**MW Petroleum Corporation Case**

**Group9**

Q1: 1) Apache’s assets are all domestic like MW Petroleum. Amoco is comparably a big international company with promising projects all over the world. This means that Amoco has a scale in operation. As a result, Amoco assets portfolio is stronger.

2) MW was a subsidiary company, which was a combination of relatively unprofitable properties of Amoco. This means that Amoco does not rely too much on MW’s properties for revenue. Therefore, the efficient operation of MW fields is not a good indicator of two companies’ financial performance and stock price valuation.

Also, we should not simply compare the share price or trend of the share price. Because share price is influenced by many other factors, such as leverage ratio, dividend, secondary public offering, repurchase.

Q2: As Apache is acquiring MW Petroleum only with equity, we used a cost of equity as a discount factor for MW Petroleum’s 15-year cash flow and terminal value. As shown in Exhibit 1, to calculate the cost of equity, we used a 10-year corporate bond rate for Apache, which is 8.03%, for a risk-free rate. Unlevered beta, which we should use for calculating the cost of equity, is shown in Exhibit 2, which is 0.82. Lastly, we got the market risk premium in 1990 for the oil & gas industry of 5.5% from “Introduction to Oil Company Financial Analysis”. As a result, we got the cost of equity of 12.54% and discounting MW’s cash flow with this rate, came up with the amount that Apache has to pay for the acquisition, which is $ 487.15.A screenshot of a cell phone

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Table 1 Valuation of MW Petroleum

Q3: The deal value will be increased to $607.91mm. As shown in Exhibit 2, by reducing direct operating costs by 30% and overhead by 15%, the net income before the interest goes up. In addition, applying the same effective tax rate, the current tax also will be increased. These changes will increase the operating cash flow of each year roughly by 20~30%. The terminal value has been adjusted proportionally. Consequently, the all-equity transaction deal value goes up to $594.17mm when calculating with the same cost of equity. It’s about a 21% increase in the deal value.

Q4: What are the real options associated with the MW assets?

According to Investopedia, the definition of a real option is a choice made available to the managers of a company concerning business investment opportunities. Real options can include the decision to expand, defer or wait, or abandon a project. For the proved developed reserves of MW are assets-in-place which are not options. As a result, if it is proved developed reserves, we have to develop it. If it is proved undeveloped/ probable/ possible reserves, we have an option on when to develop it.

Specific, for proved but undeveloped reserves, the capital expenditure in the first two years are much larger than the cash from operations, which suggests that the proved undeveloped reserves should be treated as real options. In addition, MW could leave these (proved but undeveloped) reserves undeveloped while retaining the right to develop them later. This clearly indicates that the proved undeveloped reserves should be valued using the option approach.

In history, there were a lot more benefit, the transaction was completed through a price support system that protected Apache if commodity prices fell but provided Amoco with a share of the upside if prices rose. After the acquisition, Apache moved its headquarters to Houston, became bigger and bigger.

Exhibit 1 Aggregated MW Production and Cash Flow Projections

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Exhibit 2 Modified Aggregated MW Production and Cash Flow Projections

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