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1 EXECUTIVE SUMMARY

In March 2004 a site visit was done by IMPaC Offshore Engineering (IMPaC) to inspect the King 500, a fully hydraulic well intervention and workover unit, currently rigged-up at Kongshavn Industri, Bergen. As outlined in more detail in this report the rig was found in good to excellent condition, based on the visual inspection carried out by IMPaC and the information provided by Odfjell.

Estimating the upcoming work program of the operator Kavala Oil in the Prinos and Epsilon Field in the next five to ten years, the rig is suitable to add value to the operations. The unit is able to fulfill the workover and infield drilling requirements and has the capacity for life well interventions and low head/UBD drilling.

Since this rig is quite unique in set-up and operability it will require experienced operating and maintenance crews in the early work phase to achieve a steep learning curve in the Kavala Prinos operations. Basically very few fully hydraulic units of this size and specifications are available on the marked; subsequently the current market value of this second-hand rig is ranked high.

Given that a comparable new build will cost approximately 20 to 22 MMUSD, the rig's present market value after five years is quoted as **13.5 MMUSD** (linear over 20 years). Several major E&P companies are looking for a similar rig right now.

One reason for the relatively high costs is it's adaptation to the Norwegian Offshore Standards and Regulations. This however, will be to advantage of Kavala Oil in order to get the necessary certifications from Germanischer Lloyd and on long term basis by reducing OPEX and at the same time providing high safety standards.

The rig is delivered with valid DNV certificates, complete set of spares and all operating and maintenance manuals

2 INTRODUCTION

Kavala Oil S.A. is a privately owned company located in Greece, in which Regal Petroleum has an app 60% interest. With Regal Oil funding new investments in further field development of the Prinos and Epsilon concessions, Kavala Oil will maximize its oil production by infill drilling and re-completions in the Prinos field. Simultaneously the 'Epsilon Field' development will commence by installing a new platform installation and associated wells.

To perform the extensive upcoming work program in the most economic way and to assure continuous production, Regal Petroleum decided to purchase a Odfjell 500 rig, which, in addition to the features already mentioned, has the capacity for sidetrack drilling.

To combine well specifications in workover and drilling on the three offshore platforms (Prinos Alpha, Beta and Epsilon) the modular, fully hydraulic well intervention & workover rig, King 500, was bought from the Norwegian drilling contractor Odfjell Dilling AS second-hand.

In line with their funding procedures, Regal Petroleum asked IMPaC Offshore Engineering to validate the King 500's present market value.

3 OBJECTIVE

The objective of this study is to determine the present market value of the King 500. By indicating the requirements to a platform rig suitable for the 'Prinos' work program and the Epsilon development plans of Kavala Oil, the King 500 will be validated by evaluation of it's performance and it's overall condition.

4 BACKGROUND

The Prinos oil field is an offshore oil field located in the northern Aegean Sea about 20 km southeast of the Greek town Kavala, 10 km northwest of Thassos Island. The water depth is app. 45 meters. The existing installations consist of four steel jackets with the drilling platforms Alpha and Beta, the process platform Delta and one for the flares. The platforms are interconnected by pipe bridges.

'Alpha' and 'Beta' having deck dimensions of 20 x 22 m were designed to withstand earthquakes loads from 0,2/0,4 g and to support drilling loads (incl. Rig) of > 320 t. The associated gas of the oil production contains 60% H_2S.

The completion is dual string (4 ½", 3 ½") with gas lift. Kavala Oil plans to re-complete the producers for enhanced oil recovery by ESPs. At present the first tests are performed. Main objective of the production strategy will be to maximize production and well-on time to cover CAPEX and OPEX by oil production and to get the new drills on stream as early as possible.

The base of the Prinos Reservoir is at about 2900 m below MSL, the average total well depth is (Including deviation) up to 3200 m MD. All 24 (12/12) available slots are drilled. The panned infield drilling will be done by sidetracking the existing wells.

5 DISCUSSION

5.1 DATA

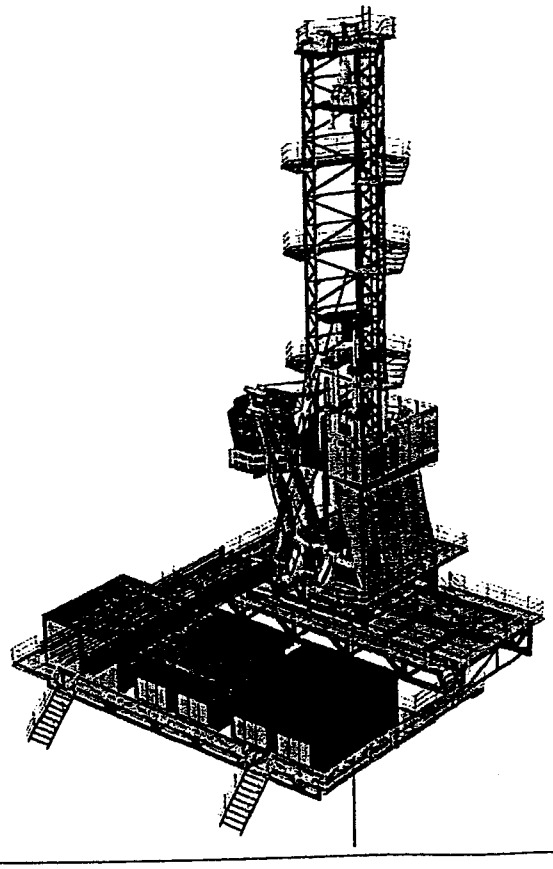
The data gathering for this report was carried out during the field visit of IMPaC Offshore Engineering (IMPaC) representatives from March 1st, 2004 to March 3rd, 2004. The IMPaC representatives met with the Drilling Manager from Kavala Oil at Odfjell Drilling AS head offices in Bergen. Three visits were made to Kongshavn Industri, where the King 500 was rigged up for up-grading and commissioning before delivery to Greece.

A meeting was held with the owner of Kongshavn Industri, who designed and built the rig in 1999. To provide information for the system under operating conditions and about field experience, several meetings were held at Odfjell Drilling AS, the previous rig owner.

The well intervention manager and his team, who were responsible for the rig operation during the five years of Odfjell's ownership, will commission and operate the unit for a limited time after rig-move to Greece. This commissioning and operation phase (Performed by Odfjell crew) is part of the sales agreement. A contact list is included in section 6.4.

5.2 KING 500, HYDAULIC WELL INTERVENTION & WORKOVER UNIT

5.2.1 General Description & Operability



King 500
Hydraulic Well Intervention & Workover Unit

- Modular well intervention & workover rig.
- Designed, built and tested by A/S Kongshavn Industri.
- Delivered to Odfjell in May 1999.
- Maximum pulling capacity: 300 tons (660,000 lbs) (including jacks)
- Maximum snubbing capacity: 100 tons (220,000 lbs)
- Regular range tubular: 2 3/8" - 7"
- Maximum stroke: 17.1 m
- Max. continuous drilling torque: 47 500 Nm (35 000 lbs-ft)

The rig is designed for operation in a hazardous area, and shall meet the requirements of the following rules and regulations:

- Applicable acts, regulations and provisions for the petroleum activity.
- DNV Rules for classification of mobile offshore units, drilling plant (DRILL).
- Health and Safety Executive UK.
- NORSOK D-002.
- NORSOK Z-015
- NPD Regulations.
- NPD guidelines to regulations related to lifting appliances and lifting gear in the petroleum's activities

The design of the unit is based on the following standards:

- IEC international standard number 529, 92-505
- ISO 4406 Cleanliness of hydraulic fluids
- NS 5820 Documentation of equipment supply

The King 500 Hydraulic Workover Unit is an electric powered hydraulic workover Rig. The rig is capable of drilling, workover and snubbing operations that are currently being conducted with a conventional draw work type rigs. The unit hydraulically moves the tubular components in and out of the wellbore with hydraulic rams, which in turn provides a very small operational-footprint for this powerful Rig. The Rig is capable of lifting 300 t by means of hydraulic cylinders, and the drilling pipes are picked up or laid down during pipe movement and positioned with an automatic pipe handling system (APHS) eliminating all unnecessary safety risks.

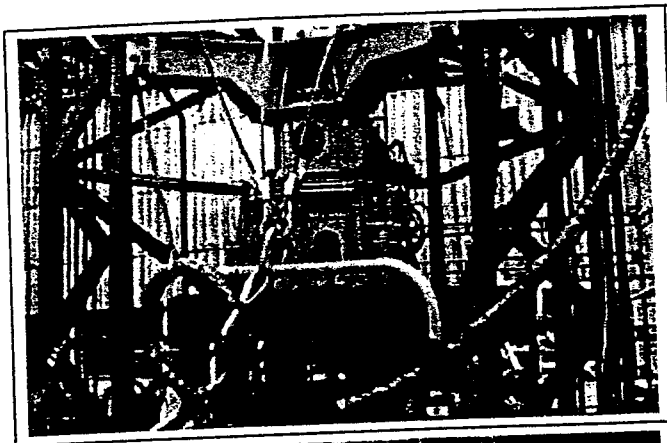
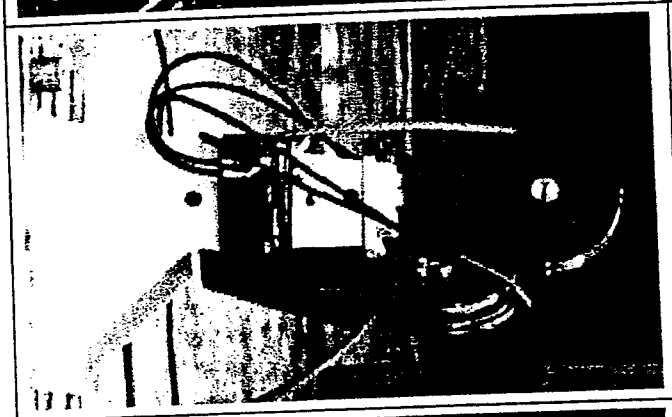
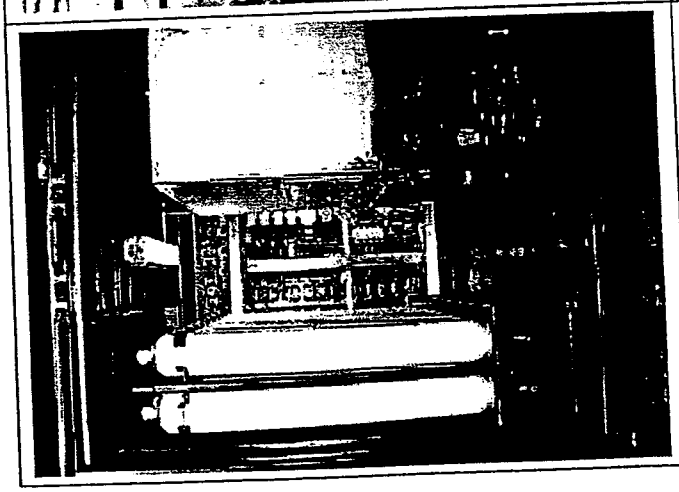
The King is an efficient workover rig that allows all drilling and workover operations to be conducted with a small footprint. With its reduced size, weight and packaging capability, these features bring down the costs of transportation, as well as maintenance, and make it suitable for platforms with limited space.

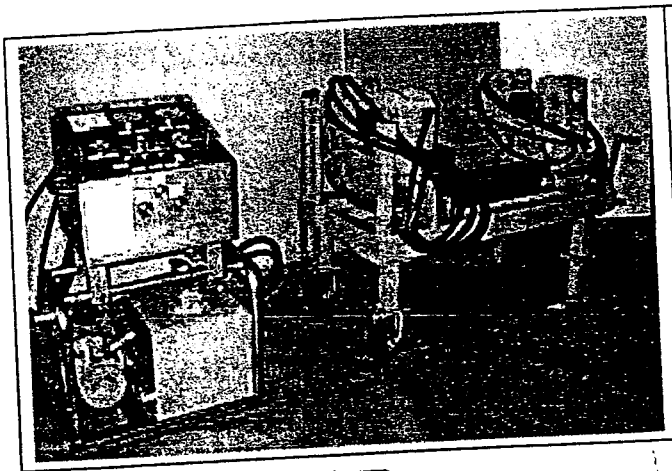
The Rig is an electrically powered hydraulic unit capable of creating 300 ton of lift force. At the same time this rig, can also provide hydraulic snubbing rig operating with i.e. an 11" 10,000 psi BOP system. The rig will work cover conventional well operations, as well as provide services under balanced situations. This versatility will greatly contribute to the anticipated operation of this rig. Additional features include the ability to handle sidetrack drilling, milling and conventional drilling applications.

Using the rig during snubbing operation eliminates the costs of kill fluid, and reduces costs of pumping equipment. The reduced rig up and rig out time is also an added feature. These actions are typically performed in a few days. All steps necessary to operate the rig are handled and controlled by means of a sophisticated control system. The control system provides reports of all pertinent well and rig-related actions.

The Automated Pipe Handling System (APHS) allows the crews through remote operation to almost completely handle this task from a safe distance. Typically only 2 men are required for normal operation. The rig's custom-designed HAWC Slips have the advantage of maintaining a full 11" bore without removing slip carriers, thus greatly speeding up the handling of large diameter tools and increasing safety.

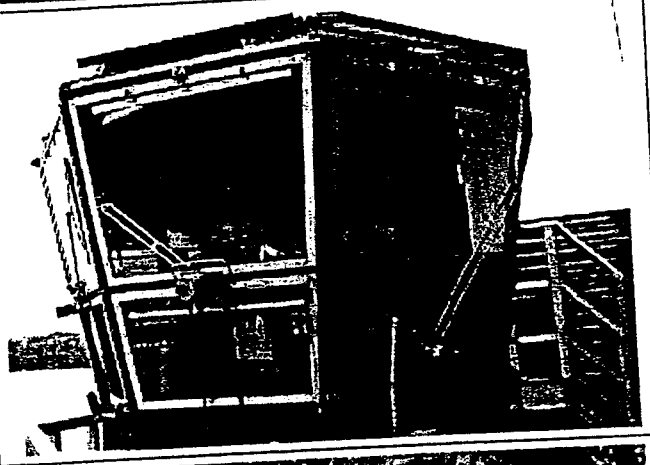
5.2.2 Main Components, Inventory

	Top Drive Capacity – 300 tons – Max. 200 rpm – Max. 35 000 ft-lbs (47.5 kNm)
	Easy torque – 50,000 lbf-ft torque (appr. 65,000 Nm) used together with a standard rig tong
	Equipment containers – Tailor-made offshore containers and baskets – Purpose built equipment containers: Hydraulic power units, BOP control system, Choke containers – Designed and tested according to DNV 2.7-1



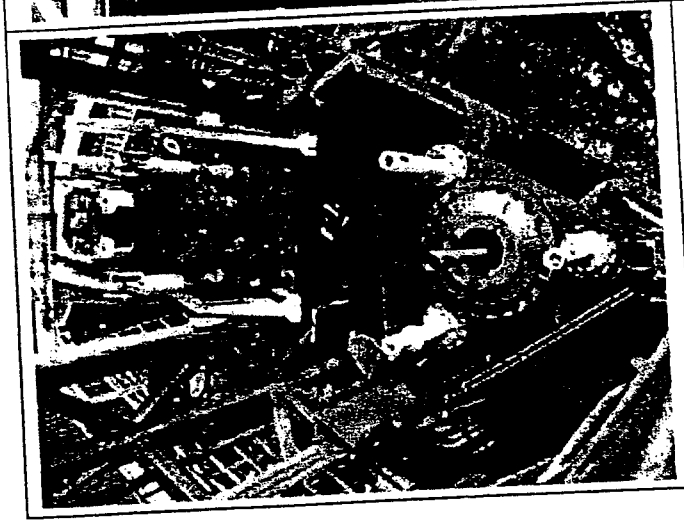
Make break unit

- Pipe range 1 1/16" - 6".
- Max torque 27 274 ft-lbs (at 260 bar)
- Max clamp force 36 460 lbs (at 260 bar)
- Weight on wagon 300kg
- Weight as single tong 150 kg



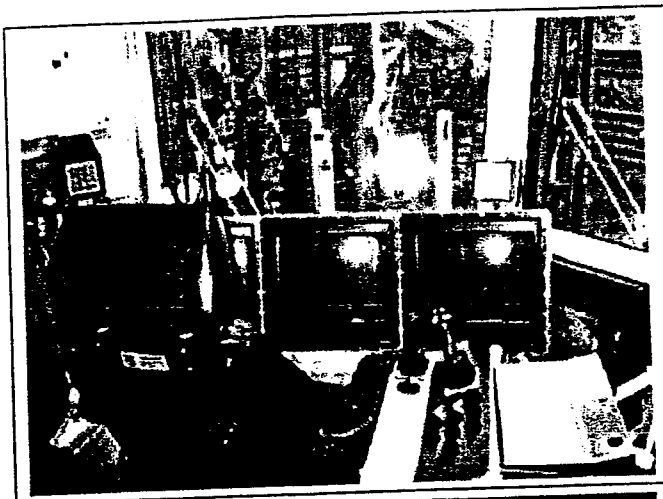
Control Cabins and Panels

- Tailor-made control cabin and consoles
- Easy to transport
- Ergonomic design
- Delivered with: window wiping and washing system, ventilation



Iron Roughneck, Elevator Slips

- Simple and robust design
- Integrated spinner
- Integrated mud bucket
- Remote operated



Rig Instrumentation & Controls

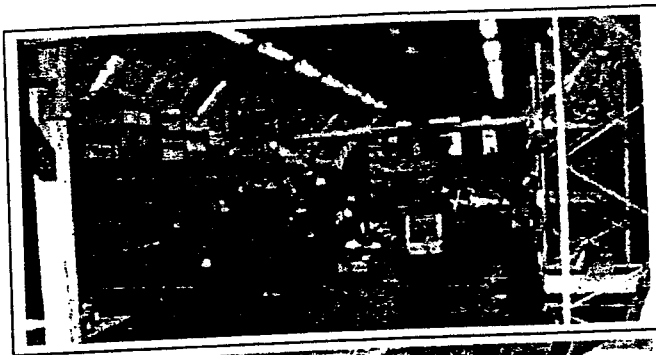
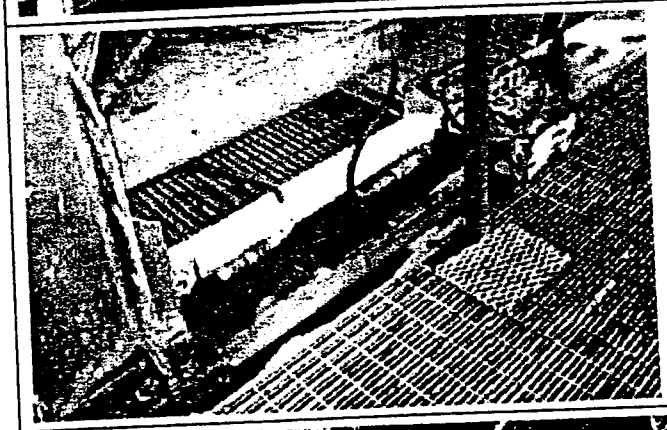
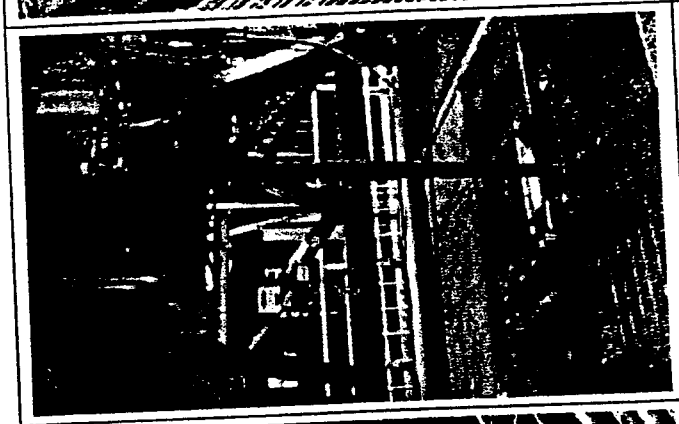
- Integrated RCS (Rig Control System) type
- Level of automation adjustable
- Computer controlled
- Full access to drilling data and provision of interface
- Allows two man rig operation
- High safety standard

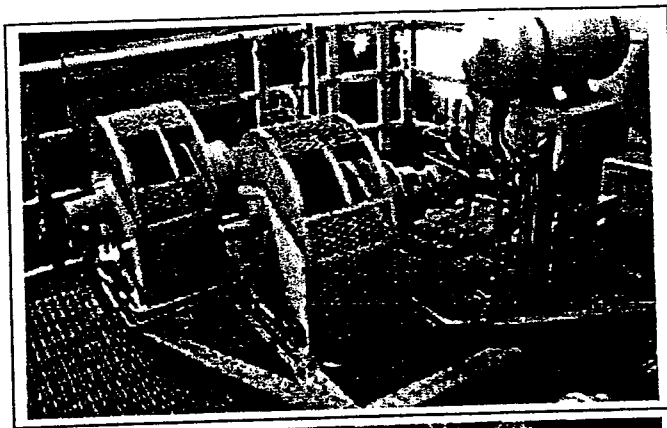
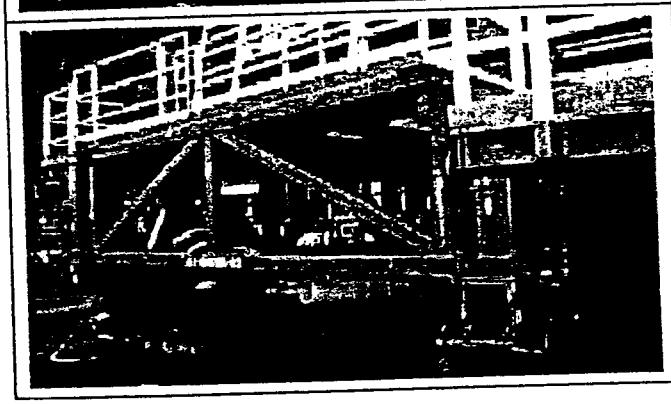
Cables/Hoses

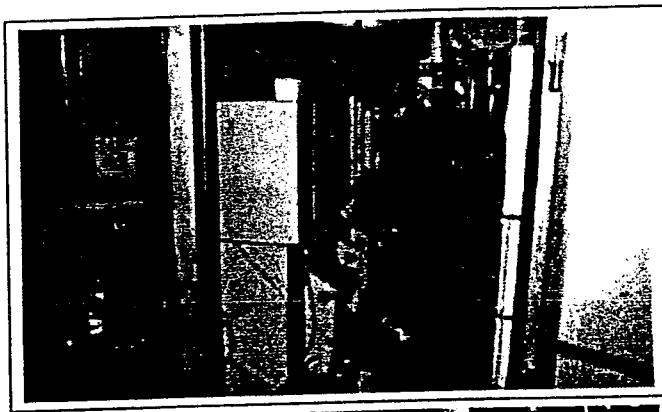
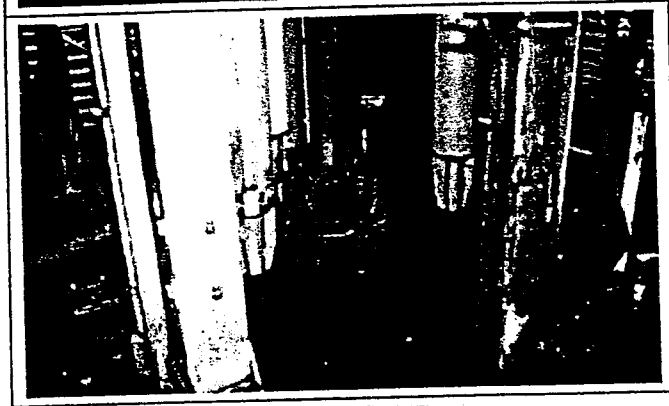
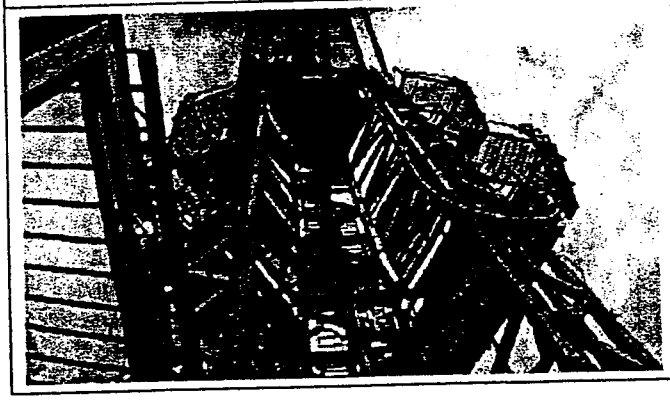
- Systems provided with plugs and connections providing easy hook-up and disconnection for rig-up and rig down operations.

Cables are protected by cable trays

- Oversized junction boxes
- Unique plug system to guarantee fool-proof hook-up of electrical and control system

	Spares – Large stock of spares provided with rig.
	Upper Jacking system – Fully hydraulic system
	Substructure on Support Frame – Providing sufficient space for bellnipple and flow lines.
	Automated Pipe Deck & Handler – Remotely operated system

	Hydraulic Winches on Top Segment – 4000 kg lifting capacity each
	Substructures Container Deck, Hydraulic House, Pipe Deck – Modular design, container to be placed where required
	View of current substructure, to be replaced by a different design to allow installation on Prinos platforms

	Generator power packs (2 provided)
	Main hydraulic pistons consisting of: Upper piston module and lower piston module
	Modular derrick

5.2.3 Available Capacity & Limitations

The rig is suitable to drill up to 8 ½" holes with the standard equipment provided. Larger holes require special handling equipment and procedures may outweigh the advantages of its current automated operation capability and safety standards subsequently. Within the design range the following performance can be achieved:

- Weight: 205 tons (excl. mud system)
- Maximum pulling capacity: 300 tons
- Maximum snubbing capacity: 100 tons
- Regular range tubular: 2 3/8"-7 "
- Optional range tubular: 7" -10 ¾"
- Maximum lengths tubular (in jack): 16,5 m
- Number of main modules: 18
- Heaviest rig module: 19,5 tons
- Maximum tripping speed: 450 m/hrs. With range 2.
- Power unit output: 2 x 600 kW
- Voltage: 690V / 50Hz (Norsok)
- Rig floor elevation (normal): 9.8 m
- Rig floor area: 39.6 m²
- Lifting capacity, pipe handler: 2000 kg
- Drilling torque, max. continuous :36 000 ft-lbs @ 100 RPM
- Maximum rotation speed: 200 RPM
- Jack plate opening: 600 mm (23,62")
- Service winches, SWL: 2 x 4 ton.
- Pipe deck capacity (3½"): 5000 m/100 ton
- Top drive torque 36 K ft*lbs
- Tripping speed 450 m/hr
- Theoretically 8500 m 8 ½" hole is achievable
- 18 main modules
- Total 56 lifts (Depends on operation)

The drilling efficiency requires detailed data from well plans. As a base case the following typical Prinos infill side track scenario is assumed in the following chapter.

5.3 WORKOVER AND DRILLING REQUIREMENTS

5.3.1 General

As planned, the rig shall work on the three Kavala drilling platforms Alfa, Beta and Epsilon. The rig move should be fast and accomplished by the available supply boats and platform cranes of the installations. The weight loads and footprints of the drilling equipment have to be within the operating envelopes of the structures and topsides. Furthermore the drilling installations have to fulfill the special requirements of the Prinos/Esilon field regarding to environmental protection (zero discharge), earthquake and H_2S protection.

5.3.2 Workover

The completion is dual string (4 ½", 3 ½") with gas lift. Kavala Oil plans to re-complete the producers for enhanced oil recovery by ESPs. The King 500 is ideally adapted to run and pull the completion strings. The unit easily covers the load requirements in WO, no rig capacity limitations have been identified.

The current set-up is suitable to perform state of the art hydraulic workovers (HWO) and can be combined with composite coiled tubing technology, to control and operate intelligent completions. The unit is built for life well workovers and snubbing operations with rotary features in difficult hole conditions. These features of the rig will allow Kavala Oil to operate the whole range of completion systems with a high potential for future developments.

5.3.3 Drilling

The base of the Prinos Reservoir is at about 2900 m (MSL), the average total well depth is as per deviation up to 3800 m MD. All 24 (12/12) available slots are drilled. The panned infill drilling will be done by sidetracking existing wells.

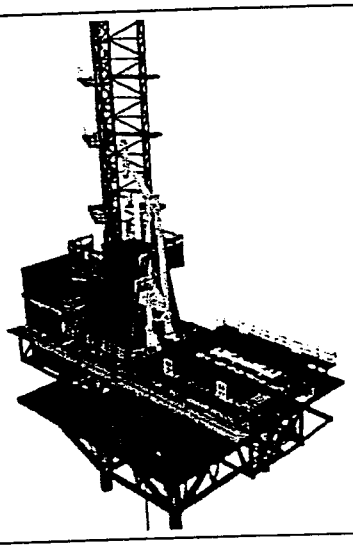
The typical side-track scenario will be as follows:

- Re-enter existing deviated well in 9 5/8" production casing,
- Side-track at 2500 m by whip stock/window milling,
- Drill new 8 ½" deviated hole,
- Turn and build into new horizontal target up to 4000 m (2900 m TVD).

Torque & Drag calculation show, that the pulling and rotary capacity of the rig is more than sufficient to do the job. The pulling and torque limitations will be dictated by the drill string used and not by the rig capability.

6 VALIDATION

6.1 APPLICATION / FIT-IN



King 500 rig configuration with new support frame on Kavala drilling Platforms Alpha/Beta

- The unit mounted onto the main skidding frame cantilevering beyond existing top sides (Drain system required)
- Deck crane to be installed to lift 25 to 30 t and reach to land top section of rig
- Shakers to be integrated in pipe handling deck sub frame
- Mud system to be arranged on platform deck

The foreseen infill drilling and workover programs can be fully executed based on the performance data provided for this Odfjell 500 rig and confirmed by the visual inspection carried out by IMPaC Offshore Engineering GmbH.

To perform the foreseen tasks the rig needs to be provided with certain utilities (instruments air etc., water and fuel) from the existing platforms.

Additional items necessary to operate the rig, such as

- New sub structure (Main Skidding Frame)
- Pipe deck support frame
- Interface to platform drilling deck
- Mud system with PTV-system and solids control
- BOPs and handling system
- Drill string
- Open drain system

Are to be provided by others and have not been part of this evaluation.

Due to it's unique design this rig offers additional feature i.e. low head drilling (LHD), slim hole drilling and trough tubing rotary drilling (TTRD). These capabilities will provide added value to Kavala Oil for future development plans.

6.2 NEW BUILT

IMPaC did receive budgetary information from the rig manufacturer Kongshaven Industri. In 2000 the company was bidding a similar rig for the cost listed hereunder.

King 500* Well Intervention Unit		NOK	EUR	USD
Module 01	Rig support frame	3.532.600	401.766	510.835
Module 03	Cylinder housing module	3.460.000	393.509	500.337
Module 05	Mast	4.962.000	564.333	717.535
Module 06	RCS	2.356.000	267.950	340.692
Module 07	Pipe handling arm	4.356.000	495.412	629.904
Module 08	Top drive with dolly	4.822.000	548.411	697.290
Module 09	Jacking system	7.260.000	825.687	1.049.840
Module 10	Top mast with winches	2.654.000	301.842	383.784
Module 11	Pipe handling deck	5.630.000	640.306	814.132
Module 12	Slips 6 stk	3.650.000	415.118	527.812
Module 13	Hydraulics			
Module 13.1	Hydraulic power unit 1	3.950.000	449.237	571.194
Module 13.2	Hydraulic power unit 2	4.120.000	468.572	595.777
Module 13.3	Field instrumention hydraulics	5.260.000	598.225	760.628
Module 14	Diesel generators and electrical system			
Module 14.1	Diesel generator 1	4.450.000	506.103	643.497
Module 14.2	Diesel generator 2	4.450.000	506.103	643.497
Module 14.3	Electrical system & MCC/LER	3.850.000	437.864	556.733
Module 14.4	Instrument / steering system	18.760.000	2.133.594	2.712.809
Module 15	Utility equipment			
Module 15.1	Easy torque	345.000	39.237	49.889
Module 15.2	Elevator	1.650.000	187.656	238.600
Module 15.3	Roughneck	4.560.000	518.613	659.403
Module 15.4	Stand pipe manifold and mud house	2.250.000	255.895	325.364
Module 16	Skid frame	6.245.000	710.250	903.064
Module 17	Additional skid frame	3.950.000	449.237	571.194
Module 18	Power tong	3.450.000	392.372	498.891
Module 19	BOP control system incl. hoses	4.650.000	528.849	672.418
Module 20	Mud facilities	0	0	0
Module 21	Engineering	0	0	0
Module 22	Commissioning	1.850.000	210.402	267.521
Module 23	Alternative proposals	0	0	0
Sum		116.472.600	13.246.545	16.842.637
Module 24	Builder's all risk insurance 5%	5.823.630	662.327	842.132
Module 25	Transport insurance	200.000	22.746	28.921
Total		122.496.230	13.931.619	17.713.690

*Quoted prices as per year 2000 by manufacturer Kongshaven Industri

(Exchange rates 1 NOR = 0.113731 EUR = 0.144606 USD)