

**AGREEMENT**

**FOR THE ACQUISITION, PROCESSING, INTERPRETATION,  
MARKETING AND REVENUE SHARING OF**

**NON-EXCLUSIVE 2D MARINE SEISMIC DATA IN KENYA**

**BETWEEN**

**NATIONAL OIL CORPORATION OF KENYA**

**AND**

**FUGRO DATA SERVICES AG**

This AGREEMENT is made and entered into on the \_\_\_\_\_ day of \_\_\_\_\_ 2013 by and between National Oil Corporation of Kenya (hereinafter referred to as "NOCK") currently located at AON Minet House, 7<sup>th</sup> Floor, Nairobi, Kenya and Fugro Data Services AG (hereinafter referred to as "FUGRO") currently located at Bahnhofstrasse 29, CH-6300 Zug, Switzerland, a division of Fugro NV.

**WHEREAS:-**

FUGRO declares and guarantees that it possesses the technical knowledge, suitable professional skills, appropriate organisation and personnel and adequate financial means to perform its obligations under this Contract and further undertakes to and shall be obliged to perform a marine seismic survey offshore Kenya including data acquisition and data processing as per the terms and conditions spelt out in this agreement and schedules thereof.

**NOW THIS AGREEMENT WITNESSETH AS HEREUNDER:**

**1. Nature of the Agreement**

The parties have participated jointly in the negotiation and drafting of this agreement. In the event an ambiguity or question of intent or interpretation arises, this agreement shall be construed as if drafted jointly by the parties and no presumption or burden of proof shall arise favouring or disfavouring any party by virtue of the authorship of any of the provisions of this agreement.

**2. Ownership of the Data**

FUGRO will own the Data for the duration of this agreement and will have exclusive rights to license the Data to third parties. NOCK will receive a copy of the raw and processed data. The data will be provided in a standard format to be agreed. On expiry of this agreement ownership of these data will revert to NOCK.

**3. Confidentiality of the Data**

NOCK will maintain confidentiality of the Data in accordance with the terms and conditions of this Agreement, and will receive revenues based upon the licensing of the Data as defined in this agreement.

**4. Maintenance and use of the Data**

All Data, including processed Data and interpreted Data will be maintained and archived by FUGRO.

**5. Training Program**

FUGRO and NOCK will work together closely to determine appropriate training program for two (2) trainees to be nominated by NOCK during the data processing phase. FUGRO will provide training for four weeks during the processing at the FUGRO data

processing centre, most likely in UK. A broad description of the content of the training course is attached in Schedule 2.

## **6. NOCK's Rights and Responsibilities**

- a. NOCK shall make all endeavours to assist FUGRO to obtain all necessary permits to acquire the data.
- b. NOCK will maintain confidentiality for the period of this agreement all data covered by this agreement.
- c. NOCK will make aware the existence of these data to any company applying for an exploration license over a currently open block or block that becomes open during the data confidentiality period covered by these data. NOCK will strongly recommend the licensing of these data by any company applying for a PSC in respect of an open block covered by these data. It will be a requirement of any PSC work program that companies license these data.
- d. NOCK shall assist FUGRO in the interpretation of the data by providing experienced technical staff and access to relevant geological and geophysical data during the project.

## **7. FUGRO's Rights and Responsibilities**

- a. FUGRO shall be responsible for the acquisition, processing and any interpretation of the geophysical data.
- b. FUGRO shall promote the data set by including area shape files on its web site with other non-exclusive data owned and/or marketed by FUGRO. FUGRO shall also promote the Data by presenting of the Data on a one-on-one basis with clients.
- c. FUGRO will provide training in data processing to 2 staff nominated by NOCK with a 4 week attachment to FUGRO's data processing centre whilst the data are being processed. The training will cover all aspects of seismic data processing from data loading and verification through to production of the final time processed sections. Fugro will cover travel costs, provide accommodation and per diem allowances for the duration of the training.
- d. FUGRO will provide quotations for all inquiries, prepare and execute licensing agreements, deliver data and collect payment from companies that license the Data. The revenue from the data portion of the data transaction will be shared between FUGRO and NOCK as stated in this agreement. FUGRO will remit the revenue share portion to NOCK within thirty (30) days of receiving payment from the licensing company.
- e. FUGRO shall at all times conduct its efforts hereunder in accordance with all applicable laws and regulations. NOCK and FUGRO shall cooperate in all respects with each of their efforts to comply with applicable laws and regulations, including but not limited to reporting requirements imposed by such laws or regulations.

- f. FUGRO shall undertake feasibility studies with the intention of establishing a seismic data processing center and a data visualization centre within NOCK premises as per the proposal contained in the attached letter dated 2<sup>nd</sup> January, 2013.

## **8. Warranties and Limitation of Liability**

FUGRO assumes all liabilities, which may arise out of FUGRO's activities in acquiring, processing and interpreting the Data, and agrees to hold NOCK harmless from any claims, causes of action, damages or other liability arising out of those activities.

FUGRO and NOCK make no representation that oil and gas or other mineral leases will be granted or other exploration activity will be authorised for areas covered by the Data for any individual, corporation, or other third party.

FUGRO shall in no event be liable to NOCK or to other parties for punitive, indirect, special, incidental or consequential damages resulting from or arising out of the use of the Data and FUGRO expressly disclaims all general and specific, expressed or implied warranties with regard to the accuracy, usefulness and quality of the data or its fitness for any particular use or purpose. FUGRO assumes no liability for reliance upon the Data. All Data will be licensed to third parties with the understanding and agreement that FUGRO and NOCK shall not be responsible or liable for any action taken or expenditure made by third parties and their exploration groups resulting from examination, evaluation, interpretation or the use of the Data and third parties shall release, defend and indemnify FUGRO and NOCK from any claims or liabilities arising there-from.

FUGRO warrants that the media on which the Data will be delivered will be free of defects and that the Data will be accurately recorded onto such media. a

## **9 Audit Rights of National Oil**

- 9.1 FUGRO shall, during the period of this Agreement, provide NOCK with a written annual statement (hereinafter referred to as 'the statement') summarising the expenses incurred by FUGRO as set out in this agreement and the payments received by FUGRO in respect of the grant of rights of access, rental or licences to third parties and the corresponding NOCK Revenue Share as defined in Financial terms below and any deduction permitted under the said terms.
- 9.2 Throughout the duration of this agreement, NOCK may, within six(6) months from the date of the relevant statement, have access to FUGRO'S books, and correspondence relevant to determining the correctness of the statement prepared by FUGRO and its compliance with the provisions of this agreement by giving to FUGRO seven (7) days prior written notice. Such audit shall be carried out during working hours and NOCK and/or its representatives shall endeavour to conduct such audit in a manner to minimise inconvenience and expense to FUGRO.

- 9.3 NOCK or its representatives shall undertake to keep confidential all such records, correspondence and any other information disclosed to NOCK and/or its representatives during such audit.
- 9.4 All costs, including but not limited to travel costs, accommodation and daily allowance, incurred by NOCK or its representatives in conducting such audit shall be for the account of NOCK and FUGRO shall bear its own costs arising from such audit.

## **10. Term and Termination**

The Agreement shall be for a term of eight (8) years from the completion of the acquisition of the Data. If the sales target of three (3) full licenses of the data has not been reached by FUGRO during the first 8 year period FUGRO will have the right to extend the agreement for an additional term of five (5) years. NOCK reserves the right to terminate the Agreement if the acquisition stage does not start within one year of the signature of the contract. FUGRO will finish the processing within six months after the completion of the data acquisition phase of the project.

### **g. Governing Law and Venue**

This Agreement will be governed by Kenyan law. All other questions arising out of or concerning this Agreement and each Schedule or its validity, construction, interpretation, performance or breach shall be governed and decided by application of the laws of Kenya excluding any choice of law rules which would otherwise require the application of the laws of any other jurisdiction, and venue for any and all such actions shall be in Nairobi, Kenya.

### **h. Entire Agreement**

This Agreement and each Schedule are the entire agreement of the parties concerning the subject matter hereof, and no modification, amendment or addition to this Agreement or a Schedule may be effected unless in writing which specifically references this Agreement and/or the applicable Schedule and is signed by an authorized representative of each party.

### **i. Notices**

Except as otherwise expressly and specifically set forth in this Agreement, or in any Schedule hereto, all notices and other communications required to be in writing shall be deemed sufficient for all purposes if sent by registered or certified letter, courier services, or facsimile to the recipient's address stated in the applicable Schedule (provided that each party may change its address by notice in writing). Each notice sent in any of the foregoing manner shall be effective on the date of actual receipt.

**j. Assignment**

FUGRO shall have the right to assign this agreement to any Fugro company that is at least 51% owned by the parent company of FUGRO.

**k. Payment and Invoicing**

FUGRO will bear sole responsibility for the issuance of all Invoices, and receipt of monies paid by others for the licensing of the Data. FUGRO will take full responsibility for issuing NOCK their share of the revenue. The Data will be licensed to others at a specified license fee plus the then current applicable reproduction and handling charges, any sales, use, value added, gross receipts or similar taxes applicable to the transaction and any late charges specified. FUGRO will determine the licensing fee.

In the event any sales, use, value added or similar tax is levied or assessed against FUGRO as a consequence of the licensing of the Data by FUGRO, such taxes shall be deducted before revenue share with NOCK.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement effective as of the year and date first written above.

**National Oil Corporation of Kenya**

Signature: [Signature]  
Name: SHAMAYA HASSAN  
Title: CEO  
Date: 3.1.13

**Fugro Data Services AG**

Signature: [Signature]  
Name: HANS MEYER  
Title: COO  
Date: 4/2/2013

## SCHEDULE 1 - REVENUE SHARING

### AGREEMENT

#### FOR ACQUISITION, PROCESSING, MARKETING AND REVENUE SHARING

#### 2D MARINE SEISMIC DATA IN KENYA

This Schedule 1 to the AGREEMENT, is made effective on the \_\_\_\_\_ day of \_\_\_\_\_ 2013, and entered into by and between **National Oil Corporation of Kenya** (hereinafter referred to as "NOCK") currently located at AON Minet House, 7<sup>th</sup> Floor, Nairobi, Kenya and **Fugro Data Services AG** (hereinafter referred to as "FUGRO") currently located at Bahnhofstrasse 29, CH-6300 Zug, Switzerland, a division of Fugro NV and incorporates all the terms of such Agreement, unless they are modified explicitly by reference in this Schedule 1.

As per Paragraph 12 of the Agreement, any notices should be sent to:

**NOCK:**

Sumayya Hassan-Athmani  
Managing Director  
National Oil Corporation of Kenya  
AON Minet House, 7<sup>th</sup> Floor  
Nairobi,  
Kenya  
mdnock@nockkenya.go.ke

**FUGRO:**

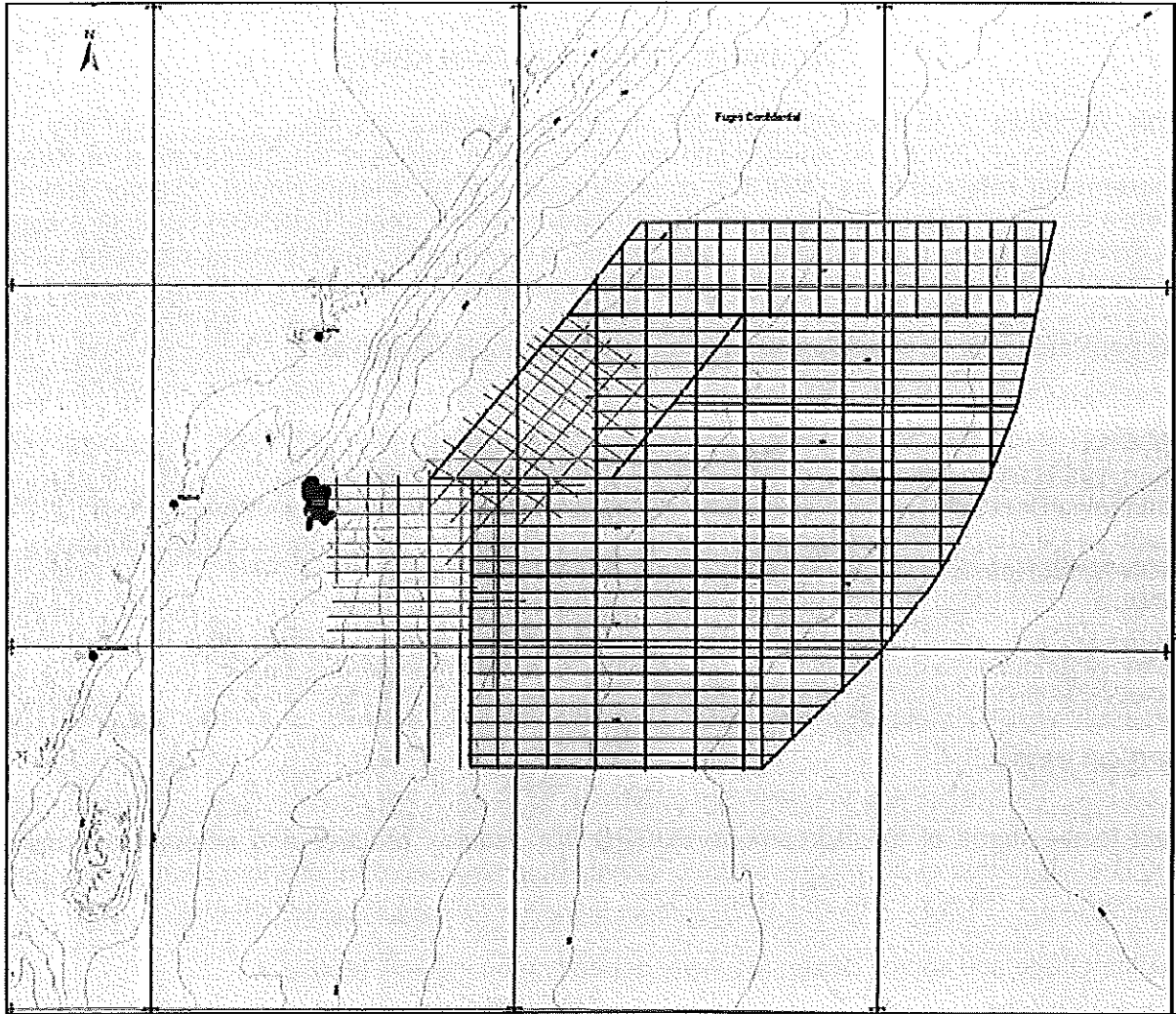
Stewart Walter  
International Business Development  
Fugro Multiclient Services (UK) Limited  
Fugro House  
Hithercroft Road  
Wallingford OX10 9RB, UK  
s.walter@fugromcs.co.uk

#### SCOPE OF WORK

Subject to the terms of the Agreement, FUGRO will acquire, process and interpret approximately 12,500 line kilometres of 2D marine seismic, gravity and magnetic data offshore Kenya. The data will be acquired on a 15km x 15km and 15km x 30km grid as shown on the attached map.

Final kilometrage and survey design may vary depending on industry feedback.

## LOCATION MAP



Ultra-deep water License Blocks shown in black  
New survey lines shown in red  
Existing Multi-client data (PGS) shown on green



# **SURVEY SPECIFICATIONS**

## **ACQUISITION PARAMETERS**

### **General Survey Details**

Technique	Single vessel, single source, single streamer
Full-fold Programme size	11,808 km 2D (full fold pre-plot)
Number of sail lines	54
Average line length	218 km
Approximate water depth	2800 to 4200 m
Nominal fold of coverage	200

### **Source**

Source type	Bolt LL XT
Shot interval	25m
Number Sources	1
Number of source strings	4
Source depth	8m +/- 1.0m (to be confirmed by sponsors)
Volume	To be agreed with sponsors
Air pressure	2000 psi
Peak-peak	To be confirmed
P/b ratio	To be confirmed
Max timing error	+/- 1ms

### **Streamer**

Streamer type	Sercel Seal ALS
Number of streamers	1
Streamer length	10000m
No of groups	800
Group Interval	12.5 m
Group length	11.78 m
Streamer depth	8m +/- 1m
Near offset	100m
Spacing of birds	Every 300m + extra redundancy at head and tail of streamers
Max. feather	10°

### **Recording**

Recording system type	Sercel Seal v5.2
Sample rate	2ms
Recording length	To be agreed with sponsors
Low Cut Filter	To be agreed with sponsors
High Cut Filter	To be agreed with sponsors
Data format	8058 SEG-D Demux
QC processing	Promax
Media	3590E

## **PROPOSED DELIVERABLES (TO BE AGREED WITH SPONSORS)**

### Standard

- SEGY format raw migration
- SEGY format final migration (true amplitude and with equalisation)
- ESSO V2 velocity tape
- UK00A navigation tape
- Gravity data (Bathymetry, free air anomaly, Bouguer anomaly) line and gridded digital data
- Magnetic data (magnetic anomaly) line and gridded data
- Gravity and magnetic data processing report.

### Optional

- CMP gathers prior to PSTM without NMO
- CMP gathers after PSTM
- 3 angle related offset volumes,  
NMO corrected with stacking velocities
- Field Data

## FINANCIAL TERMS

FUGRO will bear responsibility to license, sell and market the Data following acquisition. FUGRO will prepare all third-party licenses, prepare and submit all invoices, deliver Data and collect all license fee revenues. Upon receipt Fugro will revenue share with NOCK, upon the following terms:

1. Cost recovery figure for this survey is defined as the amount to cover the costs of all facets of survey planning and permitting, marketing and promotion, data acquisition, processing and training of NOCK nominated technicians. This is estimated to be US\$15,000,000. The actual amount to be determined on completion of data acquisition.
2. All revenues received prior to attaining the cost recovery figure will be shared 90% to Fugro and 10% to NOCK.
3. Following cost recovery all revenues will be shared 50% Fugro and 50% NOCK
4. After revenue equivalent to 2 times the licensing cost of the complete survey is achieved, future revenues will be shared 35% Fugro and 65% NOCK.
5. Fugro will attempt to pre-license the survey to several companies for underwriting, prior to conducting the survey.
6. Should FUGRO not secure sufficient pre-license funding, defined as 80% of the cost recovery figure, FUGRO reserves the right to terminate this agreement and not proceed with the project.

## PROPOSED LICENSE FEES

It is proposed to license these data at the following rates:

For data over a Block where the company is operator:

Single company rate US\$910 per km

For additional companies joining the operator the rate for the second company will be 50% of the single company rate. The rate for third and additional companies will be 30% of the single company rate for each additional company.

For data over a Block where the company is not an operator (or a co-venturer with the operator)

Single company rate US\$455 per km

For additional companies in a bona fide exploration group the rate will be 1.5 x single company rate for two companies and 30% of the single company rate for each additional company.

These license fees are applicable for early participant sponsors. These are defined as single companies or operating groups that commit to the survey before the start of data acquisition.

License fees for late participation sponsors will be decided by Fugro based on prevailing market conditions. Late participation sponsors are defined as single companies or operating groups that commit to license the data after the start of data acquisition.

## TERMS

FUGRO will invoice Third Party Licensors of the Data as follows:


For early participation sponsors: 50% of the license fee on execution of the license agreement, 30% on completion of data acquisition and 20% on delivery of final products

For late participation companies 100% of the license fee is due and payable upon execution of a Third-Party Data License.


All fees are quoted exclusive of sales, use, and turnover or value added taxes or any other taxes that may be imposed. In the event any sales, use or similar tax is levied or assessed against FUGRO as a consequence of the licensing of data by FUGRO at any time after delivery of the Data to Third Parties, such taxes shall be for the sole account of such Third Party.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement effective as of the year and date first written above.

**National Oil Corporation of Kenya**

By:   
Print Name: Summya Hassan  
Title: COO  
Date: 31/1/13

**Fugro Data Services AG**

By:   
Print Name: HANS MEYER  
Title: COO  
Date: 4/2/2013

## SCHEDULE 2 – TRAINING PROGRAM

A final program will be agreed between NOCK and Fugro to suit the individual needs and experienced of the trainees.

It is proposed to cover the following aspects during the training to be undertaken at a Fugro processing centre most likely where these data are being processed.

### Basic Seismic Data Processing (8 days)

#### Seismic method

- Wave and raypaths
- Reflection and refraction
- Energy Sources
- Receivers - Land & Marine
- Geometries - Survey layouts

#### Introduction to Processing

- Basic processing flow - Marine
- Basic processing flow - land
- Key processing steps/algorithms
  - Fourier and other transforms
  - Filtering in time and space
  - Deconvolution
  - Noise reduction
  - Multiple Attenuation
  - Static corrections - Refraction and residual
  - Velocity Analysis
  - Moveout corrections - NMO and DMO
  - Migration
  - Stack

#### Practical Exercises

## **Advanced Seismic Processing (12 days)**

### **Seismic Theory**

- Stress-strain relationship
- Wave equation
- Anisotropy

### **Migration**

- Time domain
  - Post-Stack and pre-Stack
- Depth domain
  - Interval velocity/depth models
    - Creation (well logs and velocity fields)
    - Updating (tomography)
  - Introduction of anisotropy
  - Depth imaging algorithms

### **Amplitude vs. Offset/Angle**

- Underlying theory
- Approximations to Zoeppritz's equations

### **Inversion**

- Deterministic - Post & Pre-Stack
- Stochastic

### **4D / Time-lapse for reservoir monitoring**

### **Multi-component**

- OBC / OBS: acquisition and processing

### **Borehole seismic**

- VSP

### **Practical Exercises**