6	Deloro		Ventilations plans for 875, 1000, 1125, 1250, 1375 and 1500 ft. Levels
Aunor Gold Mines Limited	MP0467	4	MP0467_1 to MP0467_4	Deloro	1972	Ventilation plans for 1625, 1750, 1875 and 2000 ft. Levels
Aunor Gold Mines Limited	MP0468	7	MP0468_1 to MP0468_7	Deloro	1972	Ventilation plans 2125, 2250, 2300, 2375, 2500, 2600 and 2700 ft. Level s
Aunor Gold Mines Limited	MP0469	6	MP0469_1 to MP0469_6	Deloro	1972	Ventilation plans 2900, 3000, 3100, 3250 and 3300 ft. Levels
Aunor Gold Mines Limited	MP0470	7	MP0470_1 to MP0470_7	Deloro	1972	Ventilation plans 3375, 3500, 3625, 3750, 3875, 4000 and 4125 ft. Levels
Aunor Gold Mines Limited	MP0471	7	MP0471_1 to MP0471_7	Deloro	1974 to 1976	Ventilation plans 4225, 4300, 4525, 4600 4825, 4975 and 5250 ft. Levels
Aunor Gold Mines Limited	MP0472	4	MP0471_1 to MP0471_4	Deloro	1964 to 1981	Mine note; 675 and 750 ft. Levels plan and sections; surface plan; schematic composite projection through the ore zone;
Aunor Gold Mines Limited	MP0473	11	MP0473_1 to MP0473_11	Deloro	1969	Level plans for 625-750, 750-875, 1000-1125, 1125-1250, 1250-1375, 1375-1500, 1500-1625, 1625-1875, 1725-1875 and 1875-2000 ft. Levels
Aunor Gold Mines Limited	MP0474	6	MP0474_1 to MP0474_6	Deloro	1969	Level plans for 2000-2125, 2125-2300, 2300-2500, 2500-2700 and 2500-2700 ft Levels; ventilation plans for 2700-2900 and 2900-3100 ft. Levels
Aunor Gold Mines Limited	MP0475	6	MP0475_1 to MP0475_6	Deloro	1969	Ventilation plans for 3100-3300, 3300-3500, 3500-3625, 3625-3750, 3750-3875 and 3875-4000 ft. Levels
Aunor Gold Mines Limited	MP0476	6	MP0476_1 to MP0476_6	Deloro	1969	Diagram of diamond drill home s for new hydraulic backfill system for shaft no. two, showing 800, 1250, 1500 and 2000 ft. Levels
Aunor Gold Mines Limited	MP0477	3	MP0477_1 to MP0477_3	Deloro	1969	Long sections of stopes A, B and c
Argor Exploration Limited	MP0479	1	MP0479_1	South Bluff Creek	1968	Project terrain Alpha B shaft and crosscut plan and section
Aquarius Porcupine Gold Mines and Asarco Aquarius Mine	MP0480	8	MP0480_1 to MP0480_8	Macklem	1989	Level plans for 400 and 525 ft. Level of Block O, 525 ft. Level of Block 1N, 525 ft. Level of Block 1E; Cross

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Aunor Gold Mines Limited	MP0482	13	MP0482_1 to MP0482_13	Deloro	1967 to 1968	Composite section through the ore body; level plans for 625-750, 750-875, 1000-1125, 1250-1375, 1500-1625 and 1875-2000, 2125-2300 and 2500-2700 ft. Levels; ventilation plans for 2900-3100, 3300-3500, 3625-3750 and 3875-4000 ft. Levels
Buffalo Ankerite Gold Mines Limited	MP0483	3	MP0483_1 to MP0483_3	Deloro	1951	Longitudinal section showing shafts, winzes and escape ways; geology at 725 and 2000 ft. Levels
Buffalo Ankerite Gold Mines Limited	MP0484	3	MP0484_1 to MP0484_3	Deloro	1951 to 1952	Geology at 1075, 1250 and 1400 ft. Levels
Buffalo Ankerite Gold Mines Limited	MP0485	3	MP0485_1 to MP0485_3	Deloro	1952	Geology at 1500 and 1700 ft. Levels
Buffalo Ankerite Gold Mines Limited	MP0486	3	MP0486_2 to MP0486_4	Deloro	1951	Geology at 1850, 2200 and 2350 ft. Levels
Buffalo Ankerite Gold Mines Limited	MP0487	3	MP0487_1 to MP0487_3	Deloro	1951	Geology at 2500, 2650 and 2800 ft. Levels
Buffalo Ankerite Gold Mines Limited	MP0488	3	MP0488_1 to MP0488_4	Deloro	1951	Geology at 2950, 3100 and 2350 ft. Levels
Buffalo Ankerite Gold Mines Limited	MP0489	4	MP0489_1 to MP0489_4	Deloro	1951	Geology at 3450, 3600, 3750 and 3900 ft. Levels
Broulan Reef Mines Limited	MP0490	1	MP0490_1	Tisdale	1965	Surface plan
Broulan Reef Mines Limited	MP0491	4	MP0491_1 to MP0491_4	Whitney	1952	Composite plan and elevation of workings; diamond drill hole and assay plan at 173, 273 and 398 ft. Levels
Broulan Reef Mines Limited	MP0492	5	MP0492_1 to MP0492_5	Whitney	1952	Level plan of east and west sections of 523 ft. (no. four) Level
Broulan Reef Mines Limited	MP0493	3	MP0493_1 to MP0493_3	Whitney	1952	Level plans of 630 ft. Level showing no. one shaft at the 650 and 755 ft. Levels showing no. one winze
Broulan Reef Mines Limited	MP0494	1	MP0494_1	Whitney	1962	DD plan of block RVIII-4 southwest at the 1870 ft. Level
Broulan Reef Mines Limited	MP0495	1	MP0495_1	Whitney	1962	DD plan of block RVIII-4 southwest at the 1870 ft. Level
Broulan Reef Mines Limited	MP0496	1	MP0496_1	Whitney	1962	DD plan of block RVIII-4 northeast at the 1870 ft. Level
Broulan Reef Mines Limited	MP0497	1	MP0497_1	Whitney	1962	DD plan of block RVIII-5 southwest at the 1870 ft. Level
Broulan Reef Mines Limited	MP0498	1	MP0498_1	Whitney	1962	DD plan of block RVIII-3 northwest at the 1870 ft. Level
Broulan Reef Mines Limited	MP0499	1	MP0499_1	Whitney	1962	DD plan of block RVIII-3 northeast at the 1870 ft. Level
Broulan Reef Mines Limited	MP0500	1	MP0500_1	Whitney	1962	DD plan of block RV-3 northwest at the 1870 ft. Level
Broulan Reef Mines Limited	MP0501	1	MP0501_1	Whitney	1962	DD plan of block RVI-4 southwest at the 1870 ft. Level
Broulan Reef Mines Limited	MP0502	1	MP0502_1	Whitney	1962	DD plan of block RVIII-4 southwest at the 1870 ft. Level
Hugh-Pam Porcupine Mines Limited	MP0503	1	MP0503_1	Whitney	1962	DD plan of block RVI-4 southeast at the 2050 ft. Level

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Hugh-Pam Porcupine Mines Limited	MP0504	1	MP0504_1	Whitney	1962	DD plan of block RVI-4 southwest at the 2050 ft. Level
Hugh-Pam Porcupine Mines Limited	MP0505	1	MP0505_1	Whitney	1962	DD plan of block RV-3 northeast at the 2050 ft. Level
Hugh-Pam Porcupine Mines Limited	MP0506	1	MP0506_1	Whitney	1962	DD plan of block RVI-3 northwest at the 2050 ft. Level
Broulan Reef Mines Limited	MP0507	1	MP0507_1	Whitney	1962	DD plan of block RVII-4 southwest at the 2050 ft. Level
Hugh-Pam Porcupine Mines Limited	MP0508	1	MP0508_1	Whitney	1962	DD plan of block RVI-3 northwest at the 2200 ft. Level
Broulan Reef Mines Limited	MP0509	1	MP0509_1	Whitney	1962	DD plan of block RVI-4 southwest at the 2200 ft. Level
Hugh-Pam Porcupine Mines Limited	MP0510	1	MP0510_1	Whitney	1962	DD plan of block RV-3 northwest at the 2200 ft. Level
Hugh-Pam Porcupine Mines Limited	MP0511	1	MP0511_1	Whitney	1962	DD plan of block RV-3 northeast at the 2350 ft. Level
Broulan Reef Mines Limited	MP0512	1	MP0512_1	Whitney	1962	DD plan of block RVII-4 southwest 2350 ft. Level
Hugh-Pam Porcupine Mines Limited	MP0513	1	MP0513_1	Whitney	1962	DD plan of block RVI-4 southeast 2350 ft. Level
Hugh-Pam Porcupine Mines Limited	MP0514	1	MP0514_1	Whitney	1962	DD plan of block RVI-4 southwest at the 2350 ft. Level
Hugh-Pam Porcupine Mines Limited	MP0515	1	MP0515_1	Whitney	1962	DD plan of block RVI-3 northwest at the 2350 ft. Level
Broulan Reef Mines Limited	MP0516	1	MP0516_1	Whitney	1962	DD plan of block RVI-4 southwest at the 2500 ft. Level
Broulan Reef Mines Limited	MP0517	1	MP0517_1	Whitney	1962	DD plan of block RVIII-5 southeast at the 2500 ft. Level
Broulan Reef Mines Limited	MP0518	1	MP0518_1	Whitney	1962	DD plan of block RVIII-4 northwest at the 2500 ft. Level
Broulan Reef Mines Limited	MP0519	1	MP0519_1	Whitney	1962	DD plan of block RVII-4 southeast at the 2500 ft. Level
Broulan Reef Mines Limited	MP0520	1	MP0520_1	Whitney	1962	DD plan of block RVIII-5 southwest at the 2500 ft. Level
Broulan Reef Mines Limited	MP0521	1	MP0521_1	Whitney	1962	DD plan of block RVII-4 southeast at the 2500 ft. Level
Broulan Reef Mines Limited	MP0522	1	MP0522_1	Whitney	1962	DD plan of block RVIII-4 northeast at the 2500 ft. Level
Broulan Reef Mines Limited	MP0523	1	MP0523_1	Whitney	1962	DD plan of block RVI-3 northeast at the 2500 ft. Level
Broulan Reef Mines Limited	MP0524	1	MP0524_1	Whitney	1962	DD plan of block RVII-4 northeast at the 2500 ft. Level
Broulan Reef Mines Limited	MP0525	1	MP0525_1	Whitney	1962	DD plan of block RVII-4 northwest at the 2500 ft. Level
Broulan Reef Mines Limited	MP0526	1	MP0526_1	Whitney	1962	DD plan of block RVI-3 northwest at the 2500 ft. Level
Broulan Reef Mines Limited	MP0527	1	MP0527_1	Whitney	1962	DD plan of block RIX-5 northwest at the 2500 ft. Level

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Broulan Reef Mines Limited	MP0528	1	MP0528_1	Whitney	1962	DD plan of block RVIII-5 northeast at the 2500 ft. Level
Broulan Reef Mines Limited	MP0529	1	MP0529_1	Whitney	1962	DD plan of block RIX-5 southwest at the 2500 ft. Level
Broulan Reef Mines Limited	MP0530	1	MP0530_1	Whitney	1962	DD plan of block RVI-4 southeast at the 2500 ft. Level
Broulan Reef Mines Limited	MP0531	1	MP0531_1	Whitney	1962	DD plan of blocks RVI-4 southeast and RVII-4 southwest at the 2540 ft. Sub Level
Hugh-Pam Porcupine Mines Limited	MP0532	1	MP0532_1	Whitney	1962	DD plan of blocks RV-3 northeast and RVII-4 southwest at the 2600 ft. Sub Level
Broulan Reef Mines Limited	MP0533	1	MP0533_1	Whitney	1962	DD plan of blocks RVI-4 southeast and RVII-4 southwest at the 2650 ft. Level
Canadian Jamieson Mine	MP0534	2	MP0534_1 to MP0534_2	Godfrey	1970	Long and cross section showing surface elevation and 1-N-1 stope; longitudinal section U-30
Canadian Johns-Manville Company Limited; Johns-Manville Company Limited; Johns-Manville Mining and Trading Limited	MP0535	6	MP0535_1 to MP0535_6	Penhorwood and Reeves	1949 to 1974	Proposed location for access road, plant site and mine site; map of service building roof plan and flashing details; building plans and elevations showing the structural steel layout; location of explosives and service buildings of Reeves Mine
Johns-Manville Mines Limited	MP0536	11	MP0536_1 to MP0536_11	Penhorwood	1974 to 1975	Plans and elevations showing dust cover and hood, secondary crusher dust control back filter, fine grinding process dust control, clean air plenum, bag filter down comer and dust control duct layout; annual report
Broulan Reef Mines Limited	MP0537	1	MP0537_1	Whitney	1964	Composite level plan showing longitudinal section
Broulan Reef Mines Limited	MP0538	2	MP0538_1 to MP0538_2	Whitney	1964	Geological plan of 200 and 350 ft. Levels
Broulan Reef Mines Limited	MP0539	2	MP0539_1 to MP0539_2	Whitney	1964	Geological plan of 500 and 650 ft. Levels
Broulan Reef Mines Limited	MP0540	2	MP0540_1 to MP0540_2	Whitney	1964	Geological plan of 800 and 970 ft. Levels
Broulan Reef Mines Limited	MP0541	2	MP0541_1 to MP0541_2	Whitney	1964	Geological plan of 1120 and 1270 ft. Levels
Broulan Reef Mines Limited	MP0542	2	MP0542_1 to MP0542_2	Whitney	1964	Geological plan of 1420 and 1570 ft. Levels
Broulan Reef Mines Limited	MP0543	2	MP0543_1 to MP0543_2	Whitney	1964	Geological plan of 1720 and 1870 ft. Levels
Broulan Reef Mines Limited	MP0544	2	MP0544_1 to MP0544_2	Whitney	1964	Geological plan of 2050 and 2200 ft. Levels
Broulan Reef Mines Limited	MP0545	2	MP0545_1 to MP0545_2	Whitney	1964	Geological plan of 2350 and 2500 ft. Levels
Broulan Reef Mines Limited	MP0546	2	MP0546_1 to MP0546_2	Whitney	1964	Geological plan of 2500 and 2600 ft. Levels
Broulan Reef Mines Limited	MP0547	1	MP0547_1	Whitney	1964	Geological plan of 2650 ft. Level
Porcupine Reef Gold Mine	MP0548	2	MP0548_1 to MP0548_2	Whitney	1962	DD plan at 200 ft. Level of RV-4 southeast and RVI-4 southwest

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Porcupine Reef Gold Mine	MP0549	2	MP0549_1 to MP0549_2	Whitney	1962	DD plan at 350 ft. Level of RV-4 southeast and RVI-4 southwest
Porcupine Reef Gold Mine	MP0550	2	MP0550_1 to MP0550_2	Whitney	1962	DD plan at 500 ft. Level of RV-4 southeast and RVI-4 southwest
Porcupine Reef Gold Mine	MP0551	2	MP0551_1 to MP0551_2	Whitney	1962	DD plan at 500 and 650 ft. Levels of RVI-4 southeast
Porcupine Reef Gold Mine	MP0552	2	MP0552_1 to MP0552_2	Whitney	1962	DD plan at 500 and 650 ft. Level of RVI-4 southeast and southwest
Porcupine Reef Gold Mine	MP0553	2	MP0553_1 to MP0553_2	Whitney	1962	DD plan at 500 and 650 ft. Level of RVI-4 northeast and southwest
Porcupine Reef Gold Mine	MP0554	2	MP0554_1 to MP0554_2	Whitney	1962	DD plan at 650 and 800 ft. Levels of RVI-4 southeast
Porcupine Reef Gold Mine	MP0555	2	MP0555_1 to MP0555_2	Whitney	1962	DD plan at 800 ft. Level of RVI-4 southwest and RVII-4 southwest
Porcupine Reef Gold Mine	MP0556	2	MP0556_1 to MP0556_2	Whitney	1962	DD plan at 970 ft. Level of RVI-4 southwest and southeast
Hugh-Pam Porcupine Mines Limited	MP0557	2	MP0557_1 to MP0557_2	Whitney	1962	DD plan at 350 and 500 ft. Levels of RV-3 northeast
Hugh-Pam Porcupine Mines Limited	MP0558	2	MP0558_1 to MP0558_2	Whitney	1962	DD plan at 500 and 650 ft. Levels of RV-3 northwest
Hugh-Pam Porcupine Mines Limited	MP0559	2	MP0559_1	Whitney	1962	DD plan at 650 and 800 ft. Levels of RV-3 northeast
Hugh-Pam Porcupine Mines Limited	MP0560	2	MP0560_1 to MP0560_2	Whitney	1962	DD plan at 970 ft. Level of RVI-3 northwest and RVII-3 northwest
Hugh-Pam Porcupine Mines Limited	MP0561	2	MP0561_1 to MP0561_2	Whitney	1962	DD plan at 970 and 1120 ft. Levels of RV-3 northeast and RVI-3 northwest, respectively
Hugh-Pam Porcupine Mines Limited	MP0562	2	MP0562_1 to MP0562_2	Whitney	1962	DD plan at 1570 and 1720 ft. Levels of RVI-3 northwest and RV-3 northwest, respectively
Hugh-Pam Porcupine Mines Limited	MP0563	2	MP0563_1 to MP0563_2	Whitney	1962	DD plan at 1720 ft. Level of RVI-3 northwest and RV-3 northwest
Hugh-Pam Porcupine Mines Limited	MP0564	1	MP0564_1	Whitney	1962	DD plan at 650 ft. Level of RIV-3 northeast
Banner Porcupine Mines Limited	MP0565	1	MP0565_1	Whitney and Tisdale	1962	DD plan at 650 ft. Level
Bonetal Gold Mines Limited	MP0566	2	MP0566_1 to MP0566_2	Whitney	1962	DD plan at 800 ft. Level of RVII-4 northwest and 970 ft. Level of RVII-4 southwest
Bonetal Gold Mines Limited	MP0567	2	MP0567_1 to MP0567_2	Whitney	1962	DD plan at 970 ft. Level of RVII-4 northeast and northwest

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Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Bonetal Gold Mines Limited	MP0568	1	MP0568_1	Whitney	1962	DD plan at 970 ft. Level of RVII-4 southeast
Broulan Reef Mines Limited	MP0569	2	MP0569_1 to MP0569_2	Whitney	1962	DD plan at 970 ft. Level of RVII-3 northeast and 1120 ft. Level of RV-3 northeast
Broulan Reef Mines Limited	MP0570	1	MP0570_1	Whitney	1962	DD plan at 1270 ft. Level of RV-3 northeast
Broulan Reef Mines Limited	MP0571	2	MP0571_1 to MP0571_2	Whitney	1962	DD plan at 970 ft. Level of RVII-3 northeast and 500 ft. Level of RVII-4 northwest
Broulan Reef Mines Limited	MP0572	2	MP0572_1 to MP0572_2	Whitney	1962	DD plan at 1120 ft. Level of RVII-4 northwest and southwest
Broulan Reef Mines Limited	MP0573	2	MP0573_1 to MP0573_2	Whitney	1962	DD plan at 500 ft. Level of RVI-4 northeast and 970 ft. Level of RVIII-4 southwest
Broulan Reef Mines Limited	MP0574	2	MP0574_1 to MP0574_2	Whitney	1962	DD plan at 970 ft. Level of RVIII-4 northwest and 1120 ft. Level RVI-4 southeast
Broulan Reef Mines Limited	MP0575	2	MP0575_1 to MP0575_2	Whitney	1962	DD plan at 1120 ft. Level of RVI-4 southwest and 1270 ft. RVI-4 southwest
Broulan Reef Mines Limited	MP0576	2	MP0576_1 to MP0576_2	Whitney	1962	DD plan at 1270 ft. Level of RVI-3 northwest and RVI-4 southeast
Broulan Reef Mines Limited	MP0577	2	MP0577_1 to MP0577_2	Whitney	1962	DD plan at 1270 ft. RVII-4 southwest and northeast
Broulan Reef Mines Limited	MP0578	2	MP0578_1 to MP0578_2	Whitney	1962	DD plan at 1270 ft. Level of RVII-4 northwest and 1420 ft. Level of RVI-3 northwest
Broulan Reef Mines Limited	MP0579	2	MP0579_1 to MP0579_2	Whitney	1962	DD plan at 1420 ft. Level of RVI-4 southwest and RVII-4 southwest
Broulan Reef Mines Limited	MP0580	2	MP0580_1 to MP0580_2	Whitney	1962	DD plan at 1420 ft. Level of RVI-4 southeast and RVII-4 southeast
Broulan Reef Mines Limited	MP0581	2	MP0581_1 to MP0581_2	Whitney	1962	DD plan at 1570 ft. Level of RVII-4 southwest and RVI-4 southwest
Broulan Reef Mines Limited	MP0582	2	MP0582_1 to MP0582_2	Whitney	1962	DD plan at 1570 and 1720 ft. Levels of RVI-4 southeast
Broulan Reef Mines Limited	MP0583	2	MP0583_1 to MP0583_2	Whitney	1962	DD plan at 1720 ft. Level for RVI-4 southwest and 1720 ft. Level for RVII-4 southwest
Broulan Reef Mines Limited	MP0584	2	MP0584_1 to MP0584_2	Whitney	1962	DD hole plan at 1870 ft. Level of RVII-4 northwest RVI-4 southeast
Broulan Reef Mines Limited	MP0585	2	MP0585_1 to MP0585_2	Whitney	1962	DD hole plan at 1870 ft. Level of RVIII-4 northwest and RVIII-5 southeast
Broulan Reef Mines Limited	MP0586	2	MP0586_1 to MP0586_2	Whitney	1962	DD plan at 1870 ft. Level of RVII-4 northeast and southeast
Coniaurum Gold Mines Limited	MP0587	2	MP0587_1 to MP0587_2	Tisdale	1958 to 1961	Surface geology; level plan of 2450 ft. Level
Coniaurum Gold Mines Limited	MP0588	2	MP0588_1 to MP0588_2	Tisdale	1961	Level plans of 2250, 2300, 2500 and 2600 ft. Levels
Coniaurum Gold Mines Limited	MP0589	2	MP0589_1 to MP0589_2	Tisdale	1961	Surface geology and level plans of 400 and 500 ft. Level

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Coniaurum Gold Mines Limited	MP0590	2	MP0590_1 to MP0590_2	Tisdale	1961	Level plans for 1000 and 4000 ft. Levels
Coniaurum Gold Mines Limited	MP0591	2	MP0591_1 to MP0591_2	Tisdale	1961	Level plans for 3500 and 3750 ft. Levels
Coniaurum Gold Mines Limited	MP0592	2	MP0592_1 to MP0592_2	Tisdale	1961	Level plans for 4250 and 5000 ft. Levels
Coniaurum Gold Mines Limited	MP0593	2	MP0593_1 to MP0593_2	Tisdale	1961	Level plans for 3250 and 5250 ft. Levels
Coniaurum Gold Mines Limited	MP0594	2	MP0594_1 to MP0594_2	Tisdale	1961	Level plans for 2750 and 3000 ft. Levels
Coniaurum Gold Mines Limited	MP0595	2	MP0595_1 to MP0595_2	Tisdale	1961	Longitudinal projection and level plan for 1250 ft. Level
Coniaurum Gold Mines Limited	MP0596	2	MP0596_1 to MP0596_2	Tisdale	1961	Level plans for 4500 and 4750 ft. Levels
Coniaurum Gold Mines Limited	MP0597	2	MP0597_1 to MP0597_2	Tisdale	1961	Level plans for 700 and 5500 ft. Levels
Coniaurum Gold Mines Limited	MP0598	2	MP0598_1 to MP0598_2	Tisdale	1961	Level plans for 1500 and 1750 ft. Levels
Coniaurum Gold Mines Limited	MP0599	1	MP0599_1	Tisdale	1961	Level plan for 2000 Level
Carshaw Porcupine Mines Limited	MP0600	2	MP0600_1 to MP0600_2	Tisdale and Shaw	1950	Vertical section shaft and level plan for 125 ft. Level
Central Porcupine Mines Limited	MP0601	2	MP0601_1 to MP0601_2	Tisdale	1935 to 1937	Level plan for 1000 ft. Level
Aunor Gold Mines Limited and Delnite Mines Limited	MP0604	3	MP0604_1 to MP0604_3	Deloro	1963	Long section through ore body; section through 48000 west and 5000 west
Delnite mines Limited	MP0605	3	MP0605_3 to MP0605_6	Deloro	1963	Level plans for 150, 250 and 375 ft. Levels
Delnite mines Limited	MP0606	6	MP0606_1 to MP0606_6	Deloro	1963	Level plans for 500, 625, 750 and 875 ft. Levels
Delnite mines Limited	MP0607	6	MP0607_1 to MP0607_6	Deloro	1963	Level plans for 1000, 1125 and 1250 ft. Levels
Delnite mines Limited	MP0608	6	MP0608_1 to MP0608_6	Deloro	1963	Level plans for 1250, 1375, 1500 and 1625 ft. Levels
Delnite mines Limited	MP0609	6	MP0609_1 to MP0609_6	Deloro	1963	Level plans for 1750, 1875 and 2000 ft. Levels
Delnite mines Limited	MP0610	6	MP0610_1 to MP0610_6	Deloro	1963	Level plans for 2000, 2125, 2250, 2375 and 2500 ft. Levels
Delnite mines Limited	MP0611	6	MP0611_1 to MP0611_6	Deloro	1963	Level plans for 2500, 2625, 2750 and 2875 ft. Levels
Delnite mines Limited	MP0612	6	MP0612_1 to MP0612_6	Deloro	1963	Level plans for 3000, 3100, 3300 3125, 3250, 3375 and 3500 ft. Levels

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Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Delnite mines Limited	MP0613	6	MP0613_1 to MP0613_6	Deloro	1963	Level plans for 3625, 3750, 3875, 4000, 4125 and 4250 ft. Levels
Delnite mines Limited	MP0614	6	MP0614_1 to MP0614_6	Deloro	1963	Level plans for 4375, 4525, 4675, 4875, 4975, 5100 and 5250 ft. Levels
Delnite mines Limited	MP0615	5	MP0615_1 to MP0615_5	Deloro	1963	Level plans for 4975, 5100 and 5250 ft. Levels
Desantis Porcupine Mines Limited	MP0616	2	MP0616_1 to MP0616_2	Ogden	1942	East-West section map of vein; composite plan
Desantis Porcupine Mines Limited	MP0617	5	MP0617_1 to MP0617_5	Ogden	1942	Level plans for 200, 325, 450, 575 and 700 ft. Levels
Desantis Porcupine Mines Limited	MP0618	4	MP0618_1 to MP0618_4	Ogden	1942	Level plans for 800, 925, 1040 and 1175 ft. Levels
Detour Lake Joint Venture	MP0619	2	MP0619_1 to MP0619_2	Sunday Lake	1980	Development plan showing projected DD value and geology for the 400 ft. Level, completed to 100 and 120 metres
Dome Mines Limited	MP0620	2	MP0620_1 to MP0620_2	Tisdale	1971	Level plan of sixth and eighth Levels
Dome Mines Limited	MP0621	2	MP0621_1 to MP0621_2	Tisdale	1971	Level plans for tenth and twelfth Levels
Dome Mines Limited	MP0622	2	MP0622_1 to MP0622_2	Tisdale		Surface plan and level plan of first Level
Dome Mines Limited	MP0623	2	MP0623_1 to MP0623_2	Tisdale		Level plans of third and fifth Levels
Dome Mines Limited	MP0624	2	MP0624_1 to MP0624_2	Tisdale		Level plans of sixth and seventh Levels
Dome Mines Limited	MP0625	2	MP0625_1 to MP0625_2	Tisdale		Level plans of eight and ninth Levels
Pamour Porcupine Mines Limited	MP0626	3	MP0626_1 to MP0626_3	Whitney	1972	Longitudinal projection section facing north; surface plan; level plans of 100 and 200 ft. Levels
Pamour Porcupine Mines Limited	MP0627	3	MP0627_1 to MP0627_3	Whitney	1972	Level plans for 400, 600 and 800 ft. Levels
Pamour Porcupine Mines Limited	MP0628	2	MP0628_1 to MP0628_2	Whitney	1972	Level plans for 1000 and 1200 ft. Levels
Pamour Porcupine Mines Limited	MP0629	2	MP0629_1 to MP0629_2	Whitney	1972	Level plans for 1400 and 1600 ft. Levels
Pamour Porcupine Mines Limited	MP0630	2	MP0630_1 to MP0630_2	Whitney	1972	Level plans for 1800 and 2000 ft. Levels
Pamour Porcupine Mines Limited	MP0631	4	MP0631_1 to MP0631_4	Whitney	1972	Level plans for 2200, 2400 and 2600 ft. Levels

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Pamour Porcupine Mines Limited	MP0632	4	MP0632_1 to MP0632_4	Whitney	1972	Level plan of 2800 ft. Level east; Level plan of twenty-eight Level; level plans for active and inactive levels
Kam-Kotia Mines Limited	MP0633	4	MP0633_1 to MP0633_4	Robb	1963 to 1967	Longitudinal section north; level plans for One and Two Levels.
Kam-Kotia Mines Limited	MP0634	5	MP0634_1 to MP0634_5	Robb	1963 to 1969	Level plans for no. two, six, seven, eight and nine Levels
Kam-Kotia Mines Limited	MP0635	10	MP0635_1 to MP0635_10	Robb	1964 to 1974	Surface plan; main sump at 500 ft Level; 500 ft. cross cut at Fifth Level; 505 drift, 500 hoist room and station; section of raise bulkhead; escape raise section; ore pass raise; 101 B stope extension;
Kam-Kotia Mines Limited	MP0636	3	MP0636_1 to MP0636_3	Robb	1964 to 1965	Mechanical drawing showing reinforcing of temporary sump at the Fifth Level; no. one shaft deepening
Kam-Kotia Mines Limited	MP0637	5	MP0637_1 to MP0637_5	Robb	1966 to 1974	Mechanical drawings showing 205 drift bulkhead, temporary sump at no. ten Level, the main sump and concrete damn for the main sump at the 500 ft. Level, and the collar of no. one shaft
Kam-Kotia Mines Limited	MP0638	5	MP0638_1 to MP0638_5	Robb	1960 to 1970	Mechanical drawings of the powder magazine building, no. one shaft timbre for shaft deepening, no. one shaft dump doors; plan showing workplace accidents
Hollinger Consolidate gold Mines	MP0640	4	MP0640_1 to MP0640_4	Tisdale	1966	Level plans for 100, 200, 300 and 425 ft. Levels
Hollinger Consolidate gold Mines	MP0641	4	MP0641_1 to MP0641_4	Tisdale	1966	Level plans for 550, 675, 800 and 950 ft. Levels
Hollinger Consolidate gold Mines	MP0642	4	MP0642_1 to MP0642_4	Tisdale	1966	Level plans for 1100, 1250, 1400 and 1550 ft. Levels
Hollinger Consolidate gold Mines	MP0643	4	MP0643_1 to MP0643_4	Tisdale	1966	Level plans for 1700, 1850, 2000 and 2150 ft. Levels
Hollinger Consolidate gold Mines	MP0644	4	MP0644_1 to MP0644_4	Tisdale	1966	Level plans for 2300, 2450, 2600 and 2750
Hollinger Consolidate gold Mines	MP0645	4	MP0645_1 to MP0645_4	Tisdale	1966	Level plans for 2900, 3050, 3200 and 3350 ft. Levels
Hollinger Consolidate gold Mines	MP0646	4	MP0646_1 to MP0646_4	Tisdale	1966	Level plans for 3500, 3650, 3800 and 3950 ft. Levels
Hollinger Consolidate gold Mines	MP0647	4	MP0647_1 to MP0647_4	Tisdale	1966	Level plans for 4100, 4250, 4400 and 4550 Levels
Hollinger Consolidate gold Mines	MP0648	4	MP0648_1 to MP0648_4	Tisdale	1966	Level plans for 4700, 4850, 5000 and 5150 Levels

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Hollinger Consolidate gold Mines	MP0649	5	MP0649_1 to MP0649_5	Tisdale	1966	Level plans for 5300 and 5450 ft. Levels; shaft elevations, coordinates of claim corners; surface plan
Dome Mines Limited	MP0650	2	MP0650_1 to MP0650_2	Tisdale	1936	Composite plans
Dome Extension Mines Limited	MP0651		MP0651_1	Tisdale	1912	Mine workings at 100 and 200 ft. Levels
Faymar Porcupine Gold Mines	MP0653	3	MP0653_1 to MP0653_3	Deloro	1941 to 1942	Composite plans
Furness Gold Mines Limited	MP0654	1	MP0654_1	Deloro	1928	Part of claim No. 887
Gillies Lake Porcupine Gold Mines	MP0655	1	MP0655_1	Tisdale	1938	Composite plan
Porcupine United Mines	MP0656	1	MP0656_1	Tisdale		Plan of principle workings
Halcrow Swayze Mine	MP0657	5	MP0657_1 to MP0657_5	Halcrow	1933	Mine survey; assay plan at 270 and 354 ft. Levels; miscellaneous notes
Hayden Gold Mines Limited	MP0658	2	MP0658_1 to MP0658_2	Ogden	1917	North-south vertical cross section; mine plan showing 100, 200 and 300 ft. Levels
Goldhawk Porcupine Mines Limited	MP0659	1	MP0659_1	Cody	1947	Plan and longitudinal section
Hughes Porcupine Mine	MP0661	2	MP0661_1 to MP0661_2	Whitney		Claims no. 13096 and 13097; underground workings
Joburke Gold Mines Limited	MP0662	4	MP0662_1 to MP0662_4	Keith	1975	Level plans for 85, 125, 250 and 375 ft. Levels
Joburke Gold Mns Ltd	MP0663	3	MP0663_1 to MP0663_3	Keith	1975	Long sections of main zone and north zone; surface plan
Hallnor Mines Limited	MP0665	3	MP0665_1 to MP0665_3	Whitney	1969	vertical projection section; level plans for first and second Levels
Hallnor Mines Limited	MP0666	3	MP0666_1 to MP0666_3	Whitney	1969	Level plans for first and second Levels
Hallnor Mines Limited	MP0667	3	MP0667_1 to MP0667_3	Whitney	1969	Level plans for fourth and fifth Levels
Hallnor Mines Limited	MP0668	3	MP0668_1 to MP0668_3	Whitney	1969	Level plans for fifth, sixth and seventh Levels
Hallnor Mines Limited	MP0669	3	MP0669_1 to MP0669_3	Whitney	1969	Level plans for eight and ninth Levels
Hallnor Mines Limited	MP0670	3	MP0670_1 to MP0670_3	Whitney	1969	Level plans for eleventh and fourteenth Levels
Hallnor Mines Limited	MP0671	3	MP0671_1 to MP0671_3	Whitney	1969	Level plans for seventeenth and eighteenth Levels
Hallnor Mines Limited	MP0672	3	MP0672_1 to MP0672_3	Whitney	1969	Level plans for nineteenth and twentieth Levels

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Hallnor Mines Limited	MP0673	3	MP0673_1 to MP0673_3	Whitney	1969	Level plans for twentieth and twenty-first Levels
Hallnor Mines Limited	MP0674	3	MP0674_1 to MP0674_3	Whitney	1969	Level plan for twenty-second level
Hallnor Mines Limited	MP0675	3	MP0675_1 to MP0675_3	Whitney	1969	Level plans for twenty-second, twenty-third and twenty-fourth levels
Hallnor Mines Limited	MP0676	3	MP0676_1 to MP0676_3	Whitney	1969	Level plans for twenty-fourth, twenty-fifth and twenty-sixth Levels
Hallnor Mines Limited	MP0677	3	MP0677_1 to MP0677_3	Whitney	1969	Level plans for twenty-seventh, twenty-eighth and twenty- ninth Levels
Hallnor Mines Limited	MP0678	3	MP0678_1 to MP0678_3	Whitney	1969	Level plans for twenty-ninth and thirtieth Levels
Hallnor Mines Limited	MP0679	3	MP0679_1 to MP0679_3	Whitney	1969	Level plans for thirty-first and thirty-second Levels
Hugh-Pam Porcupine Mines Limited	MP0681	4	MP0681_1 to MP0681_4	Whitney	1960	Level plans for 2050, 2200 and 2350 ft. Levels showing blocks RV-3 northeast and RVI-3 northwest
Hugh-Pam Porcupine Mines Limited	MP0682	4	MP0682_1 to MP0682_4	Whitney	1960	Level plans for 2350 and 2500 ft. Levels showing blocks RVI-3 northwest and northeast, RVI-southeast and southwest
Broulan Reef Mines Limited	MP0683	4	MP0683_1 to MP0683_4	Whitney	1960	Level plans for 2200, 2350 and 2500 ft. Levels for blocks block RVI-4 southwest and southeast and RVI-3 northwest
Broulan Reef Mines Limited	MP0684	4	MP0684_1 to MP0684_4	Whitney	1960	Level plans for 2500 ft. Levels showing blocks RVI-3 northeast, RVI-4 southeast and southwest and RVII-4 southwest
Broulan Reef Mines Limited	MP0685	4	MP0685_1 to MP0685_4	Whitney	1960	Level plans for 2500 ft Level showing blocks RVII-4 northeast and northwest and RVIII-4 northeast and northwest
Kam-Kotia Mines Limited	MP0687	3	MP0687_1 to MP0687_3	Robb	1961 to 1971	General surface plan; area geology maple claim location plan
Kam-Kotia Mines Limited	MP0689	3	MP0689_1 to MP0689_3	Robb	1973	Level plans for third, fourth, fifth and sixth Levels
Kam-Kotia Mines Limited	MP0690	4	MP0690_1 to MP0690_4	Robb	1973	Level plans for sixth, seventh, eighth, ninth and tenth Levels
Kenilworth Mines Limited	MP0694	4	MP0694_1 to MP0694_4	Ogden	1963	Long section of north zone; Level plans for 200 and 300 ft. Levels
Kenilworth Mines Limited	MP0695	3	MP0695_1 to MP0695_3	Ogden	1963	Level plans for 400 and 500 ft. Levels
Kenilworth Mines Limited	MP0696	3	MP0696_1 to MP0696_3	Ogden	1963	Level plans for 500 and 700 ft. Levels
Naybob Gold Mines Limited	MP0697	4	MP0697_1 to MP0697_4	Ogden	1948 to 1964	Surface plans; claim plans; longitudinal sections
Naybob Gold Mines Limited	MP0698	4	MP0698_1 to MP0698_4	Ogden	1948	Compilation plan and long section; Level plans for 100 and 200 ft. Levels

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Naybob Gold Mines Limited	MP0699	4	MP0699_1 to MP0699_4	Ogden	1948	Level plans for 300 and 400 ft. Levels
Naybob Gold Mines Limited	MP0700	4	MP0700_1 to MP0700_4	Ogden	1948	Level plans for 550 and 700 ft. Levels
Naybob Gold Mines Limited	MP0701	4	MP0701_1 to MP0701_4	Ogden	1948	Level plans for 1075, 1175 and 1275 ft. Levels
Naybob Gold Mines Limited	MP0702	4	MP0702_1 to MP0702_4	OGDEN	1948	Level plans for 700, 825 and 950 ft. Levels
The Mace	MP0703	1	MP0703_1	Tisdale		Surface plan map
The Mace	MP0704	1	MP0704_1	Tisdale		Surface plan map
Kenilworth Mines Limited	MP0705	1	MP0705_1	Ogden	1963	Long section of north zone; Level plans for 200, 300, 400 and 500 ft. Levels
Pamour Porcupine Mines Limited	MP0707	8	MP0707_1 to MP0707_8	Tisdale	1981 to 1984	Section maps showing 121131 drift and 120704, 120706, 121001, 121007, 140P02 and 140904 stopes
Pamour Porcupine Mines Limited	MP0708	8	MP0708_1 to MP0708_8	Tisdale	1982	Section maps showing 140904, 141121, 150801, 150P02, 151002 Stope, 170P02 and 150P02 stopes
Pamour Porcupine Mines Limited	MP0709	8	MP0709_1 to MP0709_8	Tisdale	1982 to 1984	Section maps showing 170P02, 180901, 170P02 and 180901 stopes as well as lifts three, four and five
Pamour Porcupine Mines Limited	MP0710	10	MP0710_1 to MP0710_10	Tisdale	1968 to 1984	Level plans for the surface and 100, 200, 300, 425, 550, 675, 800, 950 and 1100 ft. Levels
Pamour Porcupine Mines Limited	MP0711	18	MP0711_1 to MP0711_18	Tisdale	1968	Level plans for 1250, 1400, 1550, 1700, 1850, 2000, 2150, 2300, 2450, 2600, 2750, 2900, 3050, 2100, 3350, 3500, 3650 and 3800 ft. Levels
Pamour Porcupine Mines Limited	MP0712	16	MP0712_1 to MP0712_16	Tisdale	1968	Level plans for 3950, 4100, 4250, 4400, 4550, 4700, 4850, 5000, 5150, 5300, 5450, 5525, 5675, 5825 and 5975 ft. Levels
Kenilworth Mines Limited	MP0713	4	MP0713_1 to MP0713_4	Ogden	1964	Section maps showing north zone; level plans for 200 and 300 ft. Levels
Kenilworth Mines Limited	MP0714	3	MP0714_1 to MP0714_3	Ogden	1964	Level plans for 400, 500 and 700 ft. Levels
Kam-Kotia Mines Limited	MP0715	4	MP0715_1 to MP0715_4	Robb	1963	Section maps showing open pit sections twenty-eight, thirty, thirty-two and thirty-four
Kam-Kotia Mines Limited	MP0716	5	MP0716_1 to MP0716_5	Robb	1963	Section maps showing open pit sections thirty-six, thirty-eight, forty, forty-two and forty-four
Kam-Kotia Mines Limited	MP0717	5	MP0717_1 to MP0717_5	Robb	1963	Section maps showing open pit sections forty-six, forty-eight, fifty, fifty-two and fifty-four
Kam-Kotia Mines Limited	MP0718	3	MP0718_1 to MP0718_3	Robb	1963	Section maps showing open pit sections fifty-six, fifty-eight and sixty
Kam-Kotia Mines Limited	MP0719	4	MP0719_1 to MP0719_4	Robb	1963	Section maps showing open pit sections sixty-two, sixty-four, sixty-six and sixty-eight

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Mcintyre Porcupine Mines	MP0720	5	MP0720_1 to MP0720_5	Tisdale	1971	Key plan and vertical mine section as well as section maps showing shafts no. four, five, six, seven, ten, eleven, twelve and fourteen.
Mcintyre Porcupine Mines	MP0721	4	MP0721_1 to MP0721_4	Tisdale	1971	Section maps showing shafts no. ten, fifteen and sixteen
Mcintyre Porcupine Mines	MP0722	5	MP0722_1 to MP0722_5	Tisdale	1971	Level plans for 50, 100, 200, 300 and 400 ft. Levels
Mcintyre Porcupine Mines	MP0723	5	MP0723_1 to MP0723_5	Tisdale	1971	Level plans for 500, 600, 700, 800 and 900 ft. Levels
Mcintyre Porcupine Mines	MP0724	5	MP0724_1 to MP0724_5	Tisdale	1971	Level plans for 1000, 1125, 1250, 1375 and 1500 ft. Levels
Mcintyre Porcupine Mines	MP0725	5	MP0725_1 to MP0725_5	Tisdale	1971	Level plans for 1625, 1750, 1875, 2000, 2125 ft. Levels
Mcintyre Porcupine Mines	MP0726	5	MP0726_1 to MP0726_5	Tisdale	1971	Level plans for 2250, 2375, 2500, 2625 and 2750 ft. Levels
Mcintyre Porcupine Mines	MP0727	5	MP0727_1 to MP0727_5	Tisdale	1971	Level plans for 2875, 3000, 3125, 3250 and 3375 ft. Levels
Mcintyre Porcupine Mines	MP0728	5	MP0728_1 to MP0728_5	Tisdale	1971	Level plans for 3500, 3625, 3750, 3875 and 4025 ft. Levels
Mcintyre Porcupine Mines	MP0729	5	MP0729_1 to MP0729_5	Tisdale	1971	Level plans for 4175, 4325, 4475, 4625 and 4775 ft. Levels
Mcintyre Porcupine Mines	MP0730	5	MP0730_1 to MP0730_5	TISDALE	1971	Level plans for 4925, 5075, 5225, 5375 and 5525 ft. Levels
Mcintyre Porcupine Mines	MP0731	5	MP0731_1 to MP0731_5	Tisdale	1971	Level plans for 5525, 5675 and 5825 ft. Levels
Mcintyre Porcupine Mines	MP0732	5	MP0732_1 to MP0732_5	Tisdale	1971	Level plans for 5975, 6125, and 6275 ft. Levels
Mcintyre Porcupine Mines	MP0733	5	MP0733_1 to MP0733_5	Tisdale	1971	Level plans for 6425, 6575 and 6700 ft. Levels
Mcintyre Porcupine Mines	MP0734	5	MP0734_1 to MP0734_5	Tisdale	1971	Level plans for 6825, 6975, 725 and 7275 ft. Levels
Nighthawk Pen Mines Limited	MP0746	3	MP0746_1 to MP0746_3	Cody		Level plans for 425, 525 and 625 ft. Levels
North Whitney Mines Limited	MP0747	1	MP0747_1	Whitney	1938 to 1940	Map showing underground workings
Onakawana Lignite Development	MP0748	1	MP0748_1	Dyer	1944	Surface plan
Pamour Porcupine Mines Limited	MP0749	2	MP0749_1 to MP0749_2	Whitney	1974	Longitudinal section and surface plan
Pamour Porcupine Mines Limited	MP0750	2	MP0750_1 to MP0750_2	Whitney	1974	Level plans for 100 & 200 ft Levels east and 400 ft. Levels

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Pamour Porcupine Mines Limited	MP0751	2	MP0751_1 MP0751_2	Whitney	1974	Level plans for 800 and 1000 ft. Levels
Pamour Porcupine Mines Limited	MP0752	2	MP0752_1 to MP0752_2	Whitney	1974	Level plans for 1200 and 1400 ft. Levels
Pamour Porcupine Mines Limited	MP0753	2	MP0753_1 to MP0753_2	Whitney	1974	Level plans for 1600 and 1800 ft. Levels
Pamour Porcupine Mines Limited	MP0754	2	MP0754_1 to MP0754_2	Whitney	1974	Level plans for 2000 and 2200 ft. Levels
Pamour Porcupine Mines Limited	MP0755	3	MP0755_1 to MP0755_3	Whitney	1974	Level plans for 2400, 2600 and 2800 ft. Levels
Pamour Porcupine Mines Limited	MP0756	3	MP0756_1 to MP0756_3	Whitney	1974	Level plans for miscellaneous active levels
Preston Mines Limited	MP0757	3	MP0757_1 to MP0757_3	Tisdale	1966	Section showing no. two and three shafts; level plans for first and second Kevels
Preston Mines Limited	MP0758	4	MP0758_1 to MP0758_4	Tisdale	1966	Level plans for third, fourth and fifth Levels
Preston Mines Limited	MP0759	4	MP0759_1 to MP0759_4	Tisdale	1966	Level plans for fifth, sixth seventh and eight Levels
Preston Mines Limited	MP0760	4	MP0760_1 to MP0760_4	Tisdale	1966	Level plans for ninth Level
Preston Mines Limited	MP0786	3	MP0786_1 to MP0786_3	Tisdale	1961 to 1962	Cincinnati Porcupine Openings; 569 stope, ; bulkhead hydraulic fill storage
Rundle Mines Limited	MP0787	2	MP0787_1 to MP0787_2	Newton	1942	Level plans for 150 and 300 ft. Levels
Scottish Ontario Mines	MP0788	4	MP0787_1 to MP0787_4	Whitney	1942 to 1977	Elevation and section map; surface geology map; plan of underground workings; plan and section
Shaw Porcupine Gold Mines Limited	MP0789	1	MP0789_1	Shaw	1931	Map showing north and south drifts
Thomas Gold Mines Limited	MP0790	1	MP0790_1	Thomas	1924	Sketch of Dome Mine
Whelpdale Porcupine Mines Limited	MP0791	1	MP0791_1	Tisdale	1918	Plan and section map
Kidd Creek Mines	MP0792	3	MP0792_1 to MP0792_3	Kidd	1978	Surface plan and long sections
Kidd Creek Mines	MP0793	3	MP0793_1 to MP0793_3	Kidd	1978	Level plans of 8-1A Level, 8-1 sub-Level and 8-2 backfill level
Kidd Creek Mines	MP0794	3	MP0794_1 to MP0794_3	Kidd	1978	Level plans for 8-2, 8-3.2 and 8-3.3 sub-levels

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Kidd Creek Mines	MP0795	3	MP0795_1 to MP0795_3	Kidd	1978	Level plans for 8-3.5, 8-4 and 8-5 sub-levels
Kidd Creek Mines	MP0796	3	MP0796_1 to MP0796_3	Kidd	1978	Level plans for 8-6 sub-Level and 800 ft. Level
Kidd Creek Mines	MP0797	3	MP0797_1 to MP0797_3	Kidd	1978	Level plan for 800 ft. Level ramp, 12-1 and 12-2 sub-Levels
Kidd Creek Mines	MP0798	3	MP0798_1 to MP0798_3	Kidd	1978	Level plans for 12-2, 12-3 and 12-3A sub-Levels
Kidd Creek Mines	MP0799	3	MP0799_1 to MP0799_3	Kidd	1978	Level plan for 1200 ft. Level showing the ramp
Kidd Creek Mines	MP0800	3	MP0800_1 to MP0800_3	Kidd	1978	Level plans showing no. sixteen ramp, 16-1 and 16-2 sub-Levels
Kidd Creek Mines	MP0801	3	MP0801_1 to MP0801_3	Kidd	1978	Level plans for 16-3 sub-level and 1600 ft. Level
Kidd Creek Mines	MP0802	3	MP0802_1 to MP0802_3	Kidd	1978	Level plans for 2000 and 2400 ft. Levels
Kidd Creek Mines	MP0803	3	MP0803_1 to MP0803_3	Kidd	1978	Level plans for 2600 and 2800 ft. Levels
Kidd Creek Mines	MP0804	3	MP0804_1 to MP0804_3	Kidd	1978	Level plans for 28-1 sub-Level and 2800 ft. Level
Kidd Creek Mines	MP0805	3	MP0805_1 to MP0805_3	Kidd	1978	Level plans for 28-2 and 28-3 sub-Levels
Kidd Creek Mines	MP0806	3	MP0806_1 to MP0806_3	Kidd	1978	Level plans for 2860 ft. Level, 2920-3050 ft. ramp and 28-26 ramp
Kidd Creek Mines	MP0807	3	MP0807_1 to MP0807_3	Kidd	1978	Level plans for 28-34 ramp, 3000 and 3200 ft. Levels
Kidd Creek Mines	MP0808	3	MP0808_1 to MP0808_3	Kidd	1978	Level plans for 3400, 3600 and 3800 ft. Levels
Kidd Creek Mines	MP0809	3	MP0809_1 to MP0809_3	Kidd	1978	Level plans for 4000, 4200 and 4400 ft. Levels
Kidd Creek Mines	MP0810	3	MP0810_1 to MP0810_3	Kidd	1978	Level plans for 4600, 4700 and 4800 ft. Levels
Belmoral Mines Limited	MP0830	5	MP0830_1 to MP0830_5	Tisdale	1941 to 1980	Geological plan for ramp, 160, 375 and 500 ft. Levels; surface geology
Belmoral Mines Limited	MP0831	3	MP0831_1 to MP0831_3	Tisdale	1987	Sections 10075 north, 10100 north and 10125 north
Belmoral Mines Limited	MP0832	6	MP0832_1 to MP0832_6	Tisdale	1987	Sections 10150 east, 10175 east, 10250 east, 10275 east, 3100 east and 3125 east
Belmoral Mines Limited	MP0833	5	MP0833_1 to MP0833_5	Tisdale	1987	Section 3150 east, 3200 east, 3225 east, 3300 east and 3325 east
Belmoral Mines Limited	MP0834	5	MP0834_1 to MP0834_5	Tisdale	1987	Section 3400 east, 3425 east, 3475 east, 3525 east and 3550 east
Belmoral Mines Limited	MP0835	4	MP0835_1 to MP0835_4	Tisdale	1987	Sections 3575, 3650 east, 3700 east and 3750 east

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Belmoral Mines Limited	MP0836	6	MP0836_1 to MP0836_6	Tisdale	1987	Sections 2925 east, 2950 east, 3000 east, 3025 east, 3050 east and 3800 east
Belmoral Mines Limited	MP0837	6	MP0837_1 to MP0837_6	Tisdale	1987	Sections 3075 east; long sections looking north and west; assay plan for 375 and 500 ft. Levels
Belmoral Mines Limited and Vedron Limited	MP0838	5	MP0838_1 to MP0838_5	Tisdale		Face and test hole at the 275 and 375 ft. Levels; back and wall assay plan; assay plan
Belmoral Mines Limited	MP0839	5	MP0839_1 to MP0839_5	Tisdale	1988 to 1989	Longitudinal section showing hanging wall zones one and two; long section showing the Fuller Zone; long sections looking west and north
Belmoral Mines Limited	MP0840	5	MP0840_1 to MP0840_5	Tisdale	1988	Longitudinal section showing 3400-4600 east; DD layout for the ramp, 600 and 650 ft. Levels
Belmoral Mines Limited	MP0841	6	MP0841_1 to MP0841_6	Tisdale	1988	DD plan for 150, 275, 375 and 500 ft. Levels and ramp
Belmoral Mines Limited	MP0842	5	MP0842_1 to MP0842_5	Tisdale	1988	DD plan for 275 and 375 ft. Levels and ramp; assay plan for at the 500 ft. Level
Belmoral Mines Limited	MP0843	6	MP0843_1 to MP0843_6	Tisdale		Assay for plan 200 (37 zone), 275 and 375 ft. Level as well as raises at level two
Belmoral Mines Limited	MP0844	5	MP0844_1 to MP0844_5	Tisdale		Assay plan for 275, 500 (east) and 650 ft. Levels; stope assay plans for 500-320 and 375-102
Belmoral Mines Limited	MP0845	6	MP0845_1 to MP0845_6	Tisdale		Assay plan for 190 ft. sub level 275, 375 and 500 ft. Levels, 500 ft. face and test, 500-102 stope assay plan
Getty Resources Limited and Davidson Tisdale Mines Limited	MP0846	5	MP0846_1 to MP0846_5	Tisdale	1987	Surface geology of Smith Vet and T-Zone, south shaft area, main zone and eastern extension; composite map of ramps no. One and Two west
Getty Resources Limited and Davidson Tisdale Mines Limited	MP0847	5	MP0847_1 to MP0847_5	Tisdale	1987	Composite ramp plan; geology plan for Levels One and Two; DD locations at 260 ft. sub Level; 233 east sub drift plan
Getty Resources Limited and Davidson Tisdale Mines Limited	MP0848	5	MP0848_1 to MP0848_5	Tisdale	1983 to 1987	Geology plan at third, fourth and fifth Levels; 200 ft. sub level underground diamond drill hole location map; surface assay of the pit area
Getty Resources Limited and Davidson Tisdale Mines Limited	MP0849	4	MP0849_1 to MP0849_4	Tisdale	1983	Surface assay of T-Zone showing plugger hole; assay plan for the west ramp; assay plan and muck samples for 200 ft. sub Level
Getty Resources Limited and Davidson Tisdale Mines Limited	MP0850	4	MP0850_1 to MP0850_5	Tisdale	1984	Assay and sampling plan for 100, 200 and 300 ft. Levels, 300 ft. winze and no. four level chip sample assays
Getty Resources Limited and Davidson Tisdale Mines Limited	MP0851	4	MP0851_1 to MP0851_4	Tisdale	1984	Assay plans for 500 and 600 ft. Levels; assay values for no. five black assay values; section of 81.255

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Getty Resources Limited and Davidson Tisdale Mines Limited	MP0852	4	MP0852_1 to MP0852_4	Tisdale	1986 to 1987	Assay values for no. five using DD, muck sample and channel sample values; section 6:25 north looking north 60 degrees east
Getty Resources Limited and Davidson Tisdale Mines Limited	MP0853	3	MP0853_1 to MP0853_3	Tisdale	1987	Section map showing 0:00 north, 6:25 south and 12:50 south all looking north 60 degrees east DEG E
Getty Resources Limited and Davidson Tisdale Mines Limited	MP0854	9	MP0854_1 to MP0854_9	Tisdale	1987	Section maps 18:75 south, 25:00 south, 31:25 south, 37:50 south, 50:00 south, 56:25 south, 62:50 south 68:75 south, 81:25 south and 43:75 south all looking north 60 degree east
Getty Resources Limited and Davidson Tisdale Mines Limited	MP0855	1	MP0855_1	Tisdale	1987	Section map 43:75 south looking north 60 degree east
Getty Resources Limited and Davidson Tisdale Mines Limited	MP0856	3	MP0856_1 to MP0856_3	Tisdale	1987	Section maps 75:00 south, 87:50 south and 93:75 south all looking north 60 degrees east
Getty Resources Limited and Davidson Tisdale Mines Limited	MP0857	4	MP0857_1 to MP0857_4	Tisdale	1987	Section maps 100:00, 106:25, 112:50 and 118:75 all looking north 60 degrees east
Getty Resources Limited and Davidson Tisdale Mines Limited	MP0858	5	MP0858_1 to MP0858_5	Tisdale	1987	Section maps 125:00, 131:25, 137:50 143:75 and 150:00 all looking north 60 degrees east
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0859	1	MP0859_1	Tisdale	1921	Level plan of 500 ft. Level showing DDs F and G
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0860	1	MP0860_1	Tisdale	1917	New numbering system
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0861	1	MP0861_1	Tisdale		Plan of working parts
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0862	1	MP0862_1	Tisdale		Surface plan showing relation of ore bodies to claim boundaries

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Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0863	1	MP0863_1	Tisdale	1919	Surface plan showing centre line
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0864	1	MP0864_1	Tisdale	1917	Underground level plan
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0865	1	MP0865_1	Tisdale		Mine plan showing relation of ore body to claims
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0866	1	MP0866_1	Tisdale		Cross section showing DD
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0867	1	MP0867_1	Tisdale	1922	Surface plan
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0868	1	MP0868_1	Tisdale	1921	Plan of workings
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0869	1	MP0869_1	Tisdale		Section map of DD N
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0870	1	MP0870_1	Tisdale		Section map showing no. one shaft and winze
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0871	1	MP0871_1	Tisdale		Section map of DD Section map of drill hole M

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0872	1	MP0872_1	Tisdale		DD plan
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0873	1	MP0873_1	Tisdale	1921	Plan of working parts
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0874	1	MP0874_1	Tisdale	1921	Plan of working parts
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0875	1	MP0875_1	Tisdale	1922	Plan showing location of surface DD
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0876	1	MP0876_1	Tisdale		Ore estimates from DD between the 500 and 1000 ft. Levels
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0877	2	MP0877_1 to MP0877_2	Tisdale		Cross section showing shaft, winze and 500 ft. Level, part one
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0878	1	MP0878_1	Tisdale		Approximate building plan
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0879	1	MP0879_1	Tisdale	1919	Surface plan showing centre line
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0880	1	MP0880_1	Tisdale	1920	Plan showing shaft, winze and 500 ft. Level

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Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0881	1	MP0881_1	Tisdale	1919	Plan showing the centre line of the transmission line
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0882	1	MP0882_1	Tisdale		Contour map of surface sounding Horseshow Shaft
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0883	1	MP0883_1	Tisdale	1923	Sketch showing the location of tailings samples taken
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0884	1	MP0884_1	Tisdale		Contour map
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0885	1	MP0885_1	Tisdale	1921	Assay plan of 600 ft. Level
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0886	1	MP0886_1	Tisdale		Assay plan of 600 ft. Level
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0887	1	MP0887_1	Tisdale		Assay plan of 500 ft. Level
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0888	1	MP0888_1	Tisdale		Assay plan of 500 ft. Level
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0889	1	MP0889_1	Tisdale	1921	Assay plan of 500 ft. Level

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0890	1	MP0890_1	Tisdale	1921	Assay plan of 600 ft. Level
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0891	1	MP0891_1	Tisdale	1921	Assay plan of 600 ft. Level
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0892	1	MP0892_1	Tisdale	1921	Level plan for 550 and 600 ft. Levels
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0893	1	MP0893_1	Tisdale		Level plan for 500 ft. Level showing No. One shaft
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0894	1	MP0894_1	Tisdale		Level plan for 500 ft. level showing No. One Shaft
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0895	1	MP0895_1	Tisdale		Level plan for 500 ft. level showing No. One Shaft
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0896	1	MP0896_1	Tisdale		Level plan for 300 ft. level showing No. One Shaft
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0897	1	MP0897_1	Tisdale		Level plan for 200 ft. level showing No. One Shaft
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0898	1	MP0898_1	Tisdale		Level plan for 200 ft. level showing No. One Shaft

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Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0899	1	MP0899_1	Tisdale		Level plan for 100 ft. level showing No. One Shaft
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0900	1	MP0900_1	Tisdale		Level plan for 100 ft. level showing No. One Shaft
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0901	1	MP0901_1	Tisdale	1919	Assay plan for 100 to 500 ft. Levels
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0902	1	MP0902_1	Tisdale	1919	Assay plan for 100 to 500 ft. Levels
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0903	1	MP0903_1	Tisdale	1919	Assay plan for 100 to 500 ft. Levels
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0904	1	MP0904_1	Tisdale		Level plan for 600 ft. level showing No. One Shaft
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0905	1	MP0905_1	Tisdale		Level plan for 500, 550 and 600 ft. Levels
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0906	1	MP0906_1	Tisdale	1921	Level plan for 500 ft. Level
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0907	1	MP0907_1	Tisdale		Vertical projection through hole no. three

Company	Envelopes	No. of Maps	TIFF File Name	Township	Year	Description
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0908	1	MP0908_1	Tisdale	1921	Level plan for 500 ft. Level
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0909	1	MP0909_1	Tisdale		Section of DD L
Porcupine Davidson Gold Mines and Porcupine Tisdale Gold Mines Limited	MP0910	1	MP0910_1	Tisdale		Section of DD L
Liberty Mines Incorporated	MP1022	1	MP01022_1	Eldorado	2010	Underground long section composite map
Northern Sun Mining	MP1023	9	MP1023_1 to MP1023_9	Langmuir	2016	Surface plan, long section and level plans showing surface to 65 metre Level as well as 65, 85, 100, 120, 140 and 155 metre Levels.

Appendix B. Summary of donated files scanned and catalogued by the end of 2019.

File #	Township	Company or property Name	Year of Work	File Description	Work Type	Assay	No. of Large Maps or Images	UTM Zone	Easting Northing
M-4840*	Kenogaming		2019	Precambrian geology map of township at 1:20,000 scale			1		
T-0001	Eldorado	Eldorado claims	1938	Summary of claims, outcrop geology, assay results	Assay, Samp	Au	0	17	487875 5352812
T-0002	Godfrey	Utopia Gold Mines Limited	1960, 1963–1964	Prospectus, electromagnetic survey, diamond-drill plan, location maps	Pr	--	4	17	460773 5369354
T-0003	Keith	Aladdin-Groundhog Mines Limited	1946–1947	Report on geology, diamond drill records, claim location map	DD– 3 – 2267 ft		1	17	405607 5335962
T-0004	Deloro, Shaw	Furness Gold Mines Limited; Novell property, Erie Canadian Mines; Cons. Novell; James property	1925–1940, 1934–1935, 1938	Report on geological determinations, mining claims, assay results and synopsis reports on Furness Gold Mines, Excello Mine, Novell property	Data compilation, Assays, reports	Au	1	17	485268 5364696
T-0005	Carscallen	Andman Porcupine Gold Mines Limited	1945–1946	Andman Porcupine Gold Mines summary and diamond-drill records	DD - 4 - 1699 ft	--	0	17	447942 5365111
T-0006	Deloro	Jones, Ironside, Bourne, Nells and Powell Mining property	1921	Report on geology	GL	--	0	17	477723 5361463
T-0007	Macklem, German	Electra Porcupine Gold Mines Limited	1936–1937, 1940, 1942–1948	Annual report of Aquarius Porcupine Gold Mines, letter, prospectus, drill logs, maps	Reserve, prospectus, letters, DDH - 11 - 8517 ft, assays, reports, geological survey, DDH - 11 - 7430 ft, Underground DDH - 33 - 3980 ft, DDH - 30 - 26,326ft	Au	0	17	512134 5376085
T-0008	Whitney	Sylvanite GML	1939	Reports, correspondence and drilling summary for McGregor Porcupine Gold Syndicate	Reports, letters, DDH - 9 – 7460 ft, assays	--	1	17	486472 5372039
T-0009	Macklem	Auconda Gold Mines, David Martin property	1945, 1946, 1958	Geomagnetic survey of Augonda Porcupine Gold Mines property and drill logs	Magnetic Survey, DDH - 6, DDH - 4 - 280 ft	--	5	17	511472 5372838
T-0011	St. John	Earl Gold Mines Option	1945	Drilling summary Avery-Roche Group	DDH - 1 - 678 ft	--	0	17	506215 5416313

File #	Township	Company or property Name	Year of Work	File Description	Work Type	Assay	No. of Large Maps or Images	UTM Zone	Easting Northing
T-0012	Bristol, Godfrey	Sylvanite GML; Diemert and O'Shea	1941	Ontario Department of Mines deposit description and O'Shea claims assay results	Assays, GL	Au	0	17	458748 5367432
T-0013	Clergue	Selco Exploration	1960, 1965	Selco exploration drill logs, sections and location map	DD\ - 1 - 444 ft	--	0	17	515096 5388869
T-0014	Whitesides	Whiteside claims	1928	Exploration for base metals in Whitesides Township in the vicinity of Kamiskotia River	GL, Tr, Assays	Au Ag Cu Ni	1	17	440416 5366689
T-0017	Shaw	Carman-Shaw porphyry	1945	Diamond drilling and drill logs for Carmen-Shaw property	DD - 2 - 1047 ft, assays	Au	0	17	493689 5364798
T-0018	Whitney	New Bobs Lake gold mine	1940–1948	Various maps and plans of Bob's Lake diamond-drilling project, drill logs from Bob's Lake diamond-drilling project for gold exploration	DD - 15 - 7927ft, DD - 14 - 10,176ft, Assays	Au	36	17	488722 5369475
T-0024	Ogden, Mountjoy	Dalton Opt., Adjoins Carlmac property	1923, 1926, 1946	Drill logs from Whitney and Ogden property diamond-drilling project for gold exploration, plans	DD- 33 - 22,903ft, Rept, Assays	Au Ag	3	17	475082 5367448
T-0027	Mountjoy	Central Mountjoy, Carriere, Remmert and Goulet options	1940	Geology and diamond drilling for gold exploration in Mountjoy Township	DD - 4 - 1410ft, Assays	Au	4	17	469308 5372060
T-0029	Stock, German	Bazinet opt., Clavos property	1945–1946, 1948, 1954	Assays, drill logs and sections, commodity sought is gold	DD - 35 - 16,708 ft, Assays, Mag, Rept	Au As Ag	31	17	514432 5384628
T-0030	McArthur	Clodan Gold Mines Limited	1946	Drill logs from McArthur Township	DD - 13 - 962 ft, Assays	Au	1	17	483968 5340049
T-0032	Keith	Consolidated Mining and Smelting Co.	1946	Mainly maps of claims with field notes	GL	--	7	17	408744 5334243
T-0033	Bristol	East Claim Group III	1938	Report on magnetic and electrical surveys on East Claim Group III	EM, Mag	--	3	17	461521 5362768
T-0035	Deloro	Acordia; Sylvanite, Concordia; Jones-Porter, Delcore Gold; Concordia Porcupine	1936–1941, 1928, 1945	Report on diamond drilling, Correspondence, prospectus, property report	DD - 4 - 2056 ft, Rept, Assays, Correspondence, Pr	Au	9	17	482697 5359114

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File #	Township	Company or property Name	Year of Work	File Description	Work Type	Assay	No. of Large Maps or Images	UTM Zone	Easting Northing
T-0038	Tisdale	Goldale Mine Ltd.	1938	Property report on claims adjoining McIntyre Porcupine Mines to the north	Rept	--	2	17	478170 5370668
T-0039	Mountjoy	Frontenac Expln; Mountjoy claims	1945–1946	Anaconda/Frontenac Exploration Mountjoy claims and diamond drilling logs	DD - 6 - 5531 ft, Assays	Au	3	17	474684 5371817
T-0041	Keith	Garnet Gold Mines Ltd.	1946–1947	Report on diamond drilling program	GL, DD - 14 - 9694 ft, Assays	Au	2	17	401289 5333250
T-0045	Tisdale	Edwards; Nakhodas, Fuller claims	1935–1941	Various reports	Rept, DD	Au	3	17	479829 5366605
T-0046	Price	Stibbard property, Goldale Mines option	1946	Report on diamond-drilling program, photos	Rept, DD - 3 - 2111 ft, Assays	Au	15	17	466732 5351977
T-0048	Cody, Macklem	Gold Island Prop.; Nighthawk Lake; Lakefield Porcupine, Greyhawk Uranium	1960–1961, 1939–1940, 1946–1950	Property report on claims adjoining McIntyre Porcupine Mines to the north, diamond-drill logs and maps	Homestake Hollinger maps (2 pkgs), maps (3 pkgs), property reports, diamond drilling, DD - 17 - 5874 ft	Au	84	17	503974 5372628
T-0049	Deloro	McLaren Porcupine Gold Mines	1940	Report on development and operations of McLaren Porcupine Gold Mines	Rept	--	7	17	480817 5363047
T-0051	Carman		1966	Property report	Rept, Correspondence,	--	16	17	497661 5359816
T-0052	Beemer, English	Nelson claims, Telluride Lake property	1936	Property reports and assays	Rept, Assays, Tr	Au	10	17	473145 5323509
T-0054	Whitney, Cody	Halcrow-Swayze Mining	1946	Report and drill logs	DD- 2 - 1309 ft, Assays	Au	0	17	492659 5366638
T-0055	Matheson	Hallnor Mines	1930–1960	Photos only	Photos	--	2	17	501482 5382455
T-0061	Tisdale	Crown Charter, Hollinger	1938–1942, 1966, 1974, 1983, 1951, 1956–1957	Geology reports of Hollinger Consolidated Gold Mines and Mace Gold Mines, diamond-drill logs	Rept, maps, plans, DD - 5 - 532 ft, geological survey, DD - 2 - 1071 ft, Assays, GL, UG	WO3 Au	172	17	483896 5373466
T-0062	Keith	Dunvegan	1946–1947	Geology report on Hoodoo Lake Mines, assay results, diamond drilling records and logs	GL, Assays, Rept, DD - 21 - 7568 ft	Au	49	17	406220 5333066

File #	Township	Company or property Name	Year of Work	File Description	Work Type	Assay	No. of Large Maps or Images	UTM Zone	Easting Northing
T-0063	Bristol	Hubert, Wright Ventures and Continental Kirkland; Balboa	1924–1925, 1928, 1949, 1957, 1938–1941, 1945–1947	Property descriptions, assay results, geology reports, maps, diamond drilling records and logs	GL, assays, Rept, maps, DD - 7 - 3023 ft, DD - 2 - 898 ft	Au Ag Cu Pb	14	17	459786 5332439
T-0064	Shaw	Imerson claims, Hollinger Cons.	1946	Map only	Geology map	--	1	17	488399 5359174
T-0065	Eldorado	Noranda	1959	General property report	Pr, Rept	--	0	17	493507 5348678
T-0067	Deloro	Powell property; Powell-Mac Pherson	1938–1939	Correspondence, assays, maps, report on diamond drilling	Correspondence, Assays, DD - 26 - 5369 ft	Au	15	17	483787 5364536
T-0068*	Keith	Holliston Property & Corbett Property	1946	Geological Report on the Holliston Property, assay results, and geological maps	Assays, GL	Au	6	17	403061 5332040
T-0069	Godfrey, Jamieson	Jamieson property, Hagquist and Jamieson, Jamieson Copper	1926, 1938–1944, 1949–1952	Various reports on sampling, assaying and drill logs, photos	Tr, Assays, GL, Mag, DD - 11 - 2434 ft, Rept, DD - 7 - 1542 ft	Au Ag, Cu Zn	34	17	459175 5376631
T-0070	Keith	Rush Lake Gold Mines	1946–1949, 1981	Photos of Joburke Mine, underground work reports, geology reports, prospectus, maps and diamond drilling records and logs	Repts, Assays, DD - 10 - 2662 ft, UG, DD	Au	97	17	404592 5333516
T-0071	Carscallen, Denton	Jowsey Denton GML	1934, 1945–1946, 1952	Property report and diamond-drilling records for Jowsey Denton Gold Mines	Rept, DD - 1 - 323 ft	Au	4	17	450962 5359077
T-0076	Carscallen	former Lakefield Porcupine; Mining Corp.	1945	Diamond-drilling records and logs for Lakefield Porcupine Gold Mines	DD - 4 - 2058 ft, Assays	Au	6	17	454108 5358792
T-0078	Eldorado, Adams	Kennco Explns	1938, 1946, 1958	Kennco Exploration diamond-drilling logs, Lovell-Stewart claims property reports	DD - 5 - 1867 ft, Assays, Rept	Au Cu Ni	1	17	485907 5351798
T-0080	Shaw	Malga; Gail Resources; Tommy Burns property, Triplex; Arcadia; Credo; Carshaw; Amshaw; Tommy Burns, Malga Porcupine	1984, 1930, 1936, 1940, 1946, 1947, 1980–1981	Arcadia Gold Mines prospectus, reports, correspondence and Malga property diamond-drilling records, property reports	DD - 58 - 8002 ft, Assays, correspondence, Rept, GL, Pr	Au Ag	23	17	494022 5359408

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File #	Township	Company or property Name	Year of Work	File Description	Work Type	Assay	No. of Large Maps or Images	UTM Zone	Easting Northing
T-0082	Thorneloe	Thibeault Darby Claims, Wawaitin Falls Syndicate, G. Darby East Group; Darby Development, Darby Development, A.E. Phillips Prop; English - Swanson; Verity	1923, 1927, 1937–1940, 1946	Maryland Gold Mines property reports, prospectus, diamond-drilling records, assays, maps	Report, Assays, Rept, Pr, DD - 4 - 2662 ft, DD - 4 - 4122 ft	Au Ag	14	17	462726 5354680
T-0083	Keith	Hermiston - Oslund Group; Joburke	1955	Purdy Mica Mines property reports and diamond-drilling records	Rept, DD - 12 - 6146 ft	--	4	17	409898 5332810
T-0088	Bristol, Ogden, Mountjoy, Godfrey, Turnbull, Carscallen	Hulcano Porcupine, Toburn G.M.L.	1936, 1938–1939, 1946, 1957	Mineral Estates Mag, EM, reports, diamond-drilling records and prospectus	Pr, Rept, Mag, EM, DD - 2 - 1266 ft, Assays	Au	8	17	468704 5366484
T-0089	Godfrey		1938–1939	Minesta Gold Mines magnetic survey, electromagnetic survey and diamond-drilling records	DD - 6 - 6290ft, Assays, Mag, EM	Au	9	17	465511 5369386
T-0090	Carscallen	Lakefield Mines	1945, 1973, 1946, 1949	Mining Corporation of Canada assays and diamond-drilling records	Mag, Rept, Correspondence, assays, DD - 4 - 1470 ft	Au	12	17	454987 5358443
T-0095	Tisdale	Porcupine Goldor; Sovereign Porcupine	1938	Porcupine Goldor Mines reports on diamond-drill holes	GL, DD	--	2	17	478437 5367217
T-0096	Carscallen	Chris Morris property	1946	Chris Morris property report on work and diamond-drill holes	Rept, GL, Tr	--	0	17	449495 5363247
T-0098	Keefer	Jobert Keefer GML	1946–1948	Nixon-Bartleman property report, assays, plans showing geology and diamond-drilling records	Rept, Assays, DD- 6 - 2404 ft	Au	22	17	440360 5349486
T-0100	Keith	Palomar Gold Mines Ltd.	1947	Palomar Gold Mines geology report, diamond-drilling report and drill logs	Rept, DD - 9 - 5092 ft	--	4	17	407217 5334595
T-0101	Tisdale, Deloro	Paymaster	1931, 1937–1962	Paymaster Consolidated Mines correspondence, reports on geology, plans and specimens list	Correspondence, Rept, DD	Au	130	17	481270 5367648

File #	Township	Company or property Name	Year of Work	File Description	Work Type	Assay	No. of Large Maps or Images	UTM Zone	Easting Northing
T-0105	Bristol	Sylvanite; Holmer, Stanwell Oil and Gas, Piccadilly Porcupine, United Buffaddison, Orpitt Mines	1933–1934, 1938–1955, 1957	Piccadilly Porcupine diamond-drilling records, drill logs and property reports and Orbit Mines property reports, assays and diamond-drilling records	Assays, Rept, DD - 1 - 270 ft, - 80 - 43,672 ft, GL	Au	49	17	460384 5359778
T-0107	Cody, Macklem	Brunhurst Mines; Hydra Explns; Nighthawk Peninsular, Porcupine Peninsular	1924–1950	Prospectus Annual Report for the fiscal year of 1949, property report with assays and plans, Geological Report, E.J. Leahy Notes 1907-1959 Property Timeline, DDH Sections	GL, UGD, Assays, Rept	Au	43	17	505402 5372237
T-0108	Deloro	Porcupine Southgate Mines Limited, Deladam Gold Mines Limited	1945, 1953, 1963	Property reports - 1953, News clipping 1963, DDH, plans, cross sections and field notes of survey of mining claims P24479-80, 24835-6-7-8-9	Rept, news clippings, DD- 27 - 25,119 ft, Assays	Au	33	17	480322 5360221
T-0117	Keith	Brule; Smith-Cryderman; Groundhog Iron	1950	Groundhog River deposit, ore block calculations, plan of mining claims	GL, Rept, Assays	Fe	8	17	409904 5334647
T-0130	Keith	Wejack Gold Mines	1947	DDH, maps, claims, geological plan	DD - 9 - 6781 ft, Assays	Au	12	17	401531 5334669
T-0172*	Keith	Duluma Gold Mines' Keith Township Claims	1947	Geological Report on Duluma Gold Mine's Keith Township Claims, property location map, and geological maps	GL, Rept	--	2	17	404874 5336064
T-0207	Keith	Concord Mines Limited	1947	Keith Township claim map, Sections #1, #2, #3 with annotations	DD - 3 - 2265 ft, Assays	Au	4	17	400076 5333184
T-0303*	Whitney	Gold City Porcupine Mines' Hunter Mine	1949	DDH, diamond drill records	DD - 5 - 2998 ft	--	30	17	488066 5371777
T-0402*	Muskego, Foleyet, Keith, Reeves	Muskego 1-70, 2-70, 3-70	1971, 1972	DDH, diamond drill records, magnetic surveys, electromagnetic surveys, soil surveys, location maps, soil surveys	DD - 1 - 236 ft, Assays, GL	Au Ag Cu Zn	11	17	411589 5342485
T-0413	Keith	Leone Opt., Hollinger Mines Ltd.	1971	Keith Township claim map, DDH, magnetic survey, geology, plans	GL, Mag, EM, Assays, DD	Cu Zn Ni Ag Hg	14	17	400869 5334815

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File #	Township	Company or property Name	Year of Work	File Description	Work Type	Assay	No. of Large Maps or Images	UTM Zone	Easting Northing
T-0591*	Muskego	United Macfie's Muskego Township Claims	1970, 1971	Report on United Macfie's Muskego Township property, prospectus, assay results, geological map, magnetic survey, electromagnetic survey, DDH	Pr, DD - 3 - 1289 ft, Assays, Rept, maps	Au	5	17	404378 5342861
T-0549*	Jamieson, Robb	Dominion Gulf Company	1956 to 1965	Correspondence, DD hole and assay plan and section maps, residual gravity and electromagnetic surveys, geophysical anomalies maps, claim locations maps, resistivity maps	Correspondence, DD, Assays, EM, Grav,			17	459110 5379120
T-0777*	Swayze, Dore	Montgomery-Ackerman Gold Mines Properties	1934	IPO of Montgomery-Ackerman Gold Mines Ltd	Newsclippings	--	0	17	381875 5300052
T-1769*	Swayze	Granges Exploration Limited	1977	Granges Exploration AB Diamond Drilling Records and Sections, assay results, location map	DD - 1 - 58 ft, Assays	Au Ag Cu Zn Ni	0	17	378892 5298711
T-2039*	Coppell	Radiant Exploration Limited	1950	Property photos, field report, location map, sketches, geological maps	GL, Rept	--	12	17	390080 5308557
T-2040*	Coppell, Newton	Sylvanite Gold Mines Limited	1948	Report on Prospecting in Coppell Township, location map, assay results	Rept, Assay	Au	2	17	390119 5309599
T-2041*	Coppell, Newton, Dale, Whigham, McOwen, Frater	Talisman Mines Limited's Algoma Eastern Project	1969	Prospectus, location map, geological maps, magnetic survey, airborne electromagnetic survey	Pr, GL	--	20	17	419112 5309150
T-2112*	Horwood	Jamestown Exploration (formerly Ameranium Mines Limited)	1972	Report on Horwood Township Geology, Geological Map of Horwood Township Showing, electromagnetic survey, report on geophysical survey, Prospectus for Jamestown Exploration	Pr, Gl, Rept	--	2	17	403022 5316008
T-2114*	Horwood	Deburmac Gold Mines Limited	1945	DDHs, diamond drill records, diamond drill sections, surficial assaying	DD - 6 - 2788 ft, assays	Au	0	17	402438 5317057
T-2115*	Horwood	Desourdy Property	1950	Desou Gold Exploration Syndicate Diamond Drill Hole Record	DD - 4 - 357 ft	--	0	17	404638 5320717

File #	Township	Company or property Name	Year of Work	File Description	Work Type	Assay	No. of Large Maps or Images	UTM Zone	Easting Northing
T-2117*	Horwood	Groundhog Gold Mines Limited	1947	Report, geological map, DDHs, promotional material, location map, magnetic survey	DD, Assay, Rept, GL	?	4	17	401516 5317834
T-2119*	Horwood, Hardiman	Hollinger Consolidated Gold Mines Limited's Horwood-Newman Option	1973	Geology of the Horwood-Newman Option, location maps, DDHs, diamond drilling records, diamond drilling sections, assay results, geological maps	DD, Assays, Rept, GL	MoS2 Cu Zn Ni Ag Pb	54	17	410214 5321666
T-2120*	Horwood	Horlak Mines Limited & Gor-Smith Syndicate		DDHs, diamond drilling records, location map	DD - 5 – 323 ft	--	0	17	407322 5320374
T-2124*	Horwood	Macassa Mines Limited	1950	Property location map	Location map	--	0	17	407200 5320452
T-2127*	Horwood	Proto Explorations and Holdings Incorporated	1972	Prospectus, report on electromagnetic survey, geological map, electromagnetic survey	Pr, GL, Rept	--	0	17	401054 5312474
T-2130*	Horwood	Siegal Group	1949	DDHs, diamond drilling records	DD - 17 – 2251 ft	--	0	17	409761 5323750
T-2136	Huffman, Garnet, Osway, Benneweis	Erie Canadian Mines; Garnet Gold Synd.	1936, 1938	Mining Corp., Shannon and Opeepeesway Lake Location map, property file and assay plan	Rept, Assays, Tr	Au	3	17	409059 5274401
T-2151	Osway, Yeo, Huffman, Potier	McCullough Group; Cousins-Scott Group; Jessup Group; Mogridge Group	1939	Compilation of geology reports, assays, samples, maps, sketches	Tr, Samp, Assays	Au	9	17	400507 5285977
T-2186*	Silk	Oro Mines Limited & McVittie-Cryderman Group	1947	DDHs, diamond drill sections, diamond drill record, assay results	DD - 2 – 655 ft, Assays	Au	2	17	394361 5310490
T-2294*	Sothman, Halliday, Kempt, Mond	Dominion Gulf Company; Kirkland Minerals Ltd	1950 to 1958	DDH, assay, ground Mag, annual report,		Ni Cu	3	17	483962 5299763
T-2303	Osway	Noranda Exploration	1995	Electromagnetic and magnetic survey, DDH No. OSW 78-1	Assays, DD	Au Ag Cu Zn Pb WRA Ba Zr Ni Mo Sb	2	17	401386 5277616
T-2452	Huffman	A.S. Burton prop., Osway Explorations Ltd.	1981–1983	Target areas for gold exploration, regional geology, diamond-drilling program, geology report, surveys, plans stripping, claims	Map, DD	--	55	17	410849 5274614

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File #	Township	Company or property Name	Year of Work	File Description	Work Type	Assay	No. of Large Maps or Images	UTM Zone	Easting Northing
T-3721	Osway	Jerome Gold Mines Ltd., Opeepeesway Lake area	1938	Location of Jerome Gold Mines and Shannon property, plans, assays, geology, drilling and trenching	Maps, UGD	--	149	17	407231 5276843
T-3840	Adams, Carman, Carnegie, Deloro, Denton, Douglas, Eldorado, Foleyet, Keefer, Keith, Kenogaming, Langmuir, Loveland, MacDiarmid, McArthur, Murphy, Muskego, Ogden, Penhorwood, Price, Reeves, Shaw, Thorburn	The Hanna Mining Company, Sudbury Mining Division, Hollinger Drilling, Hollinger, B.W. Lang Air, Mespi Mines, Redstone River, P214216, Tex Sol. Exploration	1972–1973	Ultramafic project: assays, maps, geological survey, sampling, plans, DDH, claims, field notes, magnetic survey, airborne and ground survey	Samp, Assays, compilation, DD	Cu Ni Au	121	17	494485 5405045
T-4271	Denyes, Raney, Swayze	The Algoma Steel Corporation Limited	1960	Field reports, dip needle anomalies (geophysical maps), location map	GL, Mag	--	1	17	380287 5300324
T-4285	Keith	Algoma Ore Properties Limited, Canadian Pacific Railway Company & Cliffs of Canada Limited	1958-1961	Report on Iron Formation - Groundhog River Area, DDHs, diamond drill sections, geological maps	Assays, DD - 9 – 2425 ft, GL, Mag	Fe Si	37	17	409926 5334645
T-4286	Keith	The Algoma Central and Hudson Bay Railway Company, The Algoma Eastern Railway Company & The Lake Superior Corporation	1909-1929	Communications, Report on Iron Claims on Ground Hog River, sample discussion, sketches, property plan, reports, geological maps, assay results	GL, Samp, Assays	Fe	4	17	408743 5334255

File #	Township	Company or property Name	Year of Work	File Description	Work Type	Assay	No. of Large Maps or Images	UTM Zone	Easting Northing
T-4516	Aitken, Arbutus, Bristol, Byers, Carnegie, Carscallen, Clergue, Côté, Denton, Fingal, Godfrey, Huffman, Jamieson, Jessop, Loveland, MacDiarmid, Mahaffy, Matheson, Mountjoy, Murphy, Ogden, Oke, Osway, Reid, Robb, Tisdale, Thorneloe, Turnbull, Whitesides, Whitney, Wilhelmina Yeo	Explorers Alliance Corp; International Larder Minerals Inc.; 1232448 Ontario Inc.; 1338756 Ontario Inc.	1999	Compilation of 31 Townships (Aitken, Arbutus, etc.), Compilation of Township claims 1972 - 1999, Claims in the Tisdale Township 1984	Rept	--	42	17	n/a
T-4614	Cunningham, Greenlaw, Swayze	The Lake Superior Corporation & Marks, J.E.	1909-1910	Report on Marks Iron Claims, Report by the Ridout Exploring Syndicate, property location map, geological maps, correspondence, assay results	Assays, GL, Rept	Ca Fe Mg Si	5	17	375644 5291638
T-4830	Osway	Jerome Mine, Eddy Forest Products Ltd	1974	Assays and DDH cross section plots for holes Eddy 1 to Eddy 21	DD - 21 - 6000 ft, Assays	Au	13	17	407781 5275488
T-5244	Osway, Huffman	Osway Exploration Ltd., Jerome Gold Mines Ltd.	1980-1984	Evaluation of Jerome Mine, reports, plans and resource calculation	Rept, Rcalc, DD	Au	10	17	407231 5276843
T-5678	Swayze	Kenty Gold Mines	1983	Location map, geological map, sketches, reports, assay results	Rept, Assays, property map	Au	0	17	380364 5299995
T-6354	Keith	New Joburke Gold Mines' Joburke Mine	1949-1980	DD, diamond drill sections, geological and assay maps, sections, underground geology maps	Assays, DD, GL, UGW	--	29	17	407185 5336105
T-6366	Keith	Noranda Exploration's Joburke Project	1989	DD	DD	Au	6	17	n/a

TIMMINS DISTRICT—2019

File #	Township	Company or property Name	Year of Work	File Description	Work Type	Assay	No. of Large Maps or Images	UTM Zone	Easting Northing
T-7085*	Matheson, Hoyle, Kidd, Whitney	Ecstall Mining Limited, Falconbridge Limited, Kidd Creek Mines Texas Gulf Canada	1979-1991	Compilation of work done on roughly overlapping projects from successive companies operating in the four townships	OVD, DD, Assays EM, AMAG, Mag, Correspondence, AEM	Au		17	498443 5381590
T-7086*	Matheson, Hoyle, Kidd, Whitney	Kidd Creek Mines	1979-1985	Compilation of exploration work	EM, OVD, Assays, Correspondence, DDH	Au, Ni, Cu, Zn, As		17	498217 5383032
T-7087*	Matheson	Falconbridge Gold Corporation, Falconbridge Limited,	1988-1990	Compilation of exploration work	DDH, Assays, EM,	Au		17	494880 5376569
T-7088*	Kidd	Falconbridge Limited Project 8132	1994	Compilation of exploration work	Lc, Mag, EM			17	471502 5394371
T-7089	Matheson	Falconbridge Limited Tkachuk and Dupuis options and Umex Joint Venture, Falconbridge Gold Corporation Birker and Burkhardt options	1986 to 1990	Compilation of exploration work	AMAG, AEM, DDH, Assays, EM, Mag, Lc, report writing	Au, AS		17	498085 5376425
T-7090*	Matheson	Texas Gulf Sulphur Company	1979	Compilation of exploration work	OVD, DDH, Assays EM, AMAG, Mag, Correspondence, AEM			17	446525 5382748
T-7091*	Matheson	Kidd Creek Mines Limited Hoyle Pond Belt	1982	Compilation of exploration work	OVD, DDH, Assays EM, AMAG, Mag, Correspondence, AEM			17	496894 5353693
T-7092*	Matheson	Kidd Creek Mines Limited and	1970 to 1981	Compilation of exploration work	Lc, Mag, EM,			17	494999 5377000
T-7093*	Matheson	Texas Gulf Sulphur Company	1985	Compilation of exploration work	DD			17	494999 5383107

File #	Township	Company or property Name	Year of Work	File Description	Work Type	Assay	No. of Large Maps or Images	UTM Zone	Easting Northing
T-7094*	Matheson	Falconbridge Limited Tkachuk and Passaw Options Mill Creek project, Kidd Creek Mines Limited and Texas Gulf Sulphur Hoyle Pond Belt Project	1976 to 1990	Compilation of exploration work	OVD, Assays, Mag, DDH, EM	Au		17	494999 5383107
T-7095*	Matheson	Kidd Creek Mines Hoyle Pond Belt Project	1979 to 1986	Compilation of exploration work	Lc, OVD, EM, DDH, Assays, Correspondence,	Au	4	17	498085 5376425
T-7096*	Matheson	Kidd Creek Mines Hoyle Pond Belt Project	1984 to 1986	Compilation of exploration work	DD, Assays, Correspondence, OVD, Lc, EM	Au		17	494999 5378053
T-7097*	Matheson	Falconbridge Gold Corporation Birker, Burkhardt, Brandon and Dupuis Options, Falconbridge Limited	1987 to 1989	DD logs with Assays	DDH, Assays,	Au		17	496508 5377982
T-7098*	Loveland	Hollinger Consolidated Gold Mines Limited	1965 to 1972	Compilation of exploration work	DD, Assays	Au, Ag, Ni, Cu, Zn			
T-7099*	Hoyle	Falconbridge Limited, Kidd Creek Mines	1986 to 1988	DD logs with Assays	DD, Assays	Au	1	17	493282 5380687

Note: DD - 21 - 6000 ft = 21 diamond-drill holes totalling 6000 feet, * = completed in 2018.

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Ontario Geological Survey Regional Resident Geologist Program

**Timmins Regional Resident Geologist
(Sault Ste. Marie District)—2019**

by

**E.H. van Hees, P. Sword, P. Bousquet, S.L.K. Hinz and
J. Suma-Momoh**

2020

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Timmins Regional Resident Geologist (Sault Ste. Marie District)—2019

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INTRODUCTION

Mineral production in the Sault Ste. Marie District during 2019 consisted of gold production from 3 gold mines and bedrock aggregate from 1 trap rock quarry. As of December 31, 2019, there were a total of 11 346 active claims covering an area of 222 125 ha in the Sault Ste. Marie District, and \$9 258 389 worth of assessment work was received and processed by the Sault Ste. Marie District office in 2019 (L. Herard, Mining Lands, ENDM, email communications, February 20, 2020). The 16.81% decrease in total number of active claim units from 2018 to 2019 appears to coincide with the 15% decrease in exploration funding for junior mining companies between February and December 2019 (Anders 2019). The value of the assessment work increased by 218.35% between 2018 and 2019 (Table 1). The area covered by active claims (222 125 ha) in 2019 decreased by 11% compared to the area covered by claims in 2018 (249 176 ha). Gold was the major commodity targeted for exploration.

Table 1. Summary of claims information in the Sault Ste Marie Mining Division, 2014–2019.

Year	Active Claim Units	Assessment Work (\$)
2019	11 346	9 258 389
2018	13 638	2 908 234
2017	15 979	4 802 410
2016	10 926	2 560 016
2015	10 027	3 783 680
2014	11 493	3 173 953
Δ2018–19	-16.81%	218.35%

MINING ACTIVITY

Gold production in the Sault Ste. Marie District came from 3 operating mines in 2019: the Eagle River Mine, the Mishi Mine (Wesdome Gold Mines Ltd.) and the Island Gold Mine (Alamos Gold Inc.). Production from the 3 mines totalled 246 089 ounces of gold in 2019. Historical gold production for the Wawa area is presented in Table 2. Historical iron, uranium and base metal production up to December 31, 2019, for all the mines in the Sault Ste Marie District are listed in Tables 3, 4 and 5, respectively.

Table 2. Historical gold production in the Wawa area of the Sault Ste Marie District to the end of 2019.

Mine	Township	Years of Production	Tons Milled	Production (oz. gold)	Grade (oz./ton)
Alden–Goudreau	Cowie	1937, 1940, 1943, 1945	13 479	3220	0.24
Centennial	Naveau	1939–1940	8612	610	0.07
Cline	Jacobson	1938–1940, 1947–1948	331 842	63 328	0.19
Darwin/Grace	McMurray	1902–1903, 1907–1908, 1910, 1923, 1925, 1930, 1935, 1937, 1940, 1943–1944	45 528	15 191	0.33
Deep Lake	McMurray	1936–1938, 1943	2790	1633	0.59
Eagle River	Point Isacor	1995–2019	4 234 812	1 296 537	0.31
Edwards	Jacobson	1938	1537	485	0.32
		1997–2002	389 550	139 692	0.327
Holdsworth prospect	Corbiere	1933	60	10	0.17
Island Gold	Finan	2007–2019	3 233 649	787 141	0.24
Kremzar	Finan	1988–1990	392 858	37 678	0.10
Magino/Algoma Summit	Finan	1930–1940, 1988–1992	>768 679	113 228	0.15
Magnacon	Mishibishu Lake	1989–1990	165 000	15 356	0.09
Minto (includes Jubilee and Cooper)	McMurray	1929–1942	184 600	37 678	0.20
Mishi	Mishibishu Lake	2002–2007, 2012–2019	835 579	60 000	0.07
Murphy/Algold/Amherst	Abotossaway	1926–1932, 1936–1938, 1940	23 211	2450	0.10
Norwalk/Manxman	Naveau	1904, 1910	820	60	0.07
Parkhill	McMurray	1902, 1929, 1930–1938, 1940–1944	125 778	54 301	0.43
Ranson	Rabazo	1939	774	156	0.20
Renabie	Leeson	1947–1970, 1981–1991	5 583 895	1 100 000	0.20
Smith/Van Sickle	McMurray	1935–1936	9228	536	0.06
Stanley	McMurray	1936	1963	84	0.04
Surluga	McMurray	1968–1969, 1988–1989	87 460	8898	0.10
Total			16 441 704	3 740 272	0.23

(Resident Geologist Program Files, Sault Ste. Marie District, Sault Ste. Marie)

Table 3. Historical iron production in the Wawa area of the Sault Ste. Marie Mining District.

Mine - Owner	Township	Years of Production	Production (tons)
Old Stobie Mine – Mr. James Stobie Ltd.	Aberdeen Additional	1874–1878	No data
Breitung Mine – Breitung Iron Co.	Deroche	1900–1905	2000–3000
Williams Iron Mines Co. Ltd – Williams Iron Mines Co. Ltd	Hodgins	1902–1905	500
Rand Consolidated Mines Ltd. – Algoma Steel Corp. Ltd	Aguonie	1918–1919	3000
Morrison No.4 – Algoma Steel Corp. Ltd	Aguonie	1958–1959	67000
Goudreau “C” – Algoma Steel Corp. Ltd	Aguonie	1962–1963	375 000
Bear Claim – Algoma Steel Corp. Ltd	Aguonie	1959–1961	350 000
Goudreau “A” – Algoma Steel Corp. Ltd	Aguonie	1960–1961	250 000
Ruth and Lucy Mine – Algoma Steel Corp. Ltd	Esquega	1967–1970	1 219 989
Josephine Mine – Michipicoten Iron Mines Ltd	Corbiere	1945–1946	61 637
Old Helen – Algoma Steel Corp. Ltd	Chabanel	1900–1918	52 000 (Pyrite) + 2 700 000
Helen Mines, Alexander – Algoma Steel Corp. Ltd	Chabanel	1939–1969	20 076 963
Victoria Open Pit – Algoma Steel Corp. Ltd	Chabanel	1945–1960	10 202 089
George W. MacLeod Mine – Algoma Steel Corp. Ltd	Chabanel	1960–1998	59 662 710
Sir James Mine (Eleanor Range) – Algoma Steel Corp. Ltd	Chabanel	1958–1967	72 151 285
Magpie Mine – Algoma Steel Mine Corp. Ltd	LeClaire	1913–1921	1 212 866

Table 4. Historical uranium production in the Elliot Lake area of the Sault Ste. Marie Mining District.

Mine	Years	Tons	lbs U ₃ O ₈ prod
Algoma	1959	1 477 160	2 495 709
Can-Met	1958–1959	1 477 160	2 495 709
Denison	1957–1964	69 484 027	146 618 806
Lacnor		0	0
Milliken	1958–1959	1 796 789	3 169 600
Nordic	1957–1959	3 131 826	7 162 303
Panel	1979–1986 + 1988	7 844 980	14 533 440
Pronto	1957–1960	1 633 788	7 007 999
Quirke	1958–1960	1 962 652	4 437 377
New Quirke	1978–1986	23 294 020	45 490 560
Spanish American		0	0
Stanleigh	1958–1959 + 1988–1996	16 763 378	27 746 205
Stanrock	1958–1967	6 897 765	11 798 778
Rio Algom	1959–1996	88 547 989	188 099 114
Total		224 311 534	461 055 600

Table 5. Historical copper production in the Sault Ste. Marie District.

Mine	Township	Years of Production	Ore milled (tons)	Grade
Copper Corp Mine – C Zone	Ryan	1965–1972	1 021 358	1.16% Cu, 0.22 oz/t Ag, 0.0002 oz/t Au
Tribag Mine (Breton Breccia)	Nicolet	1972	190 949	1.22% Cu
Jardun Mine	Jarvis	1954–1957	145 029	3.43% Pb, 2.44% Zn, 0.02% Cu, 1.5 oz/t Ag, 0.0007 oz/t Au
Bruce Mines	Plummer Additional	1854–1876, 1905–1908	300 000	4.5%
Pater Mine	Spragge	1960–1968	2 000 621	1.76% Cu

Alamos Gold Inc.

ISLAND GOLD MINE

Alamos Gold Inc. continued gold production at the Island Gold Mine in 2019 after acquiring the mine from Richmond Mines Ltd. in 2017. The Island Gold Mine is located 83 km northeast of Wawa and 10 km southeast of Dubreuilville. Ore from the mine is processed onsite in the Kremzar mill, which had its capacity increased to 1200 t per day in May of 2019. Ore milled by the mine averaged 1099 t per day. Gold production from the Island Gold Mine in 2019 totalled 154 400 ounces from 380 266 tonnes processed, having a head grade of 12.28 g/t gold and a recovery of 97%. The mine did 6031 m of development work in 2019 to access reserves and to provide drilling stations. The mineral reserve and resource estimates for the Island Gold Mine at December 31, 2019, is presented in Table 6. (Alamos Gold Inc., press release, February 18, 2020; Alamos Gold Inc., Management Discussion and Analysis, October 30, 2019, and February 20, 2020).

The mine and process plant complex had a work force of 558 employees (341 full time and 217 contractors) at the end of 2019 (Ontario Mining & Exploration Directory and Resource Guide 2020, February 2020). Austin Hemphill is the Mine General Manager, Chris Bostwick is the Vice President of Technical Services, Scott RG Parsons is the Exploration Manager for Canada and Raynald Vincent is the Chief Geologist (Alamos Gold, news release, January 15, 2020).

Table 6. Mineral reserve and resource estimates – Island Gold Mine – December 31, 2019.

Mine	Category	Tonnes	Grade (g/t gold)	Contained ounces Au
Island Gold	Proven + Probable Reserves	3 643 000	10.37	1 215 000
	Measured + Indicated Resources	879 000	6.51	184 000

Exploration at the Island Gold Mine in 2019 focussed on expanding on-strike and down-plunge extensions of the deposit. Diamond drilling was conducted in the Main Extension, Eastern Extension and Western Extension of the Island Gold Main Zone. Drilling in 2019 totalled 47 608 m of surface and 24 462 m of underground exploration drilling (Table 7). The program has been successful in extending high-grade gold mineralization in the Main, Western, and Eastern Extensions and grew the 2019 year-end Mineral Reserves and Resources (Alamos Gold Inc., news release, February 18, 2020).

Table 7. Types and lengths of drilling carried out at the Island Gold Mine in 2019.

Type of Drilling	Metres Drilled in 2019
Surface directional exploration drilling	47 608
Underground exploration drilling	24 462

(Alamos Gold Inc., news release, January 15, 2020)

Highlights from the 2019 drilling program include the following:

- The 2019 exploration program continued to target 3 main areas in the Island Gold deposit, which extends over 2 km along-strike. During the first 9 months of 2019, the surface and underground exploration drilling programs focused on expanding the down-plunge and lateral extensions of the deposit, with the objective of adding new near-mine Mineral Resources. Drill holes in the Main, Western, and Eastern Extension areas were testing high-grade, east-plunging shoots outside of existing Mineral Reserves and Resources.
- Main Extension – high-grade mineralization was extended 80 m east of existing Mineral Resources (MH17-12) and 50 m down-dip from the previously reported intersection (MH17-07). High-grade mineralization has been extended over 1000 m east of current mine workings and remains open along strike to the east (Alamos Gold Inc., news release, January 15, 2020).
- Gap between Main and Eastern Extensions – extended high-grade mineralization 50 m to the west in the new area of focus to now cover a lateral extent of 350 m and confirmed the continuity of high-grade mineralization at a drilling density that will support the declaration of an initial Inferred Mineral Resource. All 17 holes drilled to date in this area have intersected the E1E Zone including 12 intersecting ore grade gold mineralization. These results have confirmed the E1E Zone extends vertically over 1.2 km, between a depth of 300 m and 1500 m in the eastern part of the deposit. (Alamos Gold Inc., news release, January 15, 2020).

- Eastern Extension – high-grade mineralization intersected 170 m east of the nearest Indicated Mineral Resource (620-610-07). This area is located 225 m above the high-grade intersections in the new area of focus. (Alamos Gold Inc., news release, January 15, 2020).
- Highlights from the Main Zone include the following intercepts:
 - 121.32 g/t Au (96.47 g/t cut) over 3.81 m (MH20-01);
 - 108.17 g/t Au (94.56 g/t cut) over 2.57 m (MH17-11); and
 - 36.45 g/t Au (13.23 g/t cut) over 8.04 m (MH17-12)
- Highlights from the Eastern Zone include the following intercepts:
 - 32.19 g/t Au (25.48 g/t cut) over 4.68 m (620-610-01); and
 - 20.18 g/t Au (20.18 g/t cut) over 3.24 m (620-610-07)
- Highlights from the Main - Eastern Gap Zone include the following intercepts:
 - 21.28 g/t Au (21.28 g/t cut) over 9.01 m (MH18-09); and
 - 28.50 g/t Au (23.13 g/t cut) over 4.38 m (MH18-10).

Wesdome Gold Mines Ltd.

Wesdome Gold Mines Ltd. operates the Eagle River Underground Mine and the Mishi Open Pit, which make up the Eagle River Complex, located approximately 50 km west of Wawa. Ore from both mines is processed at the Mishi mill, which has a capacity of 1200 t per day. Total production from the Eagle River Complex was 91 688 ounces of gold from 168 809 t of ore milled (Wesdome Gold Mines Ltd., news release, January 15, 2020). Both mines are hosted in the Mishibishu greenstone belt.

EAGLE RIVER MINE

The Eagle River Mine has been in production since 1996, and is located approximately 7 km north of Lake Superior and 50 km west of Wawa. Production for 2019 totalled 88 617 ounces from 122 405 tonnes at a head grade of 23.1 g/t gold. Gold recoveries for Eagle River ore was 97.3% for the year. The improvements in ore grade during Q3 2019 are largely a function of stopes in the 303 Zone contributing more tonnes at higher grades than anticipated. The Mineral Reserves and Resources estimate at December 31, 2019 are presented in Tables 8 and 9. (Wesdome Gold Mines Ltd., news releases, January 15, 2020; Management's Discussion and Analysis, March 10, 2020.)

The mine and process plant complex had a work force of 220 employees at the end of 2019 (Ontario Mining & Exploration Directory and Resource Guide 2020, February 2020). Jean-Guy Leclair is the Mine General Manager, Michael Michaud is the Vice President of Exploration and Jason Chalykoff is the Chief Geologist.

Table 8. Mineral reserves – Eagle River Mine – December 31, 2019.

Mine	Category	Tonnes	Grade (g/t gold)	Contained Ounces
Eagle River	Proven	331 000	15.5	165 000
	Probable	855 000	14.0	385 000
	Proven + Probable	1 186 000	14.4	550 000

(Wesdome Gold Mines Ltd., 2019 Annual Management's Discussion and Analysis, March 10, 2020)

Table 9. Mineral resources exclusive of mineral reserves – December 31, 2019.

Mine	Category	Tonnes	Grade (g/t gold)	Contained ounces
Eagle River	Measured	25 000	10.1	8 000
Eagle River	Indicated	355 000	9.0	103 000
Eagle River	Measured + Indicated	380 000	9.0	111 000

(Wesdome Gold Mines Ltd., 2019 Annual Management's Discussion and Analysis, March 10, 2020)

Wesdome Gold Mines Ltd. continued development at the Eagle River Mine on the 864 m Level of the mine in 2019 where they have encountered mineralization along a strike length of 155.4 m grading 28.3 g/t gold (uncut) with an average true thickness of 2.8 m (Wesdome Gold Mines Inc., 2019 Annual Report, March 11, 2020).

Exploration and definition drilling continued at the 300E Zone in 2019 and returned high-grade intersections over increased widths. This drilling has extended the zone an additional 300 m down-plunge to the 1300 m level (Wesdome Gold Mines Inc., 2019 Annual Report, March 11, 2020).

Surface drilling has continued to expand the Falcon Zones over a strike length of 200 m and to a depth of 600 m below surface. A drill rig has been positioned on the 772 m elevation of the mine in order to better test the down-plunge extension of the Falcon Zones. Initial drilling returned 160.5 g/t gold over 3.9 m (Wesdome Gold Mines Inc., 2019 Annual Report, March 11, 2020).

MISHI MINE

The Mishi Open Pit Mine has been in production intermittently since 2002. Production from the Mishi Mine in 2019 totalled 3072 ounces from 46 405 tonnes at a head grade of 2.5 g/t gold. Gold recoveries for Mishi ore was 83.3% for the first 9 months of the year. The Mishi Pit is 400 m long and has a planned depth of 70 m (Wesdome Gold Mines Ltd., Management's Discussion and Analysis, September 30, 2018). The Mineral Reserves and Resources estimated at December 31, 2019, are presented in Tables 10 and 11 (Wesdome Gold Mines Ltd., news release, January 15, 2020; Management's Discussion and Analysis, November 8, 2019, and March 10, 2020)

Table 10. Mineral reserves – Mishi Mine – December 31, 2019.

Mine	Category	Tonnes	Grade (g/t gold)	Contained Ounces
Mishi	Proven	8 000	1.9	500
Mishi	Probable	108 000	2.9	10 000
Mishi	Proven + Probable	116 000	2.8	10 500

(Wesdome Gold Mines Ltd., 2019 Annual Management's Discussion and Analysis, March 10, 2020)

Table 11. Mineral resources exclusive of mineral reserves – December 31, 2019.

Mine	Category	Tonnes	Grade (g/t gold)	Contained Ounces
Mishi Pit	Inferred	2 808 000	1.6	147 000
Mishi Underground	Inferred	373 000	5.4	65 000
Mishi Total	Inferred	3 182 000	2.1	212 000

(Wesdome Gold Mines Ltd., 2019 Annual Management's Discussion and Analysis, March 10, 2020)

QUARRYING ACTIVITY

Trap rock, stone and aggregate production continued from several quarries in the Sault Ste. Marie District. The production of aggregate material consists primarily of sand and gravel. Products derived from these aggregate resources are used in both road construction (to make concrete and asphalt) and building construction industries.

Ontario Trap Rock

Ontario Trap Rock (a division of R.W. Tomlinson Ltd.) continued quarrying crushed bedrock aggregate from Nipissing gabbro at their operation 3 km east of the town of Bruce Mines, in Plummer Additional Township.

The company produced just over 1 000 000 t of high-quality aggregate from this facility in 2019 (Anthony Reader, personal communication, February 14, 2020). The main product of the trap rock operation is high-quality aggregate used for rail ballast, asphalt and road construction in both Canada and the United States.

The quarry operating season begins in March and normally ends in November. About 90% of the aggregate product is transported by ship from the Ontario Trap Rock deep-water port on Lake Huron. Tandem trucks are loaded with product in the quarry and driven to the port where the product is dumped through a grate into an underground storage container. The aggregate is dispensed from the container onto a conveyor belt that automatically loads lake freighters at the dock. The remaining 10% of the product is transported to clients by rail and truck.

The trap rock operation produces 7 different product sizes, including 5, 2.5, 1, 5/8, 3/8, and 1/4 inch(es), as well as sand or silt.

The operation employed 41 full-time people, 10 full-time contractors and 4 to 8 part-time employees, hired from the Lake Huron area, during 2019 (Anthony Reader and Tammy Fluk, personal communications, February 14, 2020). The quarry Superintendent is Anthony Reader and he can be reached by email at areader@tomlinsongroup.com or phone at 1-705-785-3833.

ADVANCED EXPLORATION ACTIVITY

Argonaut Gold Inc.

MAGINO GOLD PROJECT

Argonaut Gold Inc. has made great progress in the development of its Magino Gold Project located in Finan Township during the year. During the first quarter of 2019, the company obtained a positive Decision Statement for the Federal Environmental Assessment process and a positive Statement of Completion for the Provincial Environmental Assessment process (Argonaut Gold Inc., Management's Discussion and Analysis, May 1, 2019).

The company also commenced a 6000 m drilling program which was expanded to 20 000 m based on early success in identifying high-grade mineralization in structures beneath and to the east of the planned pit and to the west of the adjacent Island Gold Mine (Argonaut Gold Inc., Management's Discussion and Analysis, November 7, 2019). The results of the first 3500 m of the program convinced the company

that it had intersected structures of the Goudreau–Lochalsh Deformation Zone that mandated follow-up. This expanded program will target the down-plunge potential of high-grade gold structures at depth. The results of the 3500 m completed are reported in Table 12 (Argonaut Gold Inc., press release, September 10, 2019). The widths indicated in the table are not true widths.

Table 12. Diamond-drill hole assays from the Magino Gold Project, 2019.

Hole	From (m)	To (m)	Length (m)	Au (g/t)
MA-19-001	41.0	66.0	25.0	2.14
MA-19-002	320.0	332.0	12.0	4.69
MA-19-003	425.0	428.3	3.3	4.81
MA-19-003	546.0	548.3	2.3	4.94
MA-19-003	557.0	559.0	2.0	4.30
MA-19-004	222.0	225.0	3.0	14.33
MA-19-004	319.0	331.0	12.0	7.96
MA-19-004	350.0	353.0	3.0	2.89
MA-19-004	356.0	358.0	2.0	3.59
MA-19-004	375.0	377.0	2.0	2.98
MA-19-004	428.0	430.0	2.0	4.68
MA-19-004	535.0	536.0	1.0	4.89

EXPLORATION ACTIVITY

A summary of exploration activity in the Sault Ste. Marie District is reported in Table 13. Locations for the activities are shown on Figure 1. Descriptions of exploration activities are presented in the following text.

Table 13. Active exploration projects in the Sault Ste. Marie District for 2019. Keyed to Figure 1.

Abbreviations			
AEM	Airborne electromagnetic survey	Pr	Prospecting
Assays	Assaying and analyses	Samp	Sampling (other than bulk)
AMT	Airborne magnetotelluric survey	SGH	Soil gas hydrocarbon analyses
DD	Diamond drilling	SD	Sonic drilling
GL	Geological survey	Str	Stripping
Lc	Linecutting	Tr	Trenching
IP	Induced polarization survey	UG	Underground exploration/development
MRE	Mineral Resource Estimate (NI 43-101)		

No.	Company/Individual Property Name	Township/Area (Commodity)	Exploration Activity
1	Alamos Gold Inc. Island Gold Mine	Finnan (Au)	Assays, DD, UG
2	International Montoro Resources Serpent River	Gaiashk, Joubin (Ni, Cu, PGE, REE, U)	AEM
3	Golden Goliath Resources Inc Wish Ore	Wishart (Au)	Tr, Samp, IP
4	Manitou Gold Inc. Goudreau	Jacobson, Riggs (Au)	Assays, GL, IP, Lc, Pr, SGH, Str, Tr

No.	Company/Individual Property Name	Township/Area (Commodity)	Exploration Activity
5	Manitou Gold Inc. Renabie - Easy Lake	Riggs (Au)	Assays, Pr, Tr
6	Manitou Gold Inc. Rockstar	Jacobson, Riggs (Au)	Assays, Pr, Tr
7	Red Pine Exploration Inc. Wawa Gold	McMurray (Au)	Assays, DD, Samp, MRE
8	Wesdome Gold Mines Inc. Eagle River Complex	Michibishu Lake Area, Point Isacor Area (Au)	Assay, DD, UG

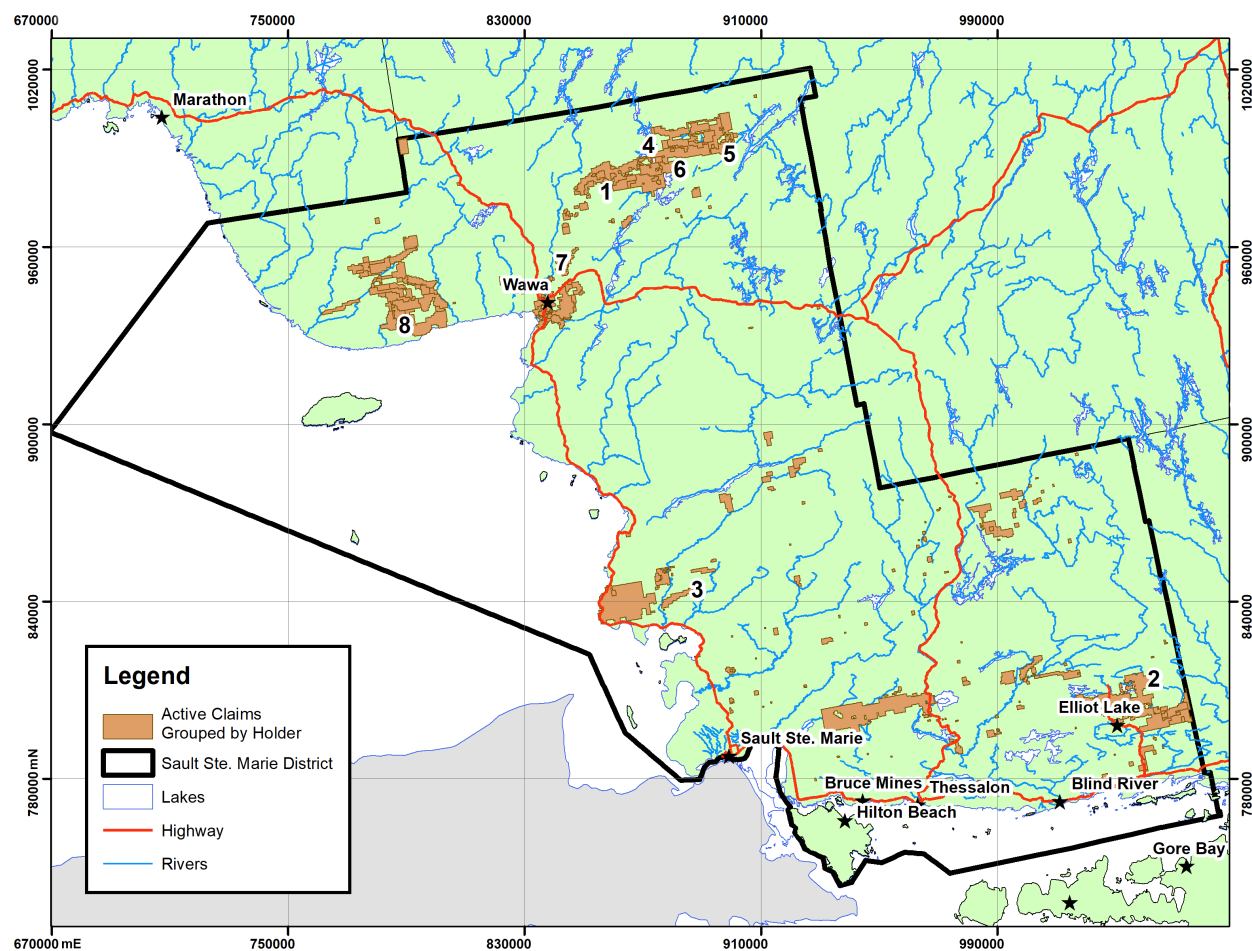


Figure 1. Exploration projects and claims in the Sault Ste. Marie District, 2019. Brown boxes indicate active claim cells as of January 9, 2020. Claim unit cells have been grouped together based on claim holders. Exploration projects keyed to Table 13.

Golden Goliath Resources Inc.

WISH ORE PROPERTY

Golden Goliath Resources identified new mineralized shear zones by manually stripping and channel sampling known mineralized showings. Assays of 4.28 g/t Au over 3.0 m including 9.05 g/t Au over 1.0 m were identified in the New Zone. Mechanical stripping has shown that the shear zone is more extensive than previously indicated by manual stripping. New results from recent sampling include 3.83 g/t over 0.5 m and 1.52 over 0.8 m. A new discovery of mineralized boulders on the trend between the New Zone and the Trench Zone returned values over 0.5 g/t, demonstrating a continuation of mineralization along the trend. An Induced Polarization (IP) survey conducted on two targeted areas of the property by the company identified several geophysical targets (Golden Goliath Resources, news releases, August 22 and September 4, 2019).

International Montoro Resources Inc.

SERPENT RIVER PROPERTY

International Montoro Resources Inc., through a contract with Mira Geosciences, has completed the compilation of exploration data on the Pecors–Serpent River, Nickel, Copper, Gold, Platinum and Palladium Project into its Geoscience Analyst (3-D) visualization and exploration platform. The compilation allowed the company to increase the size of the Pecors anomaly to 5.7 by 4.2 by 2.2 km. It has also identified 2 new high probability massive sulphide targets from conductivity and magnetic data (International Montoro Resources Inc., news release, December 3, 2019).

Manitou Gold Inc.

GOUDREAU PROJECT

During the year, Manitou Gold Inc. has gathered many properties under the Goudreau Project: Goudreau Patents, Rockstar, Midas, Dog Lake, Stover and Easy Lake–Renabie East properties. The majority are situated within the Goudreau–Lochalsh Deformation Zone (GDLZ), with the Rockstar, Midas and Dog Lake covering also the Emily Bay Deformation Zone (Manitou Gold Inc., press release, September 23, 2019).

On the Renabie–Easy Lake property, the company defined a high-strain, north-northeast-striking mineralized zone in tonalitic rocks of the Missinaibi Lake batholith in the neighbourhood of the Reed Vein. The structure, showing mineralization and alteration, appears very similar to the Renabie deposit. The structure was traced for over 400 m before it disappeared under the overburden. The structure remains open along-strike in both directions. Gold mineralization occurs in both foliation-parallel and intersecting quartz veins hosted within zones of high strain. Surface grab sampling by the company returned assays up to 79.9 g/t Au, with an average of 18.2 g/t Au for 18 samples grabbed selectively. (Manitou Gold Inc., press release, September 23, 2019.)

Field work on the Stover property identified key targets for high-grade gold mineralization around the Pileggi No. 1 area (Manitou Gold Inc., press release, September 23, 2019). The rocks associated with the gold consist of silicified and carbonate-altered mafic volcanic rocks with laminated quartz veins and pyrite, chalcopyrite and pyrrhotite mineralization in east-southeast-trending shear zones. Grab samples collected near the old workings of the Pileggi No.1 returned 9.37 g/t Au, 6.2 g/t Au and 4.1 g/t Au.

Another grab sample of laminated quartz collected 200 m to the south of the Pileggi No.1 returned an assay of 3.4 g/t Au (Manitou Gold Inc., press release, September 23, 2019).

The Rockstar property saw the discovery of a new gold-bearing vein 400 m west from the Rockstar vein. The new vein structure, named RS2, is interpreted as a second subparallel structure located on the south-side of the Rockstar vein structure. The initial grab sample on the RS2 returned an assay of 39.9 g/t Au. On the Rockstar vein, systematic channel sampling was completed, returning an average grade of 3.0 g/t Au over an average width of 1.5 m along 100 m of exposed outcrop (Manitou Gold Inc., press releases, August 29 and September 23, 2019).

Red Pine Exploration Inc.

WAWA GOLD PROJECT

Red Pine Exploration Inc. published a new NI 43-101-compliant resource estimate for its Wawa Gold Project in 2019. The evaluation is based upon an underground mining scenario and is reported at a 2.7 g/t gold cut-off within a 2 g/t gold envelope. The estimation stands now at 1 307 000 t at 5.47 g/t gold for 230 000 ounces of gold in the Indicated category and 2 716 000 t at 5.39 g/t gold for 471 000 ounces of gold in the Inferred category (Table 14; Thomas 2019).

Table 14. Mineral Resource Estimate for the Wawa Gold Project.

Resource Category	Quantity (kt)	Grade (g/t gold)	Contained Gold (Ounces)
Indicated	1307	5.47	230 000
Inferred	2107	5.39	471 000

Mineral Resource Estimate by Golder Associates Ltd. (Thomas 2019).

High-grade assays capped to 35 g/t gold, cut-off grade of 2.7 g/t gold.

Effective date May 31, 2019. The estimate includes the Surluga and Minto Mine South deposits.

The company has also identified a new high-grade mineralization structure, the Cooper Structure. This new structure is located 1 km east of the northernmost extension of the Surluga deposit and 2.8 km northeast of the Minto Mine South deposit. Channel sampling completed on the structure returned an assay of 27 g/t gold over 0.31 m (true width). Other channel sample assays returned 9.6 g/t gold over 0.42 m and 3.5 g/t gold over 1.45 m. The company believes the Cooper Structure shares similarities with the Minto South Mine mineralization (Red Pine Exploration Inc., press release, February 6, 2019).

The company completed a gravity survey that identified the extension of the Jubilee Stock (Red Pine Exploration, press release, May 16, 2019). It detected both the Jubilee and Hornblende shear zones and determined that the Jubilee Stock Extension extended in a southwest direction, which allowed the identification of new areas for exploration on the property.

The Cooper Shear Zone (CSZ) and Grace Shear Zone (GSZ) were channel-sampled in 2019. The channel sampling at the Cooper Shear Zone showed that the mineralized strike length extended for over 700 m. The high-grade gold occurs within the CSZ over a strike length of 560 m, with a best result of 33.6 g/t gold over 1.4 m. An additional 2 shear zones were found running parallel to the CSZ: the Cooper 11 and the Ganley. The best results for each new shear zone are, respectively, 12.8 g/t gold over 0.4 m and 14.1 g/t gold over 1.4 m (Red Pine Exploration Inc., press release, August 14, 2019).

The channel sampling at the Grace Shear Zone resulted in the extension of the known strike length by 100 m to the northwest, for a new total length of 500 m. Sampling of trenches in the northern extension of the Grace Shear Zone returned good assays, including 16.49 g/t gold over 0.6 m for Trench 5B-1, 7.56 g/t gold over 1.05 m for Trench 2-1, and 2.98 g/t gold over 1.9 m for Trench 5A-4/5 (Red Pine Exploration, press release, September 25, 2019).

Diamond drilling done during 2019 had 3 main objectives: test the continuity of the Hornblende Shear Zone west of the Surluga deposit, test the Surluga deposit at depth and beyond the current footprint, and test the continuity of high-grade mineralization found on the surface in the Cooper Shear Zone. The drilling revealed 3 new gold zones separate from the Surluga deposit (Red Pine Exploration Inc., press release, November 21, 2019):

- new structure containing 2 g/t gold over 11.28 m discovered in the hanging wall of the Surluga deposit;
- new structure containing 4.72 g/t gold over 2.77 m found between the Surluga deposit and the Hornblende Shear Zone (footwall of Surluga deposit); and
- new high-grade zone containing 5.13 g/t gold over 1.80 m discovered in the Hornblende Shear Zone.

The drilling extended the known gold mineralization in the Minto B Shear Zone, with an intersection of 3.06 g/t gold over 2.02 m and 1.88 g/t gold over 3.52 m. It also extended the high-grade mineralization beneath the Surluga deposit by intersecting 5.21 g/t gold over 1.0 m (Red Pine Exploration, press release, November 21, 2019).

ACTIVE EXPLORATION PLANS AND PERMITS AND ASSESSMENT FILES RECEIVED IN 2019

There were 29 active Exploration Plans and Permits for projects in the Sault Ste. Marie District in 2019, a decrease of 6% compared to 2018. Active Exploration Plans and Permits are listed in Table 15.

Assessment files received by the Sault Ste. Marie District Office in 2019 are summarized in Table 16. All reports received in 2019 were for work conducted during 2018 or earlier.

Table 15. Plans and permits in the Sault Ste. Marie District in 2019.

Abbreviations					
DF	Mechanized drilling	PC	Pitting and trenching		
GL	Geophysical	SD	Mechanized stripping		
LQ	Line cutting				
Township/Area	Plan or Permit #	Claim Holder	Project Name	Activities	Effective Date
McMurray	PR-19-000238	Red Pine Expl	Wawa Gold East	DF SD PC	10/24/2019
Abigo	PR-19-000228	J. Gaudreau	Abigo Property	DF SD LQ	10/08/2019
Mishibishu Lake, Point Isacor	PR-19-000188	Wesdome GM	East Eagle River	DF SD PC	09/17/2019
Pilot Harbour, Point Isacor	PR-19-000187	Wesdome GM	West Eagle River	DF SD PC	09/16/2019
Rennie	PR-19-000176	Conquest Res	Smith Lake property	DF	09/03/2019
Leeson, Brackin	PR-19-000165	Michael, Philip Tremblay, Escher	Goudreau	DF SD PC	08/15/2019
Jacobson, Riggs	PR-19-000143	Prodigy Gold	Trillium Gold	DF	08/06/2019

Township/Area	Plan or Permit #	Claim Holder	Project Name	Activities	Effective Date
Jacobson, Bird, Bruyere, Riggs, West	PR-19-000111	Manitou Gold	Goudreau	DF SD LQ	08/15/2019
Glasgow, Meath, Rennie	PR-19-000110	Michael, Philip Tremblay, Escher	Goudreau	DF SD LQ	08/15/2019
Ryan	PR-18-000106	CR Capital	Coppercorp 4	SD LQ	10/22/2019
Ryan	PR-18-000105	CR Capital	Coppercorp 3	SD LQ	10/22/2019
Ryan	PR-18-000104	CR Capital	Coppercorp 2	SD LQ	10/22/2019
Ryan	PR-18-000103	CR Capital	Coppercorp 1	SD LQ	10/22/2019
Leeson, Rennie, Brackin, Stover	PL-19-000101	Conquest Res	Campbell Vein	DF	08/16/2019
Wishart, Palmer	PL-19-000088	Michael, Philip Tremblay, Escher	Wish Ore	SD PC LQ GL	07/14/2019
Chesley	PL-19-000012	G. Roy	DPE Chesley	LQ	04/28/2019
Casson, Otter	PL-18-010989	Battery Mineral	Otter - Helfrick	LQ GL	01/03/2019
Casson, Otter	PL-18-010987	2254022 Ont	Otter - Helfrick	LQ GL	02/03/2019
McMurray	PR-19-000238	Red Pine Expl	Wawa Gold East	DF SD PC	10/24/2019
Abigo	PR-19-000228	J. Gaudreau			
Mishibishu Lake, Point Isacor area	PR-19-000188	Wesdome GM	East Eagle River	DF SD PC	09/17/2019
Pilot Harbour, Point Isacor area	PR-19-000187	Wesdome GM	West Eagle River	DF SD PC	09/16/2019
Rennie	PR-19-000176	Conquest Res	Smith Lake	DF	09/03/2019
Leeson, Brackin	PR-19-000165	Michael, Philip Tremblay, Escher	Goudreau	DF SD PC	08/15/2019
Jacobson, Riggs	PR-19-000143	Prodigy Gold	Trillium Gold	DF	08/06/2019
Jacobson, Bird, Bruyere, Riggs, West	PR-19-000111	Manitou Gold	Goudreau	DF SD LQ	08/15/2019
Glasgow, Meath, Rennie	PR-19-000110	Michael, Philip Tremblay, Escher	Goudreau	DF SD LQ	08/15/2019
Ryan	PR-18-000106	CR Capital	Coppercorp 4	SD LQ	10/22/2019
Ryan	PR-18-000105	CR Capital	Coppercorp 3	SD LQ	10/22/2019

Table 16. Assessment files and donations received in the Sault Ste. Marie District in 2019.

Township or Area	Company Name	Year	Type of Work	OMIES Number	AFRO Number	Resident Geologist Office File Designation
Chabanel	Paulette Mousseau-Leadbetter	2018	assay, prospecting, lake and/or stream sediment sampling	20000016980		WP_Chabanel-98
Chabanel	Bruce Clarida	2018	assay, rock sampling	20000017103		WP_Chabanel-97
David Lakes area	Argo Gold Inc.	2017	assay, prospecting, soil and/or till sediment sampling, channel sampling	20000017231		WP_DavidLakes-59
Mishibishu Lake Area, St. Germain	Argo Gold Inc.	2017	assay, channel sampling	20000017301		WP_MishibishuLake-11

Township or Area	Company Name	Year	Type of Work	OMIES Number	AFRO Number	Resident Geologist Office File Designation
Otter, Aberdeen, Aberdeen Additional, Casson, Chesley Additional, Gould, McMahon, Morin	Battery Mineral Resources Ltd.	2018	airborne radiometric, airborne electromagnetic	20000017205		SSMP_Otter-19
Riggs	Alamos Gold Inc.	2019	electromagnetic very low frequency	20000017022		WP_Riggs-85
Ryan, Palmer	CR Capital Corp.	2018	assay, regional or reconnaissance ground exploration, rock sampling	20000017156		SSMP_Ryan-57
St. Germain	Precambrian Ventures Ltd.	2017	assay, prospecting, rock sampling	20000016177		WP_StGermain-14
Stover, Glasgow, Meath, Rennie, Riggs	Bold Ventures Inc.	2017	airborne magnetometer	20000017245		SP_Stover-23
David Lakes area	Windarra Minerals Ltd. / Messina Minerals Inc.	2004	assay, prospecting, rock sampling	20000015939	2.28850	WP_DavidLake-51

Note: The Resident Geologist Office File Designation incorporates the name of the township in which the assessment work was performed. AFRO = Assessment File number; OMEIS = Ontario Mineral Exploration Information System.

DISTRICT GEOLOGIST STAFF AND ACTIVITIES

Aaron Bustard was the Acting District Geologist in the Sault Ste Marie office from January 1 to February 28, 2019, after which time the position was vacant for the rest of 2019. The Sault Ste. Marie District Geologist Office is staffed by P. Sword, District Geological Assistant, with assistance from B. Boyer, who worked as a summer experience student.

The staff of the Sault Ste. Marie Office were involved in various activities over the course of the year including leading geology field trips, classroom visits to introduce students to geology, data scanning, transferring drill core library geochemistry data into digital files (Microsoft® Excel® spreadsheets) and hosting a prospector's group for coffee at the office every Wednesday afternoon.

A. Pace, P. Sword and S. Hinz led a one-day field trip to see the geology of the Gowganda Formation for the Sault Naturalists group on June 11, 2019. The field trip focused on exposures along Highway 129 and highlighted the Archean depositional setting and environment of the Gowganda Formation and more recent glacial features created during the Quaternary. S. Hinz, P. Sword and B. Boyer made a one-day field trip to see the Copper Corp C-Zone and Daisy Stone property in Ryan Township on June 13, 2019, in order to familiarize themselves with the geology of these 2 areas. J. Suma-Momoh and P. Sword accompanied J. Ralp to see his Above the JR Bear Creek property in Jessiman Township on July 25, 2019, and get an update on the prospecting activity on the property as well as provide him with some input about the project. Write-ups about the June 13 and July 25 field trips are included in this Report of Activities.

Staff of the Resident Geologist Program were involved in the implementation of upgrades to the Ontario Mineral Exploration Information System (OMEIS). OMEIS is an intranet-based application launched in 2018 that is used by RGP and Mining Lands staff to maintain and update assessment file and drill-hole

data. The second phase of OMEIS was completed in 2019 and focused on the addition of new data fields to allow for the addition of unique, archival and donated materials stored in RGP offices across Ontario. Details on archival materials will be made available on GeologyOntario in a new searchable database called the Archives of the Resident Geologist Offices (ARGO) once they are catalogued in OMEIS.

The Sault RGP office, assisted by staff from a number of other RGP offices, made geology education presentations to Batchawana First Nation and grade eight students at St. Mary's French Immersion School on April 24 and 25 and Batchawana First Nation and grade eight students at Holy Cross Catholic School on April 26. Two field trips with Batchawana First Nation and grade twelve students to the Copper Corp. property occurred on May 7, 2019. The Sault office also participated in the Northern Superior Regional Round Table on January 22, 2019; a meeting with the Thessalon First Nation to review the RGP and what services it provides, on May 1, 2019, and a Regional Round Table with the Huron First Nation on May 22, 2019. The office also participated in a Career Day at the Mississauga First Nation on May 29, 2019.

Examination of the Drill Core Library records identified 1027 samples that had assay data (Table 17). Most of these samples had whole rock geochemical data and many also had minor or trace element data. The information for these samples was stored in a Microsoft® Excel® spreadsheet for each township. That information is available from the staff in the Sault RGP office.

Table 17. Samples with geochemical data converted to digital format per township.

Township	# Samples
Keating	211
Aberdeen	11
Abotossaway	541
Aguonie	221
Albanel	41
Beange	2
Total	1027

PROPERTY EXAMINATIONS

Table 18 lists the property visits conducted by Sault Ste. Marie District staff in 2019. Detailed descriptions for select property visits and projects follow.

Table 18. Property visits conducted by Sault Ste. Marie Resident Geologist Program staff in 2019.

Client – Occurrence	Location
Jim Ralph – JR's Bear Creek	McNie Township
Copper Corp C-Zone	Ryan Township

JR's Bear Creek Property

LOCATION AND ACCESS

JR's Bear Creek property is located in McNie Township, approximately 95 km northeast of Sault Ste. Marie, Ontario. Access to the property is gained through the Domtar Road, north from the Ranger Lake Road (Highway 556), then west on the Aubinadong River Road for approximately 8 km. The outcrop is accessible by hiking approximately 422 m through the bush on a partially blazed trail.

PREVIOUS WORK

The most detailed mapping of the area was carried out by Thurston, Siragusa and Sage (1971) at a scale of 1 inch to 2 miles (1:126 720), who mapped the area as consisting of undivided felsic intrusive and hybrid rocks. In 2018, Jim Ralph discovered unusual circular features in a granitic outcrop exposed over approximately 10 m. Upon examination, Bustard et al. (2019) identified the features as orbicules composed mainly of feldspar with other associated minerals. The results of lab-analysed samples indicate the potential for rare earth element mineralization in McNie Township (Bustard et al. 2019).

GEOLOGY

On July 25, 2019, RGP staff represented by James Suma-Momoh and Pamela Sword, visited JR's Bear Creek property to examine an outcrop located approximately 222 m northwest of the previously discovered orbicules on claim # 509046 (Figure 2). Outcrop of an exposed white quartz vein measuring about 30 m long by 5.5 m wide, and in sharp contact (308°/88° north to near vertical) with a granitic host rock, is shown in Photo 1. The quartz vein appears sheared parallel to the granitic contact and displays syntaxial (inward) growth in places. The resulting “comb” texture (Photo 2A) corresponds to crystallization coeval with vein opening. Comb quartz is commonly related to a supersaturated fluid invading an open space (the initial fracture) with competitive crystal growth normal to the walls; and a slow opening rate of the fracture keeping pace with the rate of crystal growth (Chauvet 2019). In places, the vein contains xenoliths of Matachewan mafic dikes (Photo 2B). There are no visible sulphides in the quartz vein.

Four samples of the vein were collected and analyzed by inductively coupled plasma mass spectrometry (ICP-MS) with open vessel multi-acid digestion at Geoscience Laboratories (GeoLabs) in Sudbury. The results, which show no economically significant mineralization, are presented in Table 19.

Further field work consisting of prospecting and sampling is recommended in the vicinity of the quartz vein. Prospecting should include searching for any pegmatitic varieties of the granitic host rock and checking for occurrences of potassium feldspar, albite, muscovite, spodumene and lepidolite. Laboratory analytical work should investigate for any enrichment in the incompatible elements, particularly lithium, cesium and tantalum.

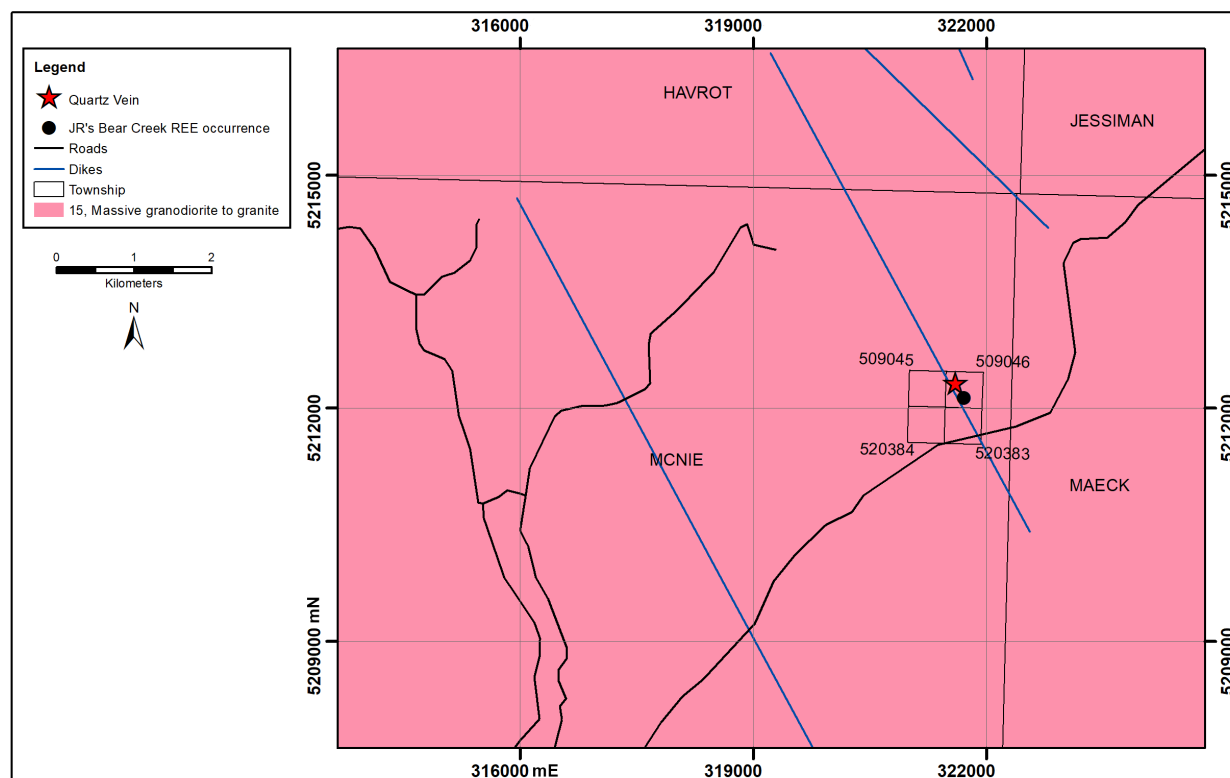


Figure 2. Map showing location of extensive quartz vein on JR's Bear Creek property in McNie Township. Geology from Ontario Geological Survey (2011). Universal Transverse Mercator (UTM) co-ordinates are provided using North American Datum 1983 (NAD83) in Zone 17.



Photo 1. View, looking west, of the extensive quartz vein on JR's Bear Creek property in contact (yellow line) with granitic rock (upper right of photo). UTM co-ordinates, NAD83, Zone 17, 321596E 5212321N.



Photo 2. JR's Bear Creek property. **A)** Comb texture in quartz vein; NAD83, Zone 17, 321602E 5212311N. Looking northwest. GPS unit (15 cm long) for scale. **B)** Sample of quartz vein with mafic dike material (grey-green), showing prismatic comb quartz (bottom). Coin (2.8 cm in diameter) for scale. UTM co-ordinates, NAD83, Zone 17, 321590E 5212309N.

Table 19. Trace elements and rare earth element geochemistry of samples collected from JR's Bear Creek property in McNic Township.

Sample ID	Ba (ppm)	Be (ppm)	Bi (ppm)	Cd (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)	Cs (ppm)	Cu (ppm)	Dy (ppm)	Er (ppm)	Eu (ppm)	Ga (ppm)
JR-19-01	3.5	0.3	<0.47	<0.013	0.72	1.9	47	0.08	2	0.07	0.04	0.02	1.06
JR-19-02	16.3	0.74	<0.47	0.21	0.73	6.8	62	0.33	3	0.13	0.08	0.04	3.43
JR-19-03	8	0.15	<0.47	<0.013	2.82	0.4	52	0.06	3	0.03	0.01	0.03	0.51
JR-19-04	1.9	0.1	<0.47	<0.013	0.76	2.9	42	0.04	<1.4	0.04	0.02	0.01	0.65
Sample ID	Gd (ppm)	Hf (ppm)	Ho (ppm)	In (ppm)	La (ppm)	Li (ppm)	Lu (ppm)	Mo (ppm)	Nb (ppm)	Nd (ppm)	Ni (ppm)	Pb (ppm)	Pr (ppm)
JR-19-01	0.11	<0.14	0.01	<0.0018	0.38	16.1	0.01	2.22	0.08	0.32	47	17.5	0.08
JR-19-02	0.16	<0.14	0.03	<0.0018	0.76	20.5	0.01	2.98	0.1	0.67	170	1.6	0.14
JR-19-03	0.07	<0.14	0.01	<0.0018	2.01	8	<0.002	2.34	0.08	0.91	3	1	0.27
JR-19-04	0.05	<0.14	0.01	<0.0018	0.25	7.3	<0.002	2.05	0.06	0.18	24	0.8	0.04
Sample ID	Rb (ppm)	Sb (ppm)	Sc (ppm)	Sm (ppm)	Sn (ppm)	Sr (ppm)	Ta (ppm)	Tb (ppm)	Th (ppm)	Ti (ppm)	Tl (ppm)	Tm (ppm)	U (ppm)
JR-19-01	0.8	0.09	<1.1	0.09	0.24	3	<0.007	0.013	0.03	8.27	0.01	0.006	0.05
JR-19-02	1.43	0.1	<1.1	0.18	0.27	2	<0.007	0.019	0.02	11.76	0.02	0.011	0.08
JR-19-03	0.46	0.08	<1.1	0.12	0.17	4	<0.007	0.006	0.02	10.78	0.01	0.002	0.02
JR-19-04	0.37	0.04	<1.1	0.06	<0.16	2	<0.007	0.008	0.03	<7	<0.002	0.002	0.02
Sample ID	V (ppm)	W (ppm)	Y (ppm)	Yb (ppm)	Zn (ppm)	Zr (ppm)							
JR-19-01	6.72	<0.05	0.56	0.043	24.97	<6							
JR-19-02	23.49	<0.05	1.11	0.074	92.03	<6							
JR-19-03	1.84	<0.05	0.19	0.011	8.34	<6							
JR-19-04	3.98	<0.05	0.22	0.016	15.92	<6							

Copper Corp – C Zone Property

A brief property visit to ground-truth a Copper Corp C-Zone mineral deposit point in Ryan Township was carried out by S.L.K. Hinz, P. Sword and B. Boyer on June 13, 2019. The property is located, approximately 85 km north of Sault Ste Marie, Ontario. The purpose of the visit was to determine if the location data for Mineral Deposit Inventory reference MDI41N02SW00004 was accurate. The UTM coordinates of the point are said to correspond to a mine shaft. The shaft was not located during the property visit, despite an attempt to find it through the swamp and woods. Without finding the shaft and obtaining a more accurate location, the current location data will remain in use. A core shack and several core racks were found on the property and these remain intact and in good condition. The Coppercorp Mine was in operation from 1965 to 1972 under North Canadian Enterprises Ltd. Since production ceased, exploration work on the property has been undertaken by Nikos Exploration Ltd. (2004–2006), First Minerals Exploration Ltd. (2010–2012), and Superior Copper Corp. (2012–2014).

RECOMMENDATIONS FOR EXPLORATION

Rare Earth Element Potential in the Huronian Supergroup Matinenda Formation

The quartz-pebble conglomerate of the Matinenda Formation hosts uranium mineralization within the Paleoproterozoic Huronian Supergroup. Over the years, exploration in this region has been mainly focused on uranium; however, this recommendation will focus on rare earth element (REE) potential. Further exploration in the area is warranted because of the increased demand for REEs. Pele Mountain Resources Inc. (now Bhang Inc.) discovered high concentrations of REEs associated with uranium in the Ryan Member of the lower Matinenda Formation of the Huronian Supergroup (Pele Mountain Resources Inc. 2012).

Pele Mountain Resources Inc. released an NI 43-101 technical report in June 2012 which was subsequently revised in June 2013 (Pele Mountain Resources Inc. 2012, 2013). They reported Indicated Resources of 31 382 000 tonnes at 1674 ppm total rare earth oxides (TREO), and Inferred Resources of 57 426 000 tonnes at 1613 ppm TREO (Table 20). TREO includes light rare earth oxides (La_2O_3 , CeO_2 , Pr_6O_{11} and Nd_2O_3) and heavy rare earth oxides (Sm_2O_3 , Eu_2O_3 , Gd_2O_3 , Tb_4O_7 , Dy_2O_3 , Ho_2O_3 , Er_2O_3 , Tm_2O_3 , Yb_2O_3 , Y_2O_3 , Lu_2O_3 and Sc_2O_3). Appia Energy Corp. has also been active in the Elliot Lake area, developing their Elliot Lake uranium and REE property. An NI 43-101 technical report released by Appia in 2013 delineated Indicated Mineral Resources of 14 435 000 tons grading 0.554 lbs U_3O_8 /ton and 3.30 lbs TREE/ton for a total of 8.0 million lbs U_3O_8 and 47.7 million lbs TREE (total rare earth elements, the sum of $\text{La}+\text{Ce}+\text{Pr}+\text{Nd}+\text{Sm}+\text{Eu}+\text{Gd}+\text{Tb}+\text{Dy}+\text{Ho}+\text{Er}+\text{Tm}+\text{Yb}+\text{Lu}+\text{Y}$; Workman, Breede and Goode 2013). This type of uranium-associated REE mineralization is not exclusive to the Elliot Lake area. Appia Energy Corp. has several projects in the Athabasca Basin of Saskatchewan that have similar mineralization, including Alces Lake, North Wollaston and Loranger projects.

Since it was common practice that REEs were not assayed during uranium exploration, there is the possibility that high concentrations of REEs have been overlooked in the Elliot Lake camp (see Figure 3 for the geology of the area). According to Resident Geologist Program files, the Elliot Lake camp produced 461 055 600 lbs of uranium between 1956 and 1997. Considering the high REE to uranium ratio (3.5:1) found in Pele Mountain Resources Inc. Mineral Resource Estimate (see Table 20), there is potential for similar high concentrations of REEs to be found elsewhere in the Ryan Member.

Pele Mountain Resources Inc. found the higher grade-mineralized zones to be within thicker sections of the main conglomerate bed, near more permeable zones, and associated with pyrite and pyrrhotite. Recent mapping done by Lewis (2012) has identified the Matinenda Formation in Albanel Township, where it was previously classified as unmineralized Mississagi Formation by Grunsky, Siemiatkowska and Berger (1975) when they mapped the area in 1974.

Table 20. Mineral resource estimate within the Main Conglomerate Bed (MCB) and for the higher grade zones (HGZ.)

Zone	Tonnes (1000s)	U_3O_8 (%)	U_3O_8 lbs (1000s)	TREO (ppm)	TREO lbs (1000s)	U_3O_8 Equivalent (%)	U_3O_8 Equivalent (1000 lbs)	REE to Uranium Ratio
Indicated								
MCB	22 743	0.045	22 554	1606	80 510	0.099	49 827	3.5:1
HGZ	8 639	0.055	10 417	1852	35 279	0.117	22 235	3.4:1
Inferred								
MCB	36 560	0.047	37 623	1554	125 248	0.102	81 842	2.2:1
HGZ	20 866	0.053	24 236	1715	78 903	0.111	51 260	2.1:1

As the high REE concentrations were found to correlate with uranium mineralization, there are several exploration strategies that are recommended. Unclaimed exposures of the Matinenda Formation, including those found in Mack, Timmermans, Bolger, Beange and Raimbault townships, should be investigated for the REE content of the rocks (Figure 3). Another exploration focus should be on unclaimed ground in proximity to the occurrences documented in the Mineral Deposit Inventory (MDI) (Ontario Geological Survey 2019a) with uranium listed as a primary commodity (Table 21). Finally, tailings from Elliot Lake's former uranium mines should be considered as an unconventional source of REEs through mine tailings reprocessing.

Table 21. Occurrences in the Elliot Lake area with uranium listed as the primary commodity on land open for staking, as listed in the Mineral Deposit Inventory (*from* Ontario Geological Survey 2019a).

MDI Number	Deposit Status	Township	Name	Primary Commodity	UTM Datum	UTM Zone	Easting	Northing
MDI41J10SW00019	discretionary occurrence	Albanel	Fort Norman Exploration Area E	uranium	NAD83	17	350191	5160640
MDI41J10SW00052	occurrence	Albanel	Arco Triller DDH #2	uranium	NAD83	17	349853	5158894
MDI41J10SW00062	occurrence	Albanel	Little White River occurrence	uranium	NAD83	17	348995	5160586
MDI41J10SW00057	occurrence	Beange	Consolidated Callinan	uranium	NAD83	17	362657	5154804
MDI41J10SE00028	occurrence	Beange	Span-North	uranium	NAD83	17	367097	5153207
MDI41J10SE00026	occurrence	Beange	Candore	uranium	NAD83	17	368311	5152477
MDI41J07NW00057	occurrence	Bolger	Peerless	uranium	NAD83	17	362479	5137619
MDI41J07NW00055	occurrence	Bolger	Moon Lake	uranium	NAD83	17	360227	5140516
MDI41J07NW00056	occurrence	Bolger	Nordic Group West	uranium	NAD83	17	365099	5139828
MDI41J08NW00070	occurrence	Gaiashk	Canuc	uranium	NAD83	17	396804	5142790
MDI41J08NW00066	occurrence	Gaiashk	Corner Lake	uranium	NAD83	17	389837	5144560
MDI41J07NE00086	occurrence	Gunterman	North American Nuclear	uranium	NAD83	17	370575	5139502
MDI41J07NE00112	occurrence	Gunterman	Kamis	uranium	NAD83	17	370944	5140821
MDI41J07SW00018	occurrence	Juillette	Fano	uranium	NAD83	17	350353	5136746
MDI41J07NW00053	occurrence	Kamichisitit	Kee #2	uranium	NAD83	17	348884	5147739
MDI41J06NE00050	discretionary occurrence	Kamichisitit	Superior Northwest Inc. Imperial Option DDH2	uranium	NAD83	17	345724	5148530
MDI41J08NW00064	occurrence	Lehman	Bracemac	uranium	NAD83	17	389865	5146290
MDI000000001405	discretionary occurrence	Long	Tungsten Corp. DDH 7	uranium	NAD83	17	361896	5123117
MDI41J07SW00019	occurrence	Mack	Black Lake occurrence	uranium	NAD83	17	354993	5126741
MDI41J10SW00056	occurrence	Raimbault	Zenmac	uranium	NAD83	17	362898	5156019
MDI41J02NW00017	discretionary occurrence	Striker	New Kelore Mines property	uranium	NAD83	17	359524	5120673
MDI41J07NW00049	occurrence	Timmermans	Martin, D.R.	uranium, thorium	NAD83	17	356489	5139198

MDI Number	Deposit Status	Township	Name	Primary Commodity	UTM Datum	UTM Zone	Easting	Northing
MDI41J07NW00041	occurrence	Timmermans	Jeanette	uranium	NAD83	17	356594	5142133
MDI41J07NW00058	occurrence	Timmermans	Little Moon Lake	uranium	NAD83	17	357679	5140895
MDI41J07NW00045	occurrence	Timmermans	Buffana	uranium	NAD83	17	359078	5141108
MDI41J07NW00044	occurrence	Timmermans	Denison	uranium	NAD83	17	357399	5142006
MDI41J07NW00051	occurrence	Timmermans	Moon Lake	uranium, thorium	NAD83	17	358442	5139005
MDI41J07NW00050	occurrence	Timmermans	Coffee Lake	uranium, thorium	NAD83	17	350778	5143615
MDI41J07SW00021	occurrence	Timmermans	Pistol Lake	uranium	NAD83	17	357029	5136607
MDI41J07SW00020	occurrence	Timmermans	Fano	uranium	NAD83	17	353062	5137123
MDI41J07NW00043	occurrence	Timmermans	Dominion	uranium	NAD83	17	354508	5138148
MDI41J07NW00047	occurrence	Timmermans	Picton	uranium	NAD83	17	352731	5144618
MDI41J07NW00048	occurrence	Timmermans	Zenmac	uranium	NAD83	17	355951	5139464
MDI41J07NW00042	occurrence	Timmermans	Big Game	uranium	NAD83	17	359640	5139044
MDI41J07NW00046	occurrence	Timmermans	Fort Norman	uranium	NAD83	17	358452	5142860
MDI41J07NW00052	occurrence	Timmermans	Anuwon	uranium	NAD83	17	357575	5139621

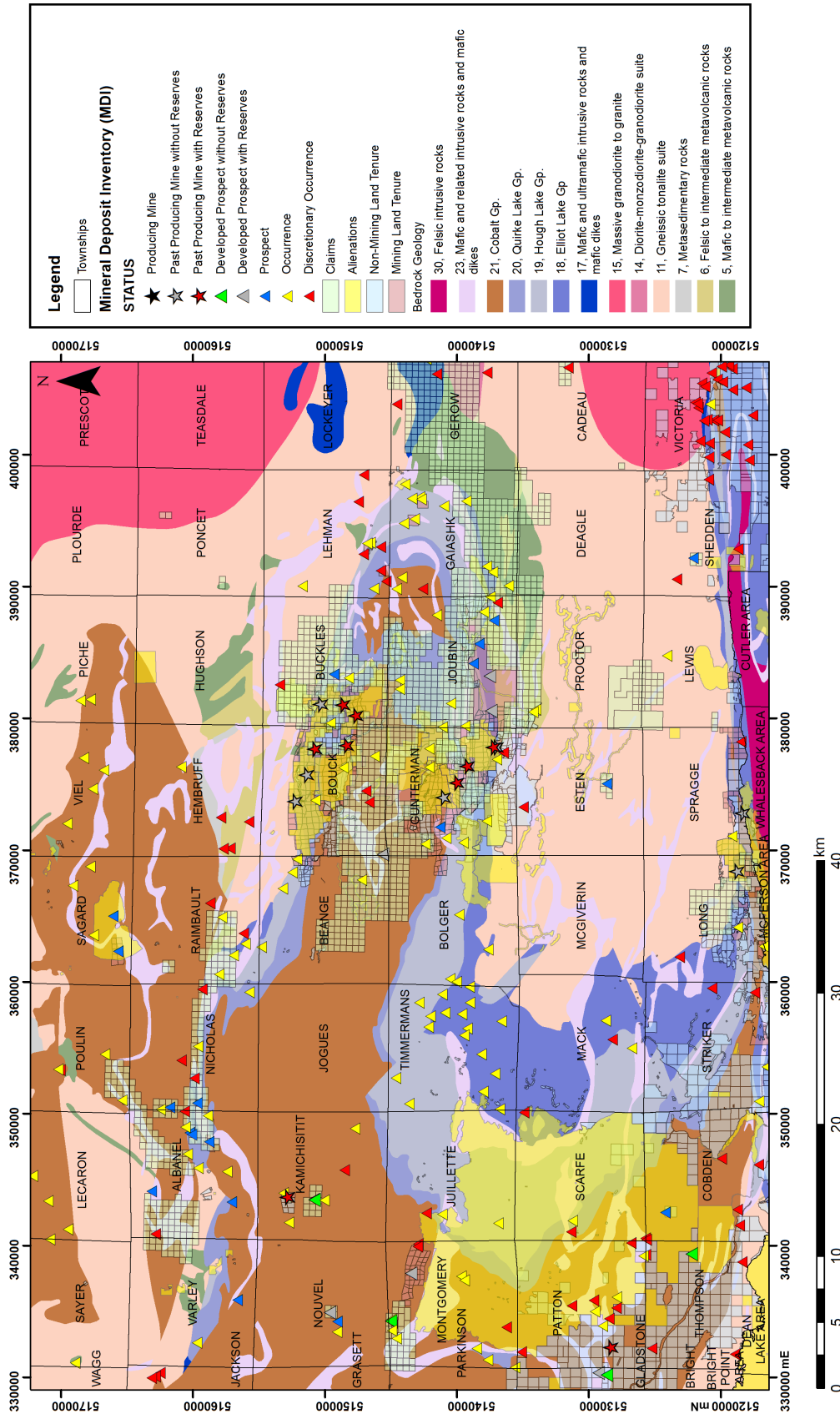


Figure 3. Geology map of the Elliot Lake area overlain with occurrences documented in the Mineral Deposit Inventory (from Ontario Geological Survey 2019a) and land tenure. Matinenda Formation is included in the Elliot Lake Group (geological unit 18, *see* legend), exposures of which can be seen in Mack, Timmermans, Bolger, Beange and Raimbault townships. Geology from Ontario Geological Survey (2011).

Nickel-Copper-Platinum Group Element Mineralization in Proterozoic Mafic Intrusions

Proterozoic mafic intrusions in the Elliot Lake area have varying potential for nickel-copper-platinum group element (Ni-Cu-PGE) mineralization. According to work compiled by Easton (2015), the 2 intrusions most likely to host high concentrations of Ni-Cu-PGE mineralization are the Nipissing gabbro and East Bull Lake layered intrusions. These 2 intrusive complexes host contact-style Cu-PGE mineralization that is characterized by disseminated sulphides within layered gabbro to gabbro-norite complexes (Easton 2015).

21C Metals Inc. holds claims on part of the East Bull Lake intrusions in Gerow Township. On August 6, 2019, they released an NI 43-101 technical report on their East Bull Platinum Group Metals (PGM) property, outlining an Inferred Mineral Resource Estimate (Table 22). The Mineral Resource Estimate was based on drilling and channel samples done by Mustang Minerals Corp. in 1999, Freewest Resources Inc. in 1999-2000, and Pavey Ark Minerals Inc. in 2017. In total, 41 diamond-drill holes and 6 surface channels were utilized, for a total of 2864 drill core assays and 79 surface channel assays (Puritch, Yasa and Barry 2019).

Table 22. East Bull PGM deposit pit Constrained Mineral Resource Estimate at 0.8g/t PdEq cut-off (*from 21C Metals Inc. (2019); classification: Inferred*).

Tonnes (M)	11.1
Au (g/t)	0.05
Pt (g/t)	0.26
Pd (g/t)	0.58
Rh (g/t)	0.04
Cu (%)	0.14
Ni (%)	0.05
Co (%)	0.01
3PGM + Au (g/t)	0.93
PdEq (g/t)	1.46
PdEq (koz)	523

The East Bull Lake intrusions extend to the east in Lockyer and Mandamin townships (Figure 4), where there is potential for further Ni-Cu-PGE mineralization to be found. Over the past decade, minimal staking and exploration has taken place in this area, especially compared to the uranium-rich Elliot Lake camp directly to the west. The last geological survey project to map the area was done by Ontario Department of Mines geologists in 1943 (Moore and Armstrong 1943). On satellite imagery, there appears to be an abundance of outcrop exposure accessible by logging roads approximately 40 km north of the town of Massey. It is recommended that these underexplored Paleoproterozoic intrusions be re-examined for Ni-Cu-PGE potential.

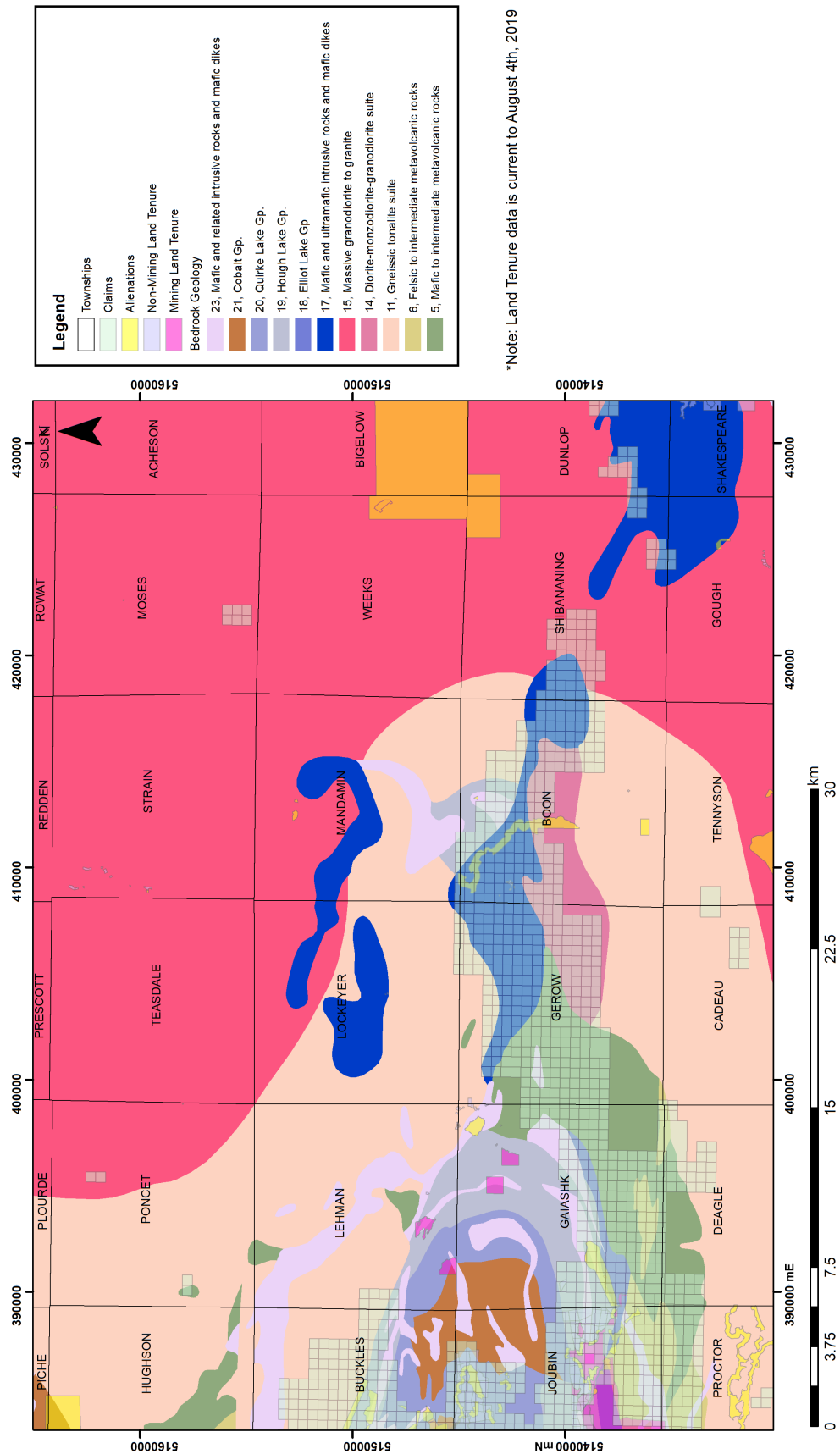


Figure 4. Geology map showing the area east of Elliot Lake overlain with land tenure. Four East Bull Lake intrusions are identified as geological unit 17, mafic and ultramafic intrusive rocks and mafic dikes (*see legend*). Geology from Ontario Geological Survey (2011).

OGS ACTIVITIES AND RESEARCH BY OTHERS

Details of activities completed during the year by the staff of the Earth Resources and Geoscience Mapping Section, Ontario Geological Survey, are provided in *Summary of Field Work and Other Activities, 2019* (Ontario Geological Survey 2019b). Field work activities carried out in the Sault Ste. Marie District include:

- Project NE-19-004. Geological Compilation Project: Ramsey–Algoma Granitoid Complex and Surrounding Rocks, Superior and Southern Provinces (Préfontaine and Rainsford, 2019)
- Project NE-18-007. Alkaline Intrusive Rocks and Carbonatites in West Township, Michipicoten Greenstone Belt (Walker and Robichaud 2019)
- Project NE-17-007. Tectonometamorphic History of the Wawa–Abitibi Terrane: Crustal Differentiation and Low-Grade Metamorphism in the Kapuskasing Uplift (Kendrick, Yakymchuk and Duguet 2019)
- Project SO-19-001. Preliminary Geology of Scarfe and Cobden Townships, Blind River Area, Southern Province (Hastie and Vice 2019)
- Airborne magnetic gradiometer and gamma-ray spectrometric surveys, shaded colour image of the second vertical derivative of the residual magnetic field and Keating coefficients, Ramsey–Algoma area (Ontario Geological Survey 2019c).

Metal Earth

- Terrane-scale Crustal Sampling of the Wawa Subprovince, Superior Craton (Mole and Thurston 2019)

Academic research activities in the Sault Ste. Marie District in 2019 are listed below.

- E. Wehrle, MSc candidate at Laurentian University, is working with Dr. Iain Samson and Dr. Daniel Kontak on Archean gold mineralization in the Wawa Gold Corridor, Wawa, Ontario.
- C. O’Neil, Applied MSc candidate at Laurentian University, is working with Dr. Daniel Kontak on the structural assessment of gold-quartz veins in the Wesdome Eagle River gold deposit, Wawa, Ontario.

Table 23. Mineral deposits not being mined in the Sault Ste. Marie District in 2019.

Abbreviations					
AF.....	Assessment Files	MP.....	Miscellaneous Paper		
AR.....	Annual Report	MRC.....	Mineral Resource Circular		
CAMH.....	Canadian and American Mines Handbook	OBM.....	Ontario Bureau of Mines		
CMH.....	Canadian Mines Handbook	ODM.....	Ontario Department of Mines		
GDIF.....	Geoscience Data Inventory Folio	OFR.....	Open File Report		
GR.....	Geological Report	OGS.....	Ontario Geological Survey		
MDC.....	Mineral Deposit Circular [No.15–] [formerly Mineral Resources Circular, No.1-14]	SMDR.....	Source Mineral Deposit Records		
MDIR.....	Mineral Deposit Inventory record	SSMP.....	Sault Ste. Marie Plans		

Deposit Name/ NTS	Commodity	Tonnage-Grade Estimates and/or Dimensions	Reserve References	Status	AMIS Site #
Pater Mine Spragge Tp. 41J/02NE	Cu, Au, Ag	Total production was 70 460 264 lbs Cu. Estimated 2 000 621 tons @ 1.8% Cu.	MRC 12, p.65. GR 76, p.90-94.	Past Producer 1960–1968	07955
Bar-Fin Mine Thompson Tp. 41J/03NE	Cu	Production of 120 000 lbs of Cu from 1500 tons of ore. 1.82% over 3 feet and 9.27% over 1.9 feet.	MRC 12, p.67 GR 17, p.62-63	Past Producer 1906	07968

Deposit Name/ NTS	Commodity	Tonnage-Grade Estimates and/or Dimensions	Reserve References	Status	AMIS Site #
Bald Dome prospect Plummer Add. Tp. 41J/05SW	Cu	80 to 100 feet true width averaging 0.25% Cu, diamond-drill core.	MRC 12, p.52 AF 0014	showing	07885
Bruce Mines Plummer Add. Tp. 41J/05SW	Cu, Ag	40 000 ton @ 1.8% Cu above 155-foot level Bruce Mines Taylor site.	MDC 12	Past Producer 1915–1921	07888 - 07891
Campbell–Dukes prospect Plummer Add. Tp. 41J/05SW	Cu	33 000 ton @ 1.2% Cu in a 230 by 8 by 220-foot block	MRC 12, p.54 AF 0014	Past Producer 1956	07883
Rock Lake Mine Aberdeen Tp. 41J/05NE	Cu, Ag	1 524 000 lbs Cu from 43 300 tons of ore	MDC 12, p.14	Past Producer 1899–1903	07781
Havilah Mine–Ophir Mine Galbraith Tp. 41J/05NE	Au, Ag, Cu	1 main vein, 2 – 150-foot shafts, 1 – 183-foot adit In 1911, 1030 oz Au and 214 oz Ag from 6589 tons ore milled.	MRC 13, p.18 OBM 1893, AR v.3, p.37-45	Past Producer 1892–1894, 1900, 1910 and 1911	07851
Steinberg Mine Plummer Add. Tp. 41J/05SW	Cu	124 000 T @ 1.1% Cu (drill indicated) for a length of 200 feet to a depth of 200 feet.	OGS 1969, MRC 12, p.56-57 AF Plummer -0014- 0017.	Past Producer 1919	07884
Stobie Mine–Rainbow Mine Johnson Tp. 41J/05SW	Cu, Ni, Au	9 tons of ore shipped from 100-foot level, 280 feet of lateral work. Shaft is 160 feet depth.	MRC 12, p.34-35. MRC 2, p.74. AF Index plan	Past Producer 1899–1901	08013
Bilton option Patton Tp. 41J/06SE	Cu	95 160 tons @ 1.72% Cu over a width of 7.3 feet to a depth of 200 feet.	ODM 1953, GR 17, p.55-58 AF	Past Producer Pre-1956	08093
Boyea Lake Adit and East Zones Montgomery Tp. 41J/06NE	Cu	50 000 tons @ 2.5 to 3% Cu 135 150 tons @ 2.32% Cu across 7 feet over 1068 feet. 75 000 tons @ 1.0% Cu across 20 feet over a length of 300 feet.	Sudbury Contact Mines AR 1971 MRC 12, p.43-44 AF	Past Producer Pre-1942	08060
Crownbridge (Cannon) prospect Kamichisitit Tp. 41J/06NE	Cu	415 000 tons @ 1.8% Cu over a width of 6.5 feet.	MRC 12, p.94 AF	Past Producer 1966–1967	08018
Glagoma Mine Gladstone Tp. 41J/06SE	Cu	In 1917, 2 shafts sunk to 250 feet	MRC 12, p.25-26 OGS 1963, GR 17 p.52-55	Past Producer 1917 and 1962	07865
Goulding Mine Cobden Tp. 41J/06SE	Cu	In 1962, 26.3 dry tons shipped @ 1.45% and 222.5 dry tons shipped @ 1.34%.	MRC 12, p.19 OGS 1964, GR 20, p.62-65	Past Producer 1962	07823
North Montgomery – Grand Portage Mine Gould Tp. 41J/06NW	Cu	No production or reserve data found.	OGS 1969, MRC 12, p.27-28. OGS 1899, AR v.8, pt.1, p.37-38. SMDR 00463 or MDIR A0229	Past Producer 1899	07871
Milgate (Abbican) prospect Nouvel Tp. 41J/06NE	Cu	105 750 tons @ 1.08% Cu (drill indicated) A Zone: L-600 by W-10 by D-235 feet	OGS 1969, MRC 12, p.97. ODM 1957, MRC 2, p.71.	1936–1955, 1956 Development work	08076
Principle Strategic Minerals prospect Gladstone Tp. 41 J/06SE	Cu	112 300 tons containing 3 128 196 lbs. Cu	MRC 12, p.26, GR 17, p.50-51. AF	Pre-1957	07864
Sheba prospect Nouvel Tp. 41J/06NE	Cu	L-1000 feet by W-3 feet on surface @ 0.59% Cu, weighted diamond-drill assays.	MRC 12, p.98	1956–1957 Development work	08077

Deposit Name/ NTS	Commodity	Tonnage-Grade Estimates and/or Dimensions	Reserve References	Status	AMIS Site #
Twin Lakes prospect Esten Tp. 41J/07SE	Cu	Probable - 76 900 tons @ 1.73% Cu over 8-foot width, drill indicated.	MRC 12, p.23 AF Esten 0010-D1	1957 Trenching and diamond drilling	07841
Bi-Ore Mine Sagard Tp. 41J/10NW	Cu	2726 tons of concentrate containing 1 647 079 lbs. of Cu.	ODM 1951, AR. v.60, pt.2, p.2. MRC 12, p.70-71	Past Producer 1947–1949	07931
Cheney Mine Gould Tp. 41J/11SW	Cu	39 405 tons @ 3.97% Cu (drill-indicated) 3500 tons mined in 1967.	MRC 12, p.26-27 ODM, 1929, v.38, pt.7, p.10-15	Past Producer 1966–1967	07874
Copper Prince Mine Kamichisitit Tp. 41J/11SE	Cu, Au	4 shoots 310 by 6.3 feet averages 3% Cu 60 by 9.7 feet averages 1.9% Cu 45 by 6.6 feet averages 2.3% Cu 110 by 9.6 feet averages 0.9% Cu Weighted average of 4 diamond-drill holes, 2.7% Cu over 7 feet and 0.03 oz/ton Au.	MRC 12, p.93-94 GR 178, p.66-67 SMDR File 00823 MP 57, p.87	1928–1929 Diamond drilling, trenching and grabs. 1973 mining operations suspended after shipping small quantity of Cu concentrate.	08019
Jardun Mine Jarvis Tp. 41K/09NE	Pb, Zn, Ag, Cu, Au	No.1 and 4 zone reserves are 20 000 tons averaging 7.25% Pb, Zn and 1.52 oz/ton Ag. No.3 zone reserve estimate is 19 367 tons averaging 9.56% Pb and Zn with 1.10 oz/ton Ag.	MRC 12, p.32-33 AR v.67, pt.2. p.108- 109.	Past producer 1954–1957	08007
Kerr Scott (Algoma Galena) Deroche Tp. 41K/09NE	Pb, Zn, Ag, Au	1859 tons of hand-cobbed ore recovered. Deposit reserves have not been calculated.	MRC 12, p.21-22 AR v.49, pt.1, p.223 ODM 1928 v.37, pt.3, p.72-73	Past Producer 1939	07833
Goulais River, Doughty, Eagle Mine, Tribag, Edwards. Vankoughnet Tp. 41K/16SW	Cu, Ag	250 000 tons @ 2.35% Cu, 0.26 oz/ton Ag in 3 zones (drill-indicated).	GDIF #75, OBM 1905, v.14, pt.1 AR 1970, MP 46, p.92-93 AR 1973, MP 57, p.86.	Past Producer 1900	07974
Kristina Mine (Supercrest) (Superior) LaVerendrye Tp. 41K/16NE	Cu	369 350 tons @ 1.95% Cu in No.4 and No.6 shaft zones. No.6 Shaft Zone, 10 000 tons @ 4% Cu and 200 000 tons @ 2.53 % Cu.	MRC 12, p.75 MRC 1, p.43 OBM 1902, v.11, p.274 OBM, v.17, 1908, p.79	Past Producer 1903–1907 1952–1957: 22 000 ft of diamond drilling.	08040
Prace–Sill Lake Mine Vankoughnet Tp. 41K/16SW	Pb, Zn, Ag	20 000-60 000 tons @ 12 oz/ton Ag, and 20 000 tons @ 41.65 oz/ton Ag and 33.7% Pb over 1.13 ft width.	AF SSMP Vankoughnet 16, 17.	Past Producer 1975, 1979, 1981, 1983–1984 and 1985–1987	07976
Caputo–Just (Caputo-Thompson, Ontex) Wishart Tp. 41N/01SW	Cu	475 tons @ 1.18 % Cu recovered from 3 zones	MRC 12, p.78 MP 25, p.5	Past Producer 1968	07985
Coppercorp Mine Ryan Tp. 41N/02SW	Cu, Ag, Au	1.02 million tons @ 1.16% Cu production.	MRC 12, p.45-46 ODM 1953, AR 62, pt.4, p.18-24 AF – Montreal Mining Co. SSMP-0012 AF SSMP Ryan -15, p.30 AF SSMP Ryan -37 (cd). 2.47257, p.3.	Past Producer 1965–1972	07937, 07938, 07939, 08061
Glenrock (Rockdale) Palmer Tp. 41N/02SE	Co, Au, Cu	Several zones. Main zone L-250 by W-3.5 feet (drill indicated) 1953, 11 diamond-drill holes, failed to show continuity with depth, best assay 16% Co.	MRC 12, p.103 MRC 10, p.20	Glenrock 1952 Rockdale 1958	08081
Jogran prospect Ryan Tp. 41N/02SE	Cu, Mo	Reserve est. 18 M tons @ 0.19% Cu and 0.05% MoS ₂	MRC 12, p.60-61 MRC 7, p.11 AF RYAN SSMP -15, p.30	1965/66: diamond drilling	07924

Deposit Name/ NTS	Commodity	Tonnage-Grade Estimates and/or Dimensions	Reserve References	Status	AMIS Site #
Mamainse Mine Ryan Tp. (A.McDonell Location -west of Ryan Tp.) 41N/02SW	Cu	Vein L-1500 by W-13 feet 3 shafts sunk to depths 60, 280 and 320 feet. No production recorded.	MRC 12, p.57 AR. v.62, pt.4, p.23 MRC 2, p.79	Past Producer 1882–1884	08050
Maricon prospect (Rankin Location- Point Aux Mines) Slater Tp. 41N/02NE	Cu	295 405 tons @ 1.17% Cu (1098 by 345 by 8.1 feet)	MRC 12, p.58 AF Rankin Mnrl 1964, 0013-A1 AF Rankin Mnrl 1956, 0012 AF Rankin Mnrl 1949, 0017A	Past Producer 1865/66 and 1949, 1955/56	07902 Same as 07899
Pancake Lake (Richards) Kincaid Tp. 41N/02SE	Cu	310 by 21.5 by 310 feet @ 0.76% Cu developed prospect.	MRC 12, p.38	1952 intermittent until 1964	08026
Tribag Mine Nicolet Tp. 41N/02SE	Cu, W, Ag, Au	4 zones (Breton, West, East and South) Reserve est. 2004: Breton, 40 M tons @ 0.2% Cu above 300 m. East Breccia, 125 M tons @ 0.13% Cu and 0.04% MoS ₂ West Breccia, 0.1 M tons @ 0.6 – 1.0% Cu.	MRC 12, p.80 AF SSMP Ryan -15, p.30	Past Producer 1967–1973 Production from Breton and West Breccia zones.	08068
Goulais River Nahwegezhic Tp. 41O/04SW	Fe	Algoma Ore Division Iron Range: 25-40% total iron. Estimated reserves 30 480 000 tons of iron pellets in Cowie Lake Section. McPhail deposit (southern extension): 31% total iron, est. Reserves 5 080 000 tons of iron pellets.	MRC 11, p.41-42 OGS GR 192, p.49-56	1910–1944 Development work 1963–1966 diamond drilling, trenching, metallurgical studies.	08065

Note: This table contains tonnage and grade estimates, referred to as “reserves” (indicated, possible, probable), which were determined at various times by methods largely unreported. Unless specifically indicated, it must be assumed that these estimates are not in compliance with the reporting standards required by National Instrument 43-101. AMIS = Abandoned Mine Information System.

Table 24. Mineral deposits not being mined in the Wawa area in 2019.

Abbreviations					
CMH.....	Canadian Mines Handbook	OFR	Open File Report		
GR	Geological Report	RGF	Resident Geologist Files		
NM	The Northern Miner				
Deposit Name/ Township	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Alden–Goudreau (past producer) Cowie Township	Au	170 000 tons @ 0.50 oz Au per ton	Michipicoten Forest Resources and Cedar Falls Forest Resources	CMH 1937–1943	Diamond drilling 2011
Betty Lake Iron Range Knically Township	Fe	1 570 140 t @ 39.5% Fe	Essar Steel Algoma Inc.	RGF	Inactive. Bulk sampled 1999
Big Lake Iron Range Corbiere Township	Fe	302 150 tons per 100 feet @ 36.6% Fe	Michipicoten Forest Resources and Cedar Falls Forest Resources	GR 153	Last active exploration 1955
Braminco prospect Brackin Township	Au	100 000 tons @ 0.15 oz Au per ton (#21 Vein); 23 000 tons @ 0.31 oz Au per ton (#7 Vein); 5000 tons @ 0.26 oz Au per ton (B Vein)	Conquest Resources Limited	RGF	Last explored 2004
Cline Gold Mine (past producer) Jacobson Township	Au	204 000 tons @ 0.221 oz Au per ton (88-60 Zone)	Cline Mining Corporation	NI 43-101 Rpt. 30/11/2009	Diamond drilling 2008

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Deposit Name/ Township	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Edwards Mine (past producer) Jacobson Township	Au	96 000 t @ 11.3 g/t Au (at the end of 2000)	Strike Minerals Ltd.	RGF	Dewatering and diamond drilling 2011
Ego Mines Claims Abotossaway Township	Au, Cu	7 mineralized zones; W-8 zone hosts 442 080 t @ 2.6 g/t Au, 1.91% Cu	Richmont Mines Inc.	OFR 5587	Inactive
Goudreau Zone Finan Township	Au	Indicated resource: 220 667 t @ 12.0 g/t Au (85 262 ounces); Inferred resource: 169 027 t @ 10.3 g/t Au (55 730 ounces)	Richmont Mines Inc.	RGF	Diamond drilling 2010
G.W. Macleod Mine (past producer) McMurray Township	Fe	18 700 000 t (blocked out) @ 31% Fe	Essar Steel Algoma Inc.	OFR 5990	Mine closed in 1998.
Josephine–Bartlett Iron Range Corbiere Township	Fe	7 555 788 t @ 58.36% Fe	Essar Steel Algoma Inc.	OFR 5578	Diamond drilled 1946.
Josephine Mine (past producer) Corbiere Township	Fe	3 965 00 tons @ 51.65% Fe, 14.92% Si, 1.88% S	Canada Iron Inc.	RGF	Mine cave-in in 1946. Inactive.
Jubilee–Surluga property (past producer) McMurray Township	Au	Inferred resource: 32 200 000 t @ 1.14 g/t Au	Augustine Ventures Inc.	NI 43-101 Rpt 21/11/2011	Past producers (8) 1902–1991. Diamond drilling 2011.
Kremzar Mine (past producer) Finan Township	Au	229 777 t @ 7.65 g/t Au	Richmont Mines Inc.	RGF	Active exploration 2000
Lakemount property Esquega Townships	Ni, Cu	Inferred resource: 3 048 000 t @ 0.35% Ni, 0.20% Cu, 0.13 g/t Pt, 0.09 g/t Pd	First Development Holdings Corporation	NI 43-101 Rpt. Platinum Group Metals 21/01/2005	Diamond drilling 2003–2004
Lochalsh Zone (past producer) Finan Township	Au	Probable reserves: 185 450 t @ 5.6 g/t Au (33 161 ounces); Indicated resource: 252 755 t @ 5.3 g/t Au (42 875 ounces); Inferred resource: 210 160 t @ 6.4 g/t Au (43 083 ounces)	Richmont Mines Inc.	RGF	Diamond drilling 2010
Lucy Iron Range (past-producer) Chabanel Township	Fe	13 780 000 t @ 33.2% Fe	Essar Steel Algoma Inc.	RGF	Mine closed 1970.
Magino Mine (past producer) Finan Township	Au	Indicated resource: 67 555 000 t @ 1.00 g/t Au (2 176 300 ounces @ 0.35 g/t cut-off) Inferred resource: 54 242 000 t @ 0.99 g/t Au (1 721 200 ounces @ 0.35 g/t cut-off)	Prodigy Gold Incorporated	NI 43-101 Rpt. 2/11/2011	Diamond drilling 2011
Magnacon Mine (past producer) Mishibishu Lake area	Au	1.47 million tons average 0.19 oz Au per ton (drill- indicated). Past producer 1990, 19 397 oz from 163 366 tons	Wesdome Gold Mines Ltd.	CMH 1997–1998, p.204	Underground exploration 2004. Drifting westward toward Mishi Mine.
Magpie Iron Range (past producer) Leclaire Township	Fe	332 400 t @ 36% Fe	Essar Steel Algoma Inc.	RGF	Mine closed 1921. Underground mine.

Deposit Name/ Township	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Markes occurrence Jacobson Township	Au	65 000 t @ 5.75 g/t Au	Pele Mountain Resources Inc.	RGF	Diamond drilling 2010
Minto Mine South property McMurray Township	Au	Indicated resource: 105 000 t @ 7.5 g/t Au (25 000 ounces @ 3.5 g/t cut- off) Inferred resource: 354 000 t @ 6.6 g/t Au (75 000 ounces @ 3.5 g/t cut-off)	Augustine Ventures Inc. / Red Pine Exploration Ltd.	NI 43-101 Rpt 31/12/2018	Diamond drilling 2018
Murphy–Algold– Amherst gold mine (past-producer) Abotossaway Township	Au	248 800 tons @ 0.305 oz Au per ton	Lake Shore Gold Corp.	RGF	Diamond drilling 2003.
Nudulama prospect Leeson Township	Au	579 325 t @ 0.194 oz Au per ton	Gold Train Resources Inc.	RGF	Inactive
No.8 Zone Finan Township	Au	90 700 t @ 6.9 g/t Au	Richmont Mines Inc.	RGF	Exploration 1997
Pine Zone Finan Township	Au	70 000 t @ 6.4 g/t Au	Richmont Mines Inc.	RGF	Inactive
Ranson Mine Rabazo Township	Au	30 300 t @ 12.4 g/t Au	N/A	RGF	Diamond drilling 2001
Renabie Mine (past producer) Leeson Township	Au	1 million t @ 0.2 g/t Au. Past producer 1 100 000 oz Au	N/A	RGF	Rehabilitated
Ruth Iron Range (past-producer) Chabanel Township	Fe	34 608 000 t @ 30.9% Fe	Essar Steel Algoma Inc.	RGF	Diamond drilling 1967 by Algoma Ore Company Ltd.
Shenango Mine Hawkins Township	Au	37 440 t @ 4.3 g/t Au	Canadian Orebodies Inc.	RGF	Inactive
Shihan VMS property Meath and Rennie townships	Zn, Pb, Cu	Indicated resource: 199 699 t @ 3.81% Zn, 0.21% Pb, 0.09% Cu, 91.82 g/t Ag, 0.30 g/t, 0.30 g/t Au Inferred resource: 44 362 t @ 4.30% Zn, 0.20% Pb, 0.09% Cu, 72.82 g/t Ag, 0.30 g/t Au	Goldpath Resources Corp.	NI 43-101 Rpt 14/11/2011	Inactive
Sir James Dunn Mine (past producer) Chabanel Township	Fe	65 454 545 t @ 34% Fe, 7% SiO ₂	Essar Steel Algoma Inc.	RGF	Inactive
Surluga Mine (past producer) McMurray Township	Au	Inferred resource: 19 824 000 t @ 1.71 g/t Au (1 088 000 ounces @ 0.5 g/t cut-off)	Augustine Ventures Inc. / Red Pine Exploration Ltd.	NI 43-101 Rpt 06/05/2015	Diamond drilling 2018

REGIONAL LAND USE GEOLOGIST ACTIVITIES—NORTHEAST REGION

The activities of the Regional Land Use Geologist are described *in* “Regional Land Use Geologist Activities—Northeast Region” in the Timmins District report of this volume.

MINERAL DEPOSIT COMPILATION GEOSCIENTIST—NORTHEASTERN ONTARIO

The activities of the Mineral Deposit Compilation Geoscientist are described *in* “Mineral Deposit Compilation Geoscientist—Northeastern Ontario” in the Timmins District report of this volume.

ACKNOWLEDGMENTS

Information on past activities reported in the text is from assessment files and other files of the Sault Ste. Marie District Geologist Office unless otherwise noted. Information on current mining and exploration activities was provided by individual prospectors and exploration and mining company personnel, compiled from assessment files and obtained from public information sources.

The manuscript has benefitted from a review and comments made by Paula Takats, a Geoscience Editor, and Marg Rutka, the Senior Geoscience Editor working with OGS Publication Services.

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Metric Conversion Table

Conversion from SI to Imperial			Conversion from Imperial to SI		
<i>SI Unit</i>	<i>Multiplied by</i>	<i>Gives</i>	<i>Imperial Unit</i>	<i>Multiplied by</i>	<i>Gives</i>
LENGTH					
1 mm	0.039 37	inches	1 inch	25.4	mm
1 cm	0.393 70	inches	1 inch	2.54	cm
1 m	3.280 84	feet	1 foot	0.304 8	m
1 m	0.049 709	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	1.609 344	km
AREA					
1 cm ²	0.155 0	square inches	1 square inch	6.451 6	cm ²
1 m ²	10.763 9	square feet	1 square foot	0.092 903 04	m ²
1 km ²	0.386 10	square miles	1 square mile	2.589 988	km ²
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
VOLUME					
1 cm ³	0.061 023	cubic inches	1 cubic inch	16.387 064	cm ³
1 m ³	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m ³
1 m ³	1.307 951	cubic yards	1 cubic yard	0.764 554 86	m ³
CAPACITY					
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	4.546 090	L
MASS					
1 g	0.035 273 962	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 747	ounces (troy)	1 ounce (troy)	31.103 476 8	g
1 kg	2.204 622 6	pounds (avdp)	1 pound (avdp)	0.453 592 37	kg
1 kg	0.001 102 3	tons (short)	1 ton(short)	907.184 74	kg
1 t	1.102 311 3	tons (short)	1 ton (short)	0.907 184 74	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	1016.046 908 8	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	1.016 046 9	t
CONCENTRATION					
1 g/t	0.029 166 6	ounce (troy) / ton (short)	1 ounce (troy) / ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights / ton (short)	1 pennyweight / ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

	<i>Multiplied by</i>	
1 ounce (troy) per ton (short)	31.103 477	grams per ton (short)
1 gram per ton (short)	0.032 151	ounces (troy) per ton (short)
1 ounce (troy) per ton (short)	20.0	pennyweights per ton (short)
1 pennyweight per ton (short)	0.05	ounces (troy) per ton (short)

*Note: Conversion factors in **bold** type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries, published by the Mining Association of Canada in co-operation with the Coal Association of Canada.*

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