

**REGULATIONS RELATING TO RESOURCE MANAGEMENT IN THE
PETROLEUM ACTIVITIES (RESOURCE
MANAGEMENT REGULATIONS)**

18 June 2001

The Norwegian Petroleum Directorate (NPD)

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PREFACE

These regulations provide supplementary provisions within the areas under the Petroleum Act and the Petroleum Regulations which have been delegated to the Norwegian Petroleum Directorate, except provisions relating to fiscal measurement issues, which are dealt with in separate regulations. The Ministry of Petroleum and Energy is the appeal body for decisions made pursuant to the regulations. Appeals relating to decisions shall be forwarded through the Norwegian Petroleum Directorate, cf. the Public Administration Act, Chapter VI.

The purpose of these regulations is to promote an effective dialogue and co-operation between the parties responsible according to these regulations and the authorities, and in this connection also provide for cost/benefit evaluations. The regulations are intended to ensure satisfactory data acquisition and reporting etc. and are also intended to ensure that the interests of the fishing industry are taken duly into account in connection with seismic data acquisition.

The regulations are phase oriented according to the same structure as superior petroleum legislation. The first chapter deals with introductory provisions, including definitions. Chapters 2 and 3 deal with special requirements applicable to the period prior to and during exploration activities and drilling and well activities, respectively. Chapter 4 contains rules relating to naming and classification of deposits, discoveries etc. and Chapter 5 deals with material and information to be submitted or which shall be made directly available to the Norwegian Petroleum Directorate when the activities have been carried out. Chapter 6 contains general provisions.

Information to be submitted shall be communicated via electronic media. Information may in addition be submitted on paper.

The term “submit” means physical, including electronic, transmission to the Norwegian Petroleum Directorate or to someone designated as recipient by the Norwegian Petroleum Directorate. The term “make directly available” means that the supervisory authorities get access to the information via electronic information systems and may retrieve the information themselves as needed.

Comments have been prepared to these regulations, which provide supplementary explanation and guidance in respect of the provisions.

Thematic guidelines to these regulations of specific areas have been prepared. The thematic guidelines are available at the website of the Norwegian Petroleum Directorate.

REGULATIONS RELATING TO RESOURCE MANAGEMENT IN THE PETROLEUM ACTIVITIES (RESOURCE MANAGEMENT REGULATIONS)

Regulations relating to resource management in the petroleum activities (resource management regulations) issued by the Norwegian Petroleum Directorate 18 June 2001 pursuant to act 29 November 1996 no. 72 relating to petroleum activities, section 10-18, cf regulations laid down by Royal Decree 27 June 1997 no. 653 to act relating to petroleum activities, sections 46, 47, 48, 53, 79 and 86, cf delegation of authority by the Ministry of Petroleum and Energy 4 October 1991. Last amended 1 July 2010.

CHAPTER 1 INTRODUCTORY PROVISIONS

Section 1. Scope

These regulations apply to resource management in the petroleum activities in areas comprised by Section 1-4 of the Petroleum Act.

Section 2. Definitions, abbreviations etc.

The definitions of the Petroleum Act and the Petroleum Regulations apply to these regulations.

DEFINITIONS

For the purpose of these regulations, the following definitions shall apply:

Appraisal well:

Exploration well drilled to establish the extent and the size of a petroleum deposit that has already been discovered by a wildcat well.

Biostratigraphical range charts:

Table showing the occurrence of fossils in relation to sample depth

Drilling activity:

Preparation for and implementation of drilling operations

Cuttings:

Reservoir rock fragments from the drilling process.

Drilling programme:

Description containing specific well/well path information on planned drilling and well activities.

Well:

A well is a borehole which is drilled in order to discover or delimit a petroleum deposit and/or to produce petroleum or water for injection purposes, to inject gas, water or other medium, or to map or monitor well parameters. There are several categories of wells. A well may consist of one or several well paths and may have one or several termination points.

Well activity:

Preparation for and implementation of operations in connection with completion, data acquisition, monitoring, control, workover, modification and plugging of existing wells.

Wellbore:

Designates the location of the well from one termination point to the wellhead. A wellbore may consist of one or more well tracks.

Well target: Geological well target: that or those geological unit(s) into which the well is to be drilled, *Drilling operational well target:* The termination point of the wellbore (includes geographical coordinates and depths in meters).

Well track:

That part of a wellbore which extends from a point of drilling out on the existing wellbore to a new termination point for the well.

Field:

One or more petroleum deposits, which together are comprised by an approved plan for development and operation (PDO) or for which exemption from the PDO requirement has been granted.

Multilateral well:

Well drilled to produce and/or inject from several wellbores simultaneously.

Pre-drilling phase:

The period of drilling activity between the time of approval of PDO, or the granting of exemption from the requirement re. PDO, and the time of production start-up of the field.

Technical sidetracking:

Necessary drilling sideways (new well track) in order to bypass unforeseen obstacles in the well and where the geological and drilling operational well target remains unaltered.

Formation testing:

Testing of the production or injection properties of one single well for a maximum of 10 flow days. (Cf. Section 48 of the Petroleum Regulations and comments to same).

Formation test logging:

Repeated pressure/test measuring in a well (RFT)

Discovery:

One petroleum deposit, or several petroleum deposits collectively, which have been discovered in the same wellbore and in which through testing, sampling or logging there has been established a probability of the existence of mobile petroleum (includes both commercial and technical discovery).

Shallow boreholes:

Holes drilled in order to acquire information on the rock characteristics and/or carry out geotechnical examinations for the location of installations and which are not drilled to discover or delimit a petroleum deposit or to produce or inject petroleum, water or other medium.

Subsea completed well:

Development well completed with the wellhead either on the seabed or on a template, and connected to a production or injection facility.

Overall plan:

Programme containing all overall and general information relevant to drilling and well activities of development wells in new fields.

Injection well:

A development well or test development well used for injection of gas, water or other medium.

Completion activity:

Any installation of production tubing, packers and other equipment, as well as perforation of, stimulation, clean-out and killing of development wells. Shutdowns of reservoir zones or previously perforated intervals, as well as additional perforations, are similarly regarded as completion activity.

Exploration well:

A well drilled in order to establish the existence of a possible petroleum deposit or to acquire information in

order to delimit an established deposit. Exploration well is a generic term for wildcat and appraisal wells.

Exploration target:

The geological unit(s) the well is planned drilled into to prove a possible petroleum deposit which is not included in the resource basis for a field.

Log data:

Data acquired from all types of measurements carried out down hole.

Observation well:

A development well or test development well used to measure specific well parameters.

Oil-based drilling fluid:

Drilling fluid containing mineral oil and/or synthetic oil.

Junked well:

A well, which during the drilling phase has been permanently plugged for technical reasons.

Originally recoverable petroleum resources:

Total, marketable volumes of petroleum, from production start until production has ceased, based on the applicable estimate of volumes in place and recovery factor.

The Petroleum Regulations:

Regulations 27 June 1997 No. 653 to Act 29 November 1996 No 72 relating to petroleum activities, laid down by Royal Decree.

Production well:

A development well used for production of petroleum or of water for injection purposes.

Prospect:

A possible petroleum trap with a mappable, delimited reservoir rock volume.

Potential prospect:

A possible petroleum trap where the extent and quality of available data is insufficient for mapping or delimitation of the reservoir rock volume.

Test development well:

A well used for used for test development.

Reserves:

Comprise the remaining, recoverable, marketable petroleum resources from a petroleum deposit, which the licensees have decided to develop and for which the authorities have approved a PDO or have granted exemption from the requirement relating to a PDO. Reserves also comprise petroleum resources which the licensees have decided to develop but for which the authorities have not yet approved a PDO or granted exemption from.

Resources:

All estimated volumes of petroleum.

Resources originally in place:

Volumes of petroleum, which have been mapped according to geological methods, and which according to geological and reservoir engineering methods have been estimated to be present in a deposit. The estimate shall indicate volumes at market conditions.

Rig set:

10-20 g of all samples of cuttings from a well/well path. The samples have been washed and dried on the rig.

Side tracking:

Drilling of a well out from an existing well path towards a new well target. The original, lowest well section is plugged and permanently abandoned.

Inclined drilling:

Drilling of an exploration well the well path of which is planned to be non-vertical.

Wildcat well:

Exploration well drilled to establish (prove) whether petroleum exists in a potential petroleum deposit.

Development well:

A generic term for wells used for production of petroleum, production wells, injection wells and observation wells, and possible combinations thereof.

Recovery factor:

The ratio between the recoverable volume of petroleum from a petroleum deposit and the volume of petroleum originally in place in the deposit.

ABBREVIATIONS

CPI: Computer process interpretation log

CDRS: The Norwegian Petroleum Directorate's data base of drilling data (previously DDRS)

LAT: Lowest astronomical tide

MD: Measured depth

MSL: Mean sea level

MWD/LWD: Measuring and logging while drilling

POSC: Petrotechnical Open Software Corporation

RFT: Repeated formation test

RKB: Rotary kelly bushing

SI system: International system of metric measuring units

TD: Total depth

TVD: True vertical depth

UTM: Universal transversal mercator

VSP: Vertical seismic profile

Section 3. Responsibility according to these regulations

The licensee and other parties participating in petroleum activities comprised by these regulations are obliged to comply with the regulations and individual administrative decisions issued by virtue of the regulations through the implementation of necessary systematic measures.

In addition the licensee shall see to it that anyone performing work for him, either personally, through employees or through contractors or subcontractors, complies with the provisions contained in or issued pursuant to the present regulations.

CHAPTER 2 EXPLORATION ACTIVITIES

Section 4. Particular information in connection with exploration activities

The following information shall be submitted to the Norwegian Petroleum Directorate, the Directorate of Fisheries, the Institute of Marine Research and the Ministry of Defence:

1. No later than five weeks prior to commencement of the exploration activity:
 - a) designation of the exploration activity,
 - b) which exploration or production licence the activity shall be conducted under,
 - c) name of the holder of the exploration licence,
 - d) type of exploration activity to be conducted (seismic 2D or 3D, electromagnetic, shallow drilling, etc.),
 - e) name of the party carrying out the exploration activity,
 - f) planned start-up and conclusion dates,
 - g) planned extent of the exploration activity, both boat kilometres and CDP-km,
 - h) the exploration area (block, – necessary number of geographical coordinates – minimum four). The entire exploration area must be indicated, including area for necessary calibration and testing of equipment in connection with the exploration activity, as well as the area needed to turn the vessel),
 - i) number of air guns and total chamber volume, possible other signal sources,
 - j) number of streamers and length of the tow,
 - k) name of the vessel,
 - l) the vessels' call signals, IMO numbers and nationality,
 - m) calls, if any, into internal Norwegian waters,
 - n) name of the fishery expert if already known,
 - o) format of collected data,
 - p) whether the data shall be commercially available or not,
 - q) evaluation of whether the exploration activities could harm particularly vulnerable environmental resources.

2. On a weekly basis during implementation of the exploration activities:
 - a) designation of the exploration activity,
 - b) which exploration or production licence the activity shall be conducted under,
 - c) name of the holder of the exploration licence,
 - d) date the exploration activity will start. Conclusion date to be included on the last weekly report,
 - e) status of the activity, e.g. number of kilometres shot in total and during the last week, both boat-km and CDP-km,
 - f) name of vessel, call signal and name of fishery expert,
 - g) calls, if any, into internal Norwegian waters.

3. Changes in exploration activities, cf. Section 6 of the Petroleum Regulations:
 - a) if the activity is not commenced at the stipulated date, the licensee shall as soon as possible send a new report indicating the start-up date for the activity to the authorities as indicated in Item 1,
 - b) if the licensee wishes to continue the activity beyond the stipulated conclusion date, the licensee must submit information about the activity to the authorities as indicated in the first subsection no later than within ten working days prior to the stipulated conclusion date.

The Norwegian Petroleum Directorate may grant exemptions from the deadlines listed above.

The provisions in Section 4 also apply to track and other subsurface surveys that encompass acquisition of seismic data.

Section 5. Vessels that carry out seismic surveys on the Norwegian continental shelf

Vessels carrying out seismic surveys shall maintain a safe distance from vessels carrying out fishing activities and from fixed and floating fishing gear. Particular attention must be exercised when an accumulation of fishing vessels is observed.

Vessels carrying out seismic surveys shall have a fishery expert on board when required on account of the fishing activities in the area. In cases of doubt the Norwegian Petroleum Directorate has the final authority.

The nomination of the fishery expert for the individual survey shall be reported to the regional office of the Directorate of Fisheries in:

- Region South with regard to seismic surveys in the area south of 62°N,
- Region Møre og Romsdal with regard to seismic surveys in the area between 62°N and 67°N,
- Region Troms with regard to seismic surveys in the area north of 67°N.

If seismic surveys are to take place within more than one of the above-mentioned areas, the fishery expert shall be reported to the regional office of the area in which the main part of the activities will take place.

A report on the name of the fishery expert for the survey, together with the name of the vessel, timeframe and work area, shall be submitted to the applicable regional office no later than five working days prior to the planned commencement of the seismic survey.

Fishery experts shall act in an advisory capacity for the survey within their area of expertise and said experts must be assured of an unrestricted position. The duty as fishery expert shall be carried out in an objective and impartial manner with respect to the contractor company and the fishery interests.

The licensee and/or whoever is responsible for the operation of the vessels shall make the relevant provisions and data available to the fishery expert.

Accompanying vessels shall have a passive role vis-à-vis third parties.

The Norwegian Petroleum Directorate may grant exemptions from the deadlines listed above.

Section 5a. Special information in connection with exploration activities

Duty to implement position reporting

Vessels that conduct exploration for petroleum shall have on board and use equipment that monitors and reports the position and movements of the vessels. It is prohibited to shut down, damage or in other ways manipulate the position reporting equipment as long as the exploration activity is in progress.

Requirements to position reporting equipment

Requirements for position reporting equipment according to this regulation shall comply with the requirements in Regulations on requirements for equipment that shall be used on board fishing vessels for satellite monitoring, stipulated by the Directorate of Fisheries 23 December 1999 (J – report 241 – 1999). Requirements for service providers that forward monitoring data are given corresponding application, refer to the aforementioned Regulations, section 3.

Requirements for notification of signal activation

Vessels that shall commence exploration activity for petroleum shall send electronic notifications to the Directorate of Fisheries, who is appointed by the Norwegian Petroleum Directorate as system operator, for activation of reception of signals. The requirements for monitoring and registration commence when the sound sources are activated and as long as the exploration activity continues.

Position reporting

Vessels that conduct exploration for petroleum shall twice an hour, as long as the activity is in progress, automatically send position reporting data to the Directorate of Fisheries. The Directorate of Fisheries may collect position data for the individual vessel more frequently than twice an hour after instruction from the Norwegian Petroleum Directorate.

Position reporting data shall consist of the following information:

- a) unique identification for the vessel,
- b) the vessels geographical position at the time of reporting with a position error less than 500 metres with a confidence interval of 99 %,
- c) date and time of the vessel's position,
- d) speed and course when the report is sent,
- e) identification of the report type that is sent.

Section 6. Fishery expert on board vessels carrying out seismic surveys

The fishery expert shall have completed and passed the examination for an approved course. The Norwegian Petroleum Directorate stipulates the technical content, point in time and location for such course and issues the course diploma. A fee can be stipulated for course participation.

To participate on the course the candidate must be fluent in Norwegian and English and able to document that he has been active as a fisherman or a fishery expert for a total of at least twelve months during the last five years. The candidate must also prove knowledge of the fishery activity in the areas where the seismic vessel will operate. These areas are specified as south of 62 degrees north, between 62 and 67 degrees north and north of 67 degrees north. The candidate must, as a minimum, have a certificate of navigation equal to master of vessel class C or equivalent.

Also after the approved course is passed, the fishery expert must be able to document that he has been active as a fisherman or a fishery expert for a total of at least twelve months during the last five years.

The Norwegian Petroleum Directorate keeps record of the persons who have passed the course and issues a certification of the right to act as a fishery expert. The certificate has a duration of five years and must subsequently be renewed. The Norwegian Petroleum Directorate can stipulate that he who does not fulfil the activity duty as an active fisherman and/or a fishery expert or in other ways does not fulfil his duties as a fishery expert, may lose his right to practise as a fishery expert.

The fishery expert has a duty to familiarise himself with the contents of the licence and other relevant provisions. The manual for fishery experts will be stipulated by the Norwegian Petroleum Directorate and shall be brought along on every commission.

Section 7. Track surveys and other subsurface surveys

No later than five weeks prior to the commencement of track surveys and other subsurface surveys, the licensee shall send the following information to the Norwegian Petroleum Directorate, with copies to the Directorate of Fisheries, the Institute of Marine Research and the Ministry of Defence:

- a) the purpose of the surveys,
- b) time, duration and location of the surveys,
- c) survey methods,
- d) which vessel(s) will be used,
- e) drilling depth, if applicable

The provisions in Section 4 also apply to track and other subsurface surveys that encompass seismic data acquisition.

Mapping activity with hull mounted or ROV-mounted equipment, typical camera, video camera, multi beam echo recorder, penetrating echo recorder, sonar/side scan sonar and acoustic/electromagnetic pipe tracker is not comprised of the reporting duty.

Vessels that carry out track and other subsurface surveys shall have a fishery expert on board when necessary out of consideration for fishery activities in the area. If there is any doubt, the Norwegian Petroleum Directorate has the authority to make such decisions. A report including the name of the fishery expert for the

survey, the name of the vessel, time period and work area shall be submitted to the appropriate regional office in the Directorate of Fisheries no later than five working days prior to commencement of the activity.

The Norwegian Petroleum Directorate may grant exemptions from the deadlines in the first and fourth subsections.

In connection with track surveys and other subsurface surveys, drilling depth is limited to 200 metres below the seabed.

Prior to track surveys a map shall be submitted to the Norwegian Petroleum Directorate, showing the planned track and possible prospective areas. The scale and UTM coordinates shall be stated.

CHAPTER 3 DRILLING AND WELL ACTIVITIES

Section 8. Information and applications prior to drilling and well activities

Overall plan

An overall plan for drilling and well activities shall be prepared prior to such activities. The plan shall be submitted to the authorities together with the Plan for Development and Operation (PDO) or with an application for exemption from the requirement regarding such plan.

Permit for exploration drilling

The Norwegian Petroleum Directorate grants a permit for exploration drilling. Such a permit shall be granted for the individual well or well path prior to starting drilling activity. The permit will be granted on the basis of application of registration and drilling programme provided that other permits and consents required by other authorities have been granted.

Drilling programme

The drilling programme shall provide relevant information about geological and reservoir technical matters. The drilling programme shall be made directly available no later than the application for registration of wells and well paths is submitted. Reference is furthermore made to what is required in the regulations for health, environment and safety in the petroleum activities, with regard to availability and deadlines for drilling programme.

Registration of wells and well paths

The licensee shall obtain registration number and well/well path designation from the Norwegian Petroleum Directorate in respect of each separate well or well path prior to commencement of drilling activities. New well path designation shall be obtained in the case of side tracking to a new well target. Application for registration shall be submitted on a specified form no later than two weeks prior to the estimated commencement of the drilling activities. The application shall, together with the drilling programme, provide satisfactory information on the well, planned data acquisition etc.

Registration of shallow boreholes

The licensee shall obtain registration number for shallow boreholes, which are planned to be drilled to a depth exceeding 25 meters. This applies to all shallow boreholes regardless of whether they are based on an exploration license, a production license or a license to install and to operate facilities for transport and utilisation of petroleum.

Classification and reclassification of wells

The Norwegian Petroleum Directorate determines well classification. In the event of a need for reclassification, the licensee shall well in advance of change of use submit an application to the Norwegian Petroleum Directorate, which will determine new classification.

Information on formation test in respect of exploration wells and development wells prior to commencement of production on the field

Information on formation test shall be submitted to the Norwegian Petroleum Directorate ample time in advance, and no later than three days (72 hours) prior to commencement of the test activities.

Information on permanent plugging

Information on permanent plugging shall be submitted and the necessary logs shall be made directly available to the Norwegian Petroleum Directorate as soon as possible and no later than 24 hours prior to commencement of the activities.

General

The Norwegian Petroleum Directorate shall be informed of any substantial alterations in relation to the plans on which the Norwegian Petroleum Directorate based its original decision.

Section 9. Geological and reservoir technical data acquisition in connection with drilling and well activities

The licensee shall ensure that necessary samples such as cuttings, conventional cores, sidewall cores, liquid and gas samples, logs and test data are collected. The Norwegian Petroleum Directorate may stipulate requirements to data acquisition, processing and analyses in each individual case.

If not otherwise stated, the Norwegian Petroleum Directorate's standard requirements are:

Cuttings:

- a) in exploration wells samples of cuttings shall be taken of all rock types from all geological formations drilled and the sampling shall commence as soon as return of drilling fluid has been established,
- b) in a representative selection of development wells samples of cuttings shall be taken of all rock types from all geological formations in the reservoir,
- c) the interval between the samples should not exceed 10 meters,
- d) the interval between the samples in potential petroleum bearing layers of exploration wells should not exceed 3 meters if conventional cores are not taken.

Cores:

- a) in wildcat wells at least one conventional core shall be taken from all zones containing petroleum. Furthermore necessary cores should be taken of potential source rock types and reservoir rock types,
- b) from selected appraisal wells conventional cores should be taken from the entire reservoir section,
- c) from selected development wells conventional cores should be taken from the entire reservoir section,
- d) sidewall cores are to be taken to the extent this is necessary.

Fluids:

Fluid samples shall be taken in connection with formation testing, and formation test logging.

Logs:

- a) Well logs shall be run in all wells/well paths. The well logs shall be possible to correlate and shall at least enable an interpretation of lithology and estimation of porosity and water saturation,
- b) formation test logging should be carried out in exploration wells to establish pressure gradient and type of fluids in a formation as well as its producing capability.

CHAPTER 4 DESIGNATION, NAME AND CLASSIFICATION

Section 10. Well and wellbore designation etc.

The Norwegian Petroleum Directorate determines well and wellbore designation and classification of wells. Designation and classification takes place the first time at the registration of a well or a wellbore, and as required in respect of subsequent application for reclassification.

Section 11. Designation of shallow boreholes and other surveys

The Norwegian Petroleum Directorate will determine designations and classifications for surveys, including track and subsurface surveys.

Identification of shallow boreholes shall follow the same system as that which applies to wells/wellbores.

Section 12. Designation in respect of facilities

Facilities that are permanently placed shall be designated by quadrant/block number and letters from A to Z, excepting U and T, in respect of each field or block. If needed, the designations AA, AB, etc. may be used.

Section 13. Classification of petroleum resources on the Norwegian continental shelf

The petroleum resources shall be classified in accordance with the resource classification system of the Norwegian Petroleum Directorate. The originally recoverable petroleum resources shall be classified according to their position in the development chain from a discovery is made, or a new effort to increase the recoverable resources of a field is identified, and up to the point when the resources have been produced. A discovery or a field may have resources of several classes. All petroleum resources shall to the extent possible be designated by P10 - P expected - P90.

Section 14. Designation of petroleum deposits

A petroleum deposit shall be designated by means of the Norwegian Petroleum Directorate's well identification in respect of the discovery well, followed by a hyphen and the word "deposit". If there is more than one petroleum deposit in the same well, the geological unit shall be stated as additional information.

Section 15. Designation of discoveries

A petroleum discovery shall be designated by means of the Norwegian Petroleum Directorate's well identification in respect of the discovery well of the petroleum deposit or the discovery well in respect of one of the petroleum deposits followed by a hyphen and the word "discovery".

Section 16. Naming of discoveries

A petroleum discovery or a collection of discoveries may on application be named. The naming shall be done according to the rules applicable to the naming of fields. The well identification of the discovery well of the petroleum deposit or of one of several petroleum deposits, which make up the discovery, shall be kept before the name. The Norwegian Petroleum Directorate may if necessary require a discovery to be named.

Section 17. Naming of fields

The licensee shall, no later than the time of submission of the Plan for Development and Operation (PDO) or an application for exemption in respect of such plan, forward to the Norwegian Petroleum Directorate an application for consent to naming of the field. The field name shall be applicable as from the time when the Plan for Development and Operation has been approved or when the Ministry has decided not to require such plan to be submitted for approval.

If consent for use of a proper name has been granted in respect of a discovery or a collection of discoveries together, this may on application be carried on as a field name. If several named discoveries are comprised in a planned total development and operation, application for a new common name shall be submitted.

If a discovery located in the near vicinity of an existing field is decided to be developed in connection with the existing field, the discovery shall preferably be included in the existing field and the existing field's name shall be used provided that it belongs to the same production licence or has the same licencees and equal ownership share.

Final decision on naming is made by the Norwegian Petroleum Directorate.

CHAPTER 5 MATERIAL AND INFORMATION AFTER THE ACTIVITIES HAVE BEEN CARRIED OUT

Section 18. Format and marking etc.

Material and information which is submitted to, or which otherwise is made available to the Norwegian Petroleum Directorate, shall have unambiguous identification and shall be accompanied by necessary

technical information with regard to quality and properties. The Norwegian Petroleum Directorate may stipulate requirements in respect of format of material and information.

Section 19. Units of measure

Metric units of measure in accordance with the SI system shall be used in all documentation.

Section 20. Submission of material and information from exploration activities

The licensee shall as soon as possible, and no later than three months after the completion of the individual activity, submit the following material and information from the activities to the Norwegian Petroleum Directorate or to whoever is appointed by the Directorate to be in charge of data:

- a) processed seismic data, velocity data and navigation data,
- b) processed gravimetric and magnetic data in digital form,
- c) maps as transparency copies and/or in digital format such as:
 - Bouguer anomalies,
 - free air anomalies,
 - total magnetic intensity,
- d) processed seismic refraction measurements,
- e) shallow seismic profiles,
- f) analysis results, maps and profiles showing the results from other geophysical or geological surveys such as heat flow measurements, radiometric measurements, samplings etc.

In addition to the data mentioned above, the Norwegian Petroleum Directorate may require other significant data and results to be submitted in the format decided by the Norwegian Petroleum Directorate.

Section 21. Fishery expert log

The fishery expert shall keep a log (diary) according to a specified format covering the time he/she is present on board the seismic vessel. The log shall, after the mission is finished, be kept on file by the licensee for two years. Within two weeks after the mission is finished, copies of the log shall be sent to the Norwegian Petroleum Directorate, the Directorate of Fisheries and to the regional office of the Directorate of Fisheries for the area in question.

Section 22. Reporting during drilling and well activities

Daily reports from drilling and well activities

The licensee shall submit daily reports from drilling and well activities.

Ongoing activities shall be reported to the Norwegian Petroleum Directorate's drilling database, CDRS.

Reporting shall take place in accordance with the format prepared in the operational guidelines for the CDRS and in such was as described therein. New activities shall be reported during the entire life span of the well.

Special reporting in respect of development wells

Reporting in respect of geological/reservoir technical matters in connection with unforeseen events, which have occurred outside ordinary working hours, shall take place as soon as possible on the following ordinary working day.

Section 23. Submission of samples and preparations from wells

The licensee shall submit samples and preparations etc. from the individual well/well path to the Norwegian Petroleum Directorate. The material collected shall be submitted to the Norwegian Petroleum Directorate as soon as possible and no later than six months after completion of the drilling of the well.

Unless otherwise stated, the minimum requirement of the Norwegian Petroleum Directorate shall be the following:

Cuttings:

- a) from exploration wells samples from all rock types in all geological formations where samples have been collected shall be submitted,
- b) from the first development well on the field cuttings from the whole wellbore shall be submitted. If drilling later is carried out in formations not computed by the first well, cutting

- should be submitted from the whole reservoir interval in these wells,
- c) from unwashed cuttings at least 1 kg dried material shall be submitted from each sampling interval. Unwashed cuttings shall be dried at 40°C or lower. If the quantity of cuttings is limited, e.g. as a result of slim hole drilling, at least half the collected cuttings shall be forwarded, limited upwards to 1 kg,
- d) from washed cuttings one rig set shall be submitted.

Cores:

- a) where conventional cores are taken, a complete longitudinal section shall be submitted to the Norwegian Petroleum Directorate. It shall comprise at least one quarter of the core from exploration wells and one half of the core from development wells. If the core diameter is less than 7.6 cm (3 inches) the Norwegian Petroleum Directorate shall receive at least one half of the core also from exploration wells,
- b) if full diameter cores have been used for the purpose of special core analyses, the licensee may make an application for individual core intervals to be kept temporarily as full diameter cores and be treated for use in special core analyses. When such analyses have been carried out, the results shall be submitted to the Norwegian Petroleum Directorate. The rest of the material shall be sealed and kept at the operator,
- c) colour photographs of the cores shall be submitted together with conventional cores. The photographs are to be taken immediately after cutting, and shall show well path designation, core number, depth, orientation and scale.

Fluid samples from formation testing and formation test logging:

2 x 1/2 liters of each individual fluid (oil/condensate/formation fluid) from each interval/set of intervals tested. If a test yields less than 2 x 1/2 liter smaller quantities may be submitted. For all test types the fluid shall be sampled at ordinary ambient service conditions at the surface, i.e. ca. 101,3 kPa (1 Atm) and 20°C. This means that the lightest components evaporate, but otherwise the sampling shall be carried out in a way that ensures that the sample is as representative as possible of the formation fluid. Standard sample bottles are to be used and shall be filled to a maximum of ca. 85 percent of the total bottle volume.

Palynological preparations:

- a) duplicate of palynological preparations from cuttings, side wall cores and conventional cores where taken shall be submitted,
- b) the contents of preparations must be representative of the sample,
- c) preparations are made with a permanent mounting substance, preferably Elvacite or similar plastic polymer.

Format, packaging and marking of submitted samples:

- a) all samples shall be clearly and water resistant marked with licensee (operator), date of sampling, name of the person carrying out the sampling, the well designation and the depth, or depth interval, from which the samples have been collected,
- b) samples from formation testing and formation test logging shall in addition be marked with test number, test type (DST, RFT, MDT etc.), flow period (in respect of DST) and type of fluid (oil/condensate/ formation fluid),
- c) fluid samples shall be placed in 0.6-0.7 liter aluminium containers with a screw cap and seal of a type giving the lowest possible loss of hydrocarbons (standard sample bottle),
- d) samples of cuttings shall be packed in leak proof bags of good quality or in high density polyethylene containers (HDPE-containers). Each sample has to be well marked. Unwashed samples from intervals containing oilbased drilling fluid shall be kept in HDPE-containers. The overall exterior dimensions of the boxes shall be as follows:
 - height 14 cm
 - width 27 cm
 - length 90 - 110 cm
- e) conventional cores shall be delivered in solid, rigid boxes with the following exterior dimensions:
 - height 10 cm
 - width 40 cm
 - length 90 - 110 cm.

Section 24. Final reporting of geological and reservoir technical well data

The licensee shall submit a final geological and reservoir technical report in respect of each well / well path to the Norwegian Petroleum Directorate no later than six months after the individual drilling and well activity has been completed.

In addition to well data in digital format the report shall contain an overview of all collected data and analyses as well as factors, which may affect the measurement results. In respect of wildcat wells the Norwegian Petroleum Directorate requires both the prognosis and the result to be submitted by completing a particular form in digital format, which is to be enclosed with the Final Report. In the case of discoveries also the discovery evaluation report shall be submitted.

All depths shall be related to the drill floor/rotary table (RKB), and the logs shall indicate measured depth (MD) and true vertical depth (TVD). Information enabling the conversion of measured depth into vertical depth, as well as the well path geometry, shall also be included.

Section 25. Descriptions, analyses and interpretations of well data

All descriptions and analyses of well data shall on a continuous basis be made available to the Norwegian Petroleum Directorate. This applies also when interpretation or other updating is carried out.

Section 26. Status report at start-up of production

A status report describing alterations after approval of the plan for development and operation or the granting of exemption from the requirement for such plan with regard to measures to be taken, basic data, interpretations etc. and which are of importance to the development of the field, shall be submitted to the Norwegian Petroleum Directorate no later than six weeks prior to planned production start-up at the field.

Section 27. Daily reports during the production phase

Information on the most important production parameters such as gross/net production shall be made directly available to the Norwegian Petroleum Directorate on a daily basis.

Section 28. Monthly reporting of production data

The following volume data shall be reported on a monthly basis:

Production

- per well/well path and facility,
- allocated marketable products per facility/field (value adjusted),
- import/export per facility/structure,
- consumption (flare, fuel, diesel etc.) per facility/structure.

Injection

- per well/well path and facility

Stock

- quantities at end of month

Sales

- gas per owner and buyer,
- oil, NGL and condensate per vessel

Section 29. Contents of annual status report for fields in production

The report shall provide information to the authorities on matters relating to production on the field, including measures taken during the preceding period, and measures planned to be carried out in the coming year. The report shall also contain necessary explanations in respect of prognoses and resource estimates given in national budgeting reports, including basic assumptions, and of amendments in relation to the previous year's report.

The following main issues shall be covered in the report:

- general field status,
- activity report,
- plans for the period ahead.

CHAPTER 6 GENERAL PROVISIONS

Section 30. Supervisory authority

Supervision of compliance with the provisions of these regulations or decisions made pursuant to the regulations shall be carried out by the Norwegian Petroleum Directorate. The Norwegian Petroleum Directorate may make such individual administrative decisions as are necessary for the implementation of the provisions contained in these regulations.

Section 31. Exemption

The Norwegian Petroleum Directorate may in special cases grant exemption from the provisions of these regulations.

Section 32. Entry into force etc

1. These regulations enter into force 1 July 2001.
2. As from the time of entry into force of the present regulations, the following regulations shall be repealed:
 - Regulations 30 October 1991 No. 729, relating to fishery expert on board seismic vessels on the Norwegian continental shelf.