TRANSMITTAL AND RELEASE OF GEOLOGICAL DATA

AS AGREED BETWEEN THE GEOLOGICAL SURVEY OF THE NETHERLANDS (RGD) AND NOGEPA

FINAL VERSION, MAY 6th, 1993,
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1. INTRODUCTION

As most of the rules and conditions regarding reporting and the supply of data in the various regimes covered by the Netherlands Mining Legislation (exploration licences, drilling permits, production licences and concessions) are basically the same, it has been possible to arrive at a uniform agreement.

As a basis, a central reference has been taken, viz. Chapter II art. 12 and 13 of the Royal Decree of 6 February 1976, pursuant to article 12 of the Continental Shelf Mining Act. Where the rules of the various regimes materially differ, these have been indicated. For ease of reference, the words "Licensee" and "Licence area" have been used throughout this document, i.e. these cover "Concession or Permit Holder" and "Concession or Permit Area".

This document lists and specifies geological data to be furnished to the RGD by onshore and offshore operators. This arrangement concerns data acquired as from January 1, 1988.

The types of data listed entail factual results of measurements, surveys or processing using techniques that are commonly applied in the industry, both by operators and contractors. These data are to be transmitted to the RGD on a routine basis or at specific request where so provided herein.

The operators are not obliged to carry out all the measurements as listed. They agree to supply the data if and when available. The data will be supplied as soon as possible after completion of processing or when data are ready for distribution.

Log data are supplied on sepia, and also, on loan for duplication by the RGD, on tape. Reports and listings etc. are supplied on paper only unless explicitely stated otherwise.
Seismic data are also supplied on one information carrier only; but 2D migrated data are supplied on sepia and on tape, on loan for duplication by the RGD, as indicated in the relevant section.

Data which need not be transmitted to the RGD on a routine basis, or at specific request, include:

- data generated by applying inhouse proprietary techniques (i.e. techniques, usually in the research stage, that are not commonly applied in the industry and/or offered by contractors),
- data generated by reprocessing in a later stage (e.g. reprocessed seismic), and
- data of a definite interpretative nature.

In her capacity as technical advisor to the Minister of Economic Affairs, the RGD may require data that were not transmitted routinely or at specific request, if relevant to the E&P business of the owner of the data (such as application for new acreage, application for a production licence or concession). The data required for such use will be furnished, either directly to the RGD or through the Minister. For E&P business more in general, but relevant for technically advising the Minister of Economic Affairs, RGD officials may view the necessary interpretative data in the operator's offices and may selectively request to receive copies of certain interpretations.

In cases that do not concern E&P business (e.g. waste storage in salt caverns, geothermal projects, activities of a general scientific nature), data and interpretations may be submitted on request to the RGD by the owner of the data, if he is willing to do so. Submittal then will be on a time restricted loan basis and reproduction costs will be charged.

This arrangement replaces all previous arrangements with respect to transmittal and release of geological data between the RGD and NOGEPA (including but not limited to the letters as specified in attachment 1) and between the RGD and individual members of the NOGEPA, with the exception of the individual arrangements between the RGD and certain onshore operators (RGD letters dated 4 December 1973 and 18 April 1974 and the response of those operators) which will not be affected by the present arrangement.
This arrangement provides for uniform, unambiguous, practical and cost-effective reporting of geological data by the industry to the RGD. It will be updated, as agreed mutually, when the need arises.

When a licensee intends to terminate his activities in The Netherlands, he is still legally committed to supply all data as specified in this document prior to the closure of his offices.

Part I lists all reporting that is standard for drilling permits, exploration licences, concessions and production licences. Part II lists other data and reporting. Part III provides a list of items of offshore data subject to public release after ten years.

A transitional arrangement has been agreed upon (attachment 2 to the Introduction).

There are four attachments.

2. PART I: STANDARD REPORTING ON CONCESSIONS, DRILLING PERMITS, PRODUCTION LICENCES AND EXPLORATION LICENCES

2.1 SEMI-ANNUAL REPORT

Within a month after June 30th and December 31st of each year, the licensee is required to submit to the Inspector General of Mines and the Director of the Geological Survey a report of the nature, place and scope of the investigations and other operations carried out by him during the elapsed six months. Semi-annual reporting will be done in accordance with the attached model (see attachment 3).

2.2 RESULTS OF THE RECONNAISSANCE INVESTIGATION

To the semi-annual report to be submitted to the Director of the Geological Survey, shall be attached the results of the geophysical, geochemical and other gelogical surveys carried out in the framework of a reconnaissance investigation.

2.2.1 SEISMIC

2D land and marine surveys

- Shotpoint location or CDP data on tape in UKOOA format.
- Filtered final stacked section on tape
- Sepia copy of migrated seismic data.*
- Tapes in SEG-Y format of migrated seismic data (when available) on loan for reproduction by the RGD for a period of 2 weeks in principle.*
- Stacking velocities on tape or if not available listed.
- Any additional data such as field geometry and processing parameters, needed to properly display seismic data.

* Note: The provision of sepia copies will cease after the RGD has completed the transition to automatic processing of tapes. Thereafter only tapes in SEG-Y format will be provided at no cost to the RGD.

3D land and marine surveys

- Migrated CDP position data on sepia (maps) and on tape in UKOOA format.
- Tapes in SEG-Y format of 3D migrated seismic data.
- Tapes containing the stacking velocities.
- Any additional data such as field geometry and processing parameters, needed to properly display seismic data.

General remarks
The RGD can accommodate tape but prefers a less voluminous information carrier e.g. the 8mm video cassette (Exabyte 2.3 or 5 Gbyte).

Although also the field data (being the field tapes/discs with pertaining survey information) are regarded as the results of the reconnaissance investigation these are not submitted on a routine basis but the RGD may obtain such field data at reproduction cost.

2.2.2 GRAVITY MEASUREMENTS AND (AERO) MAGNETIC MEASUREMENTS

The resulting contour maps on film.

The RGD may request the original field data at reproduction cost.

2.2.3 RESULTS OF GEOCHEMICAL AND OTHER GEOLOGICAL SURVEYS

Basic data obtained, for example with sediment analysis, with "sniffing" devices on land, airborne and subsea, and induced polarization or surface gamma-ray measurements.

2.3 RESULTS OF RECONNAISSANCE IN THE PRE-LICENCE PHASE

The results of the pre-licence phase reconnaissance operations in the licence area, at the disposal of licensee at the moment on which the licence has become effective, shall also be attached to the first semi-annual report.

The basic data concerned will only be submitted if and when specifically requested by the RGD.

2.4 WELL PROFILE

The licensee is required with regard to each well spudded by him within the licence area, to prepare and keep up to date a well profile as is usual in a modern drilling enterprise. After the completion of the well a copy of the well profile shall be submitted by the licencee as soon as possible to the Director of the Geological Survey.
The content and lay-out of well profiles (composite or final logs) shall be as prescribed in "Further Rules Mining Regulations Continental Shelf well profiles 1981" (attachment 4)

2.5 GEOLOGICAL DATA FROM WELLS AND THE RESULTS OF CHEMICAL AND PHYSICAL MEASUREMENTS

Operators will provide the RGD concurrently with copies of their daily telexed drilling reports to State Supervision of Mines.

After the completion of a well the geological data obtained from the well and the results of chemical and physical measurements, performed during the drilling or with respect to materials extracted by the drilling, shall be submitted by the licensee as soon as possible to the Director of the Geological Survey.

In this context, "as soon as possible" means for submission of data recorded during the drilling phase, not later than one month after completion of the well. Data which do not become available until later, such as processed versions, must be furnished not later than one month after becoming available to the licensee. Results of measurements in wells in a later phase than the drilling phase, must be submitted with the next semi-annual report.

General data such as name of well, location and date of registration/survey must be supplied. The form of the data to be furnished will, as a rule, be the same as the form in which those data are in the possession of the licensee.

2.5.1 GEOLOGICAL DATA OBTAINED FROM THE WELLS

In this context geological data are:
1. deviation survey (as listings or in digital form and plots)
2. "logs" (other than mentioned in par. I.5.2.1), like: mudlog, lithological log, master log, formation evaluation log, sample log, hydrocarbon log, gas log, chromatolog, mineral log

3. cores:
    - date of recovery
    - depth (interval) of recovery
    - type of recovery (conventional cores, sidewall cores)
    - type of coring technique (conventional, rubber sleeve, fiberglass, pressure barrel)
4. core photographs
5. core description
    - cores
    - sidewall cores
6. petrographic data
    - x-ray diffraction results
    - Scanning Electron Microscope photographs
    - grain size analysis
    - photographs of thin sections
7. geochemical data
    - vitrinite reflectance
    - fluorescence characteristics
    - Thermal Alteration Index (TAI)
    - Total Organic Matter (TOM)
    - Total Organic Carbon (TOC)
    - pyrolysis results (e.g. Rockeval)
    - gas/liquid chromatography results
    - mass-spectrometric results
    - elemental composition (e.g. isotopes)
    - oil gravity organic chemical composition

2.5.2 RESULTS OF CHEMICAL AND PHYSICAL MEASUREMENTS CARRIED OUT IN THE BOREHOLE

2.5.2.1 BOREHOLE MEASUREMENTS (WELL LOGS)

This concerns all results of measurements in boreholes carried out by, or by order of, the licensee.
At present the following main categories are distinguished:

- MWD (measurement while drilling) logs
- open hole logs
- seismic well logs (well shoots, calibrated sonic logs, VSP's, synthetic seismograms)
- technical well logs (CBL, etc.)
- cased hole logs
- production logs

Analog displays must be supplied on sepia on the available scales. Digital log data must be furnished on a current informationcarrier (presently: magnetic tape), in principle, exclusively according to one of the accepted industry standards (log runs of one well possibly together on tape) on loan for duplication by the RGD for a restricted period.
Additional data with respect to the logs, such as listings, acquisition or processing reports and such like, must be forwarded together with the relevant logs.

For practical reasons, the RGD at present does not request routine transmittal in digital form of technical well logs. In cases where more than one type of processing has been performed to the same set of log data, one version of each should be forwarded (e.g. dipmeter data, processed for borehole geometry, directional, structural, sedimentological information, etc.).

Results of processing of log data that are of a definite interpretative nature, however, need not be supplied routinely (e.g. in-house evaluations, contractor products such as Global/Epilog reservoir analysis).

2.5.2.2 WELL TESTING DATA

- operating and measuring conditions
- equipment data
- well completion data
- sequence of events
- bottom hole/wellhead pressure and temperature measurements
- flow rates of oil, condensate, gas, water

2.5.3 RESULTS OF CHEMICAL AND PHYSICAL MEASUREMENTS OF MATERIAL FROM THE BOREHOLE

2.5.3.1 RESULTS OF CORE MEASUREMENTS

In principle, core data are supplied on paper. However, conventional core data (porosity, permeability and grain density) and, where applicable, other core measurement results in digital form are supplied on floppy disc in ASCII-format or compatible. The text of the accompanying core report, containing the general data, will be supplied on paper.

<u>General data</u>

1. core gamma surface log
2. sample preparation
   - sample type
     - full diameter core, core plug, sidewall core, cutting
   - sample depth, geometry, orientation
   - core plugging fluid
   - extraction and drying procedures
   - mounting
3. analysis
   - date of analysis
4. sequence of measurements
5. measurement conditions
   - temperature, confining pressure, fluid systems used, fluid specifications

<u>Results:</u>

- porosity
- grain density
- fluid saturations
  - oil
  - water
  - gas (qualitative)
  - porosity from fluids summation
- electrical properties
  - formation factors vs. porosity (atmospheric/overburden)
  - resistivity index vs. water saturation (atmospheric/overburden)
  - cation exchange capacity (CEC, with porosity and grain density)
- permeability

  - sample orientation and direction of measurement
  - air permeability
    - pressure dependence (Klinkenberg effect)
    - pressure gradient dependence ("turbulence" effect)
  - liquid permeability
- cap rock permeability and threshold pressure
- capillary pressure vs. saturation
  (incl. depth, porosity, permeability, grain density, CEC)
- surface and interfacial tension, wettability
- relative permeabilities
  - base permeability
  - wetting phase, non-wetting phase
  - imbibition, drainage
  (incl. depth, porosity, permeability, grain density, CEC)
- fluid properties
  - oil: composition, gravity
  - pore water: composition (salinity)
- pore water volume compressibility
- Brinell hardness

2.5.3.2 RESULTS OF FLUID ANALYSIS

Results of Reservoir Fluid Studies

All factual data on oil (non-critical, near-critical), gas condensate and dry gas reservoir fluids (no proprietary interpretation need be supplied) e.g.:

- pressure-volume relation measurements
- differential vaporization measurements
- depletion measurements
- viscosity
- single/multi-stage separation tests
- molecular composition of separator gas, separator liquid, (recombined) reservoir fluid
- depletion tests

Results of analysis of wellhead fluids

Gas:
- hydrocarbons
- non-hydrocarbons, e.g. hydrogen sulphide, carbon oxysulphide, mercaptans, alkylsulphide, thiophenes, mercury, radon, helium, carbon dioxide, nitrogen
- specific heat content
- GPM content (C3+)
- z-factor
- specific gravity (air=l)
- stable isotope ratios

Condensate:
- hydrocarbons
- specific gravity
- sulphur content

Stock Tank Oil:
- hydrocarbons
- specific gravity
- kinematic viscosity
- water content
- Basic Sediment & Water (BS and W)
- Cloud point
- Pour point
- Salt content
- ASTM distillation
- Flash point
- Asphalt content
- Sulphur content
- Wax content
- Ash content
- Metal traces

Water:
- chemical composition (anions, cations, silica, pH)
- calcium content
- mercury content

2.6 SAMPLES

The licensee is required to preserve for a one-year period representative and labelled portions of all the rock, liquid and gas samples, obtained from a well in the licence area; a sufficient quantity of these samples, which with regard to rock has to be unwashed, shall be forwarded to the Director of the Geological Survey.

Rock and fluid samples must be forwarded as soon as the material has become available to the licensee. Gas samples only on request.

2.6.1 ROCK SAMPLES

- Drill cuttings
  Guide-line for furnishing of rock samples: unwashed, dried, at maximum 60^0 Celsius, at least 250 grams per

sample and with intervals equal to the sample intervals as used by the company. Wet samples in properly labeled linnen-type sacks with small perforations that allow natural drying are also acceptable.

- Cores (excluding sidewall cores or portions thereof): segments or slabs along the full length to be supplied within one year, unless otherwise agreed.

- Sidewall cores: residues, if available, or duplicate palynological slides are sent immediately after preparation to the RGD. When no such preparation has been done within one year, the RGD may apply for a representative part of the original material. In the latter case the company is free to decide if it prefers to send a part of the original material or prefers to make a slide at the time the RGD applies for the material.

2.6.2 FLUID SAMPLES

- Oil and condensate samples in suitable containers subject to availability
- Gas samples (only if requested within one year). When a gas sample is offered to the RGD, a decision on the need for that sample will be taken quickly.

2.7 FINAL REPORT

As regards areas for which the licence is no longer valid, the licensee submits to the Inspector General of Mines and the Director of the Geological Survey a full and final report on the activities carried out in relation to those areas. The results of the geophysical, geochemical and other geological surveys performed during reconnaissance as well as drilling shall be attached to the final report to be submitted to the Director of the Geological Survey. In a final report reference may be made to documents previously submitted on the subject. The report mentioned shall be submitted within three months after the licence for the appropriate area, or a part thereof, has ceased to be effective.

Guide-lines for the final report on exploration and drilling licences are given below.
With regard to a final report on production licences and concessions, it is not considered opportune at the moment to furnish guide-lines which deviate significantly from the report on exploration and drilling licences. For the time being, the addition of a summary of production activities will suffice.

2.7.1 FINAL REPORT

Guide-lines for the final report:

General information:

- an introduction with general information on the permit
- a summary of the exploration and production activities
- the geological setting, with a summary of well information, stratigraphy, local and regional geology, hydrocarbon prospects
- structural interpretation of the explored area, eventually with its surroundings
- conclusions

Maps:
- complete shotpoint maps, scale 1:50.000 or 1:100.000
- seismic time and depth contour maps, scale 1:50.000 or 1:100.000
- several characteristic, interpreted seismic profiles
- any other maps on reservoir geology, geological or structural setting

2.7.2 RESULTS OF SURVEYS CARRIED OUT IN RECONNAISSANCE AS WELL AS IN BOREHOLES

These are the results listed in paragraphs I.2.1, I.2.2, I.5.1 and I.5.2.
Reference may be made to relevant documents previously submitted.

2.8 REPORTING OF NEW DISCOVERIES

If the licensee has struck petroleum or natural gas in the licence area outside an already proven deposit, he is required to inform forthwith (i.e. by telex or telephone, subsequently confirmed in writing) the Minister, the Inspector General of Mines and the Director of the Geological Survey thereof. In practice, the Head of RGD's Reserves Section (at present Dr. J.N. Breunese) or, when not available, the Head of the Advisory Section (at present Ir. G.L. Snijder) should be contacted.
The presence of minerals shall be officially proven in the presence of and to the satisfaction of the Inspector General of Mines or an official appointed by him.

The announcement of a new discovery is accompanied by information concerning: location, results of production tests and an indication of the possible extent of the reserves, and, as early as possible after the discovery, complementary data with respect to the results of production test and reserve estimates. Such reporting will also apply to appraisal wells where already existing proven or expected reserves are modified substantially.

3. PART II: OTHER DATA TO BE FURNISHED

3.1 RECONNAISSANCE LICENCE

A reconnaissance licence provides, inter alia:

The licensee is required to submit to the Director of the Geological Survey and the Inspector General of Mines, within six months after the licence has ceased to be effective, a complete report concerning the location, nature and scope of the investigations and other operations carried out by him in relation to the licence area. To the report to be submitted to the abovementioned Director must be attached the results of the operations carried out.

3.1.1 REPORT

There are no specific guide-lines for the form and the contents of this report other than those mentioned above.

3.1.2 RESULTS OF GEOPHYSICAL SURVEYS

See Par. I.2.1

3.1.3 RESULTS OF GEOCHEMICAL AND OTHER GEOLOGICAL SURVEYS

See Par. I.2.2

3.2 PRIORITY DECLARATION

The relevant conditions for reporting are laid down in sections 2 and 9 of the "Arrangement geophysical survey in support of applications for drilling permits" between the Minister of Economic Affairs and NOGEPA (December 1982).

A request to the Minister for a priority declaration should include 20 copies of a map, scale 1:250.000, showing the area to be surveyed; at the same time, it must be sent to the Director of the Geological Survey and submitting therewith the proposed and sufficiently elucidated programme of the geophysical survey.

The advice of the Director to the Minister will include, inter alia, the period within which the results of the survey must be reported to the RGD maximum one and a half years. This report usually constitutes the basis for the application of a drilling permit. Therefore, the interpretation of the geophysical data in the form of maps and profiles relevant to the petroleum geology of the area is normally submitted as well.

3.2.1 PROGRAMME OF GEOPHYSICAL SURVEYS

The programme layout of geophysical surveys must be such that it can be regarded as adequate for the identification of prospects, which are possibly oil or gas bearing and which therefore may be considered for further reconnaissance by means of drilling. In addition, a very provisional indication of possible drilling locations must be given.

3.2.2 RESULTS OF THE INVESTIGATION

See Par. I.2.1

3.3 MAPS ACCOMPANYING THE SEMI-ANNUAL REPORT IN RESPECT OF PRODUCTION LICENCES AND CONCESSIONS ONLY

The licensee is required also to submit to the Director of the Geological Survey, together with a semi-annual report, maps upon which are recorded in a manner commonly used in a modern and well-managed oil or gas production enterprise, the area and the geological formations from which the oil or natural gas is recovered, as well as the location of the wells with the essential data thereof. If these maps have not been supplemented or modified significantly, reference may be made to previously submitted maps.

These maps are:

- Depth contour maps of the top of each of the reservoirs with wells and pertaining columns with fluid-fluid/gas contacts, boundaries of licence areas and other relevant details.

- Isopach maps, insofar as these data are relevant and have been prepared by the companies concerned.

3.4 REVISED WELL PROFILES

If a borehole is used for the production of petroleum or natural gas, the licensee is required, if the profile is changed, to submit a correspondingly revised well profile to the Director of the Geological Survey as soon as possible.

The content and the layout of revised well profiles (composite - or final logs) shall be as prescribed in "Further Rules Mining Regulations Continental Shelf Well Profiles 1981" (see attachment 4).

3.5 SITE SURVEYS

The Mining Regulations Continental Shelf, Art. 31a provide:

1. When a mining installation, mobile as an entity, is placed the bottom penetration as a result of that placing must be determined in a suitable manner; a suitable report thereof must be drawn up, copies of which shall be submitted forthwith to the Inspector General of Mines and the Director of the Geological Survey.

2. A mining installation, not mobile as an entity, may only be placed on the Continental Shelf after sufficient data have been obtained in respect of the bottom condition at the site of erection of the installation by instituting a suitable investigation; these data shall be submitted well before placing the installation to the Inspector General of Mines, the Director of Waterways and the Director of the Geological Survey.

The terms "suitable" and "sufficient" have not been clarified in further rules.

4. PART III: RELEASE OF GEOLOGICAL DATA

4.1 RELEASE OF GEOLOGICAL DATA

CSMA, Art. 29 provides:

1. All those who are, or have been, concerned in the enforcement of this act, are bound to secrecy in respect of all the facts that have become known to them in their capacity, insofar as they are not authorized or under the obligation, by their function, to impart their knowledge.

2. The obligation laid down in the first section no longer applies to the publication of geological information by an institution to be designated by the Minister - supplied by licence holders in virtue of provisions attached to such licences - as soon as 10 years have elapsed after such information was supplied.

The Minister has designated the RGD as the institution charged with the publication of the relevant data. Geological data acquired outside the Continental Shelf area will not be subject to publication. In practice, the period of 10 years takes effect as of the moment of survey or sampling of the data.

A catalogue of the data to be released and the costs thereof is kept up to date regularly by the RGD.

Borehole data are released twice a year, seismic data once a year. Three months before a release the RGD informs the relevant companies. There is then a one-month period with the possibility to make objections.

The data to be released specified hereunder, will be made available on paper or film, unless stated differently.

4.1.1 GEOLOGICAL DATA

For publication the following data qualify:

1. Drilling data
   - well location
   - borehole measurements (are made available on magnetic tape if the RGD has such tape at its disposal), with the exception of typically technical data
   - mud log
   - well profile (composite - or final log) (with the exception of specific paleo data)
   - conventional core analysis (porosity/permeability measurements and matrix density determinations)
   - core descriptions
   - official report of a discovery by the State Supervision of Mines
   - summary of test results
   - oil or gas analysis, formation water analysis

2. Sample material

   Rock samples and gas fluid samples, insofar as the RGD has these available, can be studied on certain conditions.

3. Seismic data
   - shotpoint location maps
   - 2D surveys: seismic sections of filtered final stack and filtered migrated stack on paper, sepia or on tape
   - 3D surveys: 3D migrated seismic data sets on tape

The results of reprocessing at a later stage are not transmitted to RGD on a routine basis and do not qualify for release.

4. Gravity and (aero) magnetic data

   The resulting contour maps

5. ATTACHMENT 1

Attachment to Introduction

Earlier arrangements between the Geological Survey of The Netherlands (RGD) and NOGEPA that are replaced by the present arrangement, effective January 1988.

Date	No.	Sender
08-03-1977	S3877 GB/NV	RGD
23-03-1977	S777 GB/NV	RGD
04-07-1977	----------	NOGEPA
04-07-1977	----------	NOGEPA
23-08-1977	S1377-Br/RvdL	RGD
22-12-1977	----------	NOGEPA
09-01-1978	GB/AG-7854	RGD
23-02-1978	S2478-Br/RvdL	RGD
21-03-1978	----------	NOGEPA
14-11-1978	BR/RvdL-Sl4678	RGD
18-12-1978	----------	NOGEPA
28-04-1982	AB/LL S12882	RGD
16-06-1982	----------	NOGEPA
07-12-1982	AB/LL S40782	RGD
17-01-1983	----------	NOGEPA
04-05-1983	CS/LH S13783	RGD
11-10-1983	----------	NOGEPA
16-01-1984	CS/LH S11684	RGD
17-02-1984	----------	NOGEPA
23-05-1984	CS/LH S16584	RGD
05-07-1984	AB/LH S21684	RGD
17-09-1984	No. 015	NOGEPA
29-01-1985	JvH/JD-85187	RGD
26-03-1985	No. 208	NOGEPA
04-07-1985	CS/CB-852543	RGD
04-09-1985	No. 325	NOGEPA
29-11-1985	CS/CB-854700	RGD
16-06-1985	AB/CB-862173	RGD
27-06-1986	No. 534	NOGEPA

6. ATTACHMENT 2

TRANSITIONAL ARRANGEMENT

A1 Log data of older wells for which no tapes (LIS, BIT) existed but which were digitized by or on behalf of the owner of the data:
The RGD may purchase these data for a price of Dfl. 1000,- (incl. BTW) per well from the owner. When several wells are requested they could be assembled on one tape.

A2 Digital log data of wells for which original LIS or BIT tapes exist for the period prior to 01-01-1988:
On request by the RGD these tapes will be supplied on loan for duplication by the RGD for a period of two weeks.

B Other data for the period prior to 01-01-1988:
In the period prior to 01-01-1988 the RGD has not always received all data which could reasonably be expected from the companies. In order to enable the RGD to complete her files where necessary, the RGD will contact companies involved to reach an acceptable solution. This does not imply that the post 01-01-1988 agreement will be applied retroactively.

7. ATTACHMENT 3

Attachment to Par. I.1, II.1, II.2, II.3

Model

Semi-Annual Report

PRIORITY DECLARATIONS, DRILLING LICENCES, CONCESSIONS (Territory)

and

RECONNAISSANCE LICENCES, EXPLORATION LICENCES, PRODUCTION LICENCES
(Continental Shelf)

Period 1 January 19 - 30 June 19

resp. 1 July 19 - 31 December 19

Contents

General

The semi-annual report deals with the nature, place and scope of the investigations and other operations of a licencee during the period under review. It provides an overview of data that have been generated. It has a direct relation to the NOGEPA-RGD document "Transmittal and release of geological data". At the end of this Attachment 3 there is a "Note for guidance in writing the semi-annual report".

I Changes in licence status and ownership

During the period under review there were the following changes in the licences:

I.1 Priority declarations

I.2 Drilling licences

I.3 Concessions

I.4 Reconnaissance licences

I.5 Exploration licences

I.6 Production licences

II Geophysics

During the period under review, geophysical activities took place as follows:

II.1 Seismic acquisition and processing

Survey name (prefix) :
Licence name :
Contractor :
Horizontal coverage :
Km/ Km^2 shot :
Date of completion :

Contractor processing :
Type of processing :

The geographical position of the surveys is indicated on the map, enclosure

II.2 Seismic data obtained by exchange, purchase or otherwise

Original survey name (prefix) :
Obtained from :
Km/ Km^2 :
New survey name (prefix) :
List of original and new line numbers :

II.3 Reprocessing of previously shot seismic

Survey name (prefix) :
Line number :
Contractor reprocessing :
Type of processing :

II.4 Velocity surveys in wells

II.5 Other geophysical surveys

III Wells

During the period under review the following well-drilling and directly related activities took place:

III.1 General data

Licence name	:		
Well name	:		
Well type (E, A, D)	:		
Co-ordinates	:	E/x	N/y
Elevation rotary table	:	MSL/ NAP	
Water depth	:	meters	
Drilling unit	:		
Target	:		
Date commencement drilling	:		
Date final depth	:		
Final depth	:	meters AH	
Final depth	:	meters TvD	
Date completion	:		
Result	:		
Status	:		

III.2 MWD surveys

Date	:		
Tool type(s)	:		
Interval	:	meters	
Bit size	:	inches	
Logging Company	:		

III.3 Cores

Date	:		
Core number	:		
Interval	:	-	meters
Recovered	:		meters

III.4 Sidewall cores

Date	:	
Depths of s.w.c.	:	meters

III.5 Wireline surveys

Date	:

Run :

Tooltype :

Bitsize : inches

Interval measured: - meters

BHT : ^{0}C

Mud type :

Mud density : g/ cc

Rm : ohmm at ^{0} C

Rmf : ohmm at ^{0} C

III.6 Well tests

Date :

Type :

Interval: : - meters

III.7 Pressure observations

Date :

Interval : - meters

III.8 Reservoir fluid analysis

Date :

Type of fluid :

Interval : - meters

IV Operations after the drilling phase

During the period under review the following measurements were carried out in wells, and the following measurements were made on materials from wells:

IV.1 Wireline surveys

Date :

Run :

Tooltype :

Interval measured: - meters

IV.2 Core analysis (core plugs)

Type of analysis	:		
Interval	:	-	meters
Report nr	:		
Report date	:		
Laboratory	:		

IV.3 Petrographical and geochemical analysis

Type of analysis	:		
Interval	:	-	meters
Report nr	:		
Report data	:		
Laboratory	:		

IV.4 Well tests

Date	:		
Type	:		
Interval	:	-	meters

IV.5 Pressure observations

Date	:		
Interval	:	-	meters

IV.6 Reservoir fluid analysis

Date :

Type of fluid :

Interval : - meters

V Miscellaneous

V-1 Pre-licence phase reconnaissance operations results

In the case of , a Reconnaissance licence has been changed into a Drilling licence (Territory), respectively an Exploration licence has been awarded (Continental Shelf). The data that had not yet been transmitted to the RGD earlier are listed in section VI "List of enclosures" and are attached to this semi-annual report.

V-2 Maps in respect of Production licences and Concessions

The cases in which new maps of producing fields have been made in the period under review are the following:

The relevant documents are listed in section VI "List of enclosures" and attached to this semi-annual report.

VI List of enclosures

Note for guidance in writing the semi-annual report

Title page Indicate the relevant period

Changes in licence status and ownership

I List the licences of the various types for which changes took place in the period under review. Indicate the changes and the dates thereof.

Geohysics

II.1 List the surveys and indicate the relevant data.

II.2 List the surveys and indicate the relevant data. Indicate per line the old and the new identifiers (line numbers) when re-labelling has taken place.

II.3 List the surveys. Indicate the type of re-processing and the relevant line numbers.

II.4 List the wells in which a velocity survey has been carried out.

II.5 List the other geophysical surveys that have been carried out or obtained otherwise. Indicate the areas.

Wells

III.1 List the wells. Also include sidetracks, re-entries etc. Indicate the relevant data.

III.2 List the MWD surveys and indicate the relevant data.

III.3 List the cores and indicate the relevant data.

III.4 List the sidewall cores with their respective depth values.

III.5 List the runs and indicate the relevant data (certain details will help the RGD with early recognition and further processing of digital data to be received).

III.6 List the well tests and indicate the relevant data.

III.7 List the pressure surveys and indicate the relevant data.

III.8 List the fluids (oil, condensate, dry gas, formation water) that have been analyzed and indicate the relevant data.

Operations after the drilling phase

IV.1 List the runs and indicate the relevant data.

IV.2 List the core- intervals and indicate the relevant data.

IV.3 List the cases in which petrographical and/ or chemical analysis has been performed and indicate the relevant data.

IV.4 List the tests and indicate the relevant data.

IV.5 List the pressure surveys and indicate the relevant data.

IV.6 List the fluids (oil, condensate, dry gas, formation water) that have been analyzed and indicate the relevant data.

Miscellaneous

V-1 Refer to the relevant licence changes (see section I), list the relevant data and attach them to this semi-annual report.

V-2 The following text, Par II.3 of the document "Transmittal and release of geological data" applies:

"The licensee is required also to submit to the Director of the Geological Survey, together with a semi-annual report, maps upon which are recorded in a manner commonly used in a modern and well-managed oil or gas production enterprise, the area and the geolocical formations from which the oil or natural gas is recovered, as well as the location of the wells with the essential data thereof. If these maps have not been supplemented or modified significantly, reference may be made to previously submitted maps.

These maps are:

- Depth contour maps of the top of each of the reservoirs with wells and pertaining columns with fluid-fluid/gas contacts, boundaries of licence areas and other relevant details.

- Isopach maps, insofar as these data are relevant and have been prepared by the companies concerned."