

ADDENDUM to:

**Resource Report for Tethys'
Kazakhstan Concessions**

**Prepared According To
National Instrument 51-101**

As of April 30, 2012

Klymene Prospect

Date of this Report: January 15, 2014

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1. EXECUTIVE SUMMARY

Gustavson Associates, at the request of Tethys Petroleum Limited (Client), has been retained to provide an estimate of the Prospective Resources for the Klymene Prospect in Tethys’ contract area in the Republic of Kazakhstan. The subject area is located within the Kul-Bas Exploration and Production Contract, to the west of currently producing assets in the Akkulka Exploration Contract located in the North Ustyurt sedimentary basin in Kazakhstan.

This report is an addendum to the report written as of April 30, 2012 by Gustavson Associates titled “Resource Report for Tethys’ Kazakhstan Concessions” which was prepared to the National Instrument 51-101 standards for Tethys Petroleum Limited.

The prospect includes three prospective reservoir levels which are the Cretaceous age Upper Aptian, and Lower Aptian and the Jurassic aged section. Table 1-1 below is a summary of the Prospective Resources. The Cretaceous reservoirs are expected to be sandstone and the Jurassic reservoirs are expected to be fractured carbonate and sandstone. The data provided by Tethys included a series of 2D seismic lines which were loaded into an SMT workstation project. Tethys also provided their interpretation which was audited by Gustavson and found to be an accurate representation of the subsurface. The areas used in the resource calculation were the Gustavson interpretation of the P10, P50 and P90 areas.

The methodology used for the estimate of Risked and Unrisked Gross Prospective Resources presented herein was to make independent calculations using a probabilistic volumetric calculation based on parameters cited in the “Resource Report for Tethys’ Kazakhstan Concessions”.

Table 1-1 Prospective Resource Estimates for Klymene Prospect by Reservoir

Structure	Oil in Place, MMBbl			Unrisked Gross Oil Resources, MMBbl				Probability of Success	Risked Oil Resources, MMBbl			
	P ₉₀	P ₅₀	P ₁₀	Mean	P ₉₀	P ₅₀	P ₁₀		Mean	P ₉₀	P ₅₀	P ₁₀
Prospective Resources												
Jurassic Klymene	68.49	248.01	535.71	78.16	15.16	63.94	158.43	20.0%	15.63	3.03	12.79	31.69
Aptian Klymene - (Upper)	10.49	182.16	1,043.92	130.26	3.51	62.52	357.15	20.0%	26.05	0.70	12.50	71.43
Aptian Klymene - (Lower)	16.73	253.78	1,791.08	213.24	5.65	86.24	614.71	30.0%	63.97	1.69	25.87	184.41
Total	95.71	683.95	3,370.71	421.66	24.32	212.71	1,130.29		105.66	5.43	51.17	287.53

Note that the estimates on the left side of this table do not account for the risk of failure in exploring for these resources, while the estimates on the right side of this table are adjusted for that risk. The expected Associated Gas based on an average GOR from the Doris Field production would be 200 scf/stb. These estimates will be re-assessed in the event of a discovery at Klymene.

Prospective Resources are defined as “those quantities of petroleum estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. Prospective Resources have both an associated chance of discovery and a chance of development. Prospective Resources are further subdivided in accordance with the level of certainty associated with recoverable estimates assuming their discovery and development and may be sub-classified based on project maturity.”¹ There is no certainty that any portion of the resources will be discovered. If discovered, there is no certainty that it will be commercially viable to produce any portion of the resources. The Low Estimate represents the P₉₀ values from the probabilistic analysis (in other words, the value is greater than or equal to the P₉₀ value 90% of the time), while the Best Estimate represents the P₅₀ and the High Estimate represents the P₁₀.²

The data provided by Client includes 2-D seismic data with interpretation, well data, resource estimates, and the parameters used in the Client calculations.

Note that Sections 3, 4 and 5 from the “Resource Report for Tethys’ Kazakhstan Concessions” are applicable to this addendum.

¹ Society of Petroleum Evaluation Engineers, (Calgary Chapter): *Canadian Oil and Gas Evaluation Handbook, Second Edition*, Volume 1, September 1, 2007, pg 5-7.

² Society of Petroleum Evaluation Engineers, (Calgary Chapter): *Canadian Oil and Gas Evaluation Handbook, Second Edition*, Volume 1, September 1, 2007, pg 5-7.

2. KLYMENE PROSPECT

The Klymene Prospect is located 61 kilometers northwest of Doris Field. Doris Field has oil production from Cretaceous strata (Figure 2-1) and has proven oil in the Jurassic section. The prospect is up dip from the Koskatyn G 1 well, which drilled to a depth of 4,100 meters into the Lower Jurassic age strata (Figure 2-2).

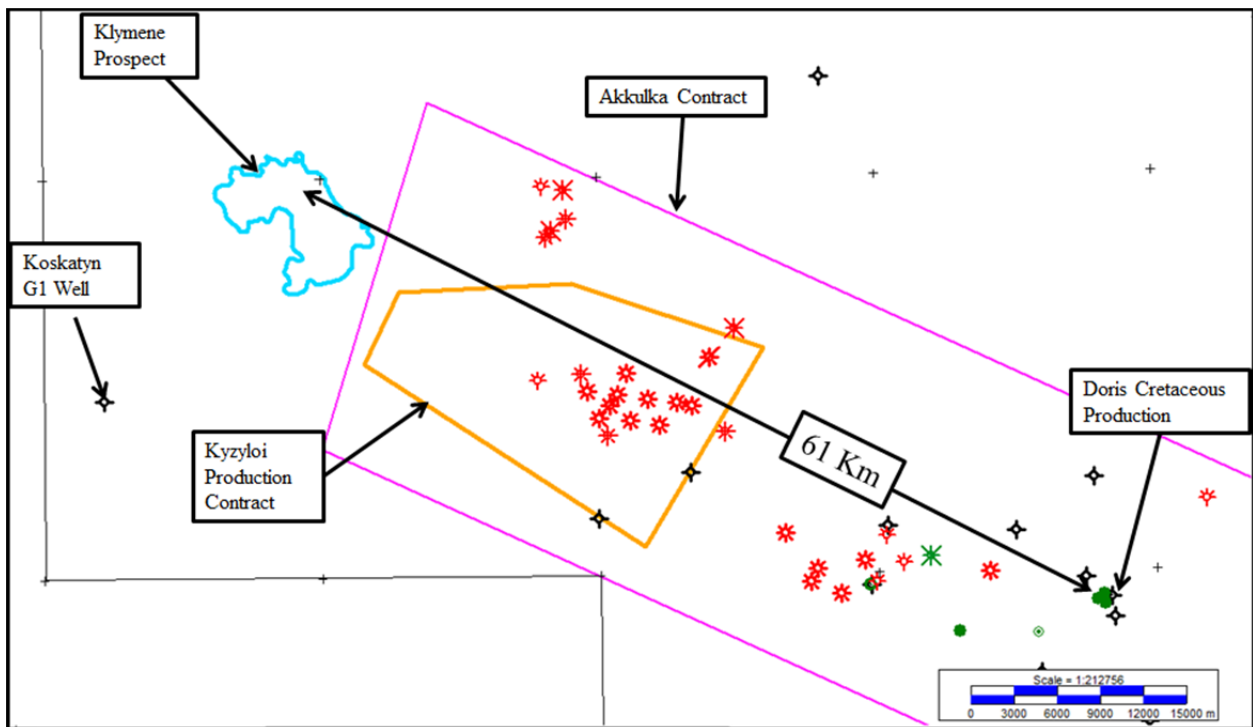


Figure 2-1 Map of Production in the Area of the Klymene Prospect

The Klymene Prospect is located approximately 20 kilometers to the northwest of the Kyzylloi Production Contract area and approximately 61 kilometers northwest of the Doris Field (Figure 2-1). The Kyzylloi Production Contract area has gas production from the shallow Kyzylloi and Tasaran sands. These shallow Eocene aged sands have produced a total of 32.5 BCF since 2007. As of 12/31/2013 the Doris Field area has produced a total of 2.36 MM Barrels of oil from three wells the AKD01, AKD05, and AKD06 since September 2010. This includes 2.2 MM Barrels of oil production from the Cretaceous age Doris Sand from the AKD-01 and AKD-06 wells and a total of 159.0 MBO from the AKD-05 from the Jurassic.

The 2D seismic data over the Kul-Bas area can be used to demonstrate that the Cretaceous Doris sand interval and the Jurassic section can be tied from the Klymene prospect to the Doris Field.

The G-1 Koskatyn well was drilled in 1971 to test a small anticline to the southwest of the Klymene prospect (Figure 2-2). The Koskatyn G-1 well encountered the top of the Jurassic formation at 2,885 meters Measured Depth (MD) and was reportedly drilled to a Total Depth (TD) of 4,100 meters within the Lower Jurassic³ and was a dry hole but as seen in Figure 2-2 the location of this well is downdip to the Klymene Prospect.

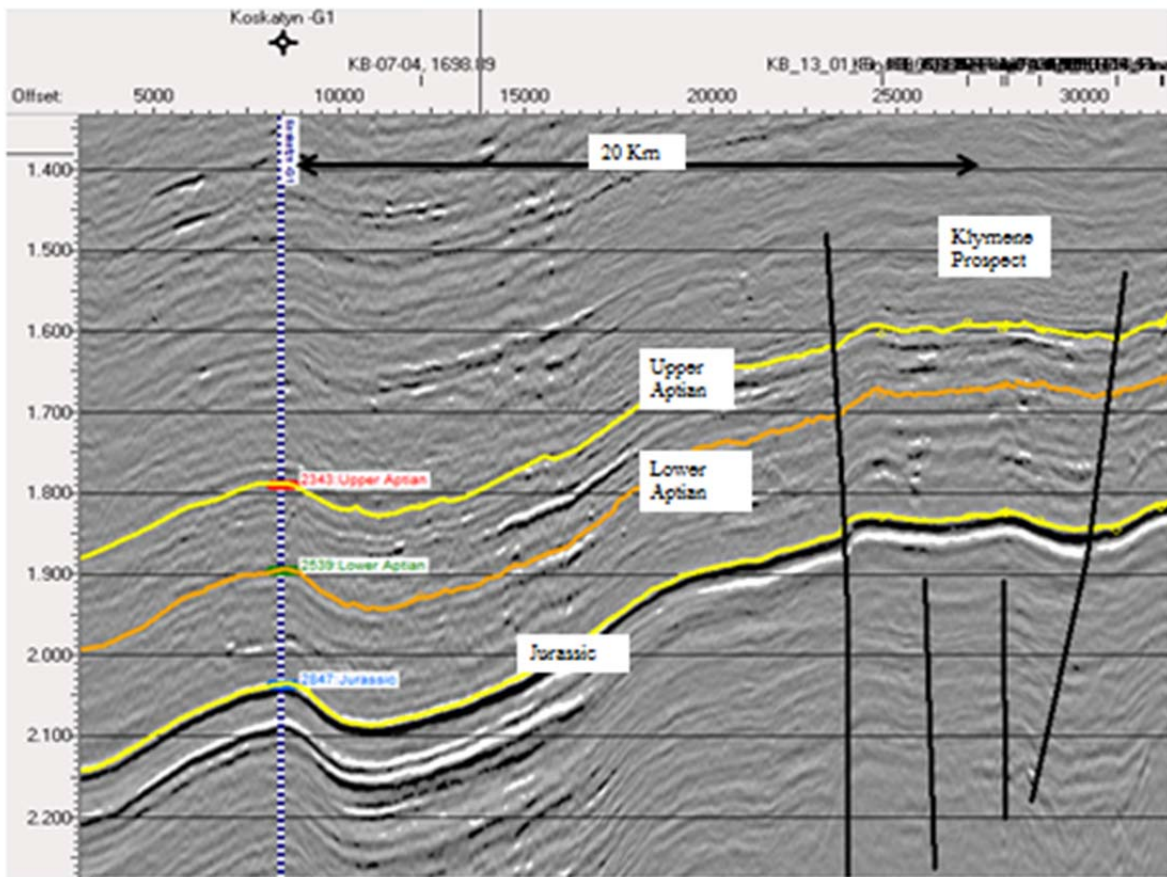


Figure 2-2 Seismic Line from Koskatyn G 1 to Klymene Prospect

³ Well file of the G-1 well, Koskatyn Prospect translation from Russian provided by Tethys

2.1 CRETACEOUS AGE APTIAN RESERVOIRS

The Upper Aptian and Lower Aptian reservoirs (Figure 2-3) considered here for the Klymene Prospect are interpreted to be equivalent to the Cretaceous aged sandstone reservoir that produces at Doris Field. The Klymene structure is a fault bounded anticline as seen in Figure 2-3. The areas used in the probabilistic Potential Resource calculations were identical for both of the potential Aptian reservoirs. The structure for the potential Aptian reservoirs does not change in the short vertical interval between the Upper and Lower Aptian. The Probability of Success for the Lower Aptian is 30% as compared to the Upper Aptian which is 20% due to brighter amplitude and the analogous Doris production. The top of the Lower Aptian horizon is estimated to be at approximately -2,030 meters subsea at the prospect location.

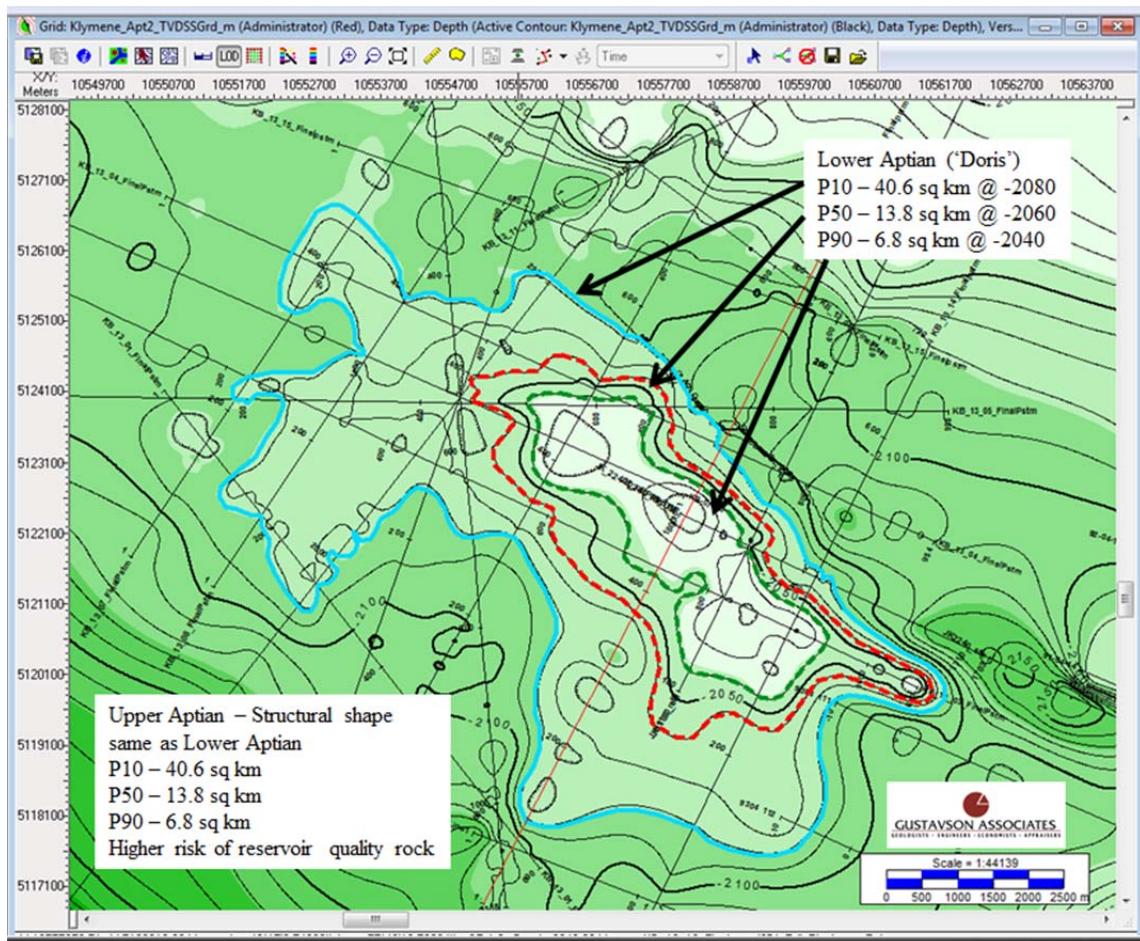


Figure 2-3 Depth Structure Map on the Lower Aptian with Prospective Resource Areas (after Tethys)

2.2 BCU/JURASSIC AGE RESERVOIR

The Base of Cretaceous Unconformity (BCU) Jurassic age reservoir is the deeper drilling target for the Klymene Prospect (Figure 2-4). The structure at this level is similar to that of the Aptian as a fault bounded anticline. This structure is up dip to the Koskatyn G-1 well and fault separated (Figure 2-2). Based on preliminary results, although the well records are not clear the top of this Jurassic section could be a carbonate which grades into a sandstone and even conglomerates with depth. This is similar to the Jurassic section seen in the Doris area to the southeast. The top of this horizon is estimated to be at approximately -2,300 meters subsea at the prospect location.

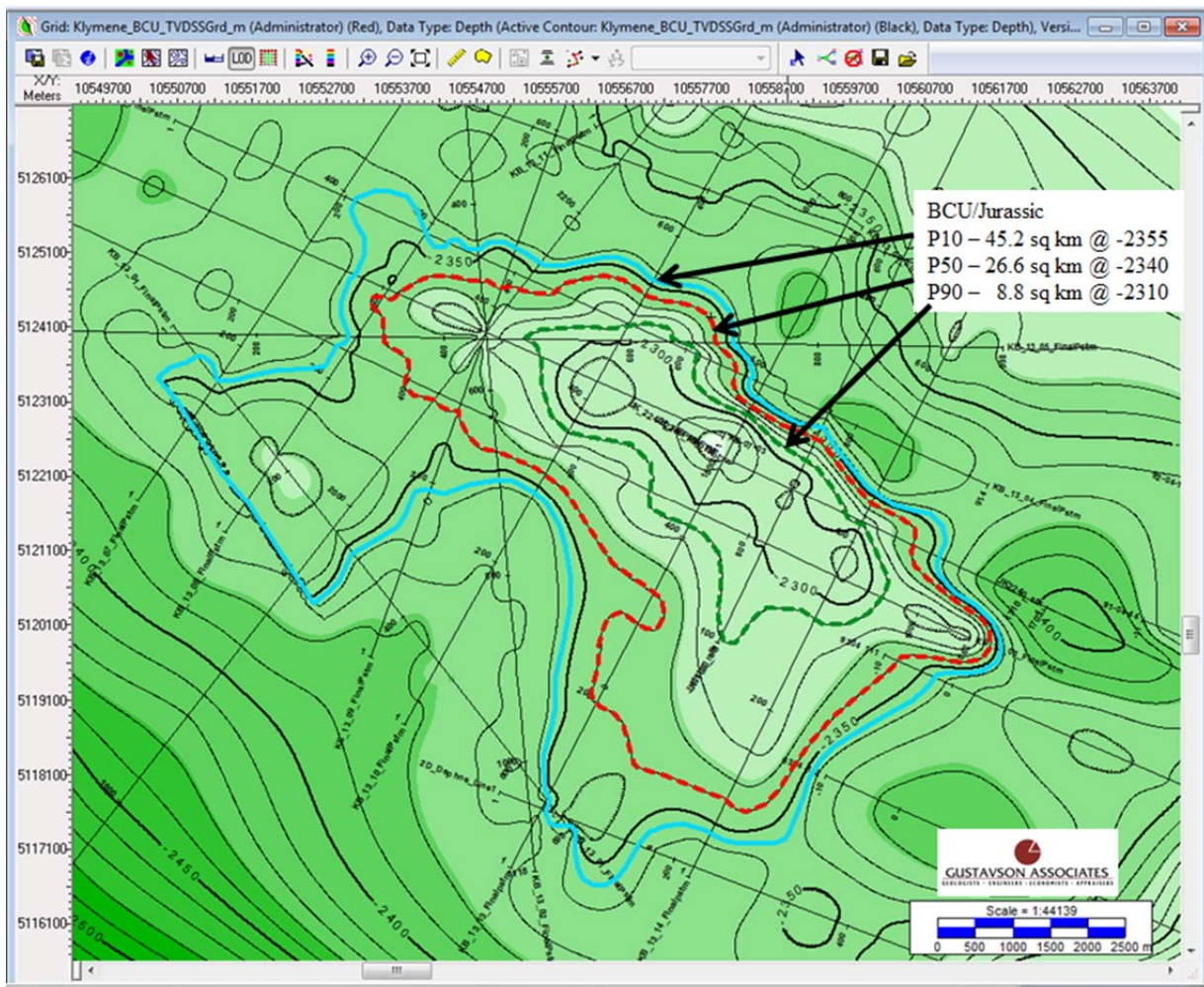


Figure 2-4 Depth Structure Map on the Top Jurassic with Prospective Resource Areas (after Tethys)

3. PROBABILISTIC RESOURCE ANALYSIS

3.1 GENERAL

A probabilistic resource analysis is most applicable for projects such as evaluating the potential resources of an exploratory area like the Akkulka and Kul-Bas exploration licenses, where little data are available as to the values of the reservoir parameters. The range of the expected reservoir data is quantified by probability distributions, and an iterative approach yields an expected probability distribution for potential resources. This approach allows consideration of most likely resources for planning purposes, while gaining an understanding of what volumes of resources may have higher certainty, and what potential upside may exist for the project.

The analysis for this project was carried out considering the range of values for all parameters in the volumetric resource equations.

3.2 INPUT PARAMETERS

This method involves estimating probability distributions for the range of reservoir parameters and performing a statistical risk analysis involving multiple iterations of resource calculations generated by random numbers and the specified distributions of reservoir parameters. To do this, each parameter incorporated in our resource calculation was evaluated for its expected probability distribution.

Because few data are available about the likely distribution of the reservoir parameters, simple triangular distributions with specification of P_{90} , most likely or mode, and P_{10} values were used for most of the parameters. The exception to this is the reservoir area, for which lognormal distributions with specification of P_{90} , most likely or mode, and P_{10} values were used.⁴ Note that these parameters represent average parameters over the entire prospect. So, for example, the porosity ranges do not represent the range of what porosity might be in a particular well or a

⁴ The original intention was that the low values specified would represent P_{90} values; however, this assumption resulted in some negative values. The probability associated with the specified low-end value was therefore reduced until the input distribution included no negative values.

particular interval, but rather the reasonable range of the average porosity for the whole prospect. Gustavson is of the opinion that this is a reasonable approximation, and has used the same methodology. A summary of input parameters is shown in Table 3-1.

In a probabilistic analysis, dependent relationships can be established between parameters if appropriate. For example, portions of a reservoir with the lowest effective porosity generally may be expected to have the highest connate water saturation, whereas higher porosity sections have lower water saturation. In such a case, it is appropriate to establish an inverse relationship between porosity and water saturation, such that if a high porosity is randomly estimated in a given iteration, corresponding low water saturation is estimated. The degree of such a correlation can be controlled to be very strong or weak. This type of dependency, with a medium strength of -0.7, was used in this study for porosity with water saturation and with net/gross ratio. Similarly, the low end of the gross thickness distributions for this prospective accumulation would generally be expected to occur when the productive area is small; therefore, a positive correlation of 0.7 was assigned to gross thickness and productive area.

Table 3-1 Summary of Input Parameters

Lead/Prospect name	Area, sq. km.			Gross Thickness (m)			Net/Gross			Porosity, %			Oil Saturation, %			Bo, Res. Bbl/STB			Recovery Factor			Solution Gas/Oil Ratio, SCF/Bbl		
	Most Likely		P10	Most Likely		P10	Most Likely		P10	Most Likely		P10	Most Likely		P10	Most Likely		P10	Most Likely		P10	Most Likely		P10
	P90	Likely	P10	P90	Likely	P10	P90	Likely	P10	P90	Likely	P10	P90	Likely	P10	P90	Likely	P10	P90	Likely	P10	P90	Likely	P10
BCU Klymene	8.8	26.6	45.2	25	28	31	0.38	0.538	0.7	14.0%	19.3%	23.9%	60.0%	67.3%	75.0%	1.2	1.22	1.28	15%	30%	40%	101	113	129
Aptian Klymene (Upper)	6.8	13.8	40.6	2	15	35	0.68	0.763	0.85	26.0%	28.9%	32.0%	55.0%	64.7%	75.0%	1.14	1.16	1.19	25%	35%	45%	151	184	220
Aptian Klymene (Lower)	6.8	13.8	40.6	3	20	60	0.68	0.763	0.85	26.0%	28.9%	32.0%	55.0%	64.7%	75.0%	1.14	1.16	1.19	25%	35%	45%	151	184	220

3.3 PROBABILISTIC SIMULATION

Probabilistic resource analysis was performed using the Monte Carlo simulation software called “@ Risk”. This software allows for input of a variety of probability distributions for any parameter. Then the program performs a large number of iterations, either a large number specified by the user, or until a specified level of stability is achieved in the output. The results include a probability distribution for the output, sampled probability for the inputs, and sensitivity analysis showing which input parameters have the most effect on the uncertainty in each output parameter.

After distributions and relationships between input parameters were defined, a series of simulations were run wherein points from the distributions were randomly selected and used to calculate a single iteration of estimated potential resources. The iterations were repeated until stable statistics (mean and standard deviation) result from the resulting output distribution. This occurred after 5,000 iterations.

3.4 RESULTS

The Unrisked and Risked Gross Prospective Oil Resources are summarized in Table 3-2. Also included are the Probability of Success values for each potential reservoir.

Table 3-2 Prospective Resources for Klymene Prospect

Structure	Oil in Place, MMBbl			Unrisked Gross Oil Resources, MMBbl				Probability of Success	Risked Oil Resources, MMBbl			
	P ₉₀	P ₅₀	P ₁₀	Mean	P ₉₀	P ₅₀	P ₁₀		Mean	P ₉₀	P ₅₀	P ₁₀
Prospective Resources												
Jurassic Klymene	68.49	248.01	535.71	78.16	15.16	63.94	158.43	20.0%	15.63	3.03	12.79	31.69
Aptian Klymene - (Upper)	10.49	182.16	1,043.92	130.26	3.51	62.52	357.15	20.0%	26.05	0.70	12.50	71.43
Aptian Klymene - (Lower)	16.73	253.78	1,791.08	213.24	5.65	86.24	614.71	30.0%	63.97	1.69	25.87	184.41
Total	95.71	683.95	3,370.71	421.66	24.32	212.71	1,130.29		105.66	5.43	51.17	287.53

The output distributions were then used to characterize the Prospective Resources. Graphs of cumulative probability versus prospective resources were constructed. The distribution graphs are shown as Figure 3-1, Figure 3-2, and Figure 3-3.

Note that the estimates on the left side of this table do not account for the risk of failure in exploring for these resources, while the estimates on the right side of this table are adjusted for that risk.

Prospective Resources are defined as “those quantities of petroleum estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. Prospective Resources have both an associated chance of discovery and a chance of development. Prospective Resources are further subdivided in accordance with the level of certainty associated with recoverable estimates assuming their discovery and development and may be sub-classified based on project maturity.”⁵ There is no certainty that any portion of the resources will be discovered. If discovered, there is no certainty that it will be commercially viable to produce any portion of the resources. The Low Estimate represents the P₉₀ values from the probabilistic analysis (in other words, the value is greater than or equal to the P₉₀ value 90% of the time), while the Best Estimate represents the P₅₀ and the High Estimate represents the P₁₀.⁶

It should be noted that the shape of the probability distributions all result in wide spacing between the minimum and maximum expected resources. This is reflective of the high degree of uncertainty associated with any evaluation such as this one prior to actual field discovery, development, and production. Also note that, in general, the high probability resource estimates at the left side of these distributions represents downside risk, while the low probability estimates on the right side of the distributions represent upside potential. These distributions do not include consideration of the probability of success of discovering commercial quantities of oil, but rather represent the likely distribution of oil discoveries, if successfully found.

⁵ Society of Petroleum Evaluation Engineers, (Calgary Chapter): *Canadian Oil and Gas Evaluation Handbook, Second Edition*, Volume 1, September 1, 2007, pg 5-7.

⁶ Society of Petroleum Evaluation Engineers, (Calgary Chapter): *Canadian Oil and Gas Evaluation Handbook, Second Edition*, Volume 1, September 1, 2007, pg 5-7.

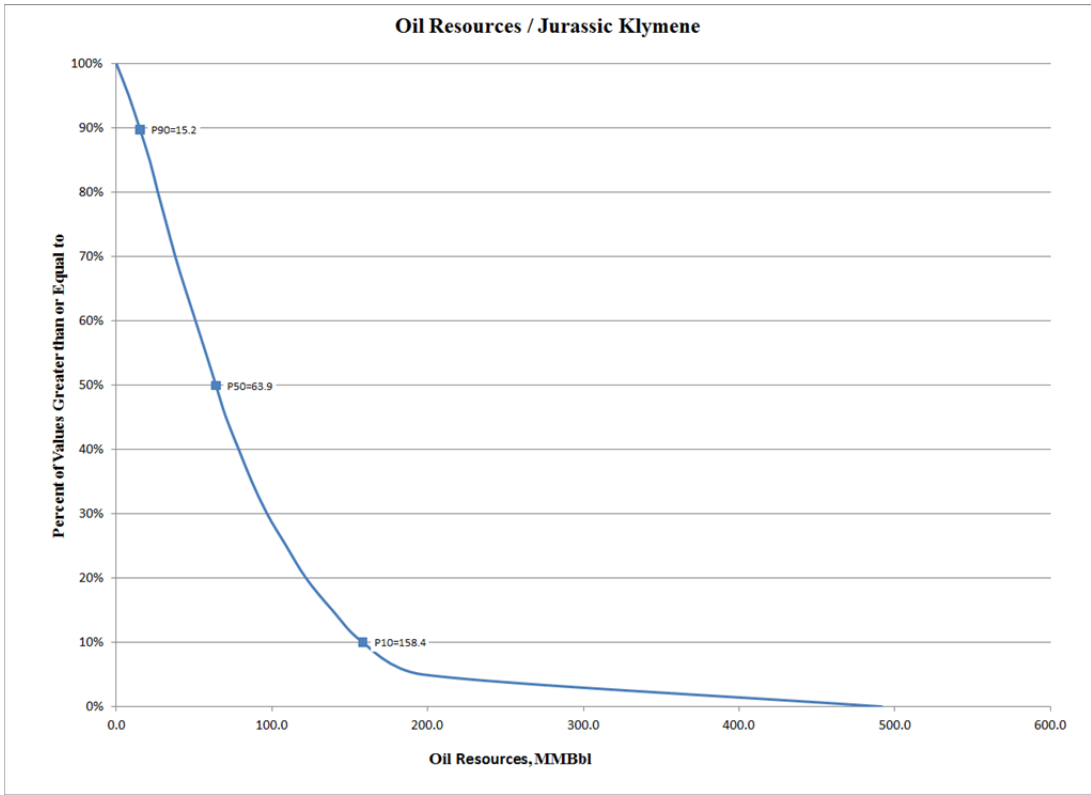


Figure 3-1 Oil Resources Klymene Jurassic (BCU)

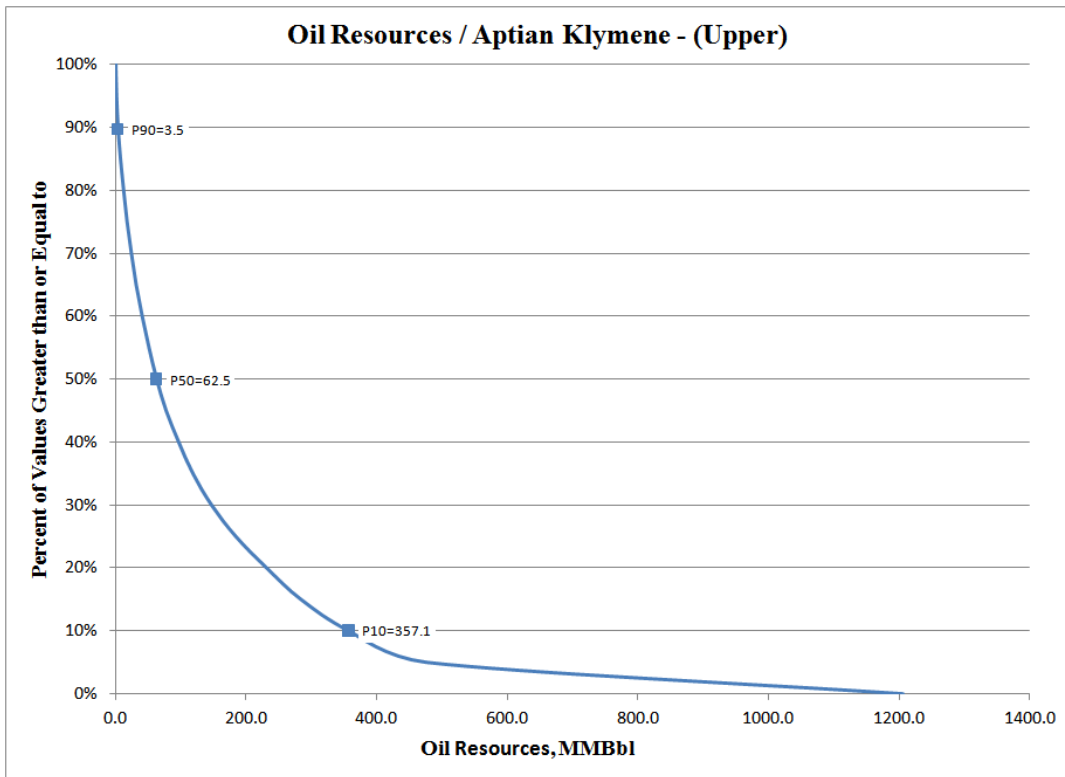


Figure 3-2 Oil Resources Klymene Upper Aptian

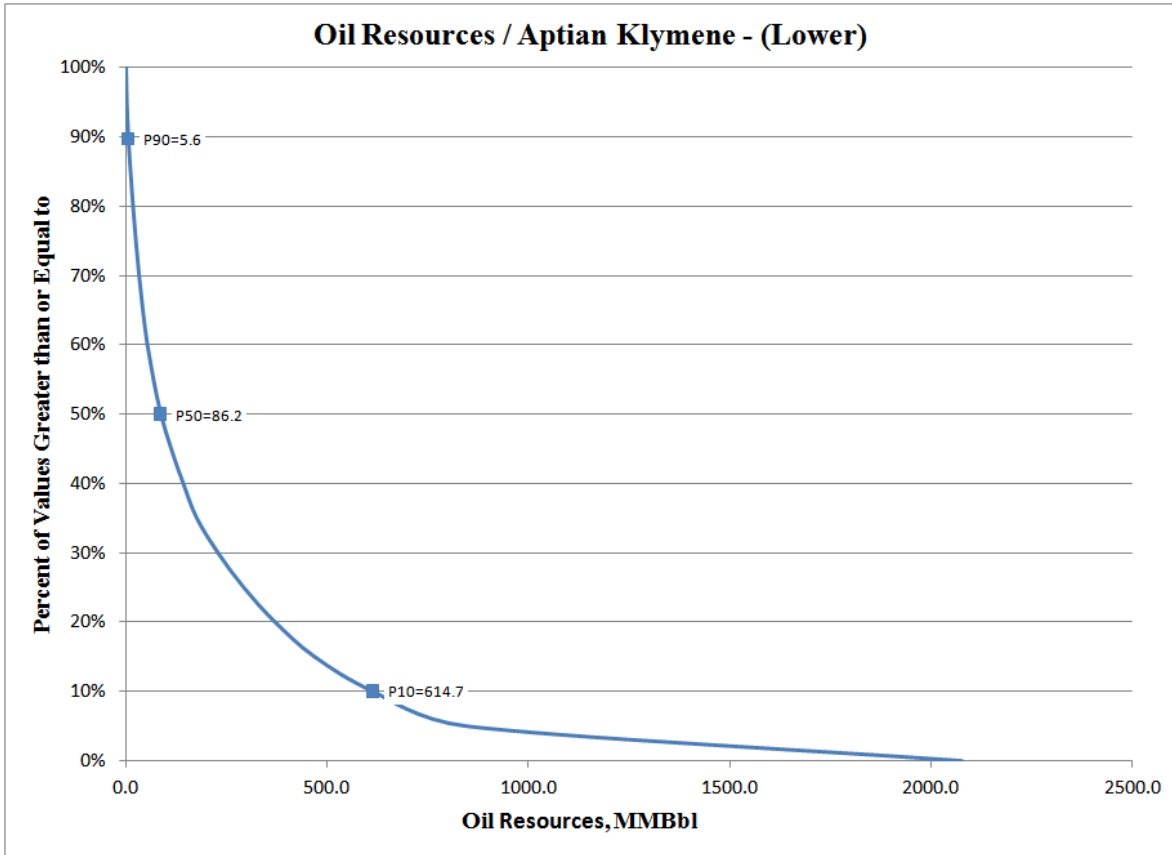


Figure 3-3 Oil Resources Klymene Lower Aptian