

**GOLD**
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*All figures in US\$, unless otherwise noted.*
**Companies Mentioned**

	Rating	Target
IDM Mining	Spec Buy	C\$0.35
INV Metals	Spec Buy	C\$2.50
Midas Gold	Spec Buy	C\$2.95
NewCastle Gold	Spec Buy	C\$2.00
Orla Mining	Spec Buy	C\$2.30
Sabina Gold & Silver	Spec Buy	C\$3.25
Seabridge Gold	Spec Buy	C\$20.00
Victoria Gold	Spec Buy	C\$1.00
Cardinal Resources	NR	NR
Falco Resources	NR	NR
GoldQuest Mining	NR	NR
Orca Gold	NR	NR
Pure Gold Mining	NR	NR
Treasury Metals	NR	NR

## Takeover Twenty Update: Beaver Creek

### Event

We discussed new interesting explorers at the Beaver Creek conference in an Oct. 3 sister report, *The Dirt Dozen Explorers*, yet there were few new Development-stage companies at the conference. We struggle to find new developers for our Takeover Twenty, but this shortage is core to our investment strategy. There was, however, plenty of important news leading up to the conference, prompting this update.

### Highlights

- **Takeover Twenty Investment Thesis** | Exploration this decade is estimated to have only replaced one ounce for every three produced, making existing discoveries all the more strategic. Our Takeover Twenty represents the best development-stage projects we have found. It's not a complicated strategy — we are positioned where the producers must go to replace depleting resources; it is less costly and more time effective for them to buy than to try to find.
- **Strong Relative Performance** | The Developers are the best-performing tier of 2017, up 23% YTD, versus Royalties 17%, Intermediates 10%, Seniors 9%, Explorers 0% and Junior Producers -15%. Since Aug. 2014, when we focused the Takeover Twenty on Development-stage companies, it has increased 75%, while the GDXJ is down 20%, the GDX is down 13% and the HUI is down 13%.
- **Two-thirds Turnover in Three Years** | 12 of our Takeover Twenty list of companies have been acquired in three years at an average premium of 66% and two have graduated to producer status. Producers are getting hungrier — this was evident at Beaver Creek. YTD, 2017 has seen a notable uptick in acquisitions, and we speculate that one-third to one-half of our list will turn over by Dec. 2018.
- **Our Current Favourite Developers (Alphabetical)** | **IDM**: B.C. high-grade aiming for 2019 production; **Midas**: permit schedule more secure and Q3/19 not far off for its 5Moz reserve; **Newcastle**: water discovery and friendlier permitting regime; **Sabina**: deep high grade is transforming project economics; **Seabridge**: new high-grade Iron Cap discovery improving 40Moz KSM project; and **Victoria Gold**: fully permitted and Phase 1 construction underway.
- **Up-and-Coming Favourites** | **GoldQuest**: exploration sizzle; **INV**: high-grade discoveries a boost; **Orca**: watch for expansion; **Orla**: exciting sulfide discovery; **Pure Gold**: strong new PEA; and **Treasury Metals**: critical mass.
- **Two to Watch** | **Cardinal**: new 7Moz in Ghana; and **Falco**: progressing the Horne.

### Conclusion

Our Takeover Twenty investment strategy has been simple, but effective — we're recommending investors hold a few Development-stage projects and wait for the market to gradually re-rate them or producers to acquire them. The latter are getting hungrier and the developers are still trading at less than the producers could find them for and can be put into production much faster than a new discovery could.

## Investment Thesis

### Mother Nature's Tray of Sandwiches — This Is Lunch

**A Snapshot of the Best Development-stage Companies** | We believe Development-stage companies are the best strategically positioned tier in the gold sector at this point in time. They are a critical feedstock for the gold industry's replenishment of resources and growth. Having looked at most publicly available development projects, we feel comfortable that our Takeover Twenty provides a snapshot of the best projects within the TSX-listed companies waiting in the wings; maybe not all of them, but on balance a representation of the strongest. Figure 1 summarizes key valuation data for the group, with additional details available in Appendix I. The accountants will be quick to point out that there are only nineteen in the Takeover Twenty. Yes, we struggle to keep the list at twenty. Given the avalanche of news releases leading up to the Beaver Creek conference, and just after, we felt that timeliness mattered more than numbers. We suggest a few other companies that we hope to add to the list shortly.

**Our Favourites** | The following are our favourites, listed alphabetically. We are the first to admit that our favourites are not the most certain to be taken over. We are only right half the time. That is why we open and close this section, our Investment Thesis, with the observation that the most important investment decision is to have a few Development-stage companies in a portfolio and to pick those that most closely fit the reader's investment criteria. There is enough detail in Figure 1 to do this and we can provide more for the asking, or even our internal rankings.

- **Current Favourites:** IDM, Midas, Newcastle, Sabina, Seabridge, Victoria
- **Up and Coming Favourites:** Goldquest, INV Metals, Orca, Orla, Pure Gold, Treasury Metals
- **One to Watch:** Cardinal

**A Hungrier & Larger Crowd of Producers** | When the last cycle began in late 2001, global gold production stood at 85.1Moz/year. GFMS estimates that it was 103.6Moz/year in 2016. In the interim, our list of producers on the TSX has more than doubled, albeit most of the growth has been in the 100–350Koz/year segment. Figure 2 shows what has been happening to the largest producer reserve coverage ratio (reserve ounces divided by annual production). We tend to think of the large producers as the hungriest, but the junior producers are starved of growth too, a realization of which is responsible for the group's poor performance in 2017 (see the current year in the historical performance by tier in Figure 3). The crowd of producers is larger and hungrier. Actions speak louder than words; there was record attendance of corporate acquirers (producers) at September's Precious Metals Summit at Beaver Creek, dedicated to exploration and Development-stage companies. We noted this in a sister report published on Oct. 3, *Favourite Explorers from the Beaver Creek Conference: Our "Dirt Dozen"*.

**Fewer Discoveries to Replace Production** | Despite a 66% reduction from the peak in 2012, gold exploration spending in 2016 was more than any other year before 2008 and 1.8x the average annual amount spent in 1990–1999. What do we have to show for it? Our April 24 report, [\*Profit from the Disconnect Between Production & Discovery\*](#), with the help of SNL's data, showed the plummeting rate of discovery and commensurate soaring cost of discovery, summarized in Figures 3a & 3b. Discoveries for the decade starting in 2010 have plummeted to only 0.3 ounces/oz of production, versus 0.7 in 2000–2009 and 1.4 ounces/oz produced in 1990–1999. Furthermore, many of the discoveries are either in inhospitable locations or are uneconomic. No wonder, therefore, that global production is broadly believed to have peaked.

**Investors Hungrier for Growth in a World of "Peak Gold"** | A new up-cycle began for gold in Dec. 2015, although it hardly feels like it. Producer share prices have actually doubled since, while 20% higher gold prices and flat operating costs have improved margins substantially. In the downturn, investors wanted companies to focus on maximizing net free cash flow. In today's world of flat global production, we believe a distinction will increasingly be made between companies with long-term sustainable growth and those on the hamster wheel of trying to replace mature mines with declining

production profiles. If this trend runs its normal course, the distinction will translate into substantially higher valuation multiples for the growth companies and penalties for those in decline.

**Mother Nature's Tray of Sandwiches — the Takeover Twenty** | The combination of today's larger production base, fewer new discoveries, investor appetite for growth and rising gold prices puts the world's existing inventory of undeveloped projects in an enviable position. What they possess is increasingly rare and valuable. We have been told our list is a "tray of half-eaten sandwiches". Well, Mother Nature is not bringing another tray, just the occasional sandwich. This is lunch. The tray of sandwiches we offered up in our inaugural Aug. 2014 Takeover Twenty has been picked over in the interim, two-thirds having either been eaten — at an average 66% premium we might add — or spoken for. It is a struggle for us to find new sandwiches to replenish the tray. The lunch crowd is larger and from what we could see from their attendance at Beaver Creek, hungrier. Even the tuna on pumpernickel with curled edges will eventually look appetizing.

**Just Pick a Few Sandwiches** | We highlighted earlier that only one-half of the companies acquired from the Takeover Twenty were among our favourites at the time. Acquisitions are driven by strategic fit, and beauty is in the eye of the beholder. We are not able to predict timing for takeovers, although we suspect that somewhere between one-third and one-half of the Takeover Twenty will be acquired by year-end 2018. Takeovers are often the end game for Development-stage projects, but what really underpins our investment thesis is the growing disparity between global production and discovery rates. This and the fact that, despite their scarcity, the developers are trading at well below replacement cost, while their projects typically have a decade's head start on where a new exploration discovery would be with respect to economic studies and permitting.

Figure 1: Takeover Twenty Summary

"TAKEOVER TWENTY"														
SUMMARY														
Share Price (\$/sh)	Company	Ticker & Exchange	Last Economic Study Completed	Shares Outstanding (millions)	Market Cap US\$M	Net Mkt Cap US\$M	LOM Construction Capex US\$M	Reserves Moz Au Equiv (Co Share)	Other Resources Moz Au Equiv (Co Share)	Paradigm Estimate of Moz Au	Process Recover %	Net Mkt Cap/Au Equiv	Remaining LOM Construction Capex/Au Equiv	Total Cash Cost/Au Equiv
\$0.63	Atacama Pacific Gold	ATM-V	PFS	98.1	\$49	\$40	\$355	3.7	2.1	3.7	78%	\$14	\$122	\$843
\$2.15	Bear Creek Mining	BCM-V	Feasibility	104.4	\$179	\$130	\$640	3.0	3.3	3.0	72%	\$60	\$292	\$67
\$1.33	Dalladrian Resources	DNA-T	PEA	289.9	\$307	\$270	\$225	1.4	3.0	3.4	94%	\$85	\$71	\$688
\$0.12	Freegold Ventures	FVL-T	PEA	180.2	\$17	\$14	\$94	0.0	6.5	1.0	80%	\$18	\$123	\$911
\$0.35	Goldquest Mining	GQC-V	PFS	274.9	\$77	\$54	\$165	1.2	1.5	1.2	75%	\$82	\$180	\$604
\$0.13	IDM Mining	IDM-V	PEA	398.7	\$41	\$38	\$126	0.5	0.2	0.7	89%	\$87	\$218	\$582
\$0.88	INV Metals	INV-T	PFS	94.1	\$66	\$57	\$314	2.1	1.4	2.8	90%	\$23	\$124	\$578
\$0.66	Midas Gold	MAX-T	PFS	332.7	\$175	\$99	\$1005	4.7	2.0	5.0	86%	\$23	\$233	\$635
\$0.81	NewCastle Gold	NCA-V	PEA	215.0	\$137	\$124	\$170	0.0	5.5	2.3	75%	\$74	\$102	\$721
\$0.62	Orca Gold	ORG-V	PEA	183.5	\$91	\$62	\$272	0.0	2.3	2.1	83%	\$35	\$156	\$734
\$0.62	Orezone Gold	ORE-T	Feasibility	158.6	\$78	\$55	\$250	1.3	1.0	1.4	87%	\$45	\$204	\$726
\$1.24	Oria Mining	OLA-V	PFS	169.2	\$167	\$149	\$260	2.2	0.2	1.8	74%	\$113	\$197	\$606
\$0.54	Pure Gold Mining	PGM-V	PEA	199.2	\$96	\$78	\$70	0.0	1.8	1.2	92%	\$71	\$63	\$767
\$2.24	Sabina Gold & Silver	SBB-T	Feasibility	235.2	\$419	\$352	\$509	2.7	4.5	3.3	93%	\$114	\$165	\$524
\$15.41	Seabridge Gold*	SEA-T	PFS	64.2	\$787	\$676	\$5,164	38.6	41.8	39.8	73%	\$23	\$213	\$57
\$0.68	Treasury Metals	TML-T	PEA	126.5	\$68	\$67	\$192	0.0	1.5	1.2	94%	\$57	\$164	\$543
\$1.08	Trek Mining	TREK-V	Feasibility	195.8	\$168	\$104	\$146	1.0	0.5	1.1	91%	\$103	\$145	\$707
\$0.47	Victoria Gold	VIT-V	Feasibility	579.2	\$214	\$148	\$306	2.7	1.8	3.1	70%	\$69	\$142	\$519
\$0.33	West African Resources	WAF-V	Feasibility	594.1	\$154	\$129	\$137	0.9	1.3	0.9	91%	\$159	\$189	\$656
Takeover Twenty Average					\$143	\$129	\$259	3.7	4.5	4.3	83%	\$64	\$188	\$593
Takeover Twenty Median					\$102	\$102	\$255	1.4	1.9	2.2	84%	\$61	\$105	\$627

(All figures per recovered PCI estimated Au Equiv oz)

**Date of Share Pricing: 5-Oct-2017**

**Valuation Assumptions**

Gold Price (US\$/oz): **\$1,325**

Silver Price (US\$/oz): **\$17.67**

Copper Price (US\$/lb): **\$3.04**

CAD/USD Exchange Rate: **0.800**

\*Seabridge reserves and resources only use Mineable gold resources; operating costs are net of copper and other metal credits

\*\*Market cap less other assets, investments, working capital and proceeds from ITM options/warrants, plus debt

\*\*\*ITC = Investor Total Cost = Market Cap/oz + Construction Capex/oz + AISC/oz

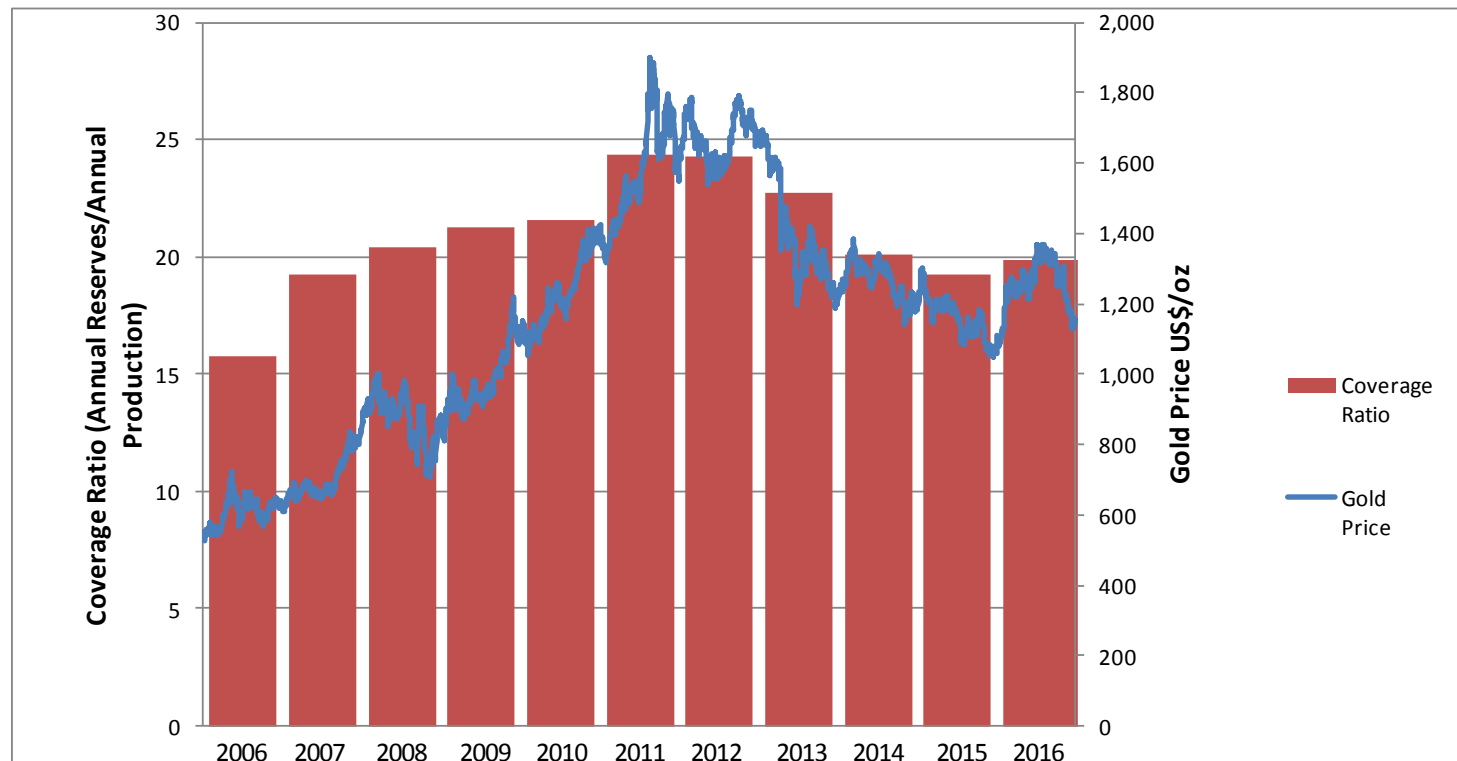
**Bolded companies indicate research coverage by PCI**

(All \$ ratios are in US\$ (eg. Market Cap/oz) except NAV/sh, which is C\$/sh)

(Per ounce metrics use PCI Mineable resource estimate, and are net of processing recovery)

(IRR and NAVs are based on 100% equity, no leverage. NAVs are at 5% discount except with Copper at 8%.)

Source: Paradigm Capital Inc., Company filings

**Figure 2: Senior Producer Coverage Ratio 2006–2016**


Source: Paradigm Capital Inc., SNL, Company filings

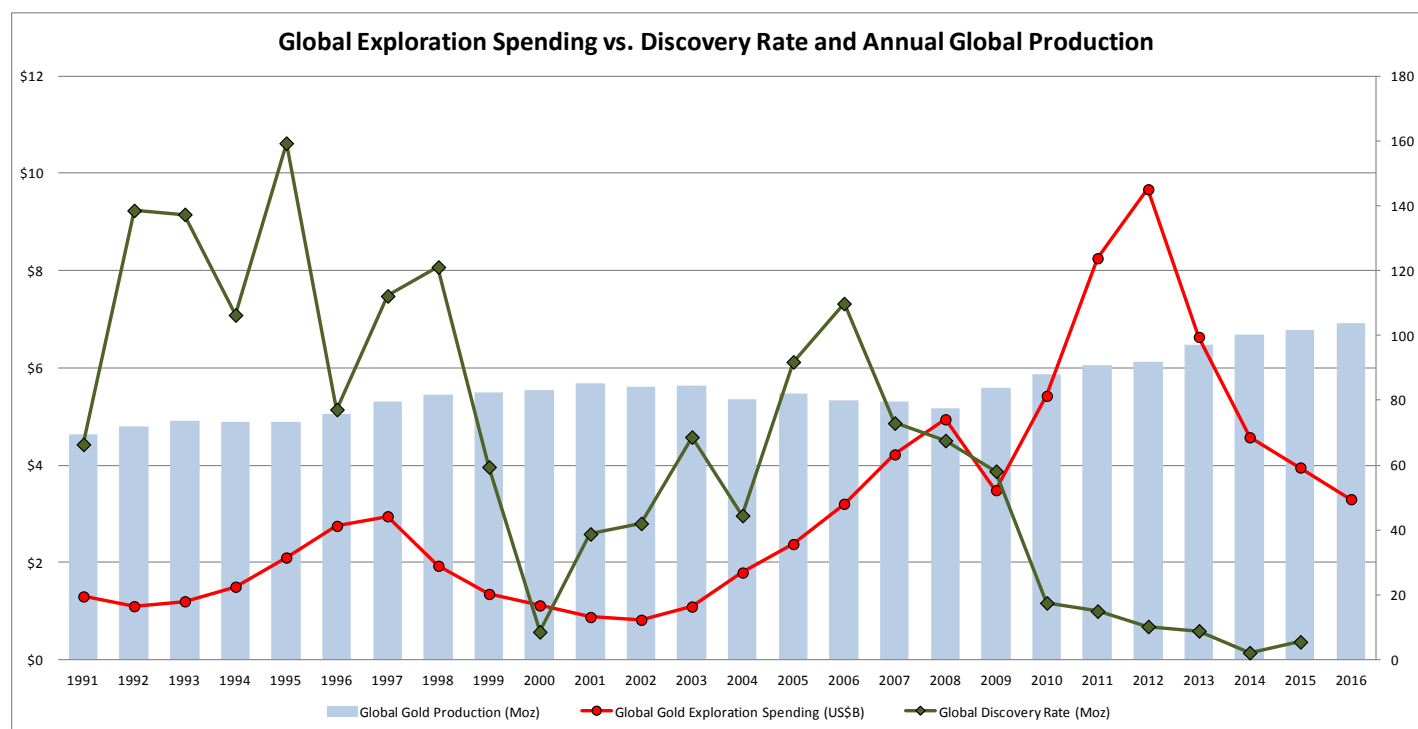
**Figure 3: Historic Price Performance by Tier**

Performance YoY (Dec 31 vs Dec 31)																Compound Annual Change		
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 YTD to Oct 5	Jan/02 to Dec/16	Change Jan/02-Dec/16 (14 Years)
Gold	25%	20%	6%	18%	23%	32%	2%	26%	30%	11%	7%	-7%	-2%	-10%	9%	10%	10%	441%
Global Cash Cost Change	-3%	23%	14%	6%	18%	25%	18%	13%	6%	18%	13%	3%	-4%	-5%	-1%		7%	273%
Margin Expansion (Contraction)	28%	-3%	-8%	12%	5%	7%	-16%	13%	24%	-7%	-6%	-10%	2%	-5%	10%		2%	42%
Senior	66%	41%	0%	19%	13%	19%	-2%	2%	17%	-13%	-21%	-46%	-22%	-18%	56%	9%	3%	62%
Intermediate	132%	55%	-5%	27%	54%	-6%	-13%	81%	52%	-8%	-12%	-55%	0%	-11%	66%	10%	12%	706%
Royalty			-13%	86%	43%	-15%	-23%	90%	53%	17%	46%	-42%	16%	-17%	100%	17%	14%	733%
Junior Producers	221%	123%	-16%	26%	54%	-24%	-43%	150%	63%	-27%	-20%	-55%	6%	-14%	76%	-15%	13%	768%
Developers			2%	73%	133%	-14%	-48%	208%	84%	-16%	-26%	-51%	-7%	-6%	109%	23%	11%	483%
Explorers			-6%	38%	116%	4%	-62%	147%	132%	-33%	-25%	-65%	-17%	-29%	167%	0%	17%	1544%
Gold Equity Average	156%	107%	-6%	45%	69%	-6%	-32%	113%	67%	-13%	-10%	-52%	-4%	-16%	96%	7%	20%	1525%

Ranking																Rank 2002-2016		
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 YTD	Rank 2002-2016	Rank 2007-2016
Gold	5	5	1	7	6	1	1	6	6	2	2	1	4	2	7	3	3	2
Senior	4	4	3	6	7	2	2	7	7	4	5	3	7	6	6	5	7	7
Intermediate	3	3	4	4	3	4	3	5	5	3	3	5	3	3	5	3	4	4
Royalty			6	1	5	6	4	4	4	1	1	2	1	5	3	2	1	1
Junior Producers	1	2	7	5	3	7	5	2	3	6	4	5	2	4	4	7	5	5
Developers			2	2	1	5	6	1	2	5	7	4	5	1	2	1	1	3
Explorers	2	1	5	3	2	3	7	3	1	7	6	7	6	7	1	6	6	6

Source: Paradigm Capital Inc., FactSet

**Figure 3a: Global Disconnect between Production and Discovery**


Source: Paradigm Capital Inc., SNL, GFMS

**Figure 3b: Global New Discovery Table**

	1990-1999	Coverage Ratio (Discov/Prod)	Finding Cost (\$Explor/oz)	Annual
Spent Explor \$B	\$12.0		\$11	\$1.2
Discovered Moz	1050	1.4		105
Produced Moz	751			75
New Discoveries	132			13
	2000-2009	Discov/Prod	\$Explor/oz	
Spent Explor \$B	\$15.8		\$26	\$1.6
Discovered Moz	604	0.7		60
Produced Moz	820			82
New Discoveries	93			9
	2010-2015	Discov/Prod	\$Explor/oz	
Spent Explor \$B	\$23.2		\$147	\$3.9
Discovered Moz	157.4	0.3		26
Produced Moz	570			95
New Discoveries	15			2

NB The above 0.3 ratio is based on SNL's assumption that another 98 Moz wb found. Actual has been 59 Moz, which is a ratio of just 0.1.

**Based on global discoveries over 2 Moz 1990-2015**

Source: Paradigm Capital Inc., SNL, GFMS



## Analysis of the Takeover Twenty

**Living Up to its Name, Takeover Twenty** | Since we launched the Developers version of the Takeover Twenty August 2014, we have seen 12 companies be acquired at an average premium of 66% and two graduate to producer status. That is more than a 50% turnover, our initial Takeover Twenty starting with 25 companies. (Yes, it is true, we can't count, our "Dirt Dozen" explorer report published on Oct. 3 included 15.) Now we struggle to keep our Takeover Twenty from falling below that number. Figure 4 lists the takeovers and premiums paid for the Takeover Twenty acquisitions over the past three years. We were asked by a client what proportion of the list we would expect to be acquired over the next year. Looking through the list, our estimate is 40%. YTD, there have been as many acquired as the best previous year of 2015; things appear to be heating up. On the other hand, takeover premiums are likely to decline from the 66% average of the past three years, but stay well above the historical average of 32%. We are still in the early stage of a new up-cycle.

**Leading Performance by Developers** | Figure 5 shows how the Takeover Twenty has substantially outperformed the GDX and GDXJ, increasing 75% since August 2014 relative to -13% and -20%, respectively. Indeed, the GDX and GDXJ have yet to recover what they lost in 2014–2015. The Development tier from which we draw the Takeover Twenty was also largely spared the GDXJ rebalancing that occurred in 2017. (Could such a disruption re-occur if share prices experience another rally, like 2016?). How has the Takeover Twenty performed compared to other gold sector tiers? Figure 3 shows how, YTD, the Developers and Takeover Twenty have increased 23%, outperforming all other gold tiers on the TSX, especially their closest relatives, the Explorers (0%) and Junior Producers (-15%). We doubt this is an aberration, but simply the market recognizing the growing production *versus* discovery gap and the fact that Development-stage companies, on average, continue to trade at valuations substantially below replacement cost, which we touch on next.

**Valuations — Still Trading Below Replacement Cost** | There are several takeaways from our Takeover Twenty summary in Figure 1. Perhaps the most important is that the group continues to trade well below replacement cost. The median market cap per ounce of recoverable resource is \$61/oz, which would translate into \$51/oz of net market cap per in-situ mineable if divided by the resource-weighted recovery of 84%. Not surprisingly, there is a wide distribution of valuations within our group. Figure 6 shows the market cap per mineable ounce, in situ, which range from \$11/oz to \$166/oz. Discovery costs per ounce of global discoveries (2Moz+ resources or 1Moz reserve being the lower cut-off) have soared, as we show in Figure 2. We estimate the replacement cost of deposits of a quality equivalent to that found in our Takeover Twenty group is now over \$140/oz in situ.

**Faster to Production** | The average time from initial discovery to production is now 18 years, according to SNL. Our Takeover Twenty has projected start-up dates of 2019–2024, as shown in Figure 1, a considerable advantage over new exploration projects.

**Project Rates of Return** | We have frequently heard the Takeover Twenty referred to as a tray of half-eaten sandwiches. Projections by developers are invariably optimistic and we have tried to insert some conservatism, particularly in the areas of sustaining capital and G&A, but no doubt our IRRs remain optimistic. Nevertheless, our median IRR of 25% strongly indicates that the bulk of the projects will be built if gold increases beyond today's \$1,270/oz.

- **Highest Project IRRs:** Projects with the highest IRRs tend to be heap-leach based like Newcastle's (39%) and Orla's (38%), the exception being where there is already major existing infrastructure, notable in Pure Gold's case (46%) and Trek's (33%). Figure 7 shows our estimated project IRRs after tax. IRR and project scale are generally inversely related, as we show in Figure 8, but larger projects like Midas' and Sabina's stand out as having higher-than-average project IRRs for their size.
- **IRR to the Acquirer:** One usually hears the word "accretive" in an acquirer's description of its transaction, but almost never "this is the acquisition IRR". Why not? Investors want to know. It's because the latter rarely is anywhere close to the company's cost of capital, at least using the gold price and resources known at the time. Despite what skeptics would say, it isn't a ponzi scheme. A new project's mineable resources usually grow with time and so too does

the gold price for a longer-term asset. Acquirers count on this. Our estimated IRR to the acquirer assumes that the buyer pays a 30% premium to the current share price, a premium pretty typical of the long term (cycle lows, like we are in currently, tend to have higher premiums; our Takeover Twenty average premium has been 66% since Oct. 2014). Figure 9 ranks the Takeover Twenty in terms of IRR to the acquirer. *Atacama and INV Metals have notably attractive IRRs to the Investor.*

**Size Matters** | Acquirers most commonly look for projects with exploration upside that will grow the resource substantially beyond what was paid for it at the time of acquisition. While always situation-dependent, certain types of projects tend to have more exploration upside in the long term than others. Projects with large resources (5Moz+) tend to outlive and have more exploration upside than smaller projects — think elephants versus squirrels. Underground mines tend to have longer lives and more exploration upside than open-pit mines. Heap-leach projects tend to have shorter lives than those with conventional milling. Offsetting the exploration upside and longer life is the tendency for large projects to have lower IRRs than small projects, as shown in Figure 8. Heap-leach projects may have shorter lives and smaller resources, but their IRRs tend to be better. One should also consider the IRR to the acquirer in context of the size of the resource too, Figure 9, since this will be even more sensitive to finding new resources, or enjoying multiple cycles. We watch for the anomalies.

- **Newcastle** is a good one, a large resource with a heap-leach high IRR, but this is not readily evident in our summary (Figure 1) or in our comparison of mineable resource size and project IRR in Figure 8. We explain this next and why Newcastle is a favourite in its own write-up.
- **Seabridge's** reserve is so large that we couldn't put it in Figure 8, and while its IRR may not be high it is proportionately better for its size than one would think — and, as we describe later, this is before including the recent Iron Cap discovery.
- **Midas** is another standout given its large 5Moz mineable resource and 17% IRR.

**Optionality** | In a future report, we will expand on the topic and benefits of optionality because today's market is unwilling to pay for ounces that are not included in a mine plan, particularly those that are out of the money. Yet these are, front and centre, the source of future reserve increases that the acquirers count on (and don't want to pay for either). The resource bars in Figure 10 show the mineable resource we have included in our valuation and the remaining resources we have not. Essentially, these additional ounces come for free. If you are an investor, or acquirer, why not pick a target with plenty of optionality? **Sabina and Newcastle** are great examples.



**Figure 4: Takeover Twenty Acquisitions since August 2014**

Takeover Twenty Acquisitions Since Aug 2014		"TAKEOVER TWENTY"					PARADIGM CAPITAL	
Target	Acquirer	Takeover Announcement Date	C\$ Target Co. Share Price Close Prior to Announcement	C\$ Bid Price	Premium to Previous Close	Value of Bid (US\$M)		
Avneel Gold*	Endeavour Mining	29-Jun-17	\$0.29	\$0.43	48%	\$122		
Integra Gold	Eldorado Gold Corp.	15-May-17	\$0.80	\$1.21	52%	\$432		
Mariana Resources	Sandstorm Gold	26-Apr-17	\$1.04	\$1.92	85%	\$214		
Exeter Resources	Goldcorp	28-Mar-17	\$1.54	\$2.58	67%	\$170		
Gryphon Minerals	Teranga Gold Corp.	19-Jun-16	\$0.14	\$0.20	49%	\$64		
Kaminak Gold	Goldcorp	12-May-16	\$1.98	\$2.62	33%	\$406		
True Gold	Endeavor Mining	4-Mar-16	\$0.40	\$0.57	43%	\$180		
Carlisle Goldfields	Alamos Gold	15-Oct-15	\$0.37	\$0.60	63%	\$23		
Romarco Minerals	OceanaGold	30-Jul-15	\$0.40	\$0.68	71%	\$657		
Mega Precious Metals	Yamana Gold	23-Apr-15	\$0.05	\$0.10	124%	\$14		
Probe Mines	Goldcorp	19-Jan-15	\$3.36	\$5.00	49%	\$404		
Orbis Gold	Semafo	12-Oct-14 <sup>2</sup>	\$0.35	\$0.71	104%	\$161		
Takeover Twenty Acquisition Average					66%	\$237		
Median Premium of 75 Gold-Sector Takeovers Since 2005					37%			

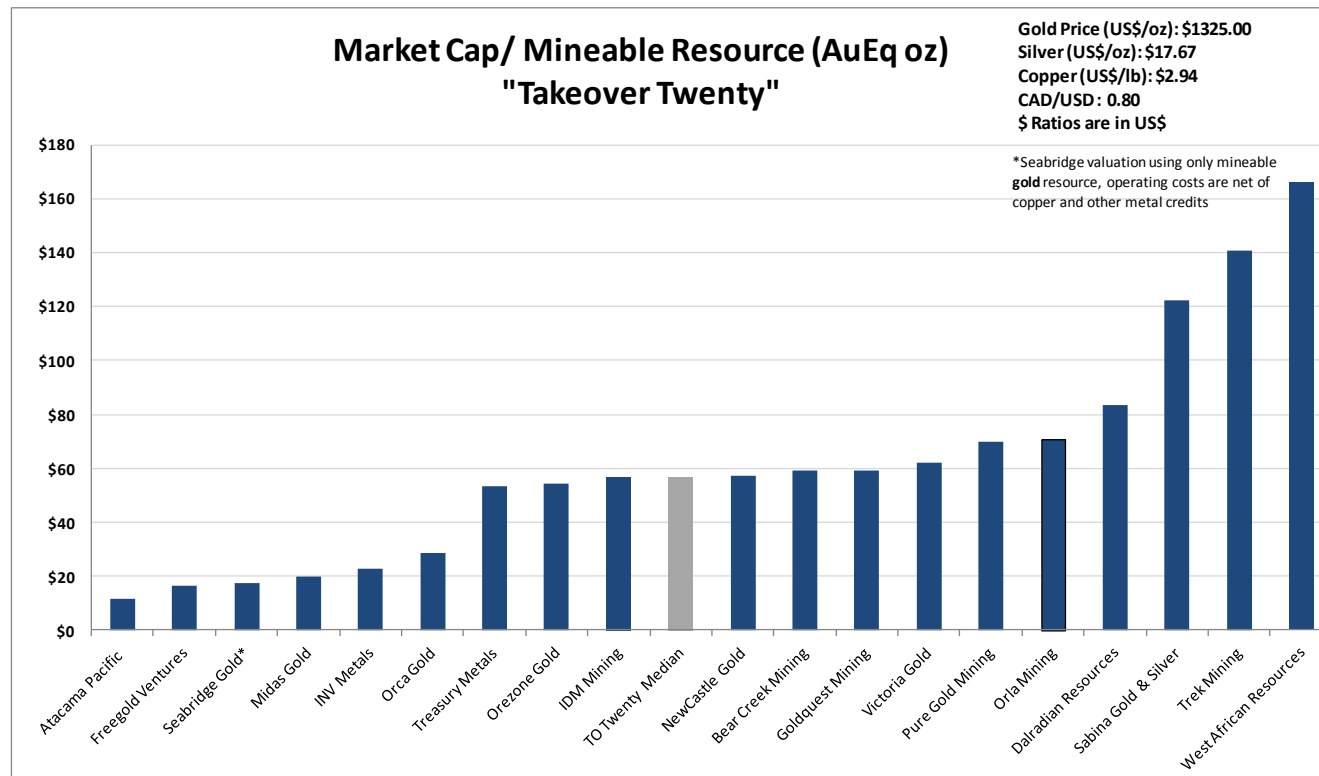
<sup>2</sup>Deal renegotiated, announced 10-Feb-15. Metrics reflect renegotiated bid.

Source: Paradigm Capital Inc., SNL, Company filings

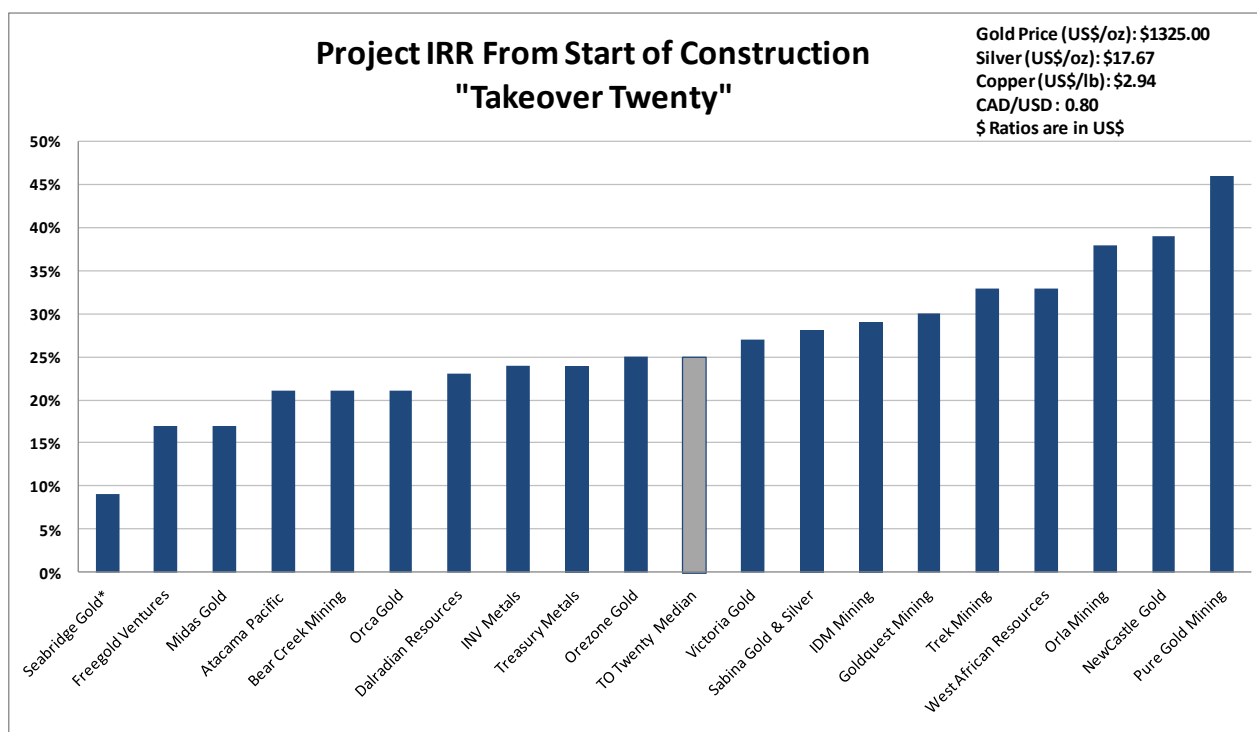
**Figure 5: Takeover Twenty Performance**

Takeover Twenty Share Price Performance								
Ticker	Company	Date Included in Takeover Twenty	Share Price Close Prior to Entry (C\$)	Date Removed From Takeover Twenty	No. of Years in Takeover Twenty	Share Price at Exit/Takeover or Current Share Price	Reason for Exit	% Return from start to exit/current
ATM-V	Atacama Pacific Gold	4-Apr-17	\$0.44	n/a	0.50	\$0.63		43%
AVK-V	Avneil Gold	20-Oct-16	\$0.26	n/a	0.96	\$0.42		60%
BCM-V	Bear Creek Mining	1-Aug-14	\$3.04	n/a	3.18	\$2.15		-29%
BSX-T	Belo Sun Mining	1-Aug-14	\$0.23	8-Nov-16	2.27	\$0.94	Replaced	309%
DNA-T	Dalradian Resources	8-Aug-16	\$1.29	n/a	1.16	\$1.34		4%
FVL-T	Freegold Ventures	1-Aug-14	\$0.21	n/a	3.18	\$0.12		-43%
GQC-V	Goldquest Mining	20-Oct-16	\$0.42	n/a	0.96	\$0.35		-17%
GRY-ASX	Gryphon Minerals	1-Aug-14	\$0.18	19-Jun-16	1.88	\$0.20	Acquired by Teranga	11%
GUY-T	Guyana Goldfields	1-Aug-14	\$3.12	24-Jun-17	2.90	\$10.11	Graduated	224%
ICG-V	Integra Gold	1-Aug-14	\$0.21	15-May-17	2.79	\$1.21	Takeover Bid by Eldorado*	476%
IDM-V	IDM Mining	15-Jul-15	\$0.25	n/a	2.23	\$0.13		-50%
INV-T	INV Metals	23-Nov-16	\$0.75	n/a	0.87	\$0.87		16%
KAM-V	Kaminak Gold	1-Aug-14	\$0.98	12-May-16	1.78	\$2.62	Acquired by Goldcorp	167%
LGC-V	Luna Gold	23-Sep-16	\$0.32	1-Feb-17	0.36	\$1.70	Merger with JDL Gold	n/a
LUG-T	Lundin Gold	20-Mar-15	\$3.90	n/a	2.55	\$5.09		31%
MAG-T	MAG Silver	1-Aug-14	\$9.91	17-Oct-16	2.21	\$18.12	Replaced	83%
MAX-T	Midas Gold	1-Aug-14	\$0.77	n/a	3.18	\$0.67		-13%
MGP-V	Mega Precious Metals	1-Aug-14	\$0.11	23-Apr-15	0.73	\$0.10	Acquired by Yamana	-9%
MRA-V	Mariana Resources	23-Jul-16	\$1.00	26-Apr-17	0.76	\$1.92	Acquired by Sandstorm	92%
NCA-T	NewCastle Gold	1-Aug-14	\$0.69	n/a	3.18	\$0.81		17%
NEE-V	Northern Vertex	15-Nov-15	\$0.23	1-Dec-16	1.05	\$0.41	Replaced	78%
OBS-ASX	Orbis Gold	1-Aug-14	\$0.38	12-Oct-14	0.20	\$0.71	Acquired by Semafo	87%
OLA-V	Orla Mining	9-Dec-16	\$1.50	n/a	0.82	\$1.24		-17%
ORE-V	Orezone Gold	1-Aug-14	\$0.85	n/a	3.18	\$0.62		-27%
ORG-V	Orca Gold	15-Sep-17	\$0.50	n/a	0.05	\$0.62		
PGM-V	Pure Gold Mining	15-Sep-17	\$0.64	n/a	0.05	\$0.55		
PG-T	Premier Gold Mines	1-Aug-14	\$2.94	20-Sep-16	2.14	\$4.18	Focus Change	42%
PVG-T	Pretium Resources	1-Aug-14	\$7.30	n/a	3.18	\$11.95		64%
RMX-T	Rubicon Minerals	1-Aug-14	\$1.61	20-Oct-15	1.22	\$0.59	Replaced	-63%
ROXG-T	Roxgold Inc.	1-Aug-14	\$0.87	15-Jul-16	1.96	\$1.51	Graduated	74%
R-T	Romarco Minerals	1-Aug-14	\$0.89	30-Jul-15	0.99	\$0.68	Acquired by OceanaGold	-24%
SBB-T	Sabina Gold & Silver	1-Aug-14	\$0.88	n/a	3.18	\$2.24		155%
SEA-T	Seabridge Gold	1-Aug-14	\$8.97	n/a	3.18	\$15.41		72%
TGM-V	True Gold Mining	1-Aug-14	\$0.45	4-Mar-16	1.59	\$0.57	Acquired by Endeavour	27%
TML-T	Treasury Metals	3-Feb-17	\$0.64	n/a	0.67	\$0.69		8%
TXG-T	Torex Gold	1-Aug-14	\$15.20	25-May-16	1.82	\$18.90	Graduated	24%
VIT-V	Victoria Gold	1-Aug-14	\$0.14	n/a	3.18	\$0.47		232%
WAF-V	West African Resources	15-Sep-17	\$0.00	n/a	0.05	\$0.32		
XRC-T	Exeter Resources	6-Jul-16	\$1.66	28-Mar-17	0.73	\$2.58	Acquired by Goldcorp	55%
CGJ-T	Carlisle Goldfields	1-Aug-14	\$0.05	15-Oct-15	1.21	0.60	Acquired by Alamos	1100%
Time Weighted Average Return from Takeover Twenty Companies								75%
Average Return from Takeover Twenty Companies								62%
Median Return from Takeover Twenty								36%
GDJ-US	VanEck Vectors Junior Gold Miners ETF		\$42.42			\$33.79		-20%
GDJ-US	VanEck Vectors Gold Miners ETF		\$26.69			\$23.22		-13%
HUI-US	NYSE Arca Gold BUGS Index		\$237.03			\$199.41		-16%

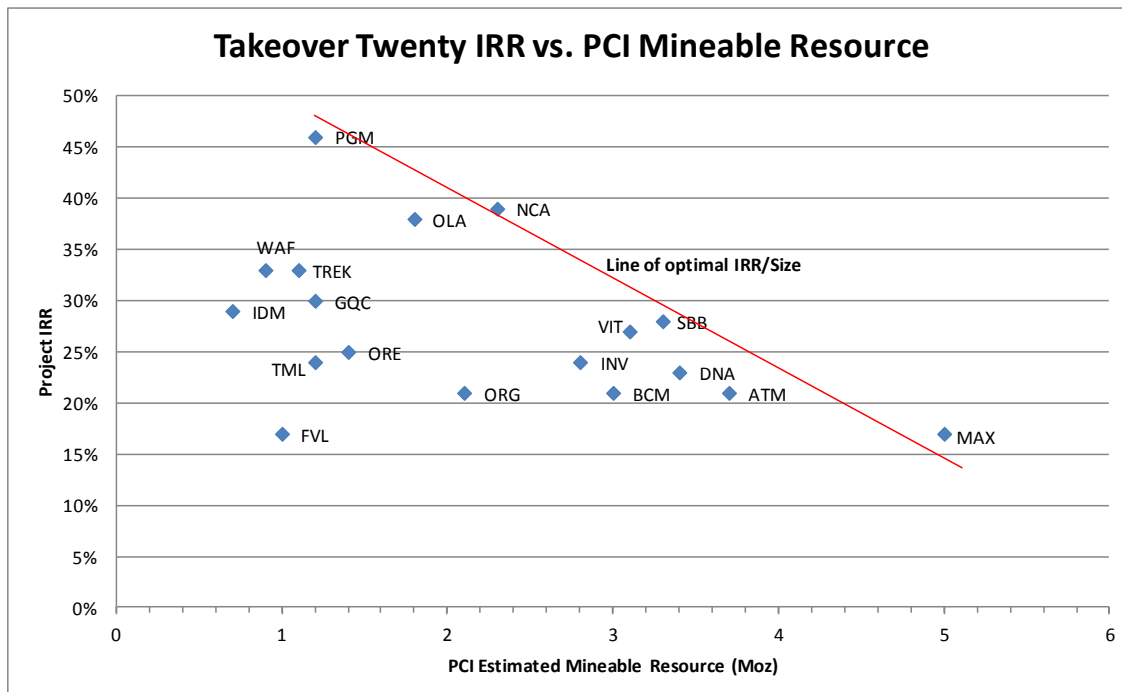
Source: Paradigm Capital Inc., SNL, Company filings

**Figure 6: Takeover Twenty Market Cap per Mineable Resource Ounce**


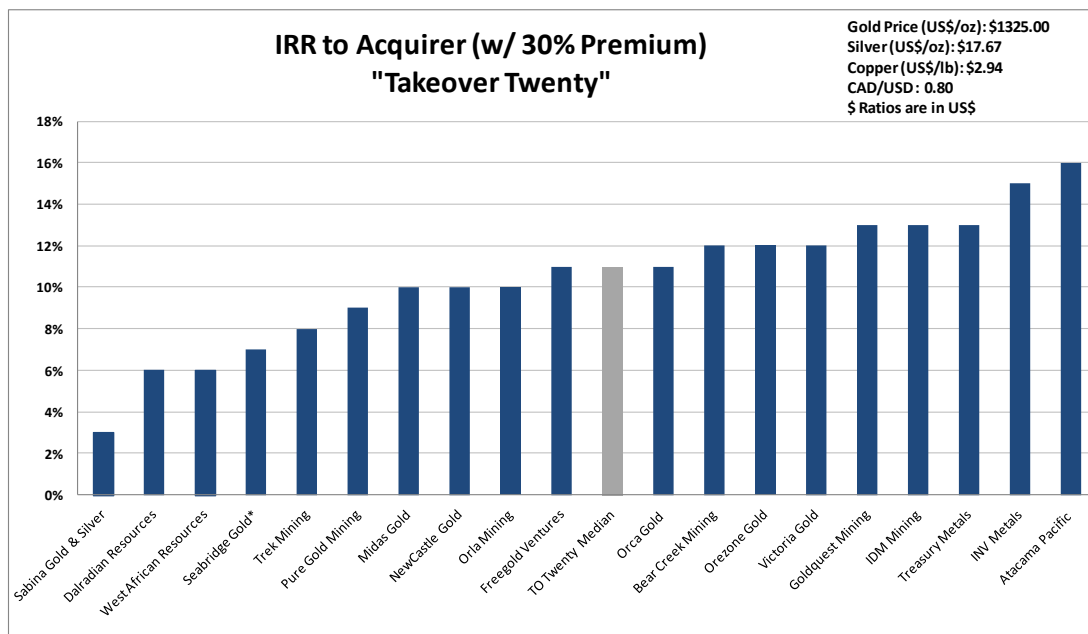
Source: Paradigm Capital Inc., Company filings

**Figure 7: Takeover Twenty Project IRRs**


Source: Paradigm Capital Inc., Company filings

**Figure 8: Takeover Twenty Project IRR vs. Mineable Resource**


Source: Paradigm Capital Inc., Company filings

**Figure 9: Takeover Twenty IRR to Acquirer Assuming a 30% Premium**


Source: Paradigm Capital Inc., Company filings

	IDM Mining	Treasury Metals	Trek Mining	Pure Gold Mining	West African Resources	Orca Gold	Orezone Gold	Orla Mining	Goldquest Mining	INV Metals	Dalradian Resources	Victoria Gold	NewCastle Gold	Atacama Pacific	Bear Creek Mining	Freegold Ventures	Midas Gold & Silver	Sabina Gold & Silver	Seabrige Gold
Mineable Resource (Moz)	0.7	1.2	1.1	1.2	0.9	2.1	1.4	1.8	1.2	2.8	3.4	3.1	2.3	3.7	3	1	5	3.3	39.8
% of Global Resource Mineable	0.7	1.5	1.5	1.8	2.2	2.3	2.3	2.4	2.7	3.5	4.4	4.5	5.5	5.8	6.3	6.5	6.7	7.2	80.4
% of Global Resource Mineable	100%	80%	73%	67%	41%	91%	61%	75%	44%	80%	77%	69%	42%	64%	48%	15%	75%	46%	50%

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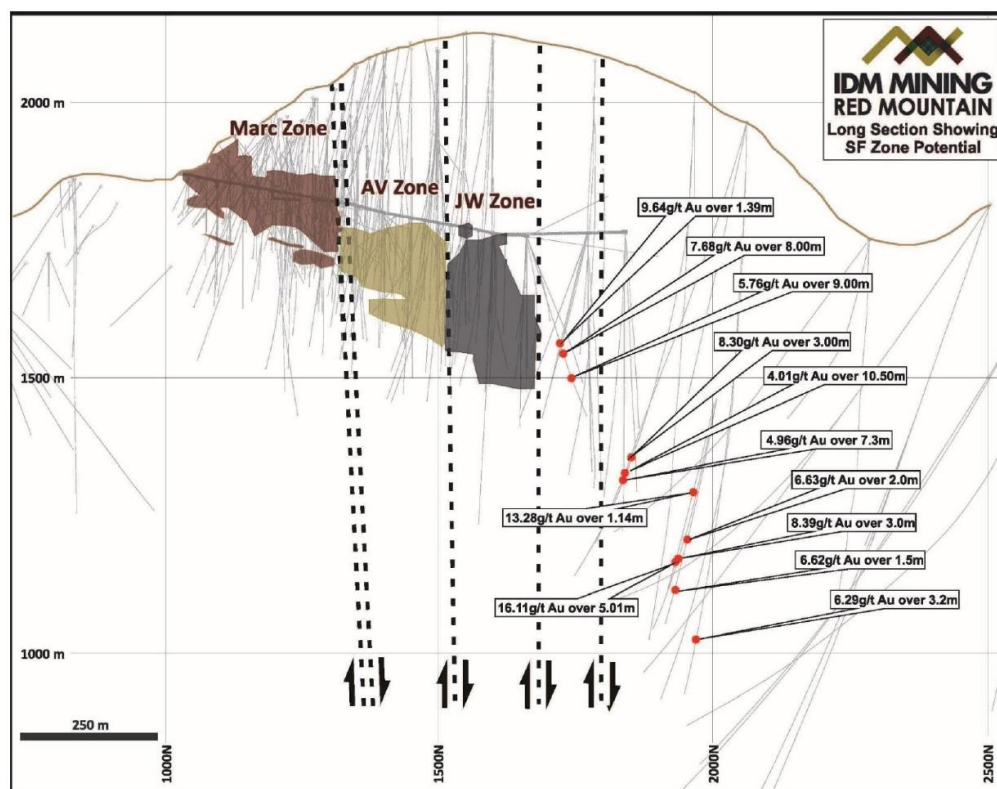
## Our Current Favourite Developers

### IDM Mining: Well-located High-grade Gold Project Aiming for 2019 Production

(IDM-V: C\$0.13; Market Cap: US\$41M; 52-wk H-L: C\$0.21–C\$0.12; Spec. Buy C\$0.35 TP)

IDM's Red Mountain project in B.C., Canada, has plenty of positive aspects going for it, including the high-grade nature (7.5 gpT gold), safe jurisdiction and proximity to infrastructure (allowing for grid power and not requiring a full on-site camp). The main areas of concern on the project are its relatively short defined mine life (~six years) and the challenges that the winter weather will present to logistics. We can't control Mother Nature (though IDM has made allowances for the time and cost of snow removal and avalanche prevention) but we are confident there is much more gold to be found; the deposits remains open in most directions with step-out drilling continuing to deliver. In our opinion, this is going to be a typical narrow-vein underground mine with a defined single-digit mine life, but such mines quite commonly can operate for two or three times as long (or more) than the initial mine plan predicted. There is a dearth of high-quality Canadian gold development projects that are 2–3 years away from production. A recently completed (June 2017) Feasibility Study has outlined a project producing 78Koz gold annually for six years, with a robust IRR (32% after-tax, \$1,250/oz gold) and a reasonably quick payback of 1.9 years. We see excellent potential to extend the mine life from extensions of the currently defined orebody, as well as the potential for additional satellite operations within the regional land package, which could also grow the annual gold production levels.

Figure 11: Red Mountain Deposit Remains Open Along Strike/Depth



Source: Company filings



### **Midas: Large-scale Project Now with Two-year Permitting Timeframe**

**(MAX-T: C\$0.61; Market Cap: US\$98M; 52-wk H-L: C\$1.07–C\$0.62, Spec Buy C\$2.95 TP)**

Midas had seen an important inflection point in its permits with the Sept. 18 signing of a co-operation agreement (MoU) between the seven agencies responsible for giving Midas its key Record of Decision. The Q3/19 schedule is one quarter later than the prior mid-2019 estimate, but is now substantially less risky, from what we can gather, since the collective feet of all the agencies will be held to the fire by the agreement. Not that there couldn't be some slippage, but the risk of a "no" out of the blue from one or more agencies is now tangibly less likely, we believe. Otherwise, the agencies would not likely be held to an agreement of this kind, the first of its kind in Idaho since the late 1990s. Given the two-year time frame, we think investors should seriously consider investing in Midas. Its 5Moz project is unusually large and is trading at \$20/mineable ounce, quite attractive, as shown in Figure 6. While our IRR estimate of 17% at \$1,325/oz is a third lower than our Takeover Twenty average, the 10% IRR to the acquirer is attractive and the P/NAV of 0.29x is well below the Takeover Twenty median of 0.40x (these measures are found on the right side of Figure 1). Midas' share price would have to increase 42% to meet its peer group average P/NAV. The market has a steep time discount for unpermitted projects and/or projects still more than a year from production. We like situations where time works so much in our favour, and expect that as 2018 progresses, Midas will gain increasing investor interest. Our target price of C\$2.95 may seem aggressive, but at our one-year target gold price of \$1,450/oz Midas' NAV/sh increases to C\$3.05 and the project IRR to 22% (Appendix II). We also expect the most likely acquirers to come from the Intermediate or Senior tier and that these will be trading at higher multiples than their current 1.0x average P/NAV, closer to their historic 1.5x average. Those circumstances would make our C\$2.95 target for Midas nicely accretive.

### **Newcastle: With Water Issues Now Addressed, Plans for Production**

**(NCA-V: C\$0.81; Market Cap: US\$131M; 52-wk H-L: C\$1.13–C\$0.52; Spec Buy C\$2.00TP)**

Observers of Newcastle will have noticed a major change in tone as management articulates its future, a tone more certain about the path to production. Newcastle ranks near the top of our internal ranking for development projects on the combined strengths of high project IRR, high IRR to an acquirer, low technical risk (being a restart of the former heap-leach mine), U.S. jurisdiction and its outstanding resource upside. Since the revival of this project was launched in 2014, the overriding worries, for investors and acquirers, have been whether it can be permitted and if it could find enough water. A new resource estimate was released on Sept. 11, which includes measured and indicated (M&I) of 4.0Moz grading 0.64 gpT and 1.6 Moz of inferred grading 0.48 gpT at a 0.2 gpT cut-off grade (Figure 12). Our valuation uses only our estimate of the mineable resource within the existing permit footprint and a higher cut-off grade of 0.25 gpT, for 2.3Moz grading 0.7 gpT. It may not be quantifiable, but the further strengthening of the geological model underpinning the resource is important and would be critical to a potential acquirer. The resource may be the foundation of a project, but without water the project can't go anywhere. This summer's discovery of sufficient water on its permitted land to support a 17,000-Tpd production level, which we discussed in our Aug. 16 research note, was a critical step forward in certainty, the Castle Mountain project being located in a desert surrounded by a national monument (park). Over the past six months, Newcastle management also determined that the backfill used to refill the previous JSLA open pit by the former operator, Viceroy, in 2000–2001 had an average grade of ~0.35 gpT and would make suitable run-of-mine (RoM) feed for the first 2–3 years of heap leaching, helping to pay for the waste removal, provide some initial up-front capital and, most importantly, fast track the company into production, potentially by late 2018–2019. The company now feels it is positioned to press ahead into production. What about the permitting? At the Beaver Creek conference, we noted a shift in the way management expressed the action plan to a more definitive "this is what we will be doing". Two other key factors weigh into NCA's certainty of being able to move forward. First, there has been a discernible shift in the attitude of the federal administration agencies in favour of the job creation that mining can bring. The MoU signed by the seven agencies responsible

for permitting Midas' project in Idaho is tangible evidence (see our Midas discussion). Second, Newcastle is looking at a restart of a former operation that has an existing operating permit with the lead agency, the County of San Bernardino. Management's legal advisors and discussion with key agencies indicate to management that it has the right to restart production, as long as it stays within the existing permitted footprint of 1,375 acres, which include ~300 acres of unused permitted area of disturbance as per the Record of Decision of 1997. If the restart of the operation stays within the permitted area of disturbance, and also has very minor modifications, the restart is only a formality (hence our 6MTpy and 2.3Moz resource assumptions.) Over time, likely in 2018, NCA will apply for permit amendments within the permitted EIS EIR Mine boundary of 1989, an important feature of our optionality thesis.

**Figure 12: Castle Mountain September 2017 Resource Estimate**

	Measured			Indicated		
Cut-off Grade (g/t Au)	Mt	Grade (g/t Au)	Au Moz	Mt	Grade (g/t Au)	Au Moz
0.14	172.1	0.542	3.0	75.3	0.528	1.3
<b>0.20</b>	<b>135.0</b>	<b>0.643</b>	<b>2.8</b>	<b>57.2</b>	<b>0.640</b>	<b>1.2</b>
0.50	46.8	1.245	1.9	19.7	1.251	0.8
1.20	12.1	2.688	1.0	5.5	2.547	0.5
	Measured & Indicated			Inferred		
Cut-off Grade (g/t Au)	Mt	Grade (g/t Au)	Au Moz	Mt	Grade (g/t Au)	Au Moz
0.14	247.3	0.538	4.3	193.1	0.336	2.1
<b>0.20</b>	<b>192.2</b>	<b>0.642</b>	<b>4.0</b>	<b>102.3</b>	<b>0.481</b>	<b>1.6</b>
0.50	66.5	1.247	2.7	23.1	1.104	0.8
1.20	17.6	2.644	1.5	4.8	2.503	0.4

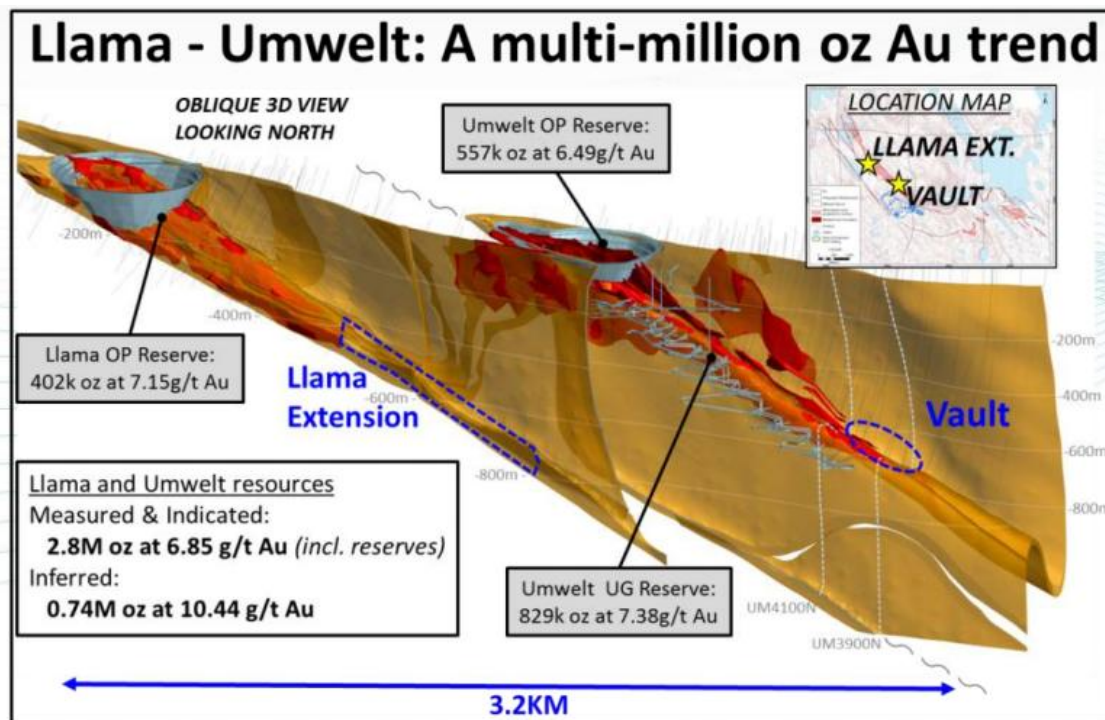
Source: Company filings

### Sabina: Permits Will Be an Important Milestone but Underground Upside a Key Driver

(SBB-T: C\$2.24; Market Cap: US\$403M; 52-wk H-L: C\$2.70–C\$0.84; Spec. Buy C\$3.25 TP)

Investors are waiting for word from the federal Minister of Environment that the Goose project has been awarded its Project Certificate. At that point, we believe the company will be in play. Furthermore, we suspect that if the late summer exploration program continues to have success at extending the deep higher-grade mineralization at the Umwelt and Llama deposits, an acquirer is likely to come forward before the next resource update, or possibly shortly thereafter. Our Sept. 8 research note, [Site Visit – Upside Still Shines](#), outlined how just 0.75Moz of Umwelt addition to our mineable resource increased our SBB NAV by 39%. We suspect there is substantially more mineralization down dip of the two deposits and hopefully other jewelry boxes like the two identified to date, one for each of Umwelt and Llama. Have a look at Figure 13. Often the intersection of two major structures, like one might see happen at Umwelt and Llama if they extend to the theoretical intercept, is also a sweet spot. We doubt that Sabina will have the luxury of time to explore the down-dip potential much further. Experience has taught us that while acquirers typically enter an acquisition with a low rate of return, 5–6% after tax being a median, they look for exploration upside to help bring the life-of-mine (LoM) return higher. In the case of underground mines, our analysis has found that the project lifespan for mines with large resources commonly end up being twice what was forecast by the Feasibility Study. Goose is not only one of these large projects, but the total resource of 7.2Moz is also so much larger than the 3.3Moz that we assume to be mineable that it offers the acquirer considerable, visible optionality. Furthermore, its high grade makes the Goose project particularly special, notwithstanding the Arctic location. The Back River project, which includes Goose within an 80-km-long greenstone belt controlled by Sabina, is a "company maker" in scale, while its grade profile would allow a buyer to start small and gradually expand. Sabina remains a favourite of ours among the large developers.

Figure 13: Sabina's Llama-Umwelt Trend at Back River

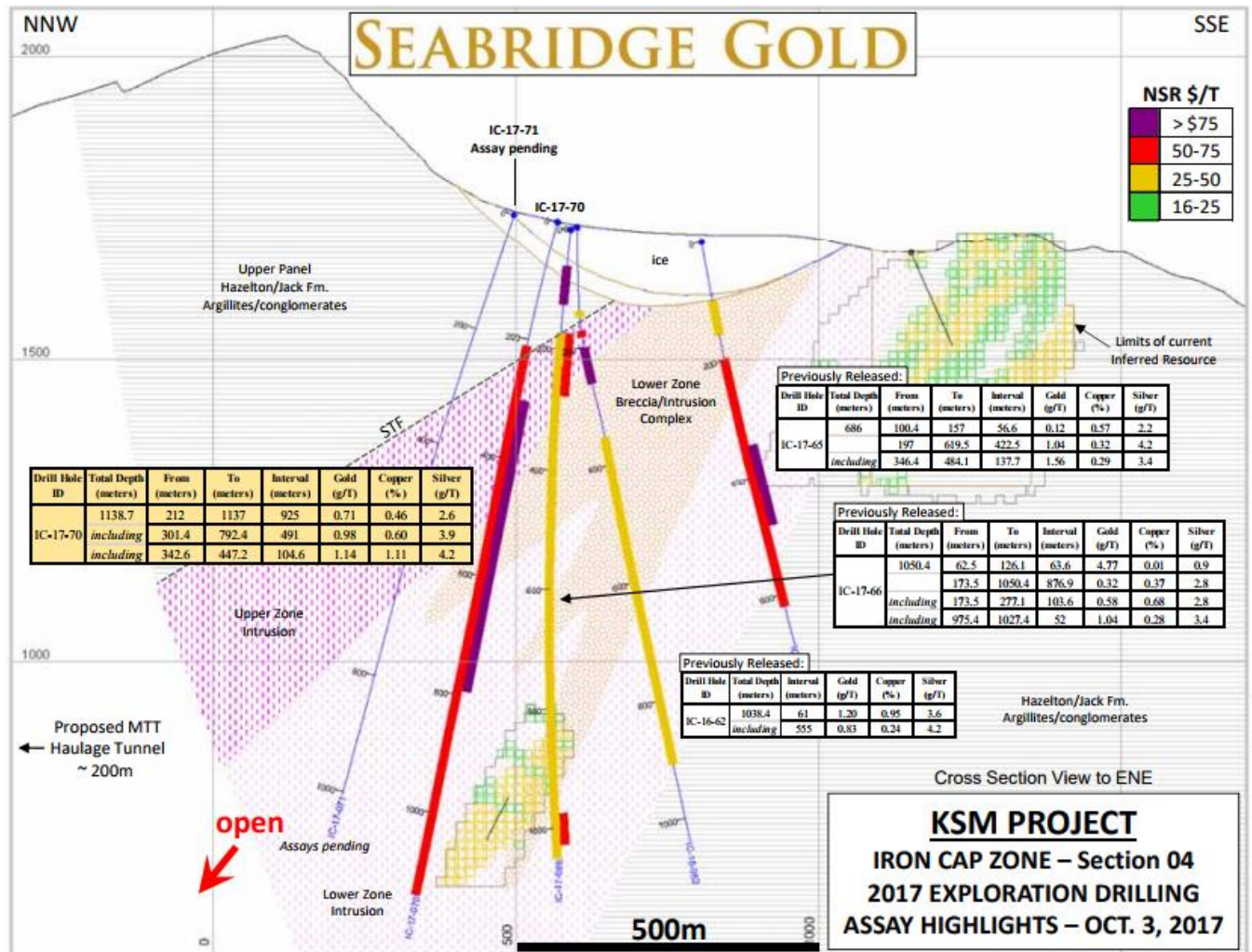


Source: Company filings

**Seabridge: Strategically Compelling KSM Project Positioned to Improve Materially — Again****(SEA-T: C\$15.41; Market Cap: US\$705M; 52-wk H-L: C\$17.13–C\$9.99; Spec. Buy C\$20.00TP)**

From a reserve standpoint, Seabridge's KSM project is a whale among a school of salmon and bass. With reserves of 38.8Moz and a global resource of 101Moz, Seabridge's 100%-owned, fully permitted KSM project in Northwestern B.C. is one of the most strategically compelling development projects in the world. KSM has been materially improved year after year, more so than the world's other 20Moz+ development projects, in our opinion, as management consistently delivers on expansion of the overall mineable resource and improvements to the mine plan. The recent drilling success of a high-grade discovery at the Iron Cap deposit, which we discuss in our Sept. 12 research note, is a prime example. This season's drilling at Iron Cap continues to impress. On Oct. 3, Seabridge released Hole IC-17-70, returning 491m of 0.98 gpT and 0.6% copper – an outstanding hole. This confirmed the extension of the high-grade zone down-plunge. Although drilled oblique to the mineralized zone (Figure 14), the mineralized high-grade intrusion and breccia is continuous and appears to thicken at depth. The existing Iron Cap mineable resource in the 2016 Preliminary Economic Assessment (PEA) was 199MT, representing only 8.4% of KSM's total mineable resource tonnage (2.4BT). We think it could see another 300–500MT added over the next year, most of which could appear in a 2017 year-end resource estimate. While it wouldn't change the up-front construction capital of \$5.7B, or change years 1-6, it would bring higher grades into the mill starting in Year ~7, as well as defer some of the ~\$2B of capital spending anticipated to develop the Deep Kerr. Given its proximity to infrastructure (the MTT), Iron Cap's block cave would be much less expensive to develop. Moving Iron Cap forward into the mine plan would likely push KSM's 1Moz/year gold production beyond Year 7 of the mine plan, as IC's higher grades would displace lower-grade gold mill feed from Deep Kerr (albeit Deep Kerr has higher copper grades). Although KSM's \$5.7B capex is well beyond all but a few companies to take on alone, the project's long life and massive underlying optionality have positioned Seabridge to benefit from the shift toward co-operative joint ventures by the majors. Shared infrastructure and capital expenditures will be important de-risking elements for majors looking to expand development pipelines to include large, long-life projects and KSM represents one of the only "mega-scale", shovel-ready, safe jurisdiction development projects that we feel is realistic at metal prices ~10% higher than today's — a target that is not unrealistic given the peak of the last cycle at ~\$1,900/oz gold. Along with having the largest mineable resource, by far, of our Takeover Twenty group of developers, SEA offers one of the best leverage to higher gold prices, trading at one of the lowest net market capitalization per ounce of recoverable resource of the group, \$23/oz based on our 40Moz mineable resource assumption adjusted for a 73% process recovery, and not including any of the 35Blb of copper at KSM.



**Figure 14: Iron Cap Cross Section incl. Hole IC-17-170, KSM**


Source: Company filings

### Victoria Gold: Fully Permitted Canadian Project with Phase 1 Construction Underway

**(VIT-V: C\$0.47; Market Cap: US\$191M; 52-wk H-L: C\$0.74–C\$0.42; Spec Buy C\$1.00TP)**

We are surprised that Victoria Gold has not been acquired yet. The Eagle project located in the Yukon is fully permitted and “shovel-ready”. In fact, VIT has started moving the shovel with Phase 1 construction activities underway, which entails preparing the mine site (e.g., road upgrades, camp expansion) for full construction in 2018 and critical path earthworks (at the toe of the in-valley leach facility, and cut and fill of the crusher foundation). The Sept. 2016 Feasibility Study outlines a project producing ~200Koz annually for 10 years, and a very respectable 29.5% after-tax IRR. To sweeten the deal, Victoria embarked on an aggressive drill program both increasing the near-pit resources as well as targeting several of the regional targets, which has successfully demonstrated that the large regional land package hosts plenty of blue-sky upside. While we consider Victoria a prime takeover candidate, management is wisely not sitting on its hands waiting for someone to take over, and has executed a commitment letter for \$220M of project financing, over two-thirds of the anticipated C\$400M (~US\$300M) development capex. VIT remains a favourite of ours among the large developers.

**Figure 15: Eagle Project Phase I Construction Underway**



Source: Company filings



## Up-and-Coming Favourites

We have modeled this group of developers and quite like their potential. In particular, we have identified key catalysts that have the potential to materially boost the project's appeal to acquirers. We only have official coverage of Orla and INV within the list.

### INV Metals: Exploration Heats Up at the Loma Larga Development Project

**(INV-T: C\$0.88; Market Cap: US\$65M; 52-wk H-L: C\$1.13–C\$0.62; Spec. Buy C\$2.50TP)**

A Feasibility Study is currently underway at INV's 100%-owned Loma Larga project in south-central Ecuador. INV acquired the 3Moz project in Nov. 2012 from IAMGOLD (IMG-T, C\$11.25 TP, Buy). Formerly known as Quimsacocha, the project has been improved and risk reduced, and Ecuador's tax situation has seen positive changes. We currently model a mineable resource of 2.8Moz, and with a 24% IRR and NAV@5% of \$346M. INV stacks up well within our Takeover Twenty group of the world's best Development-stage companies, offering excellent value at 0.18x NAV and an attractive risk:reward for investors. The Aug. 2016 PFS, prepared by RPA, proposes a small footprint, low-impact, cyanide-free project producing two concentrates from a 3,000-Tpd underground mine, averaging 150Koz/year over 12 years of full production. The stratigraphically controlled high-sulphidation polymetallic epithermal deposit consists of a 1.6-km (N-S), 120–400m wide (E-W), 50–60m thick low-grade halo with a higher-grade inner core made up of gold (~85% of net revenue), copper (~8%) and silver (~7%). Located just 110–175m below surface, the deposit will be accessed by a ramp from surface, with development in the low-grade halo and a planned production rate of 3,000-Tpd, a mix of long-hole mining (a bulk mining method), and the more selective drift and fill method for smaller areas. Half the tailings will be used as backfill underground, the remainder dry-stacked, and then covered after mining is completed. INV has been actively exploring the Loma Larga property in parallel with the ongoing Feasibility Study work. Recent exploration drilling has focused to the west of the known resource, close to the area planned for the underground access portal. Highlights include 51m of 3.22 gpT, including 2.75m of 20 gpT from Hole 383, demonstrating the potential for both resource expansion and delineation of additional high-grade chutes within the deposit. Additionally, INV drilled a deep exploration hole to the north of Loma Larga in search of an underlying porphyry deposit. Hole 384, drilled to a depth of 1,160m, intersected 0.29 gpT over 215m from 721m. While not economic grade, the argillic alteration and sulphide mineralization are interpreted as the lateral halo of a nearby porphyry system — a promising indication. IAMGOLD owns a 36% stake in INV and has continued to express its ongoing support for the project, participating in the C\$27.6M February financing to maintain its ownership share.

**Goldquest Mining: Romero Project Is Main Driver, But Regional Exploration Adding Some Sizzle****(GQC-V: C\$0.35; Market Cap: US\$71M, 52-wk H-L: C\$0.60–C\$0.20)**

Goldquest released a Pre-feasibility Study (PFS) in Nov. 2016 which outlined a development plan to produce a gold-rich copper concentrate at its Romero project in the Dominican Republic (gold is three-quarters of the value of the concentrate). Production is forecast at ~110Koz gold equivalent (AuEq) for a seven-year mine life, although the current mine plan uses only 35% of the defined M&I resource, and we believe there is good potential to both extend the mine life and expand the annual production rate through conversion of resources. The development plan envisions producing a gold-copper concentrate that will be shipped offsite for final processing, which means the operations will not use cyanide, a strong community concern that would make permitting very difficult. The operation also has a small footprint as it is an underground mine, and will use dry-stacked tailings disposal. We are also intrigued by the unfolding Cachimbo polymetallic discovery located ~20-km southeast of Romero. The initial discovery hole announced in January intersected 5m grading 14 gpT gold, 74 gpT silver, 12% zinc and 1% copper, and follow-up drilling has returned more positive results, with similar gold-rich polymetallic intercepts. The Cachimbo discovery may have been a factor in Agnico's decision to make a strategic investment in March, purchasing a 15% interest in Goldquest. Cachimbo could well be developing into a second economic deposit on Goldquest's land package. We are modestly concerned that the permitting of the Romero project seems to be moving at a slow pace, a bit surprising given the company proactively addressed the usual main concerns (cyanide, large footprints, tailings) upfront by best practices techniques and offsite processing of concentrates. The Romero project screens well in our Takeover Twenty, and this is without giving any upside value to Cachimbo and the remaining land position.

**Orca: Growth Potential Would Put Its Sudan Project into an Important Snack Bracket****(ORG-V: C\$0.62; Market Cap: US\$74M; 52-wk H-L: C\$0.64–C\$0.31)**

We began watching Orca when a March 2 press release talked about a 1.8Moz indicated resource at 1.8 gpT — pretty sweet. There was a fly in the ointment, however, because its 70%-owned Block 14 project in North Sudan (the safe Sudan) was in a desert and the quantity and quality of water was a problem. Orca apparently had found enough water for a 1.8MTpy plant, but the quality was not great. We continued to watch as other steps forward were made. In May, Orca elected to provide a revised PEA and move directly toward a Feasibility Study for Q1/18. A major water discovery had allowed it to boost the throughput to 3.4MTpy, producing 135Koz/year LoM at an AISC of \$752/oz and an after-tax IRR of 23% at \$1,200/oz; robust even considering that the indicated resource grade had declined to 1.46 gpT for 1.94Moz. Usually it's the discovery of additional resources that peaks our interest, but in this case it was water. The water discovery prompted us to consider including Orca in the Takeover Twenty, which we did in September. Orca stacked up toward the bottom of our rankings; but, what we are really waiting for are two other catalysts. Management would like to boost the throughput yet again, this time to 6MTpy. We understand why: LoM production would increase to 225Koz/year, a much more relevant number for investors than 135Koz/year. It would also move Block 14 into a snack bracket appealing to Intermediate producers, not just Juniors. Both considerations are important because, having known management from its Red Back days and before, in our assessment Orca could be builders, but also would sell for the right price. First, however, it must find the additional water and then expand the resources. Four additional water well holes are planned into an expanded area. The first intersected the aquifer Sept. 15. A 25-km drill program is also underway to expand the mineable resource. We will have a better sense of things following a tour in mid-Oct. Our analysis suggests the Block 14 project will be robust and more attractive within our Takeover Twenty if the company is able to find enough water and expand the resource without losing too much grade. Last, but far from least, another important inflection point was the Oct. 6 announcement that the U.S. had lifted its longstanding sanctions on Sudan, in place since 1993. Given the unknown and generally negative perception of Sudan, this is an important de-risking event and will expand the bandwidth of investors substantially.

### **Orla: Exciting Sulfide Discovery at Cerro Quema and Transformational Camino Rojo Deal**

**(OLA-V: C\$1.24; Market Cap: US\$127M; 52-wk H-L: C\$1.54–C\$1.02, Spec. Buy C\$2.30TP)**

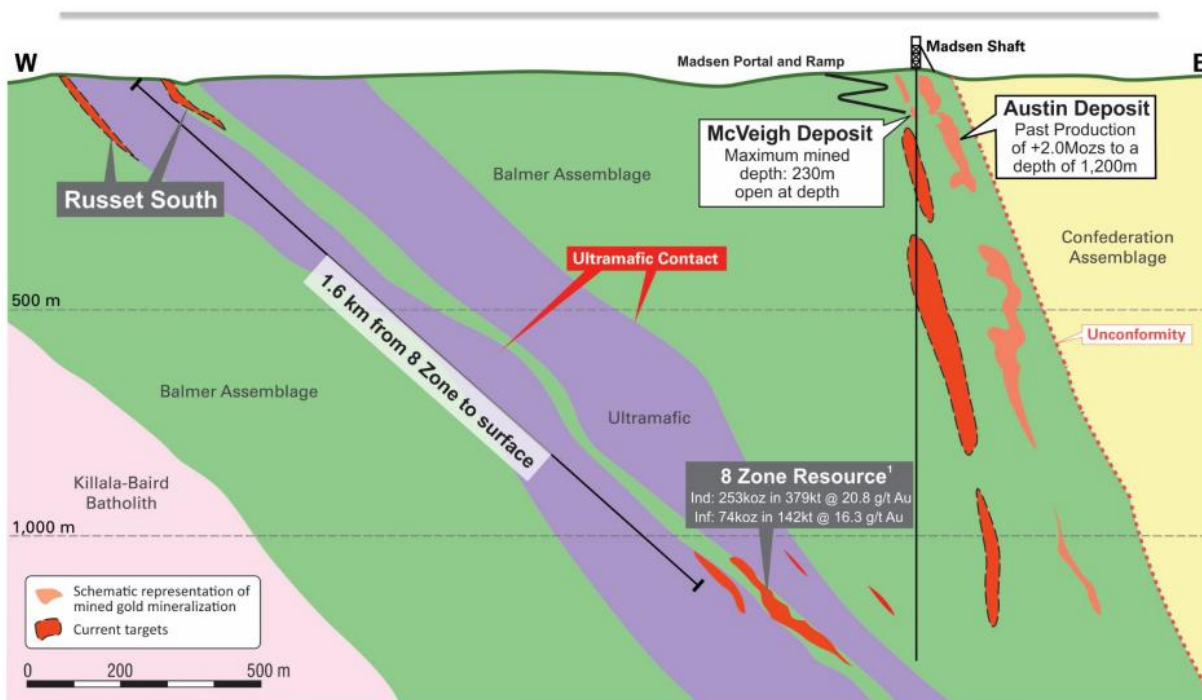
While Orla wasn't at Beaver Creek, choosing the Denver Forum the following week, it had an important press release on Sept. 13 about a sulfide discovery at its Cerro Quema project. We also caught up with management for an update recently. Hole 116 hit two wide intervals of massive to semi-massive sulfide, a first for the property: 49m grading 1.39% copper and 0.50 gpT gold starting at 41m and below that, starting at 118.7m another 55.8m grading 1.99% copper and 0.28 gpT gold. The 28.7m in between was weakly mineralized. Agnico-Eagle (AEM-T, C\$67.00 TP, Buy) and Sentient purchased their original strategic interests in Orla's predecessor primarily for the copper-gold upside (now 13% and 9.5% interests, respectively), but only limited copper sulfide mineralization has been found historically and that which was found was high in arsenic (energite — a copper arsenic mineral), an economic hurdle. This prompted Orla to focus on the oxide gold heap-leach potential. One hole does not make an orebody, but this mineralization is apparently clean and primarily chalcocite, one of the most profitable copper minerals because copper is 66% of its molecular weight (CuS). One of three drill rigs on site will now start stepping out to determine the orientation and size of the structure. While we hasten to point out that a single hole does not make a deposit, with thicknesses and grades of this order the tons could add up quickly, so we will watch closely — especially for the next hole, a 150m step-out that was just completed. Management has also held constructive discussions with Panama's President and government officials about obtaining formal notification of permit renewals, which expired in Feb. 2017. Government agencies and the local communities continue to be quite supportive, so hopefully there will be news on this front within a few weeks. With the October target closing date now near at hand to buy the Camino Rojo project in Mexico from Goldcorp, we have updated our Orla model to include this transformational project, assuming a mineable resource of 1.3Moz. This win-win deal now becomes the dominant (57%) part of our Orla NPV and will most likely be the first project into production, producing at a level of about 100Koz/year. Initial constructive discussions have taken place with neighbour Fresnillo about providing layback onto its property. We have assumed that any additional resources mined beyond Camino Rojo's border will go to Fresnillo. Orla stands out as the company with the second-highest project IRRs, after Pure Gold, an experienced mine building team now with surprising sulfide copper-gold exploration potential.

### **Pure Gold: Re-energizing the Madsen Mine**

**(PGM-V: C\$0.54; Market Cap: US\$82M; 52-wk H-L: C\$0.75–C\$0.40)**

Pure Gold has a 100% interest in the past-producing Madsen mine located in Red Lake, Ontario. The deposit hosts a current indicated resource of 1.65Moz @ 8.9 gpT and an additional 0.18Moz of inferred @ 9.4 gpT. An updated PEA was released on Sept. 14, outlining a significantly improved mineable resource (1.0Moz @ 10.3 gpT vs. 0.28Moz @ 8.3 gpT from the previous 2016 PEA) with a modest C\$51M initial capital cost. The PEA assumes a processing rate of 600 Tpd (66Koz average annual production over 14 years) after refurbishment and upgrading of the existing 500-Tpd mill on site. The mill is permitted to 1,089-Tpd, so scalability exists in the future for a potentially larger project. We attended the Oct. 3 site visit to Madsen and were impressed by the pace of the underground refurbishment of the existing ramp. The ramp is in excellent condition, and underground drilling is ongoing as PGM continues to define and expand the Austin and McVeigh horizons (Figure 16), while exploration drilling of the high-grade 8-Zone continues from surface. In addition, management is exploring several promising near-surface satellite deposits with an updated resource estimate, including initial resources at the Russet and Fork satellites (Figure 16), planned for Q4/17. Madsen is already brushing close to the 2Moz+ global resource mark, and the updated resource may push it past the 2Moz threshold at a grade of 8 gpT+ — a rare breed among Canadian development projects. Pure Gold stacks up reasonably well in our Takeover Twenty group of Developers, although below the average annual production of the group (66Koz/year vs. 120Koz/year). Madsen's existing underground and processing infrastructure (reducing initial capital costs) and high grades result in an extremely robust after-tax IRR of 46% relative to the group average of 25% and the highest Capital Efficiency of the group (NPV/Construction Capex). PGM trades at 0.53x our after-tax NAV@5% of \$165M, a premium to the Takeover Twenty median of 0.40x, so it is not surprising that its IRR to the Acquirer at 9% is slightly lower than its peer median of 11%.

**Figure 16: Madsen Project Cross Section**



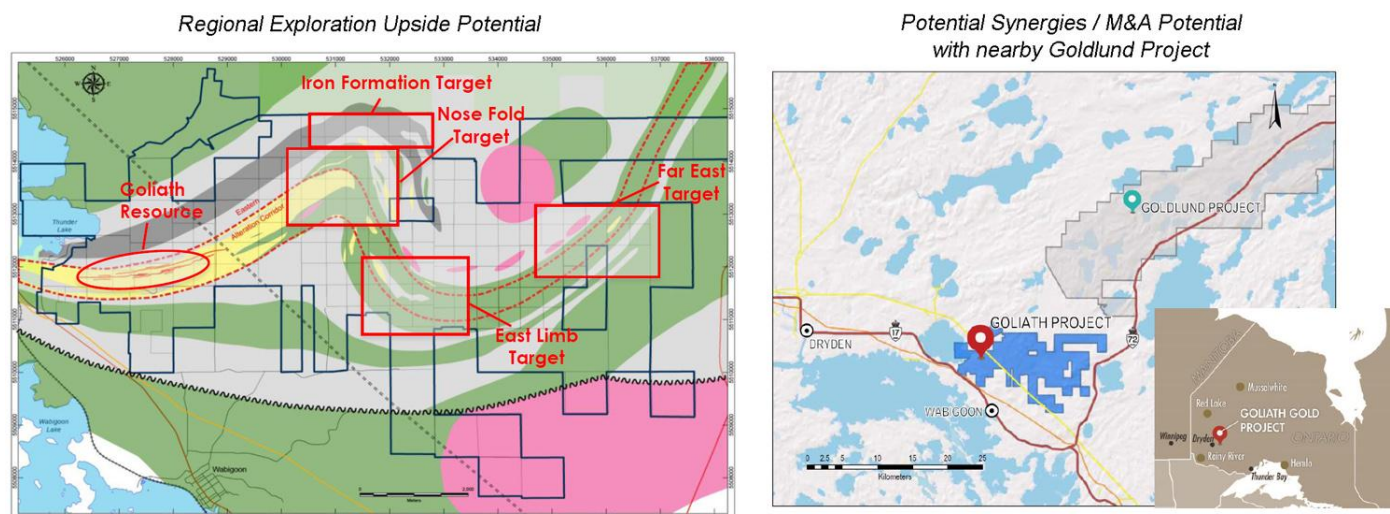
Source: Company filings

### Treasury Metals: Location, Location, Location

(TML-T: C\$0.68; Market Cap: US\$63M; 52-wk H-L: C\$0.90-C\$0.48)

Treasury Metals' Golden Goliath project is very well located in terms of infrastructure/access, located ~20-km east of Dryden, Ontario, and just ~2 km off the Trans-Canada Highway. Access for exploration and eventual development is top-notch, without the need for a camp, and grid power will be available. A PEA released in March outlined a development producing ~87Koz annually over a 13-year combined open pit and underground mine life with peak production exceeding 100Koz in years 3–6. The Golden Goliath project ranks in the “middle of the pack” in our Takeover Twenty, partly due to its relatively small size, utilizing ~1.2Moz of total resource of 1.5Moz global resource (incl. 0.3Moz inferred). TML is currently drilling on the project with the primary goal of converting inferred resources that are included in the PEA mine plan to M&I, and thus being able to continue to include them in the Feasibility Study now underway (expected Q1 2018 completion). There is still near-and-medium term exploration upside from expanding the mineralization immediately to the northeast of the planned open pit (where recent “condemnation” drilling intersected “ore grade” gold mineralization in several drill holes approximately 80 to 350 metres from the proposed open pit) and from several regional targets on the Golden Goliath project land position. We also believe there are potential synergies between TML's Goliath Gold project and the Goldlund project owned by First Mining Finance, located just a few kilometres apart. Goldlund is an advanced exploration project with defined resources of 2.31Moz (560Koz indicated, 1.75Moz inferred) held by a company that has the strategy of advancing projects toward development, but not building them itself. The close proximity of these two projects begs the question: Would it not be better to develop them as one?



**Figure 17: Internal and External Sources of Upside**


Source: Company filings

## Ones to Watch

### Cardinal Resources: Major New Discovery in Ghana

(CDV-ASX: A\$0.67; Market Cap: US\$182M; 52-wk H-L: A\$0.78-A\$0.19)

This was one of our favourite new exploration stories from the Beaver Creek conference. Just prior to the conference, Cardinal released a new resource of 4.3Moz @ 1.1 gpT indicated plus 3.1Moz @ 1.2 gpT inferred for its 100%-owned Namdini project in northern Ghana, near the Burkina Faso border. This was a major improvement to the previous resource estimate of indicated 0.9Moz @ 1.2 gpT plus inferred 3.2Moz @ 1.1 gpT. Namdini remains open below the 300–400m limits of the indicated and inferred resource shells. There is also strong evidence of repeat structures on the large land package, sufficient to deserve a separate exploration budget, with one of three targets (Kungongo) already undergoing a reconnaissance drill program. Namdini appears to have all the criteria of a major, robust new mine, an average grade of 1.2 gpT, with a strip ratio expected to be under 2:1 and a high-grade starter pit. The only limitation we see is the fine-grained nature of the gold, which is located along the pyrite boundaries and within the matrix. Test work has shown that it follows the pyrite into a concentrate with ~5–10% mass pull. Further detailed met tests are underway to test finer grinding than the 80% -75 micron used to achieve 86% recovery. A fine regrind (say 20–50 micron) is likely to be necessary, but Namdini is fortunate to be close to grid power. A PEA or PFS is now anticipated in spring 2018 (was Q3/17) because Namdini continues to grow, but we believe the project will rapidly track toward a production decision. Cardinal has already had well-known consultants RPA peer-review the resource estimate, arriving within a few percent of what the primary resource estimators MPR did. Nevertheless, because Namdini is unique, we plan to gain a better understanding of both the resource estimate, in particular, and the metallurgy. Once the resource and metallurgical boxes are ticked, we believe we will have sufficient information from comparable mines in Ghana and Burkina Faso to build a good first-pass model. This will allow us to compare Cardinal to other best-in-class Development-stage projects in our Takeover Twenty. We expect it to stack up well. Goldfields operates two open-pit mines in Ghana and on Sept. 26 issued a press release highlighting its current 8.8% equity stake in Cardinal, expandable to 16.7% with its options. The hawks are circling.

**Falco Resources: Return of the Horne****(FPC-V: C\$1.19; Market Cap: US\$170M; 52-wk H-L: C\$1.65–C\$0.77)**

The Horne mine in Rouyn-Noranda, Quebec, was the flagship mine for Noranda, which operated from 1927 to 1976, producing 11.6Moz of gold and 2.5Blb of copper. The copper smelter that served the mine is still in operation (now owned by Glencore, processing metal concentrates and North America's biggest recycler of electronic components). When the mine closed in 1976, it was owing to economics (prevailing metal prices and increasing costs of mining at greater depths), not that the mineralization had run out. Falco acquired the property in 2012 and has outlined M&I resources of 4.56Moz gold, 42Moz silver, 354Mlb copper and 1.72Blb zinc beneath the old mine, in what it has named the Horne 5 deposit. A PEA completed in June 2016 outlined an operation running at 15,000 Tpd that would produce 236Koz gold annually for 12 years, at an AISC of \$427/oz, net of the base metals applied as credits. The company is working on a Feasibility Study which is expected to be released within the next few weeks. The envisioned development is a "bulk-mining" underground operation running at 15–16KTpd. The large stopes (40m x 20m x 25m) and high level of automation will bring economies of scale that will offset the commonly higher costs of deep underground mining. The existing 1,200m Quemont #2 shaft will be used to access Phase 1 of the mine development, and this shaft will be deepened to 1,800m for Phase 2. The mineralization has been traced as deep as 2.6 km and is still open at depth, so further expansions may occur in the future. The mining methods were more selective in the past to concentrate on grade; the "bulk mining" approach means a lower grade — the average grade of the M&I resource is 1.56 gpT gold, or 2.41 gpT AuEq when counting the base metals. Not that long ago, 2.4 gpT for an underground operation would intuitively seem uneconomic, but operations such as Agnico's Goldex deposit (located in Val d'Or, about an hour's drive away) have proven that units costs can be lowered considerably if deposits are amenable to bulk-mining methods (Goldex's grade is 1.6–1.7 gpT, and total cash costs are in the mid-\$500s/oz). Falco is part of the "Osisko-family", in that Osisko Gold Royalties (OR-T, C\$20.25 TP, Buy) owns a 13.3% stake in Falco, and the CEO is Luc Lessard, who was previously the COO and Senior Vice President of Engineering and Construction for the "original" Osisko Mining where he was responsible for the design, construction and commissioning of the world-class Canadian Malartic gold mine, as well as working on multiple open pit and underground mine builds prior to Osisko. Falco has a team with the technical talent to build mines, with backing of a group that has the financial capability to do so.




## Appendix I: Takeover Twenty Additional Pages

### Takeover Twenty: Operations

OPERATIONS

"TAKEOVER TWENTY"

PARADIGM  
CAPITAL

Company	Type of Mine	Process Type	Production Start Year (Assumed)	Reserves Au Equiv		Resources Au Equiv		PCI Mineable Est. Au Equiv		Annual Production Koz Au Equiv		Mine Life (Yrs)		Total Cash Cost/oz Au Equiv		WGC AISC/oz Au Equiv	
				Moz	gpT	Moz	gpT	Moz	gpT	Yr 1-3	LoM	Reserves	PCI Est	Yr 1-3	LoM	Yr 1-3	LoM
Atacama Pacific Gold	OP	Heap Leach	2020	3.7	0.4	2.1	0.3	3.7	0.4	166	194	15	15	\$780	\$843	\$877	\$934
	OP	Concentrate	2020	3.0	0.7	3.3	0.4	3.0	0.7	124	129	17	17	-\$151	\$67	-\$20	\$224
	UG	CIL/CIP	2021	1.4	8.6	3.0	12.3	3.4	7.7	108	117	12	27	\$688	\$688	\$904	\$867
	OP	Heap Leach	2022	0.0	0.0	6.5	0.6	1.0	0.5	63	48	0	16	\$710	\$911	\$764	\$996
	UG	Concentrate	2020	1.2	3.8	1.5	2.1	1.2	3.8	133	120	7	7	\$532	\$604	\$720	\$796
	UG	CIL	2020	0.5	7.5	0.2	12.2	0.7	7.4	87	75	6	8	\$490	\$562	\$651	\$804
	OP	Concentrate	2022	2.1	5.4	1.4	3.1	2.8	5.6	184	156	12	15	\$562	\$578	\$763	\$729
	OP	Concentrate/POX	2022	4.7	0.0	2.0	1.5	5.0	1.6	105	319	13	13	\$579	\$635	\$621	\$751
	OP	Heap Leach	2018	0.0	0.0	5.5	0.6	2.3	0.7	45	103	0	15	\$671	\$721	\$771	\$815
	OP	CIL	2020	0.0	0.0	2.3	1.8	2.1	1.5	154	106	0	13	\$641	\$734	\$702	\$805
Orozone Gold	OP	Heap Leach/CIL	2019	1.3	0.8	1.0	1.6	1.4	0.8	160	105	11	10	\$573	\$726	\$680	\$880
	OP	Heap Leach	2019	2.2	0.8	0.2	0.4	1.8	0.8	190	141	11	9	\$560	\$606	\$650	\$694
	UG	CIP	2019	0.0	0.0	1.8	8.9	1.2	10.3	85	66	0	9	\$706	\$767	\$687	\$917
	OP/UG	CIL	2021	2.7	5.7	4.5	6.5	3.3	6.9	221	274	9	11	\$491	\$524	\$679	\$715
	OP/UG	Concentrate	2024	38.6	0.5	41.8	0.4	39.8	0.5	1148	569	49	51	\$222	-\$57	\$501	\$296
	OP/UG	Conc / CIL	2020	0.0	0.0	1.5	2.0	1.2	3.9	75	89	0	13	\$588	\$543	\$694	\$641
	OP/UG	Conc / CIL	2018	1.0	1.5	0.5	1.7	1.1	1.5	129	122	7	8	\$707	\$707	\$777	\$777
	OP	Heap Leach	2019	2.7	0.7	1.8	0.6	3.1	0.7	187	186	10	11	\$594	\$619	\$720	\$748
	OP	CIL	2020	0.9	1.7	1.3	1.3	0.9	1.7	151	88	9	9	\$672	\$656	\$701	\$699
	Takeover Twenty* Average				3.5	2.0	4.3	3.1	4.2	3.0	185	158	10	14	\$559	\$602	\$686
Takeover Twenty* Median				1.3	0.7	1.8	1.6	2.1	1.5	133	120	9	13	\$588	\$635	\$702	\$777

\*Seabridge reserves and resources only use Mineable gold resources; operating costs are net of copper and other metal credits

**Bolded companies indicate research coverage by PCI**

(All \$ ratios are in US\$ (eg. Market Cap/oz) except NAV/sh, which is C\$/sh)

(Per ounce metrics use PCI Mineable resource estimate, and are net of processing recovery)

(IRR and NAVs are based on 100% equity, no leverage. NAVs are at 5% discount except with Copper at 8%.)

(All dollar figures except share prices quoted in US\$)

**Date of Share Pricing: 5-Oct-2017**

Valuation Assumptions

**Gold Price (US\$/oz): \$1,325**

Silver Price (US\$/oz): \$17.67

Copper Price (US\$/lb): \$3.04

CAD/USD Exchange Rate: 0.800

Source: Paradigm Capital Inc., Company filings

## Takeover Twenty: Upside Sensitivity

UPSIDE SENSITIVITY @ \$1450 GOLD

"TAKEOVER TWENTY"

PARADIGM CAPITAL

Company	"Base Case" Pricing Scenario					"Upside Case" Pricing Scenario					Percentage Change (Upside vs Base Case)										
	Unfinanced		IRR to Acquirer (w/ 30% prem)	Project IRR From Start of Construction	Ratio of IRR to Acquirer (w/ 30% prem)	Unfinanced		Financed		Unfinanced NAV% Change	Project IRR % Change	IRR to Acquirer % Change	Financed NAV% Change								
	C\$ NAV/sh	P/NAV				C\$ NAV/sh	P/NAV														
Alacama Pacific Gold	\$4.69	0.13x	21%	16%	76%	\$1.73	0.36x	\$7.04	0.09x	28%	22%	77%	\$2.38	0.26x	50%	--	32%	34%	--	38%	--
Bear Creek Mining	\$6.39	0.34x	21%	12%	56%	\$3.22	0.67x	\$8.32	0.26x	26%	15%	58%	\$3.90	0.55x	30%	--	21%	27%	--	21%	--
Dallard Resources	\$2.20	0.60x	23%	6%	26%	\$1.94	0.68x	\$2.81	0.47x	28%	8%	28%	\$2.40	0.55x	27%	--	21%	28%	--	24%	--
Freagold Ventures	\$0.39	0.31x	17%	11%	63%	\$0.18	0.65x	\$0.62	0.19x	23%	15%	67%	\$0.24	0.49x	61%	--	34%	41%	--	33%	--
Goldquest Mining	\$0.84	0.42x	30%	13%	45%	\$0.57	0.61x	\$1.09	0.32x	36%	18%	49%	\$0.69	0.51x	30%	--	22%	35%	--	21%	--
IDM Mining	\$0.33	0.39x	29%	13%	43%	\$0.20	0.66x	\$0.42	0.31x	35%	16%	47%	\$0.23	0.56x	29%	--	20%	32%	--	19%	--
INV Metals	\$4.78	0.18x	24%	15%	61%	\$1.96	0.45x	\$6.00	0.15x	28%	17%	61%	\$2.31	0.38x	26%	--	19%	19%	--	18%	--
Midas Gold	\$2.26	0.29x	17%	10%	62%	\$0.96	0.69x	\$3.10	0.21x	20%	13%	64%	\$1.17	0.56x	37%	--	22%	26%	--	22%	--
NewCastle Gold	\$1.64	0.49x	39%	10%	25%	\$1.31	0.62x	\$2.17	0.37x	50%	13%	26%	\$1.63	0.50x	32%	--	30%	35%	--	25%	--
Orca Gold	\$1.61	0.39x	21%	11%	54%	\$0.98	0.63x	\$2.26	0.27x	27%	16%	58%	\$1.24	0.50x	41%	--	30%	39%	--	26%	--
Orezone Gold	\$1.56	0.40x	25%	12%	49%	\$0.88	0.70x	\$2.12	0.29x	32%	18%	56%	\$1.09	0.57x	36%	--	26%	42%	--	24%	--
Oria Mining	\$2.04	0.61x	38%	10%	27%	\$1.67	0.74x	\$2.64	0.47x	46%	15%	32%	\$2.02	0.61x	29%	--	23%	47%	--	20%	--
Pure Gold Mining	\$1.03	0.53x	46%	9%	20%	\$0.90	0.60x	\$1.40	0.39x	60%	14%	23%	\$1.17	0.46x	36%	--	30%	47%	--	31%	--
Sabina Gold & Silver	\$3.55	0.63x	28%	3%	10%	\$2.80	0.80x	\$4.42	0.51x	33%	5%	16%	\$3.37	0.67x	25%	--	18%	85%	--	20%	--
Saibridge Gold*	\$64.71	0.24x	9%	7%	81%	\$23.77	0.65x	\$101.11	0.15x	11%	9%	82%	\$31.10	0.50x	56%	--	20%	21%	--	31%	--
Treasury Metals	\$2.40	0.28x	24%	13%	53%	\$1.51	0.45x	\$3.03	0.22x	29%	16%	55%	\$1.81	0.37x	26%	--	17%	21%	--	20%	--
Trek Mining	\$1.69	0.64x	33%	8%	25%	\$1.54	0.70x	\$2.15	0.50x	42%	13%	32%	\$1.89	0.57x	27%	--	25%	61%	--	23%	--
Victoria Gold	\$1.10	0.42x	27%	12%	45%	\$0.84	0.55x	\$1.41	0.33x	32%	16%	49%	\$1.03	0.45x	28%	--	21%	33%	--	22%	--
West African Resources	\$0.43	0.75x	33%	6%	18%	\$0.39	0.84x	\$0.55	0.50x	40%	9%	23%	\$0.46	0.70x	26%	--	22%	59%	--	20%	--
Takeover Twenty* Average	\$5.46	0.42x	27%	10%	44%	\$2.49	0.64x	\$8.09	0.33x	33%	14%	46%	\$3.21	0.53x	33%	--	23%	39%	--	23%	--
Takeover Twenty* Median	\$1.69	0.40x	25%	11%	45%	\$1.31	0.65x	\$2.22	0.31x	32%	15%	49%	\$1.43	0.53x	30%	--	22%	35%	--	22%	--
Date of Share Pricing: 5-Oct-2017														Date of Share Pricing: 5-Oct-2017							
"Base Case" Valuation Assumptions														"Upside Case" Valuation Assumptions							
Gold Price (US\$/oz): \$1,325														Gold Price (US\$/oz): \$1,450							
Silver Price (US\$/oz): \$17.67														Silver Price (US\$/oz): \$19.33							
Copper Price (US\$/lb): \$3.04														Copper Price (US\$/lb): \$3.33							
Lead Price (US\$/lb): \$1.10														Lead Price (US\$/lb): \$1.20							
Zinc Price (US\$/lb): \$1.10														Zinc Price (US\$/lb): \$1.20							
CAD/USD Exchange Rate: \$0.800														CAD/USD Exchange Rate: \$0.800							
Percentage Change (Upside vs Base Case)														Percentage Change (Upside vs Base Case)							
9%														9%							
9%														9%							
10%														10%							
10%														10%							
10%														10%							
CAD/USD Exchange Rate:														CAD/USD Exchange Rate:							

Source: Paradigm Capital Inc., Company filings

## Takeover Twenty: Downside Sensitivity

"TAKEOVER TWENTY"									
DOWNSIDE SENSITIVITY @ \$1200 GOLD					PARADIGM CAPITAL				
Company	"Base Case" Pricing Scenario				"Downside Case" Pricing Scenario				Financed NAV % Change
	Unfinanced CS NAV/sh	Financed CS NAV/sh	Project IRR From Start of Construction	Ratio of IRR to Acquirer (w/ 30% prem)	Unfinanced CS NAV/sh	Financed CS NAV/sh	Project IRR From Start of Construction	Ratio of IRR to Acquirer (w/ 30% prem)	
Alkerm Pacific Gold	\$4.69	\$1.3x	21%	16%	\$2.33	\$0.36x	14%	10%	-50%
Bear Creek Mining	\$6.39	\$0.34x	21%	12%	\$4.26	\$0.67x	16%	8%	-39%
Dairadian Resources	\$2.20	\$0.60x	23%	6%	\$1.94	\$0.68x	18%	4%	-25%
Freight Ventures	\$0.39	\$0.31x	17%	11%	\$0.18	\$0.65x	9%	4%	-22%
Goldquest Mining	\$0.84	\$0.42x	30%	13%	\$0.57	\$0.61x	23%	8%	-46%
IDM Mining	\$0.33	\$0.39x	29%	13%	\$0.20	\$0.66x	22%	8%	-24%
INV Metals	\$4.78	\$0.18x	24%	15%	\$1.96	\$0.45x	19%	12%	-30%
Midas Gold	\$2.26	\$0.29x	17%	10%	\$0.96	\$0.69x	13%	7%	-31%
NewCastle Gold	\$1.64	\$0.49x	39%	10%	\$1.31	\$0.62x	28%	6%	-25%
Orca Gold	\$1.61	\$0.39x	21%	11%	\$0.98	\$0.63x	14%	6%	-38%
Orezone Gold	\$1.56	\$0.40x	25%	12%	\$0.88	\$0.70x	18%	7%	-19%
Oria Mining	\$2.04	\$0.61x	38%	10%	\$1.67	\$0.74x	28%	5%	-24%
Pure Gold Mining	\$1.03	\$0.53x	46%	9%	\$0.90	\$0.60x	32%	4%	-28%
Sabina Gold & Silver	\$3.55	\$0.63x	28%	3%	\$2.80	\$0.80x	22%	0%	-31%
Seabridge Gold*	\$64.71	\$0.24x	9%	7%	\$23.77	\$0.65x	7%	6%	-20%
Treasury Metals	\$2.40	\$0.28x	24%	13%	\$1.51	\$0.45x	20%	10%	-23%
Trek Mining	\$1.69	\$0.64x	33%	8%	\$1.54	\$0.70x	24%	3%	-18%
Victoria Gold	\$1.10	\$0.42x	27%	12%	\$0.84	\$0.55x	21%	8%	-27%
West African Resources	\$0.43	\$0.75x	33%	6%	\$0.39	\$0.84x	25%	2%	-27%
Takeover Twenty Average	\$5.46	\$0.42x	27%	10%	\$3.13	\$0.64x	20%	6%	-26%
Takeover Twenty Median	\$1.69	\$0.40x	25%	11%	\$1.18	\$0.62x	20%	5%	-34%

Percentage Change (Upside vs Base Case)

Gold Price (US\$/oz): -9%

Silver Price (US\$/oz): -9%

Copper Price (US\$/lb): -10%

Lead Price (US\$/lb): -9%

Zinc Price (US\$/lb): -9%

CAD/USD Exchange Rate: 0%

Date of Share Pricing: 5-Oct-2017

"Downside Case" Valuation Assumptions

Gold Price (US\$/oz): \$1,200

Silver Price (US\$/oz): \$16.00

Copper Price (US\$/lb): \$2.75

Lead Price (US\$/lb): \$1.00

Zinc Price (US\$/lb): \$1.00

CAD/USD Exchange Rate: \$0.800

Date of Share Pricing: 5-Oct-2017

"Base Case" Valuation Assumptions

Gold Price (US\$/oz): \$1,325

Silver Price (US\$/oz): \$17.67

Copper Price (US\$/lb): \$3.04

Lead Price (US\$/lb): \$1.10

Zinc Price (US\$/lb): \$1.10

CAD/USD Exchange Rate: \$0.800

Source: Paradigm Capital Inc., Company filings



## DISCLAIMER SECTION

Company	Ticker	Disclosures
Agnico-Eagle Mines Ltd.	AEM-T	3
IAMGOLD	IMG-T	3
IDM Mining Ltd.	IDM-T	2,3
INV Metals Inc.	INV-T	2,3
Midas Gold Corp.	MAX-T	3
NewCastle Gold Ltd.	NCA-T	2,3
Orla Mining	OLA-T	3
Osisko Gold Royalties Ltd.	OR-T	3
Sabina Gold & Silver Corp.	SBB-T	2,3
Seabridge Gold Inc.	SEA-T	2,3
Victoria Gold Corp.	VIT-V	3

Note: Please refer to above table for applicable disclosure numbers.

1. The analyst has an ownership position in the subject company.
2. Paradigm Capital Inc. has assumed an underwriting liability for, and/or provided financial advice for consideration to the subject companies during the past 12 months.
3. Paradigm Capital Inc. expects to receive or intends to seek compensation for investment banking services from the subject companies in the next 3 months.
4. Paradigm Capital Inc. has greater than a 1% ownership position in the subject company.
5. The analyst has a family relationship with an Officer/Director of subject company.

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Recommendation	Number of Companies	Percentage Breakdown	
<b>Buy</b>	94	68%	<b>Buy</b> – Expected returns of 20% or more over 12 months.
<b>Spec. Buy</b>	28	20%	<b>Speculative Buy</b> - Expected returns of 20% or more over the next 12 months on high-risk development or pre-revenue companies, such as junior mining and other early stage companies.
<b>Hold</b>	15	11%	<b>Hold</b> - Expected returns of less than +/- 20% over the next 12 months.
<b>Sell*</b>	1	1%	<b>Sell</b> - Expected returns of -20% or more over the next 12 months.
<b>Total</b>	138		

\*Includes companies with a "Tender" recommendation

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