

BW/NOP/0556-07  
28 November 2007

The Directors,  
Northern Petroleum plc,  
Martin House,  
2<sup>nd</sup> Floor,  
5 Martin Lane,  
London EC4R 0DP

## **AUDIT OF ROVESTI DISCOVERY: Offshore Italy S. Adriatic Licence F.R39.NP**

In accordance with Northern Petroleum (UK) Limited (NOP) instructions and the terms of the Agreement in April 2007, Blackwatch Petroleum Services Limited (Blackwatch) conducted a review of the portfolio of (NOP) Southern Adriatic licences F.R39.NP & F.R40.NP. This is a summary report of the main points.

A description of each asset in NOP's portfolio follows, with hydrocarbon reserves/resource classified into the relevant P90, P50, and P10 categories. The reserves classifications used in this work are in accordance with the new Petroleum Resources Management System that has been approved by the Society of Petroleum Engineers (SPE) Board of Directors in April 2007. Coordinated by the SPE Oil and Gas Reserves Committee (OGRC), the new Petroleum Resources Management System consolidates, builds on, and replaces guidance previously contained in the 1997 SPE/WPC Petroleum Reserves Definitions, the 2000 SPE/WPC/AAPG Petroleum Resources Classification and Definitions publications, and the 2001 SPE/WPC/SPEE Guidelines for the Evaluation of Petroleum Reserves and Resources. Full definitions are available at the SPE website under the following web address:

[http://www.spe.org/spe-site/spe/spe/industry/reserves/Petroleum\\_Resources\\_Management\\_System\\_2007.pdf](http://www.spe.org/spe-site/spe/spe/industry/reserves/Petroleum_Resources_Management_System_2007.pdf)

We have not verified the title of NOPs licences, as this is outside the remit of this evaluation.

Our approach has been to review NOP's technical interpretation of the geoscience and engineering data for each of the field for reasonableness. Where considered necessary NOP have revised interpretations in co-operation with our staff to provide an interpretation that we deem to be a technically reasonable base case interpretation. We have then reviewed NOP's ranges of uncertainty for each parameter around this base case in order to estimate a range of petroleum initially in place and recoverable for each field. Production profiles have then been developed

for each field as an input to the economic analysis. Furthermore, we have reviewed NOP's estimates of Operating Costs and Capital Expenditure for reasonableness and independently calculated Net Present Values based on these costs, the production profiles resulting from our review of reserves and economic parameters agreed with Northern.

We have taken the working interest that NOP will have in the Properties as presented by NOP.

Yours sincerely,  
For Blackwatch Petroleum Services Ltd



**RADWAN HADI**  
Deputy Managing Director

Enc.

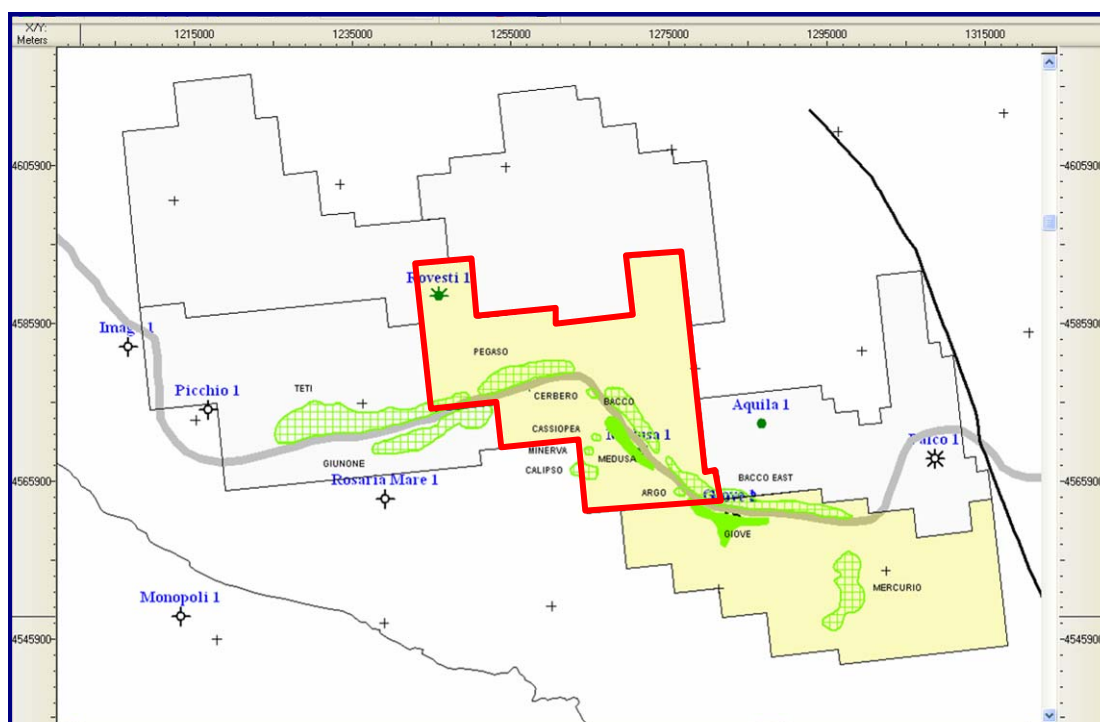
## Licences

NOP's portfolio in part consists of equity interests in two Licences F.R39.NP & F.R40.NP located in the Southern Adriatic offshore Italy.

Licence	Discovery	Interest (%)	Status
F.R39.NP	Rovesti	100*	Fully awarded

\* Northern holds a licence interest of 100%, however subsidiaries of ATI Oil Plc have under contract an economic interest of 50%.

The Rovesti oil field described in this summary is located in F.R39.NP. To date only one well has been drilled into the Rovesti structure



**Figure 1 – F.R 39.NP Licence Location with Rovesti-1 well**

## Field

The Rovesti discovery contains oil reservoir in limestones of Early Cretaceous age, penetrated 2344 metres below sealevel. NOP adopt a tripartite layering of the reservoir into the Scaglia Formation, and the Upper and Lower Maiolica Formation. These intervals are predominantly shelf slope or basinal limestones. The Rovesti discovery is a three-way dip closed structure, fault bounded to the north. It is located 12km north of the Apulian carbonate platform margin within a shelf slope or basinal setting although the structure may have resulted from gravitational collapse of the Cretaceous platform margin.

The seismic interpretation made by NOP is consistent with the seismic data. The depth conversion used is a simple two layer approach from seabed, and the resulting depth grids were tied to the well data. The Rovesti structure spills to the west, and the spill point observed on the Top Reservoir depth structure map lies close to the

estimated OWC at the well. A correction grid was applied to the Top Reservoir depth structure so that the mapped spill equalled the P50 case OWC of 2569mSS.

A GRV range was estimated by taking an upside and lowside OWC. The log suite is limited but suggests an ODT at 2565mSS, and a WUT at 2573mSS. The ODT was taken as the P90 OWC and the WUT taken as the P10 OWC. The petrophysical parameters and uncertainties associated with the layering were reviewed and deemed to be a fair representation of the reservoir.

Using lift curves for ESP-equipped completions, Blackwatch ran a series of sensitivities on Rovesti using MBAL to determine the critical uncertainties impacting reserves. The most significant uncertainties for Rovesti were determined to be STOIIIP and the well Productivity Index (PI), and the results of these sensitivity cases are presented in the table below for the P90, P50, and P10 STOIIIP values.

On the basis of the information presented, Blackwatch classifies Rovesti recoverable hydrocarbons as reserves under the probable and possible category.

### Developments

Blackwatch concludes that the only feasible development option for the Rovesti field is by using a Floating, Production, Storage and Offloading (FPSO). Crude oil would be loaded from the FPSO to a shuttle tanker for export. These are widely used for marginal field developments, where the field plateau life is short and there is no existing infrastructure. FPSO technology also reduce field abandonment costs and have potential residual value due to possible reuse at another location. FPSOs are placed on the location for the duration of the field life. Modelling work carried out by Blackwatch indicates that Rovesti wells will require artificial lift. From the data available at this stage of the study, it can be concluded that the use of Electric Submersible Pumps (ESPs) appears to be the most suitable technique for artificial lift.

### Italian Oil Market

Italy's oil and gas industry is long-established and has been dominated by Eni since the 1950s. As a result, a well developed pipeline and refinery infrastructure is in place. Although the fourth largest producer of oil and gas in Europe, Italy relies heavily on imports from North Africa and Russia, and as such there would be a ready domestic market for any oil produced. From the Southern Adriatic, oil can be sent by shuttle tanker to any one of the refineries that specialise in processing crude of this type, for instance to Taranto on the south coast or to Sicily, from where distribution networks can be accessed.

### Reserves attributable to the Northern Petroleum

	<b>Probable Reserves (P90 STOIIIP; PI=1.5)</b>	<b>Probable Reserves (P50 STOIIIP; PI=1.5)</b>	<b>Probable Reserves (P50 STOIIIP; PI=2)</b>	<b>Probable + Possible Reserves (P10 STOIIIP; PI=3)</b>
<b>Oil (MMstb)</b>	23.69	33.56	40.16	62.4

### Economic Evaluation

Estimates of the NPVs associated with NOP 100% net share of the 2P and 3P reserves for the concessions are presented below as of the effective date of 1st January 2008 using the “forecast” case oil price.

The economics were run with 33% tax and 3% Royalty.

### Price Assumptions

Details of product pricing and discounts to the Brent marker price were provided by NOP. Economic cases were run carried out using \$50, \$60, and \$70 per bbl.

Inflation is assumed at 2% per annum.

All costs have been presented by NOP in US\$, and therefore no exchange rate is applied in the evaluation.

**NPVs have been evaluated for 3 price sensitivities as follows:**

	Price Sensitivity 1	Price Sensitivity 2	Price Sensitivity 3
Brent Price 2008 Onwards (\$/bbl Real)	50	60	70

### **Net Present Value Attributable to the Northern Petroleum Interest (100%)**

	Post-Tax Net Present Value (£ million, Money of the Day) Price Sensitivity 1	Post-Tax Net Present Value (£ million, Money of the Day) Price Sensitivity 2	Post-Tax Net Present Value (£ million, Money of the Day) Price Sensitivity 3
Reserves	NPV @ 10%	NPV @ 10%	NPV @ 10%
Probable Reserves (P90 STOIP)	-50	53	147
Probable Reserves (P50 STOIP)	109	233	349
Probable+Possible Reserves (P10 STOIP)	668	901	1134

### Professional Qualifications

Blackwatch Petroleum Services Ltd ('Blackwatch') is an independent provider of geological, petroleum engineering, well testing and drilling engineering services to the international oil industry. The company specialises in the modelling, estimation, assessment and evaluation of oil and gas assets. Except for the provision of professional services on a fee basis, Blackwatch does not have any interest in or commercial arrangement with any persons employed by or acting for Northern Petroleum (UK) Ltd.

This report has been conducted under the supervision of Radwan Hadi, BSc & MSc Chemical Engineering. Mr Hadi is Deputy Managing Director of Blackwatch and has over twenty-five years of experience in the international oil & gas industry. The Geoscience review was undertaken under the supervision of Adam Law, BSc & PhD Geophysics.

### **Basis of Evaluation**

The basis for this evaluation of the prospects was a package of data made available by NOP. We have supplemented this by use of other relevant data from within the public domain.

In estimating hydrocarbons in place and recoverable volumes, we have used standard Petroleum Engineering techniques. These combine geophysical and geological knowledge with detailed information concerning porosity, permeability distributions, reservoir fluid characteristics and production tests where applicable. There is uncertainty inherent in the measurement and interpretation of basic data and in the estimation of parameters that have not been measured. We have estimated the degree of this uncertainty and have used statistical methods to calculate the range of hydrocarbons initially in place and the recoverable hydrocarbons.

For all of the assets of NOP we have reviewed the geo-science and petroleum engineering work undertaken by NOP and its partners, and made independent estimates of recoverable hydrocarbons. Where the technical work and/or the database were not sufficiently detailed, we have been unable to make an independent assessment, however, having technically reviewed the NOP assets, we are satisfied that the NOP methodology of evaluation of their additional portfolio will be to a high technical standard.

It should be understood that any evaluation of oil and gas assets is subject to significant variations as oil prices fluctuate