The Pebble Project
Background Information for HNRS A391
Reading for the Class 1 on February 1, 2013

Introduction

The Pebble Project is a controversial proposal to build a large copper mine in the Bristol Bay Watershed. The proposal has generated a major conflict involving the project proponents, the mining industry, development groups, Alaska Native communities and tribes, commercial and sport fishermen, environmental groups, and the state, federal and local governments. It is one of the most controversial resource proposals ever to be discussed in Alaska.

The Pebble Project is the case study that the class will use to illustrate how to talk through polarizing natural resource development issues. The information in this brief paper provides background information on the project and the controversy. We need students to read and understand it beforehand, so that we can use class time for other purposes.

A word on nomenclature and language. Throughout the discussion, you will find that people on both sides of the issue use language to subtly try to frame the issue to their advantage. As an example: should we refer to this Project as the Pebble Mine, or as the Pebble Project? The former is more conducive to the argument that there is a concrete mine proposal with known effects. The latter is more conducive to the idea that Pebble is an advanced exploration project that is still exploring options to mine it in a way that protects the environment. Neither language is necessarily right or wrong. And someone using the language “Pebble Mine” or “Pebble Project” may not even be consciously doing so. Or they may go back and forth. But as someone listening to those arguments, you need to understand the effect of language. Throughout this background paper, we will try to use the most accurate language we can. This background paper uses “Pebble Project” because the primary author — Bob Loeffler — comes from the background as a mine regulator. From a regulatory perspective, it’s a project, not yet a mine or even a mine proposal.

What is the Pebble Project?

The Pebble prospect, located in Southwest Alaska, is one of the largest concentrations of copper, gold, molybdenum and silver in the world. The company that owns it estimates the deposit at:

- 80.6 billion lbs. of copper
- 5.6 billion lbs. of molybdenum
- 107.4 million oz. of gold
- Commercially significant amounts of silver, rhenium and palladium

By weight, the prospect includes more than 86 billion pounds of metal: 93.4% Copper, 6.5% molybdenum, and 0.1% gold. Of course gold is worth much more than the other two primary minerals. At today’s prices, the ore is worth almost $500 Billion (61% of the value
is copper, 37% is gold, and 1% molybdenum). Of course, the value of the mine is much less than that amount, because it costs a lot of money to get that value out of the ground. For comparison, the predicted US budget deficit for 2013 is $901 billion.

**Pebble West v. Pebble East.** The deposit is usually divided into two parts. Pebble West is a low-grade near-surface deposit that would almost certainly be mined as an open pit. In contrast, Pebble East is further underground. Most observers expect that Pebble East is realistically accessible only as an underground mine.

**Who owns it?** The project is on state land, on mining claims owned by the Pebble Limited Partnership.

**Mineral Exploration History.**

- **1986-1992 Cominco.** Pebble was first investigated in 1986 by the Alaskan subsidiary of Cominco Ltd., a Canadian company. The first drilling occurred in 1988. Cominco drilled numerous exploration holes at the property and discovered what is now known as Pebble West: a low-grade, large, near-surface mostly copper deposit with significant gold. Cominco explored the property through 1992. At that time, Cominco estimated the area to contain 3 million tons of copper metal and 11 million ounces of gold, far less than today’s estimate.

- **1993-2001, Not Much Done.** During these nine years, Cominco still owned the mineral claims, but little exploration was done.

- **2002-2004, Northern Dynasty, Ltd exploration.** In 2004, Northern Dynasty Minerals, Ltd. (NDM or Northern Dynasty) optioned the property from Teck Cominco (as that company was now named). Northern Dynasty is a junior mining company. They are their own public company but are a partial subsidiary of Hunter Dickinson, Inc. The Pebble Project is Northern Dynasty’s principal asset. Over the next few years, Northern Dynasty completed extensive drilling and significantly and consistently expanded the estimated size of the ore body – they found lots more ore. By 2004, they started environmental studies for mine permitting and mine design.

- **2005 Pebble East.** In 2005, Northern Dynasty finishes the purchase and now owns 100% of Teck Cominco’s mining claims. Their drilling also discovers Pebble East. That is, on the eastern side of the original Pebble Deposit, the deposit goes further underground, and the ore grade (the amount of ore in the rock) increases. Pebble East begins 1,600 feet underground. That is too far to mine from the surface. Underground mining is more expensive, but the ore grade in Pebble East is somewhat higher.

- **2007, Pebble Limited Partnership.** Northern Dynasty is too small a company to develop a project as large as Pebble. In July 2007, Northern Dynasty sold 50% of the project to Anglo American, Plc., a large international mining company, for a reported $1.5 billion\(^1\). The two groups formed a new company, Pebble Limited Partnership.

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\(^1\)The way these purchases typically work, Northern Dynasty does not get the money that Anglo pays. Rather, Anglo must spend that much exploring, permitting and constructing the project before it “earns-in” its 50%.
Pebble Limited Partnership has its own CEO, and a six-person board of Directors: three from Northern Dynasty, and three from Anglo American.

- **2007-Present, Continued Exploration and Environmental Studies.** Since 2007, Pebble Limited Partnership (PLP) has continued to explore the project. In 2012, the company was expected to spend $107 million on its work program. All told, they have spent over $120 million on environmental studies out of a total of more than $500 million. PLP and its predecessors have drilled more than 1,000 drill holes totaling more than a million feet of drilling. The area around the Pebble deposit is now one of the most explored and studied areas in Alaska.

**Where is it?**

Where is it? Ahhh, that’s the rub. If the project was in the middle of nowhere, in a location that no one cared about, it would be far less controversial. But it’s not. It is within the Bristol Bay Watershed, and the deposit drains to tributaries of the Nushagak River and to the Upper Talarik Creek, which flows into Iliamna Lake. (The Kvichak River flows from Iliamna Lake.) These are high-value salmon streams that support the commercial, sport, and subsistence fisheries in Bristol Bay.

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In fact, Northern Dynasty’s original purchase of the project from Teck Cominco was similar, though for a much lower price.
The figure below shows the location of the deposit relative to Bristol Bay.

The deposit is in the center of the page. The nearest villages are Nondalton, Iliamna, and Newhalen. Note the two rivers above and below the deposit that form the Koktuli River, tributary to the Mulchatna, which flows into the Nushagak River.
The figure below shows the rivers in more detail. The figure shows that the deposit is within the South Fork Koktuli drainage, which with its northern fork forms the Koktuli River to the left of the image, and that the deposit is also within the Upper Talarik River, which drains down to Lake Iliamna.

The Fishery

The Bristol Bay fishery is world renowned. It is the world’s largest sockeye salmon fishery, about half of which come from the Nushagak and Kvichak drainages. All five species of salmon spawn in the watershed, as do trout and other trophy fish. The area supports numerous sport-fishing lodges that attract international clients from around the world, and the fishery is a critical part of the subsistence culture that has existed in Bristol Bay for thousands of years.

According to the EPA, “The Bristol Bay commercial salmon fishery generates... approximately $300 million in 2009 (first wholesale value) and provided employment for over 11,500 full- and part-time workers at the peak of the season. These estimates do not include retail expenditures from national and international sales. ....Based on 2009 data, the Bristol Bay sport-fishing industry supports approximately 29,000 sport-fishing trips, generates approximately $60 million per year, and directly employs over 850 full- and part-time workers. The vast majority of this revenue is spent in the Bristol Bay region. Sport hunting - mostly caribou, moose, and brown bear — generates $8 Million per year.
and employs over 130 full-and part-time workers…” [Note, that EPA reports these figures are for all of Bristol Bay, not just the Nushagak and Kvichak drainages. However, those two drainages produce approximately half the sockeye salmon in the Bristol Bay run. Sockeye is by far the largest component of Bristol Bay salmon.]

In addition, to the economic importance of the fishery, the subsistence use of salmon is a critical part of the local Native culture. The culture has developed around the use and return of the fishery. Again, according to EPA, “the Yup’ik and Dena’ina cultures of the Nushagak and Kvichak River watersheds practice a subsistence lifestyle that developed over several thousand years of living in the area and depends primarily on salmon.”

**Parties in the Controversy**

**The Mining Companies**

- **Pebble Limited Partnership (PLP).** As previously explained, PLP is a 50/50 partnership between Anglo American, Plc., and Northern Dynasty Ltd. PLP’s CEO is John Shively, who is likely to speak at the 3rd class meeting. PLP has pledged that if they cannot build a mine that will protect the fishery, they will not build it. CEO Shively and others frequently repeat that if there is a choice between endangering the fishery and a mine, the fishery should win. They argue that they should have the right to present and defend their plan through the permit process. They argue that if their proposal does not meet high standards, and protect the fishery, it will not and should not be permitted, but that the project should not be condemned before it has a chance to develop a proposal, and test that proposal through the permitting process.

- **Northern Dynasty Ltd.** As previously explained, Northern Dynasty is a junior mining company. It is a public company, in that it is owned by its stockholders. Its principal asset is the Pebble Project. Thus, the value of Northern Dynasty’s stock is directly related to the fate of the project. If the project is not developed or a development decision is delayed for many years, the stock value will approach zero. If it is developed, its stock will gain value.

- **Anglo American, Plc.** From their website, “We are one of the world’s largest mining companies. Our portfolio of high-quality mining assets and natural resources spans bulk commodities – iron ore and manganese, metallurgical coal and thermal coal; base metals – copper and nickel; and precious metals and minerals – in which it is a global leader in both platinum and diamonds. We operate in Africa, Europe, South and North America, Australia and Asia.” The company has 100,000 permanent employees and reported 2011 earnings of $6.1 billion (that’s profit, not revenue). While the Pebble Project is most likely an important project to them, the company has the assets and properties to not necessarily need production immediately for their company’s health or stock value.

“**Supporters.**” The title “supporters” is in quotation marks, because there are a significant number of development groups and others that argue that they do not know whether the Pebble Project will develop a proposal for a mine that can protect the fishery. Most of them
hold an opinion similar to PLP’s argument: Pebble has not yet made an actual proposal. They should have the right to do so. If their proposal does not meet high standards, and protect the fishery, it will not and should not be permitted. But the project should have the opportunity to develop a proposal before it is judged. And any proposal should be judged through the federal/state mine permitting process. Groups with this point of view include the Resource Development Council, industry groups, the Alaska Miners Association, Chambers of Commerce, many legislators, and others. Unlike the Pebble Partnership itself, groups with this point of view do not generally purchase advertisements to advance their view, but have made the view known in specific discussions and forums.

Environmental Groups and Other Opponents. At this point, the Pebble Project has too many opponents to realistically list. Some of the most visible opponents are below.

- **Trout Unlimited** is a national group dedicated to preserving cold water fisheries. One of their projects is to protect Bristol Bay from the Pebble Mine. The information on its website is representative of many of the arguments of Pebble opponents:

  “If built, Pebble would be one of the largest mines in the world. Because of its size, geochemistry and location, Pebble runs a high risk of polluting Bristol Bay, one of the world’s few and most productive wild salmon strongholds that supports a $500 million commercial and sport fishery. For this reason, Trout Unlimited is working with a diverse group of fishermen, guides, lodge owners, Alaska Natives, scientists, chef, restaurant owners, seafood lovers and many others to try to stop the Pebble development and to protect Bristol Bay.”

  “The dam and 10-square-mile-wide containment pond are intended to hold between 2.5 billion and 10 billion tons of mine waste that Pebble would produce over its lifetime - nearly enough to bury the city of Seattle, WA. Because the sulfide, or acid-generating, nature of the Pebble ore body, the waste would require environmental treatment in perpetuity. Any release of mine waste into the surface or groundwater has the potential to harm Bristol Bay’s salmon runs. The PLP recently stated that they plan to apply for federal and state permits in spring of 2011. With the developers moving toward permitting, now is the time to get involved to stop this mega-project and protect Bristol Bay. Now is the time to educate elected officials, agency heads, the media and anyone who cares about the future of wild salmon.”

- **The Billionaire: Bob Gillam.** Mr. Gillam, a controversial figure, owns a lodge at Keys Point, an inholding within Lake Clark National Park. His lodge is roughly 25 miles northeast of the deposit. Mr. Gillam provided funding for the initial opposition to the mine, including funding for: Alaskans for Bristol Bay, Alaskans for Clean Water, Inc., Alaska Wild Salmon Protection, Inc., Renewable Resources Coalition, and Renewable Resources Foundation, among others. Gillam is still the major funding source for these groups, but as time has passed, many other sources have provided funding for more established environmental groups.

- **Commercial Fishing Groups.** There are a large variety of commercial fisherman’s groups based in Dillingham, Seattle, Anchorage, and elsewhere that oppose the project.
• **Sport Fishing Groups.** As with commercial fishermen groups, there is a large variety of sport groups that oppose the Pebble Project. From one group’s website, “Nearly 200 leading companies in the fly fishing industry, including Albury Game Angling and Farlow’s, and outdoor gear icons Orvis and Patagonia, have rallied to help protect Bristol Bay salmon habitat from destructive, large-scale metal mines, namely the Pebble mine. One of their ads states: “The local sport fishing industry boasts about 40 commercial fishing lodges on the rivers connected to Bristol Bay, offering everything from a rustic wilderness experience to world-class luxury. Most of them have stated opposition to the proposed Pebble Mine.”

• **Others.** This list could go on for pages....but you get the idea...

**Local Government — the Lake and Peninsula Borough.** The Lake and Peninsula Borough is the local government that includes the Pebble Mine area.² The Borough includes most villages on the east side of Bristol Bay. The total population is small: only 1670 residents. The most recent Census indicates that 75% of the Borough is either Alaska Native or mixed race. All of the Borough Assembly members are either Native or part-Native.

The Borough has taken a neutral stance on Pebble. To quote from a Borough letter:

• “the Lake and Peninsula Borough Assembly feels strongly that it has an obligation to the region to work with its citizens to objectively and thoroughly review the proposed Pebble Project once detailed, site specific, accurate project and environmental information is provided.”

• “the Lake and Peninsula Borough Assembly believes the acceptance or rejection of this project is a decision that should be carefully examined and principally decided upon locally after a detailed and thorough review.

• “the Lake and Peninsula believes that environmental protection and economic development can co-exist. They are not mutually exclusive;...[however] the Lake and Peninsula Borough will not trade its pristine environment for a mine. If the project is not shown to adequately protect Borough fisheries, water quality, natural resources, and social and cultural values, we will oppose it.”

The Borough and its villages are shown on the map below.

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² One of the professors teaching this course and the author of this article, Bob Loeffler, is a part-time UAA professor whose position is funded by the Alaska Mining Association. He is also a part-time natural resource consultant. One of his long-time clients is the Lake and Peninsula Borough.
Native Organizations. There is a noticeable split in opinion between Native groups on the east and west side of Bristol Bay. Virtually all villages, Tribes, and Village Corporations on the west side of Bristol Bay (outside the Borough) voice unanimous opposition to the project. Bristol Bay Native Corporation, the regional corporation for Bristol Bay, is adamantly opposed to the mine (all of the Corporation’s directors are from the west side of Bristol Bay or from outside the region). However, the villages within the Lake and Peninsula plus Naknek and King Salmon include more mixed opinions. Some people and organizations support the project, some are opposed, and some hold a wait-and-see attitude. A recent initiative that would have killed the project passed on a Borough-wide vote, but only by 34 votes.

Nunamta Aulukestai is perhaps the most active, local-area, Native Pebble opponent. From its website: “Nunamta Aukulestai means Caretakers of the Land in Yup’ik. The group is made up of nine village corporations [west side of Bristol Bay] that have come together with this common goal of carefully managing the future of Bristol Bay. We are the people who live here year round. Our people have lived here for thousands of years. At the forefront of caring for our land is stopping the development of an open pit mine, Pebble Mine. This mine would sit precariously at the headwaters of the Kvichak and Nushagak Rivers. These rivers are the largest sockeye salmon producing rivers in the world. Millions of fish come back every year to spawn. Native people have been subsisting off of these fish for thousands of years. To put this resource at risk for an unsustainable resource such as
gold is not only foolish but it endangers the livelihoods of the residents, animals and plants that live here.”

**Is there a proposed mine to argue about?**

There may be as many arguments for and against the project as there are people who care about it. Certainly every organization has its own take on the controversy. Thus, it is dangerous and certainly incomplete to summarize the arguments for and against. But you may have noticed two conflicting arguments in the pages above. Supporters argue that there is no mine proposal and that Pebble should have the opportunity (and, for that matter has the property right) to be able to make a proposal and be judged on what they propose as it goes through the permit/EIS process.

You may have noticed, however, that the information under Trout Unlimited, which is typical of many organizations, describes the proposal (the one Pebble says doesn’t exist). It is a somewhat unusual situation. The opponents describe the project, and the proponent says that they haven’t decided on what the proposal will look like. This unusual situation needs some explanation.

First, there are some project components that aren’t likely to change. The deposit is located in a specific place. It can’t be moved. Every indication is that PLP will propose an open-pit mine there. Pebble could propose the pit to be as huge as proponents claim or they could propose a pit somewhat smaller, but the mine proposal is almost certain to include a large open pit. Second, the target metals — copper, gold and molybdenum — is a very small portion of the ore body. The part of the ore that is not metal, waste rock and tailings, has to go somewhere. So, we know that there will be a very large volume of waste rock and tailings that will be placed somewhere. Third, the proposal will include an approximately 89-mile road from the deposit to Cook Inlet.

But other than that general outline described above, there are numerous options where tailings can be placed, and for mine design. Why do proponents claim they know the details of the proposal? Indeed, PLP claims they are still studying multiple alternatives for facility locations and mine design. They say that they are still studying dozens of potential designs.

The answer is because they think that Northern Dynasty told them. In 2006, Northern Dynasty applied to the Alaska Department of Natural Resources for water rights for the planned Pebble mine. The department’s regulations require that when water withdrawal would involve a dam, an application to construct the dam be included as well. Thus, Northern Dynasty’s water rights application included an application to construct dams, as well as a conceptual mine design. The water rights and dam applications received a date stamp and nothing more from the department, which suspended processing pending a full mine application and the start of the Environmental Impact Statement process. The 2006 conceptual design included only limited information about water use and dam construction, and it was one of the many alternatives then being considered for the Pebble project.
Once Anglo-American bought into the project, the partnership, PLP, announced soon thereafter that it was no longer actively considering the 2006 design. It has not announced a reason, though presumably economic and environmental feasibility considerations played a part. In informal conversations with the author over the past few years, PLP employees have indicated the company is considering multiple alternatives for a design, but is no longer considering the 2006 alternative.\(^3\) Nevertheless, the Northern Dynasty application gave opponents an idea of what the mine and waste facilities might look like.

In February 2011, Northern Dynasty published another design. This one was even bigger. Northern Dynasty commissioned Wardrop Engineering, Inc. to complete an independent preliminary economic assessment of the project. This was done pursuant to Section of 43-101 of Canada’s securities laws. That part of the Canada’s law was adopted after a massive mining fraud in the 1990s. It is required to assure potential stockholders that a deposit really exists and is potentially economically feasible. The Wardrop Report was a 500+ page document that took one design – a very large aggressive design – and gave significant details about how it could be built.

Soon after it was published, Northern Dynasty stock rose to its highest levels in years - $20/share. Rumors circulated that Northern Dynasty was preparing to sell the project. Certainly, a 43-101 report that described the potential profit would help with a sale price if these rumors are true. While 43-101 reports are designed for stockholders and are frequently not the eventual mine design submitted to permitting agencies, it gave significant detail about what Pebble might look like (at least if Northern Dynasty was in charge). Two weeks later, the CEO of Anglo American, in a speech in Anchorage, at least partially disavowed Wardrop’s work. She said that the design in the Wardrop report was only one of the many designs that PLP was considering, and that it does not represent anything that PLP was committed to. The CEO of PLP has said at other occasions that at least portions of the design are not permittable and will not be proposed.

So, is there a design? PLP says that they are still working on multiple options (which they have not made public). Will the eventual design look like the Waldrop Report? I don’t know. The EPA took the Wardrop design, analyzed it, and in a very public document said that it would have significant (and unpermittable) impacts on the fishery. PLP said that what EPA was analyzing could not be permitted and would not be proposed. A number of scientists that EPA hired to peer review their work told EPA the impacts do not necessarily represent Pebble’s impacts because the design may be different and because the design did not include many mitigation and protection strategies that would inevitably be proposed or

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\(^3\) Some people believe that the 2006 water rights application was not necessarily intended to represent a realistic mine plan, but rather that it was submitted to the agencies to establish a priority date for future water rights. Generally, earlier applications have priority over later applications for the same water (though there are exceptions). Some people think Northern Dynasty applied for water rights to help it in a future court battle with environmentalists, whom it believed would apply for rights to the same water. If the mining company’s application was primarily part of a legal strategy, that strategy would have required the company to apply for the maximum water it could conceivably justify. Then, a later application, based on a detailed project design, might have a water budget calling for less water. These sentiments are widely shared (including by this author), but have never been confirmed by any official of the company.
required as part of the design. (Other peer reviewers appeared to be satisfied with EPA’s design.)

Opponents disagree. From a Daily News compass article, “Mine plans for Pebble exist. The facts prove it. Pebble will kick and scream about it, but these plans show sufficient information about the location, size and geochemical makeup of the deposit, water use, power needs, waste, etc. to have an honest conversation about the impacts of large-scale mining on Bristol Bay and the tens of thousands of jobs generated by Bristol Bay’s salmon resource.”

What will the eventual proposal look like? Does the specific design matter to you? (It does to me. It doesn’t to others). Come to class, for what we hope is an excellent discussion that will help teach you how to talk through some of the polarizing disagreements, and how to be a more informed consumer of information in these discussions. See you Friday...