

**STATUTORY INSTRUMENTS
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STATUTORY INSTRUMENTS SUPPLEMENT

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**THE PETROLEUM (EXPLORATION AND PRODUCTION)
(CONDUCT OF EXPLORATION OPERATIONS)
REGULATIONS, 1993.**

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**STATUTORY INSTRUMENTS.
1993 No.77**

**The Petroleum (Exploration And Production) (Conduct of
Exploration Operations) Regulations 1993.**

*(Under section 69 of the Petroleum (Exploration and Production)
Act 7 of 1985).*

IN EXERCISE of the powers conferred upon the Minister
by section 69 of the Petroleum (Exploration and Production) Act,
these Regulations hereby made this 29th day of September, 1993.

Act No.7
of 1985.

PART I—GENERAL.

1. These regulations may be cited as the Petroleum (Exploration and
Production) (Conduct of Exploration Operations) Regulations, 1993.

Citation

2. (1) In these Regulations, unless the context otherwise requires-

Interpreta-
tion

“Act” means the Petroleum (Exploration and Production) Act, 1985;

Act No.7
of 1985.

“API” means the American Petroleum Institute, and references to API
standards are references to the specifications or standards of API which
are relevant to the subject matter in question;

“appraisal well” means a well being drilled to define the extent of an
already discovered oil or gas accumulation;

“ASCII” means the American Standard Code for Information
Interchange;

“authorised person” means a person appointed by the person-in-charge to
carry out a specific duty;

“BOP” means blow-out prevention or blow-out prevention system as the
context requires;

“circulation” means the passing of fluid down the drill pipe, casing or
tubing and up the surface or in the reverse direction;

“construction” means, in relation to a fixed platform, the building of a fixed platform or additions to it at a location within the licensed area by means of erection at the location of the individual components of the platform but does not include fabrication;

“construction platform” means a ship, barge or other vessel or floating structure from which construction or installation operations for or in connection with the exploration for, or recovery of petroleum are, or are to be carried out but does not include a fixed platform or mobile drilling unit;

“date of abandonment” means the date on which a well is abandoned either permanently or temporarily, in a manner approved by the Commissioner;

“date of completion” means a date on which a well is made ready to produce reservoir fluids or, if planned for some other purpose, the date on which it is left in a suitable condition to fulfil that purpose;

“deputy person-in-charge” means a person appointed by the person-in-charge in accordance with these Regulations to act for him in respect of specified duties;

“enhanced recovery” means the application of methods which supplement or modify the original natural forces within a reservoir so as to increase recovery of hydrocarbons, beyond that which might have been expected economically under the original natural forces alone;

“exploration (or exploratory) well” means a well being drilled with the object of discovering a new oil or gas accumulation or for the purposes of obtaining stratigraphical information which may assist in the discovery of a new oil or gas accumulation;

“fabrication” means, in relation to a fixed platform, the manufacture and assembly of individual components into integrated units outside the licensed area;

“fixed platform” means a structure fixed to the lake bed from which petroleum exploration operations or operations for the recovery of petroleum are, or are to be carried out and that is not, or is not to be, capable of being moved from one position to another as such a structure;

“formation test” means a temporary completion of a well by means of special testing equipment for the purpose of evaluating the potential productivity of a reservoir and obtaining a sample of the reservoir fluids;

“geological exploration” means geological investigation by any recognised method including remote sensing, surface and sub-surface mapping, geochemical and well logging methods in the study of the earth’s surface and sub-surface;

“geophysical exploration” means geophysical investigation by any recognised method including seismic, gravimetric, magnetic, electrical and radiometric methods in the study of the sub-surface;

“inspector” means an authorised person designated in writing by the Commissioner as an inspector;

“installation” means to erect or conjoin at a location within a licensed area, integrated units which have been fabricated;

“IP” means the Institute of Petroleum of London and references to IP standards and references to the specifications or standards of IP which are relevant to the subject matter in question;

“licensed holder” means the holder of a licence;

“licensed area” means the area covered by the licence;

“magazine” means a place where explosives are stored;

“mobile drilling unit” means a vessel or floating structure including a structure, any part of which may be lowered to the lake bed for the purpose of supporting the structure, that carries or includes equipment for drilling a well from the vessel or

structure, or carrying out operations on it, but does not include a fixed platform;

“mobile platform” means a construction platform or a mobile drilling unit;

“mud” means a drilling fluid consisting of any suitable mixture of water, oil, clay, or other material (or any admixture of all or any of those materials) commonly used in the petroleum industry, which will remove the drill cuttings from the hole and will also control rock and reservoir pressures, stabilise disturbed formation conditions and seal formation into which fluid from the hole is escaping;

“offshore operations” means operation carried out on or under a water body;

“operations” means petroleum exploration or production operations;

“operator” means a licensed holder or a person appointed by the licence holder to be in charge of an operation under the licence;

“person-in-charge” means person appointed by the operator in accordance to these Regulations to be in charge of any specified operations;

“plant” means drills, drilling equipment, derricks and masts, power units, pumps, workshops, warehouses, logging and testing units, separators, storage tanks, pipelines, vehicles and all other equipment, materials and tools used in a field operation;

“platform” means a construction platform, fixed platform or mobile drilling unit;

“production” means the volume of oil, gas or water produced;

“SEG(Y)” means the Society of Exploration Geophysicists (Code Y);

“separator” means an apparatus at the surface for separating fluids produced from a well;

“short hole” means a hole drilled for the purpose of firing an explosive charge in connection with seismic operations;

“short point” means the surface location and area immediately surrounding a short hole;

“suspend” means, in relation to a well or any operations, to discontinue temporarily;

“suspended well” means a well in which all operations have been suspended before completion or abandonment for a considerable period of time, with the intention of resuming operations at a later date;

“total depth” means the greatest depth reached by a well bore, measured along its axis; not necessarily a vertical depth;

“UKOOA” means the United Kingdom Offshore Operators Association;

“unitization agreement” means an agreement entered into under section 28 of the Act;

“vessel” means a vessel, not being a pressure vessel, used in navigation, other than air navigation, and includes a floating vessel and

“water body” includes a lake, bay, gulf, channel, river, estuary, canal, stream or other waterway.

(2) Except as specifically provided in sub-regulation (1) of this regulation, words and expressions defined in the Act shall, in these Regulations, have the respective meanings assigned to them in the Act.

(3) The definitions in sub-regulation (1) of this regulation shall extend with the necessary modifications, to the grammatical variations and cognate expressions of the words and expressions defined.

3. A license holder shall ensure that all operations carried out under the license are in accordance with these Regulations and in the case of any operation in respect of which an operator has been appointed, that operator and the license holder shall be jointly and severally responsible for ensuring the observance

Responsibility of licence holder and operator

of these Regulations and the liability of the license holder and operator shall be in addition to, and shall not affect or be affected by, the liability of any other person for any contravention or failure to comply with them.

Posting of Regulations.

4. A copy of these Regulations shall be kept on every mobile drilling unit, construction platform and all other manned platforms and shall be available at all times for perusal by all persons.

Person-in-Charge

5. (1) The operator shall appoint a competent person to be in charge of every operation under the license and shall immediately notify the Commissioner of the name, address and, if available, day and night telephone number of the person in charge, the operation of which he is in charge and his acknowledgement of the appointment

(2) Any change in the appointment of the person in charge or in the particulars specified in sub-regulation (1) shall also be notified to the Commissioner.

(3) The person-in-charge shall comply with these Regulations in so far as they relate to the operations of which he is in charge and shall ensure that all persons in his charge also comply with them.

(4) The person-in-charge shall also ensure that persons under his charge know and comply with the regulations referred to in sub-regulation (3) of these Regulations, are properly instructed and supervised, and are competent in the performance of their duties.

Deputy Person in Charge.

6. (1) The person in charge may appoint a competent person to be a deputy person-in-charge and may delegate to that person to such specified duties as he may think fit.

(2) The person-in-charge shall notify the Commissioner of the name and address of the deputy person-in-charge, the duties delegated to him and his knowledge of those duties.

Inspection.

7.(1) An inspector, authorised by the Commissioner, may at any time enter upon an area the subject of a license and inspect the operation and plant of the licence holder and the operator for the purpose of ascertaining that the provisions of these regulations

are being complied with.

(2) An inspector shall, upon reasonable demand, produce evidence of his authority.

(3) An inspector shall not, in exercising his powers under this regulation, unreasonably interfere with or delay the operations of the license holder.

(4) An inspector may make any investigation necessary to determine whether or not the provisions of the Act and these Regulations are being complied with.

8. (1) Every licence holder and operator, and his or their employees shall allow an inspector at any reasonable time, to have access to and to take notes from technical records concerning operational procedures under the licence, or matters related to those operations.

(2) The information obtained under sub-regulation (1) shall be treated as confidential and shall not be used for any purpose other than that allowed by the Act or a relevant agreement.

9. Where an inspector finds any plant in a dangerous condition or any practice or method of working in connection with operation carried out under a licence which is dangerous, or is not in accordance with these Regulations, or is contrary to good oilfield practice, he may give the person-in charge notice in writing to repair or replace that plant or remedy that practice or method of working, and the person-in-charge shall immediately comply with the notice.

10. (1) Whenever in the exercise of a power conferred by these Regulations, an inspector has made a decision with respect to any matter or thing, then, except where another mode of appeal is provided for by these Regulations, an appeal may be made by the person-in-charge to the Commissioner or to a person appointed by the Commissioner to hear appeals.

(2) If the person-in-charge is dissatisfied with the decision of the Commissioner or the person appointed by him he may appeal against the decision to the Minister whose decision shall be final.

(3) Notwithstanding the exercise by a person-in-charge of the right of appeal conferred by this regulation any decision appealed against shall be implemented pending the outcome of the appeal if the Commissioner so determines in the interest of safety and notifies the person-in-charge.

Inspector's access to technical records

Powers of Inspection.

Right of Appeal.

11. (1) The operator shall allow Government officers specified by the Commissioner to attend the operations in a training or monitoring role or both; except that the attendance shall not unreasonably interfere with or delay the operations.

(2) Before commencing operations, the operator shall invite the Commissioner in writing to submit the names of the Government officers to attend the operations in the training or monitoring role or both.

PART II – GEOLOGICAL AND GEOPHYSICAL OPERATIONS

12.(1) Not less than one month before the proposed date of commencement of geological or geophysical operations, or such other period as may be approved by the Commissioner, the license holder shall submit to the Commissioner, a notice of intention to carry out a geological or geophysical programme.

(2) The notice of the intention shall include details of but not limited to-

- (a) areas in which surveys are proposed to be made;
- (b) types and objectives of the surveys;
- (c) the proposed date of commencement and expected duration of the programme;
- (d) the equipment to be used and the names of the operator of every equipment;
- (e) the person-in-charge;
- (f) where applicable, the number, sizes, and nature of explosive charges or other energy sources to be used; and
- (g) the shot point and line number.

(3) The notice of intention shall provide a brief description of the geology and pre-existing geophysical information on or relating to the area and its relationship to the objectives of the survey.

(4) The notice of intention shall be accompanied by a map of the operational area showing proposed operational grid, and the map shall be of such type and scale as may be acceptable to the Commissioner.

(5) The notice of intention shall be accompanied by a report containing methods to be adopted to combat pollution and environmental damage in areas where operations will be carried out.

13. (1) The operator shall use an energy source for purposes of conducting a seismic survey, which is acceptable to the Commissioner.

Seismic Surveys.

(2) In the case of shot hole drilling-

(a) where the shot hole drilling is to be carried out on any road, in the vicinity of an inhabited area, or in a restricted area, the person-in-charge shall notify the local authority in whose area the road, inhabited area or restricted area is situated of the intended survey;

(b) the shot hole drilling programme shall not be commenced without the prior consent of the Commissioner and shall be subject to conditions determined by the Commissioner;

(c) wooden stakes, spikes, pins or other pointed metals shall not be driven into the carriage way of any road in the performance of any exploration programme;

(d) a permanent marker shall be set in place at points of intersection of shot hole lines, at intersections of a shot hole line with any road which has been formed or graded, any railway or other right of way or if no such intersection occurs, at intervals on each shot hole line of not more than 8 kilometres, and positions of these permanent markers shall be clearly indicated on maps of the operational area to be submitted to the Commissioner;

(e) when a shot hole is to be drilled in the vicinity of any gas, oil or water pipeline cable, transmission line or other public utility, every precaution shall be taken to ensure that the pipeline, electric cable and transmission line or public utility is not damaged or its use interrupted, and in no case shall the distance from a gas, oil, water or transmission rail line be less than 50 metres and from any utility 15 metres.

(f) unless otherwise approved by the Commissioner in writing, a

shot hole shall not be drilled within 200 metres from a borehole;

- (g) whenever shot holes are to be drilled within 200 metres of a locality on which is located any building or any public utility of any description, the location of the shot hole with respect to any such buildings or public utilities shall be agreed with the Commissioner;
- (h) when a drilling crew is in advance of a firing crew to the extent that a shot hole will not be fired on completion of drilling, a temporary plug or cover shall be placed in or over the shot hole until the firing crew is ready to fire the charge;
- (i) unless otherwise exempted by the authorised officer, shot holes shall be suitably plugged after firing with a plug of solid material and the disturbed area shall be restored as far as is practicable to its original state, and the operator shall also restore any subsequent damage due to cave-in or collapse of the shot holes.

Weekly reports.

14. The person-in-charge shall submit to the Commissioner weekly operations reports giving details of the operations carried out in the previous week.

General reports

15.(1) The license holder shall submit to the Commissioner complete copies of all reports prepared from the results of field investigations, specialised studies, or other activities relating to the licensed area within four months after the completion of those activities or within four months after the completion of a twelve month period of a continuing survey, whichever is sooner.

- (2) Reports required under this regulation shall contain, where applicable, the following information-
 - (a) the location of survey, including the method of determining the positions of measurements or observations with estimates of their accuracy, including, for marine or airborne surveys, the method of navigation used;
 - (b) the composition of the field party;
 - (c) the dates the survey began and finished;
 - (d) the type of survey, and the methods and equipment used;
 - (e) the purpose of laboratory or office work, its results and conclusions, together with all supporting geological,

geophysical and engineering data (whether raw, corrective or interpretive) that the operator has used in carrying out the work both within and outside Uganda unless prohibited by confidentiality;

- (f) the records of data, including where applicable, the time and location of an observation or measurement, together with observational data in their original form, and in their processed or corrected form, with a complete and adequate description of the method of processing or correction applied.

16. In addition to the information required by regulations 14 and 15 of these Regulations, geological reports shall, without limiting the general effect of those regulations, also include-

Geological reports.

- (a) the interpretation of the stratigraphy, structure, tectonics and any other factors related to the hydrocarbon potential of the area as well as correlation with other areas;
- (b) geological maps, sections, and columns prepared from the results of the surveys, including the

raw data from all work carried out (and including a cutting of all samples taken for whatever purpose) together with interpretive material whether resulting from the survey or from the integration of other regional geological, geophysical and engineering surveys, data and interpretations, with that or other surveys or other work both within or outside Uganda, unless prohibited by confidentiality;

- (c) any other significant information pertinent to the survey or the report.

17. In addition to the information required by regulations 14 and 15 of these Regulations, reports of gravity surveys shall, without limiting the general effect of those regulations also include-

Gravity survey reports

- (a) the position, elevation, and the value of gravity relative to a recognised datum, which shall be stated for every observation point;
- (b) a description of every gravity base station, including the position, elevation, and adopted gravity value;

- (c) the value of any terrain or topographic correction which may have been evaluated including the method used to evaluate it;
- (d) in the case of marine or airborne surveys, the course and speed of the vessel or aircraft, together with the depth of the water or height above terrain, as the case may be;
- (e) the density determination on rocks, or derived values;
- (f) the gravity-meter closure charts showing misclosures or adjustments;
- (g) all gravity anomaly maps and profiles prepared as part of the survey, all interpretive material, whether resulting from the survey or integration of other surveys or other work or data both within and outside Uganda, unless prohibited by confidentiality;
- (h) Where gravity data has been recorded on field magnetic tape, one copy of the tape in standard industry format or as may be specified by the Commissioner.

Magnetic survey reports.

18. In addition to the information required by the Regulations 14 and 15 of these Regulations, reports of magnetic surveys shall, without limiting the general effect of those regulations, also include-

- (a) the position, elevation, and the value of the magnetic field intensity relative to a recognised datum, which shall be stated;
- (b) for marine surveys, the water depth and the position of the magnetometer sensor relative to the vessel;
- (c) for magnetic vector measurements, the values of observed components or directions;
- (d) a description of every magnetic base station, including the position, elevation and adopted magnetic values;
- (e) the magnetic properties of all rock samples measured;

- (f) the magnetometer drift curves, calibration details, and loop closure charts, showing misclosures and adjustments;
- (g) all magnetic anomaly maps and profiles prepared as part of the survey;
- (h) where magnetic data has been recorded on field magnetic tape, one copy of the tape in standard industry format or as may be specified by the Commissioner.

19. (1) In addition to the information required by the regulations 14 and 15 of these Regulations, reports on seismic surveys shall also include-

Seismic survey reports

- (a) the type and characteristics of the explosives or other source of seismic energy and characteristics of the signal generated;
- (b) for offshore surveys, a map or maps showing the positions of shot points and the depths of operation of seismic energy source;
- (c) copies of fathometer records;
- (d) for onshore surveys, a map or maps showing the positions of shot points, the elevation of shot points with reference to mean sea level, and the depth below surface of the seismic energy source, together with the locations of all weathered zone surveys, uphole surveys and velocity surveys;
- (e) where a shot hole is used, the depth to ground water and a driller's lithologic log;
- (f) copies of observer's daily reports;
- (g) a navigation tape on UKOOA, ASCII or SEG (Y) format;
- (h) a copy of all record sections on the reproducible film which shall show all stacking velocities used, clearly displayed on the record section, together with the results of all weathered zone and velocity surveys acquired for whatever purpose;
- (i) copies of all field tapes made before brute stack;
- (j) final stack tape of all seismic lines in a readable format that shows all stacking velocities above the record section and processing parameters on the header;

- (k) copies of shot point base maps on appropriate scales on reproducible film; and
- (l) results of all interpretations made on seismic data, including but not limited to seismic maps in time and depth, both regional and detailed including all updates, velocity maps, picked record sections, prospect montages, and interpretive integrations with all geological and engineering data used of whatever kind both within and outside Uganda, unless prohibited by confidentiality.
- (2) The operator shall ensure that all data is acquired and processed so as to take into account intraformational and shallow formations including but not limited to basalts, loose sands, salts and overpressured shales and shall ensure that, if possible, and notwithstanding the presence of such formations, interpretable quality record sections are obtained.

20. (1) Where a license holder has carried out a review of existing data as part of his work programme, he shall immediately on completion of the review, submit a copy of the review report to the Commissioner.

(2) The review shall give the name of the author and provide a bibliography of the report on which the review is based, an interpretation of the data reviewed, and conclusions drawn from them supported by maps, geological sections, and columns and any other data relevant to the review.

PART III – DRILLING OPERATIONS.

Application for consent to drill

21. (1) An operator shall, before drilling any exploration or appraisal well, submit to the Commissioner-

- (a) at least three months before the spudding of an exploration well; and
- (b) at least one week before the spudding of an appraisal well, an application for consent to drill.

(2) An application for consent to drill shall specify details of-

- (a) the location of the well, including-
 - (i) the Greenwich latitude and longitude co-ordinates;
 - (ii) the ground level elevation;

(iii) in case of an offshore well, the water depth and an estimate of the kelly bushing or derrick floor elevation above sea level, lake surface and lake bottom;

in case of a deviated hole, the well trajectory, specifying deviation, measured, depth, and azimuth of hole location at regular intervals;

(v) in the case of vertical hole, the deviation limits at the bottom of the hole location;

(b) site preparation, including, without limiting the general effect of the foregoing-

(i) the site plan, specifying the location of the rig and its components, fuel tankage, drillwater tankage, bulk mud and cement storage, firewalls, drip trays and explosive magazines;

(ii) methods to be adopted to combat pollution and environmental damage taking into account water wells, rivers, forests, farmland, fishing activity and buildings in close proximity to the location of the well;

(iii) methods to be adopted for the disposal of waste, such as spent mud, cuttings and camp waste, from the location of the well;

(iv) safety precautions relevant to site preparation as described in the Institute of Petroleum Code of Safe Practice or any other appropriate code;

(v) site surveys indicating possibilities of the presence of shallow gas;

(vi) site clean-up plans for after well-abandonment;

(vii) security requirements, especially details of

fencing, guard arrangements, firewalls, flare pit and line, warning signs, hazardous area as specified in the appropriate IP codes of conduct, lights, access limitations, visitors reporting, safety shoes area, smoking areas and hard hat areas;

- (c) blow-out prevention methods, specifying-
 - (i) anticipated pressures;
 - (ii) the blow-out preventer assembly;
 - (iii) blow-out preventer tests, checks, and drills;
 - (iv) well head details and tests;
 - (v) casing seat tests;
 - (vi) choke manifold, choke and kill line, and test procedures;
 - (vii) drilling brake procedures;
 - (viii) flow check procedures;
 - (ix) gas shows procedures;
 - (x) shut-in procedures;
 - (xi) hang of procedures; and
 - (xii) well kill procedures;
 - (d) the well plan;
 - (e) a geological, geophysical and engineering prognosis for the well; and
 - (f) a formulation evaluation plan.
- (3) Unless otherwise provided in a unitization agreement, no well shall be spudded closer than 400 metres from a license area boundary nor shall it be deviated so that its bottom hole location or any portion of the well bore is closer than 400 meters from the licence area.
- (4) In this regulation, unitization agreement means an agreement entered into under section 28 of the Act.

22. The well plan referred to in sub-regulation (2) (d) of regulation 21 of these Regulations shall contain details of –

Well plan

- (a) the drilling rig, specifying, without limiting the general effect of the foregoing-
 - (i) the mast load and capacity, mast height and prime-movers; the draw works horse power, rating and capacity;
 - (ii) the drill pipe or drill collars sizes;
 - (iii) the rotary table torque and speed rating;
 - (iv) the pump number, size and pressure rating; and
 - (v) the substructure height;
- (b) the drilling programme, specifying, without limiting the general effect of the foregoing-
 - (i) the hole sizes planned;
 - (ii) an outline of the formation evaluation programme;
 - (iii) the mud drilling fluid programme;
 - (iv) the casing programme;
 - (v) the cementing programme;
 - (vi) the deviation survey programme; and
 - (vii) the site surveys.
- (c) the drilling time curve.

23. The outline of a formation evaluation programme referred to in paragraph (b) (ii) of regulation 22 of these Regulations shall include the details of-

Outline of formation regulation evaluation programme.

- (a) the mud logging unit, crew and equipment, and the parameters to be monitored such as
 - (i) rate of penetration;
 - (ii) total hydrocarbon mud gas;

- (iii) chromatographic mud gas;
- (iv) pit level;
- (v) flow line flow;
- (vi) drilling exponent;
- (vii) hydrogen sulphide and other non-hydrocarbon gases;

- (i) mud log details;
- (ii) pump pressure, weight-on-bit and revolutions per minute;

- (b) the sampling programme;
- (c) the well site geological programme and the extent of any discretionary power of the well site geologist to change the programme;
- (d) the coring programme, coring practice if hydrocarbons are encountered, and the extent of any discretionary powers of the wellsite geologist to change the programme of practice;
- (e) the logs to be run, the logging intervals and scale, and the additional logs to be run if hydrocarbons are encountered; and
- (f) the testing programme and the extent of any discretionary powers of the wellsite geologist to test open holes.

Mud drilling
Fluid
Programme

24. (1) the mud drilling fluid programme referred to in paragraph (b) (iii) of regulation 22 of these Regulations shall provide detail of-

- (a) the hole size
- (b) mud-type proposed;
- (c) weight;
- (d) viscosity;
- (e) salinities; and

- (f) other relevant parameters such as plastic viscosity or yield point and pH, and shall specify if hydrocarbon-based mud or air mud is intended to be used in the petroleum operations.

(2) Hydrocarbon-based muds may only be used in petroleum operations with permission of the Commissioner.

25. (1) The casing programme referred to in paragraph (b) (iv) of regulation 22 of these Regulations shall include-

Casing
Programme

- (a) a summary of casing setting depths and the criteria used in selecting those depths; and
- (b) a summary of casing strings to be run, including size, weight, grade and coupling, and the criteria used for the design of each casing string, and their specifications if they are not in accordance with API specifications.

(2) The design of the casing programme shall take into account-

- (a) the need to protect aquifers and the environment;
- (b) the fracture gradient of the formation at the proposed casing setting depth;
- (c) the possibility of encountering hydrocarbons;
- (d) the possibility of encountering loss of circulation; and
- (e) the necessity to protect the environment after well-abandonment.

26. (1) the cementing referred to in paragraph (b) (v) of regulation 22 of these Regulations shall provide details of the cementing methods for each casing string, depths of multistage tool where applicable, slurry weights, expected top of cement and method of

Cementing
programme.

verification, and shall specify any factors known that could adversely affect the quality of the cement job, and procedures to be adopted if circulation is lost.

(2) Where the operator determines that a well is to be permanently abandoned, the cementing programme in respect of the well shall, before the date of abandonment, be communicated to and approved by the Commissioner.

27. (1) The deviation survey programme referred to in paragraph (b) (vi) of regulation 22 of these Regulations shall provide details of the well surveying and directional control programme including the type and frequency of the survey to be utilised for each drilled section, the method of determination of well-bore position before drilling into any potential producing horizon, and a directional plot showing the intended path of the well-bore where applicable.

(2) Where a well is to be drilled in close proximity to an existing well, a directional plot showing both paths of each wellbore shall be provided.

28. The formation evaluation plan referred to in sub regulation (2) (f) of Regulation 21 of these Regulations shall provide details of-

(a) the duties, responsibilities and authority of the operator's wellsite geologist and in particular with respect to-

- (i) the lithologic log;
- (ii) ditch cutting sampling;
- (iii) supervision of mud loggers;
- (iv) supervision of wireline loggers;
- (v) making decisions to core and to test;
- (vi) show evaluation and show reporting ; and
- (vii) completion of daily geological reports;

(b) the responsibilities of the mud logger and in particular with respect to –

- (i) the preparation of the mud log and details of the mud log scale;

(ii) the distribution of the mud log;

(iii) the distribution of gas detectors and other charts;

(iv) mud log work sheets;

(v) the gas detection system to be employed on the well site by the mud logger with details of total gas, chromatographic gas, hydrogen sulphide and other non hydrocarbon gases; unit pressuring; calibration checks and periodicity; and pit drills;

(vi) alarm systems and responsibilities of the mud logger to report high mud gas to the driller, the wellsite geologist, the tool pusher and the drilling superintendent;

(vi) abnormal pressure detection methods and equipment to be used, including but not limited to mud gas detection; hydrogen sulphide and other non-hydrocarbon gas detection;

(c) alarm system for nitrogen, carbondioxide and other high gases; pit level monitoring; flow shows; mud weight in and mud weight out detention; drilling exponent or other similar formation pressure detection devices; fracture gradient monitoring, hold fill-up calculations; and online drilling parameter monitoring;

(d) ditch cutting intervals and ditch cuttings distribution, specifying-

(i) the number of both dry and wet samples required;

(ii) the intervals at which sample cuts are to be taken;

- (iii) the remedial action to be taken if sample quality falls or circulation is lost; and
 - (iv) methods of catching samples and monitoring gas if shale shakers are bypassed;
 - (e) the geochemical sampling programme dealing with sample quantity, number, preservation, total organic carbon, rock-eval pyrolysis, vitrinite reflectivity, spore coloration, gas chromatography or mass spectrometry and oil to source correlation; and
 - (f) the wireline logs to be run and the intervals over which they are to be run.
- Reports 29. (1) During the course of mobilisation, demobilisation and drilling operations, the operator shall send a daily telex or facsimile message to the Commissioner providing a summary of the day's operations specifying the present depth of any drilling operation, lithologies penetrated, mud gas shows, testing operations, drilling difficulties, and future plans including but not limited to, at least twenty-four hour prior to inception, any abandonment plans.
- (2) The operator shall maintain on the drilling rig and shall make available for inspection at any time by an officer authorised by the Commissioner for that purpose.
- (a) a Daily Drilling report;
 - (b) a Casing and Cementing Report;
 - (c) a Choke Manifold and Blow-out Preventer Test Report; and
 - (d) a Kick Sheet in the forms substantially similar to those contained in Schedules 1,2,3 and 4 to these Regulations or such other form as the Commissioner may approve.
- Cutting samples 30. (1) Unless otherwise directed by the Commissioner, the person-in-charge shall, wherever practicable, cause to be taken, preserved and maintained, a series of cutting samples of the formations which a drill penetrates, taken at appropriate intervals and taking into account the rate of penetration and good oil field practices.

- (2) Two sets of cutting samples shall be freely supplied to the Commissioner at each sampling interval, in a timely manner, and in any event not more than one month after the well has reached total depth.
 - (3) The first set of cutting samples shall be washed and dried and shall be supplied in a labelled conventional paper envelope.
 - (4) The second set of cutting samples shall be unwashed and sundried and shall be supplied in a labelled conventional cloth bag.
31. (1) Cores shall be placed in core boxes, or other suitable containers, with accurate labels of-
- (a) the well number;
 - (b) number of the core box;
 - (c) interval of cores; and
 - (d) percentage recovery of the core.
- (2) The Cores shall be suitably stored until delivered at the license holder's expense to the Commissioner in a timely manner, and in any case not more than two months after the well has reached total depth.
- (3) One-third of the vertically split core shall be supplied boxed and appropriately labelled or resinated if possible, to the Commissioner.
- (4) Sampling for any purpose shall be carried out in a manner consistent with Government's desire to have as complete a core record as possible.
32. (1) All formation fluid recovered from formation or other non routine production tests shall be sampled.
- (2) A copy of the results of the analysis of any sample made under sub-regulation (1) shall be sent to the Commissioner immediately.
 - (3) A sample of all formation fluids recovered shall be supplied to the Commissioner, the quantity of which shall be determined by the quantity available and by mutual agreement with the Commissioner.
- Cores
Fluid Samples.

Abandonment of a well.

33. (1) Every exploratory or appraisal well, whether it is a dry hole or a discovery, shall be abandoned in a safe condition.

(2) Subject to sub-regulation (3) of this regulation, the wells referred to in sub-regulation (1) of this regulation, shall be plugged with the appropriate cement plugs, the well-head removed and a steel plate welded on the top of the casing.

(3) The location of an abandoned well shall be restored to the original site condition to the extent possible and shall be marked with the well name and number in a manner approved by the Commissioner.

Well completion report.

34. (1) A completion report shall be forwarded within three months after the completion of any well by the person-in-charge to the Commissioner.

(2) Where in any well repair, re-completion or other operation, the previous completion of the well is in any way modified, a report detailing the operation and the results from it shall be submitted to the Commissioner, in a form acceptable to him, by the person-in-charge within six weeks after the completion of the operation.

(3) Where a well is suspended on completion of drilling and is to be brought into production at a later date when facilities are available or for any other reason, the completion report shall be prepared and sent to the Commissioner as soon as possible after the drilling, giving details of the drilling of the well and the reasons for the suspension and shall be brought up to date by a supplementary report to be completed when the well is finally completed and has been on a regular production for a period of one month.

PART IV – OFFSHORE OPERATIONS.

Fixed Platforms.

35. A fixed platform shall not be constructed or installed in a licensed area, unless-

(a) at least three months before the construction or installation is commenced, notice of intention to commence construction or installation of that platform has been given to the Commissioner;

(b) the Commissioner is satisfied that suitable arrangements have been made to enable an inspector to examine the fixed platform at any time during the construction of installation.

(c) Where the Commissioner so requires in respect of sections of the platform fabricated outside the licensed area for installation in the licensed area as prefabricated parts or sections, those parts or sections are before being so installed, approved by the Commissioner and verified in such manner (if any) as he determines; and

(d) The consent in writing of the Commissioner has been obtained and the construction or installation is carried out in accordance with that consent and this part of these Regulations.

36.An application for the consent of the Commissioner to the construction or installation of a fixed platform shall be made in writing and shall-

Applications for consent to construct fixed plat forms

(a) state the location at which it is intended to construct or install the fixed platform;

(b) state the reasons, including the geological evidence, for the selection of that location;

(c) be accompanied by copies of reports and recommendations made by persons responsible for ascertaining the criteria determining the design;

(d) state particulars of-

(i) the depth of the lake and the nature of the lake bed and sub-soil at that location;

(ii) the maximum and minimum air and lake temperatures likely to occur at that location during the period during which the fixed platform is expected to be in that location;

(iii) the characteristics of the waves taken

into consideration in determining the design of the fixed platform including heights periods and directions and an estimate of the probable distribution of wave encounters likely to affect the fixed platform during the period which it is likely to be in that location;

(iv) the water current data taken into consideration in determining the design;

(v) the maximum wind speed and the direction of winds and the estimated maximum one minute speed and estimated three second gust speed likely to occur during which the fixed platform is likely to be in that location;

(vi) details of estimated marine growth on the fixed platform taken into account in determining the design;

(i) the maximum dead and live loads likely to apply to the fixed platform; and

(a) Include such other information as the Commissioner requests.

37. (1) A person shall not, in any part of the licensed area, use a mobile platform for or in connection with offshore operations for the exploration for all the recovery of petroleum unless-

(a) it has been classified by a classifying authority in accordance with the rules of that authority for classifying mobile platforms of that class and the classification has not been cancelled;

(b) it is used and maintained in accordance with those rules as in force at the time at which it was classified; and

(c) the Commissioner has given consent in writing to the use of the mobile platform in that part of the licensed area.

(2) The Commissioner shall not give his consent under sub-

regulation (1) of this regulation to the use of mobile platforms unless he is satisfied that the mobile platform is in accordance with safety requirements as to load line, construction or otherwise and that the safety equipment including lifesaving, fire-fighting, radio or radio-telephone equipment is adequate.

(3) A person using a mobile platform for or in connection with operations for the exploration for or the recovery of petroleum shall, when so requested by the Commissioner or an inspector, produce for inspection any documents issued from time to time by the classifying authority under its rules relating to the use and maintenance of the mobile platform.

38. (1) A person shall not-

(a) move a mobile platform into the licensed area; or
(b) move a mobile platform into an area or location in which approved works are to be carried out or out of an area or location in which approved works are being carried out except and in accordance with the consent of the Commissioner.

(2) An application to the Commissioner for consent to the moving of a mobile platform shall, unless the Commissioner permits in exceptional circumstances, be made in writing at least seven days before the proposed moving and shall include –

(a) particulars of the proposed moving and the times at which the operation is proposed to be carried out at the locations concerned; and

(b) particulars of any bouy or under water obstructions proposed to be left at a location from which the mobile platform is to be moved.

(3) Notwithstanding anything in this regulation to the contrary, in the case of an emergency situation the operator shall take such immediate action as is necessary to protect life, limb and equipment and shall thereafter notify the Commissioner as soon as possible of the action taken.

Location of mobile platform

Mobile platforms

Raising or lowering of mobile platforms.

39. A person shall not, except in an emergency, raise or lower a part of the structure of a mobile drilling unit that supports the structure on the lake bed unless the operation is carried out –

(a) under weather and lake conditions that are not hazardous at the commencement of the operation and, at that time, are expected not to become hazardous within the estimated duration of the operation;

(b) under the supervision of a person suitably experienced to supervise the operation;

(c) with no more than the number of persons reasonably necessary for the carrying out of the operation situated on the mobile platform;

(d) with persons on the mobile platform situated only on the deck unless it is reasonably necessary for any of them to be on another part of the mobile platform;

(e) with a suitable rescue vessel situated near the mobile platform;

(f) with radio or telephone communication equipment enabling contact between the platform and all other vessels involved in the operation and the equipment is continuously monitored during the operation; and

(g) during the hours of daylight so far as practicable.

40. (1) At all times during which a platform is in the licensed area, unless the platform is unmanned-

(a) there shall be a person in command of the platform and of the operations being carried out from the platform;

(b) all persons on the platform shall be informed of the name of the person who is in command; and

(c) the name of the person in command shall be prominently displayed on the platform.

41. (1) At all times during which a platform is in the licensed area there shall be a public address system or telephone system sufficient to enable the person in command to give

Person in command of a platform

Public address or telephone system on platforms.

instructions to all parts of the platform.

(2) The public address or telephone system shall have a source of energy that enables it to be operated if the main electricity supply on the platform fails.

42. Each platform in the licensed area shall be marked in such prominent position as to be visible from all sides of the platform with an identifying name or number not less than 600 millimetres high on a yellow background and the name or numbers or the background shall be illuminated or coated with retro-reflecting film or fitted with retro-reflectors.

43. (1) Where a person has a platform in the licensed area, unless the platform is a fixed platform and no persons are on it, there shall at all times be maintained a station on shore from which radio or telephone communication is made to and received from the platform.

(2) Radio or telephone communications shall be made from the shore station to the platform at least once in each period of three hours except during a period when the person in command of the platform has ordered by reason of operations being carried out on the platform, that the communication shall not be made.

(3) Where the shore station is unable (except by reason of an order of the person in command of the platform) to make contact with the platform by radio or telephone, arrangements shall immediately be made for contact with the platform to be made by a surface vessel or aircraft, unless a stand-by vessel is stationed in the immediate vicinity of a platform during periods when radio interference makes communication between the shore station and platform ineffective.

44. Where a vessel or aircraft is in transit between a shore station and a platform in the licensed area or a vessel or aircraft is in the licensed area in connection with operations being carried on in the licensed area, the vessel or aircraft shall be controlled and monitored from a shore station or the platform or both.

45. Where it is possible to do so, a helicopter service shall be maintained between each platform in the licensed area and a shore station or, where it is not possible to maintain a helicopter service, a

Marking of platforms.

Shore station

Control and monitoring of vessels and aircraft..

Helicopter or other rescue craft.

vessel equipped with radio communication equipment and suitable for use in rescue operations shall be maintained at a place from which it can sail to the platform within one hour.

Record of arrival and departure from platforms.

46. (1) In relation to each platform in the licensed area, a record in accordance with this regulation shall be kept of each arrival of a person at and each departure of a person from the platform.

(2) A record in accordance with this regulation shall-

- (a) be in writing;
- (b) be kept at the platform to which it relates; and
- (c) specify-
 - (i) the date and time of arrival or departure of each person arriving at or departing from the platform;
 - (ii) the date and time of arrival or departure of each person at or from a place on shore for the purpose of travelling from or to the platform; and
 - (iii) the name of each such person, and where he is travelling to or from the platform in the course of his employment, the name of his employer.

(3) A copy of a record relating to a platform kept in accordance with sub-regulation (2) of this regulation shall be kept at the place on shore from which persons depart when travelling to the platform.

PART V – POLLUTION PREVENTION AND CONTROL.

Fisheries Observer.

47. If the Commissioner so requires, the person-in-charge shall provide facilities for the inspection of operations carried out in water bodies by a fisheries observer appointed by the Commissioner for Fisheries.

Duties of Fisheries Observer.

48. If the fisheries observer is present, he shall-

- (a) assure that the conditions of any required approvals are

followed by the operator; and

- (b) observe the effects of the operations on fishery resources and their habitat.

49. If the Commissioner so requires the person-in-charge shall provide facilities for the inspection of operations carried out in game reserves by a wildlife observer appointed by the Chief Game Warden.

Wildlife Observer.

50. If the wildlife observer is present he shall-

- (a) assure that the conditions of any required approvals are followed; and
- (b) observe the effects of the operation on wildlife and their habitat.

Duties of Wildlife Observer.

51. (1) In carrying out exploration, development and production operations and the transportation of oil and gas, the license holder and his operator shall operate in a manner that ensures the prevention of pollution of the environment.

Pollution Prevention

- (2) In the disposal of any waste material, a license holder shall not create any conditions which may adversely affect public health, life, property, aquatic life, wildlife or vegetation.

52. The operator's sub-contractors shall be informed by the operator in writing, prior to executing contracts with them, of the operator's obligations to prevent pollution and of the provisions of these Regulations.

Duty to inform sub-contractors of obligations.

53. (1) Before drilling operations are commenced in any licensed area, the person-in-charge shall submit, for approval by the Commissioner, a description of procedure, personnel, equipment and materials that will be used in reporting, clean-up, and prevention of the spread of any pollution resulting from exploration or development activities.

Pollution control procedures equipment and materials.

- (2) The pollution-control equipment and materials referred to in sub-regulation (1) shall be maintained by, or shall be available to, each operator at a location approved by the Commissioner after consultation with the Commissioner for Environmental Protection.

- (3) The equipment shall include containment booms, skimming apparatus, clean-up materials, and chemical agents and shall be available before the commencement of operations.
- (4) Pollution-control equipment and materials shall be inspected monthly and maintained in a state of readiness for use.
- (5) The result of the inspection shall be recorded and maintained at the site.

Instructions, drills and training in techniques.

- 54.** (1) The operator's personnel shall be instructed in the techniques of equipment maintenance and operation for the prevention of pollution.
- (2) Drills and training classes for familiarisation with pollution control equipment and operational procedures including deployment of equipment shall be held by the operator at least annually at both the offshore and onshore locations.
- (3) To provide for observation by government personnel, sufficient notice shall be given by the operator to the Commissioner prior to all drills and training classes.

Maintenance of platforms or structure to prevent pollution.

- 55.** (1) All walking and working surfaces of platforms and structures shall be equipped with proper drainage to provide safety for personnel and to prevent pollution.
- (2) Curbs, gutters, and drains shall be installed in all deck areas to collect all contaminants in a closed sump and when open decks are used, drip pens or the equivalent shall be placed under equipment and piped to the closed sumps.
- (3) The closed sumps shall be of a type that automatically maintains fluid at a level sufficient to prevent the discharge of oil into the waters in which the platform or structure is installed.
- (4) Contaminants that are removed from sumps shall be treated and disposed off in a manner that will ensure that the effluents to be discharged are of a minimum acceptable limit of concentration and will not degrade the environment.

- 56.** (1) Drilling mud shall not be disposed of into any lake, river, stream, pond or other water body.
- (2) Produced water may be disposed off in an operating area only if the Commissioner approves of such disposal and only then subject to the following -
- (a) the oil content of produced waters discharged from offshore platforms shall be reduced to an average of not more than 10 mg/l during normal operation;
 - (b) four samples shall be taken each month over a twenty-four-hour period at all produced water disposal points;
 - (c) the samples shall be submitted to an independent laboratory to be analysed for oil content and a copy of each laboratory shall be submitted to the Commissioner if the average oil content of the four samples exceeds 10mg/l or if the oil content of any sample exceeds 20 mg/l, corrective action shall be taken;
 - (d) more frequent sampling and analysis may be required until consistent satisfactory reductions in oil content have been achieved.
- (3) All sewage shall be macerated to prevent the discharge of floating solids.

Disposal of Liquids.

- 57.** (1) Drill cuttings, sand, and other well solids shall not be disposed of in an operating area, unless all the free oil has been removed and only if the Commissioner approves of such disposal.
- (2) Containers, equipment and other similar solid waste materials shall not be disposed of into any lake, river, stream, pond, or other water body except in an emergency if so disposed, shall be removed from them as soon as conditions return to normal.
- (3) The location and description of any solid materials disposed of shall be reported to the Commissioner.

Disposal of solid materials.

Pollution inspection.

58. (1) Manned drilling and production facilities shall be inspected daily to determine if pollution is occurring.

(2) Maintenance or repairs which are necessary to prevent pollution shall be undertaken and performed immediately.

(3) Unattended drilling and production facilities, including those equipped with remote control and monitoring systems, shall be inspected daily or at intervals prescribed by the Commissioner to determine if pollution is occurring.

(4) Maintenance or repairs which are necessary to prevent pollution shall be undertaken and performed immediately.

Pollution Reports

59. (1) All spills of oil and liquid pollutants and all other instances of pollution occurrences shall be immediately reported orally to the Commissioner and shall be confirmed in writing.

(2) All reports shall include the cause, location, volume of spill, and action taken to combat the pollution.

(3) Reports of spills in a water body of more than 5.0 cubic metres (31.5 barrels) shall include information on the state of the water body, meteorological conditions and the size and appearance of the slick.

(4) Spills shall be reported orally under sub-regulation (1) within the following time limits-

- (a) within twelve hours, if spills are 0.1 cubic metres (.63 barrels);
- (b) without delay, if spills are more than 0.1 cubic metres (.63 barrels).

(5) Each operator shall notify other operators of the existence of pollution from his own operation and from the operations of other operators.

(6) The Commissioner shall provide a copy of every report received by him under this regulation to the Commissioner for Environment Protection.

PART VI – EXPLOSIVES.

60. Subject to the provisions of the Explosives Act, this part of these regulations shall apply wherever explosives are stored or used in connection with the exploration for and production of petroleum; except that the commissioner may approve other procedures in special circumstances.

61. (1) No explosive shall be imported by a licence holder or operator into Uganda for use in petroleum operations, unless under a permit issued by an officer mentioned in rule 24 of the Explosives Rules.

(2) When applying for a permit to import explosives, the licence holder or operator shall furnish an exact description of the explosives which it is desired to import and the name of the country from which it is desired to import such explosives.

(3) In the case of gun powder and blasting cartridges, the applicant shall state the net weight of the explosives and in the case of detonators or safety fuse, the exact number of detonators or coils.

(4) Applications made under this regulation for a permit shall be made through the Commissioner.

62. (1) Explosives for use in petroleum operations shall be transported under a permit issued by an officer mentioned in rule 24 of the Explosives Rules.

(2) Applications made under this regulation for a permit shall be made through the Commissioner.

(3) Explosives shall be transported in accordance with the following provisions-

(a) explosives and detonators shall be transported in separate closed containers and shall be packed so that they are protected from shock, heat, sparks or water;

(b) a vessel or vehicle carrying explosives shall be kept in good safe mechanical condition;

(c) the master or driver of the vessel or vehicle shall sail drive carefully and shall ensure by wedging or other means that the containers of explosives cannot fall off,

Application Of this part of the Regulations.

Cap. 309, Laws of Uganda.

Importation of Explosives for Petroleum Operations.

Vol. 5 Laws of Uganda S 1309-1.

Transportation of explosives.

fall over, slide about or bounce;

(d) only the persons necessary for the operation on which the vessel or vehicle is engaged shall travel on the vessel or vehicle carrying explosives;

(e) a vessel or vehicle carrying explosives shall be provided with adequate storage for the explosives and with such number of fire extinguishers as the commissioner may require including at least one suitable for use against electrical fires;

(f) a vessel or vehicle carrying explosives shall fly a red flag at all times and shall display distinguishing lights during the hours of darkness; and

(g) sparking, conduction or flammable material other than explosives and their containers shall not be carried in the explosives compartment of the vessel or vehicle.

Storage of explosives.

- 63.** (1) In addition to the requirements of the Explosives Act, an operator shall store explosives used in petroleum operations in accordance with the requirements of this regulation.
- (2) Explosives shall be stored in a cool and dry place.
- (3) Explosives shall not be stored except in such type of magazines and in such quantities as may be approved in writing by the Commissioner.
- (4) Only temporary operational storage of explosives may be made in offshore magazines and only with the approval of the commissioner and in such cases, a notice warning of the danger shall be prominently displayed and a red flag shall be flown from the structure with the offshore magazine.
- (5) Detonators shall not be stored in the same magazine as other explosives.
- (6) Except where approved by the Commissioner, detonators other than electric detonators shall not be issued from a magazine for use unless attached to a fuse.
- (7) If artificial lighting of a magazine is required, portable electric lanterns or flash lights of a flame proof construction shall be

used.

- 64.** (1) Every magazine shall be under the charge of the person-in-charge or of an authorised person who shall at all times have in his possession the keys of the magazine and who shall be responsible for the safe storage of the explosives contained in it.
- (2) The name of the authorised person shall be entered in a record book kept for the purpose by the person in charge.
- 65.** (1) Explosives taken from a magazine shall be conveyed directly to the place of use in a securely covered case, canister, or other suitable container of a type and pattern approved by the Commissioner.
- (2) Separate containers shall be used for conveying explosives, capped fuse and electric detonators.
- (3) Explosives shall not be taken from a magazine except in such quantity as may be required for a particular operation, and any surplus explosives shall be returned the same day to a magazine unless the Commissioner approves temporary storage in approved containers.
- 66.** (1) When explosives are withdrawn from a magazine for use, as far as may be practicable, the oldest explosive shall be removed first for use.
- (2) A case of explosives shall be opened only with implements made entirely of wood, fibre, bronze, brass, rubber, plastic or other minimum sparking materials.
- (3) Explosives found to have deteriorated shall not be used, and shall be destroyed promptly by commonly accepted methods under the direct supervision of the person-in-charge or a person authorised by him.
- (4) Plugs of explosive shall not be broken but shall be cut on a wooden surface with a knife made of minimum sparking material and with a fixed blade.
- (5) Capped fuses shall be prepared by an authorised person and in a suitable place approved by the Commissioner.
- (6) All fuses shall be cut to the required lengths with a sharp instrument and detonators shall be crimped on the fuse by a

Authorised to person in charge of storage of magazines.

Conveying explosives from magazines to place in use.

Use of Handling And Preparing explosives.

crimper approved by the Commissioner.

(7) Explosives shall not be placed near an open flame, naked light, open fire or open heating unit.

Responsibility Regarding Workmen using explosives

Capt..309.

67. (1) A workman shall not use, handle, prepare or fire the explosives unless-

(a) A workman is competent in accordance with the Explosives Act to use, handle, prepare and fire the explosives or is performing his duties under the direct personal supervision and direction of a person competent to use, handle, prepare and fire the explosives; and

(b) The workman is over the age of eighteen (18) years and has a good understanding of these Regulations.

(2) Where more than one workman are involved in the same operation of handling, charging or firing explosives, the workmen shall be jointly and severally responsible for the proper handling, charging and firing the explosives.

(3) A person handling, charging or using explosives shall not have in his possession any burning or incandescent material which is exposed.

(4) A person entering or being in a magazine shall not have in his possession any burning or incandescent material.

Warning to be given of firing operations.

68. The person supervising explosives firing operations shall, before firing explosives, warn all persons in the vicinity likely to be affected by the explosion and shall ensure that no unauthorised persons are in the vicinity of the operational area.

Apparatus used in firing operations.

69. (1) For the purpose of electrical firing, suitable and efficient circuit testers, exploders, switches, fuses, conductors, and other necessary apparatus shall be kept by the operator.

(2) All the articles of equipment and apparatus referred to in sub-regulation (1) shall be maintained in good working order and shall be tested at frequent intervals to ensure their constant efficiency.

(3) If any such article is found to be inefficient or unsuitable it shall immediately be withdrawn from use.

70. (1) An exploder shall be suited with a locking device by means of which the circuit cannot be completed and the device shall be kept locked while the exploder is not in use.

(2) The key of the device shall be retained in the personal custody of an authorised person while he is on duty.

(3) Immediately before firing, the electrical circuit to be used shall be tested by a testing instrument approved by the Commissioner.

(4) The testing shall not take place nearer to the explosive charge than would be safe if an explosion occurs during the test.

(5) The exploder shall not be connected to firing cable conductors until all other steps preparatory to the firing of the shot have been completed.

(6) When the exploder has been connected to firing conductors after the foregoing provisions of this regulation has been complied with, the shooter shall immediately fire the charge.

(7) Immediately after the firing of the charge, the locking device shall be used to break the firing circuit, then the firing conductors shall be disconnected from the exploder and short-circuited.

71. (1) Electricity from power or lighting cables shall not be used for firing shots unless the following requirements are complied with-

(a) an approved firing-switch shall be installed between the source of power and the firing conductors and shall be constructed and protected so as to ensure a total absence of current or current leakage into the firing cables except when the switch is closed;

(b) the firing-switch and any other switch used shall each be placed in a fixed switch-box so constructed that it cannot be shut, unless the switch is in the off position;

(c) there shall be only one key for each switch-box

Use of exploders

Use of power or lighting cables in electric firing.

and the key shall be in the custody of an authorised person.

- (d) in no circumstances shall the key pass from the personal custody of the authorised person while he is on duty;
- (e) firing conductors shall be provided which are fitted with plugs capable of connecting them to appropriate bases in the switching apparatus.

(2) Electrical contact shall not be made to the firing-switch until all the foregoing provisions of this regulation have been complied with and then the shooter shall immediately fire the charge.

(3) Immediately after firing, the shooter shall disconnect all firing conductors from the switching apparatus and lock the switch boxes.

Short circuiting.

- 72.** (1) Where shots are fired electrically, the detonator lead wires shall remain short-circuited until the explosive is in position ready for placement.
- (2) The firing cable leading to the explosive charge shall also remain short-circuited while the leads from the detonators are being connected to each other and to the firing cable.
- (3) The short-circuit in the firing cable shall be located so that a premature explosion will not harm the person opening the short-circuit.

Precautions against stray currents.

- 73.** Where shots are fired electrically in the vicinity of power or lighting cables from which electricity is not being used under regulation 70 of these regulation, adequate precautions shall be taken to prevent the firing cables or wires both before and after firing, from coming into contact with, or being affected by any leakage of electrical current from the power or lighting cables.

Precautions during thunderstorms

- 74.** (1) Shooting operations shall not be carried out during heavy rain or thunderstorms or under conditions of lightning.
- (2) Where a thunderstorm threatens to occur when charges are placed or are being placed-

- (a) operations shall stop immediately;
- (b) all charges which have been placed shall be fired;
- (c) all unplaced explosives and detonators shall be returned to the magazine or container which shall then be locked; and
- (d) all workmen except those required to return explosives and detonators under paragraph (c) of this sub-regulation shall move to a place of safety.

75. When a misfire has occurred on a lake, attempt shall be made to recover the charge, and an authorised person shall ensure that it sinks and does not constitute a hazard to shipping or persons.

Misfires offshore.

76. (1) In case of a misfire on land, all persons shall away from the charge for at least one-half hour except that, when the hole is open, the shooter may, before the expiry of that period reprime the charge after he has determined that the charge is not burning.

Misfires on land

(2) where a misfire has occurred, the charge shall be re-fired by means of a further charge inserted in the shot hole and no attempt shall be made to withdraw the charge.

(3) If the charge in a shot hole fails to explode after repriming and firing, the charge and any wires attached to it shall be buried in the shot hole and the hole shall be filled with earth and plugged at the surface and labelled, and the person-in-charge shall at the end of each month, furnish to the Commissioner a report on all such unexploded charges left in shot holes during such month, detailing the location, size, type and depth of the unexploded charges and the conditions in which the shot holes were left.

(4) Where one work shift relieves another, the workman in charge of the outgoing shift shall inform the workman in charge of the incoming shift of the number and position of all misfired shots.

77. Regulations 75 to 84 apply wherever explosives are used in perforating, back-off shooting, explosive cutting of tubulars or junk, fracturing, wire-line sampling or wireline formation testing or other operations of a similar nature in connection with the exploration or the production of petroleum and shall prevail over the preceding regulations where there is any conflict.

Use of Explosives in wells.

- Personnel handling explosives. **78.** The use, handling, preparing and firing of explosives, shall be done by or under the direct personal supervision of a competent person experienced in the use of explosives for those purposes.
- Safety of rig personnel. **79.** (1) During the operation of loading, connecting, running or recovering perforating guns or other equipment charged with explosives, only that work which is essential to the operation in hand shall be permitted on the derrick floor, and only such persons as are necessary for that work shall be permitted on the derrick floor.
- (2) All other persons shall remain at a safe distance.
- Radio Transmitters. **80.** (1) When operating a radio transmitter other than a frequency modulated transmitter on shooting vessel, the power switch of that transmitter shall be in the "OFF" position at all times when electric detonators are outside the magazine.
- (2) Except in the case of an emergency, all radio transmitters shall be shut down on the drilling or servicing vessel from the time that any tool charged with explosives is connected up ready to be run in the hole-
- (a) until the tool has been fired down the hole; or
- (b) if the tool fails to fire, until it has been retrieved and the firing cable and detonator has been disconnected.
- Operating hours. **81.** All down the hole shooting operations shall, as far as possible, be carried out during daylight hours.
- Earth return electrical systems. **82.** An earth-return electrical system shall not be used on a vessel or well platform during operations involving the use of explosives.
- Cathodic devices. **83.** All cathodic protective devices shall be shut off during shooting operations.
- Earthing. **84.** All equipment including the drilling rig and all ancillary equipment, service units and cabins used for and in connection with perforating or other down-the-hole shooting operations, shall be efficiently earthed and electrical bonding shall be established between the equipment and the well-head before firing circuits are completed.

PART VII – SAFETY.

- 85.** (1) A manual of instructions for safety in operations shall be prepared by the operator and shall be drawn to the attention of every person who is about to be engaged in, or concerned with, the carrying out of operations or the execution of works in any licensed area, and the person shall be instructed to comply with all the requirements of the instructions which are relevant to the duties to be performed by him.
- (2) the manual of instructions shall be in a form approved by the Commissioner and shall incorporate, but not necessarily be limited to, all the requirements as to safe practice included in these Regulations except insofar as-
- (a) the requirements relate only to the license holder; or
- (b) the Commissioner approves any omission.
- (3) The manual of instructions shall be made readily available at all times to all persons on every survey vessel and vehicle, mobile drilling unit, construction platform and fixed platform in the licensed area.
- 86.** Without affecting the responsibility of the person-in-charge, every supervisor, foreman, tool-pusher and driller shall so supervise the workmen under his supervision that the workmen are not working in an unsafe manner or in unsafe circumstances, and as far as is practicable, ensure that all tools and equipment are maintained in a safe working condition.
- 87.** Every workman shall use the safeguards, safety appliances or devices furnished for his protection.
- 88.** (1) All machinery and equipment shall be operated by a workman assigned so to do by his supervisor; and before that workman starts any machinery or equipment, he shall ensure that all guards are in place and that no person will be endangered by the machinery being put in motion.
- (2) The person-in-charge and the supervisor shall ensure that any person who is assigned to operate any tool, machine or equipment, or to carry out any work, process or procedure that might endanger any workman is competent to carry out the assignment without undue risk.

Manual of instructions.

Responsibility of supervisors, etc.

Responsibility of workmen.

Machinery

(3) The person-in-charge and the supervisor shall ensure that-

(a) every bolt, rope or chain used for the transmission of power (except those operated from catheads), all gear, sprockets, clutches, cranks, connecting rods and all exposed and moving parts of machinery (excluding catheads and those parts which may be driven, supported or driven by the rotary table) shall be enclosed, screened or railed off to prevent any workman from coming into contact with them;

(b) pinch points of all types of machines and the cutting edge of all power driven tools shall, where practicable, be guarded to prevent accidental contact by workmen;

(c) every abrasive wheel shall, where practicable, be guarded in such a way as to restrain flying parts and to limit the dispersal of dust and particles produced by grinding;

(d) where power-driven machinery is used, each machine shall have a stopping device located within easy reach of the workman operating the machinery;

(e) every machine not individually motor driven shall be equipped with a clutch or other adequate means of stopping the machine; and

(f) starting devices shall be so arranged as to prevent accidents starting.

(4) All boilers and unfired pressure vessels used in connection with petroleum operations shall be designed, constructed, tested, installed, inspected and maintained in accordance with the provision of all relevant enactments.

Machinery maintenance.

89. Where there is danger from contact with moving parts, a person shall not clean or oil or otherwise maintain any machinery while that machinery is in motion.

Machinery repair.

90. (1) Before any piece of machinery is repaired it shall be shut down, the power to it is disconnected, and the control device locked or otherwise made inoperative.

(2) No person shall start the machinery except on the direct instruction of the person responsible for shutting it down, or of his supervisor.

(3) The person effecting the repair shall notify the supervisor when repair has been completed.

91. It shall be the responsibility of the person-in-charge at all times to ensure that-

(a) all powered mobile equipment is maintained in good running order, and is operated in such a manner as to prevent undue danger to men working in the same area;

(b) when mobile equipment is operated during hours of darkness, adequate lights are provided and used;

(c) when mobile equipment is used locations or under conditions where there is a danger of falling objects, an overhead guard is provided, with shelter to protect the driver from over-head hazards and inclement weather;

(d) a cab or similar means of enclosure on mobile equipment has adequate means of ventilation;

(e) where mobile equipment uses hoisting or hauling ropes and the driver of the equipment may be exposed to danger if the ropes break while under tension, a guard is installed to protect him from such hazard; and

(f) a person other than a competent driver is not assigned or permitted to operate mobile equipment.

92. The driver of any mobile equipment is directly responsible for the safe mobile operation of his equipment and when his vision is obstructed, he shall proceed with his work only on signal from a designated signaller who has a clear view of the path to be travelled or of the movement to be performed.

Mobile Equipment.

Responsibility of driver of mobile equipment.

Removal of fire hazard debris.	<p>93. The person –in-charge shall ensure-</p> <p>(a) that rubbish, debris or oil refuse that might constitute a fire hazard is removed in proper receptacles from the vessel, or platform and safely disposed; and</p> <p>(b) that the rubbish, debris or oil refuse is not disposed of in a manner which would cause pollution.</p>	<p>(4) All building, structures, machinery and equipment shall be of sufficient size and strength to withstand safely the imposed stresses and to perform safely the functions for which they are used.</p>	
Use of welding plants	<p>94. A welding plant may be used in an area where petroleum operations are being conducted only if the person-in-charge is satisfied that all responsible precautions have been taken to avoid hazards.</p>	<p>(5) Inspections of all buildings, structures, machinery and equipment shall be made by a person authorised by the Commissioner as often as their character and type of operation conducted requires.</p>	
Restrictions on smoking.	<p>95. Smoking and the carrying of smoking materials shall not be permitted on vessels and marine installation being used in drilling or production operations except in places set aside on them for that purpose.</p>	<p>(6) Any defective equipment, or unsafe conditions found on inspection shall be corrected, repaired, replaced or otherwise made safe.</p>	
Burning vented gas.	<p>96. Gas being vented to the atmosphere shall not be burnt on vessels and marine installations without the approval of the Commissioner.</p>	<p>100. (1) Subject to compliance with any requirement of the Uganda Posts and Telecommunications Co-operation Act, all manned platforms and all attending vessels including launches carrying persons to any working locations shall carry means of telecommunication with other manned platforms in the same area, or with the nearest operation base.</p>	Communications Act No. 3 of 1983.
International combustion engine exhaust.	<p>97. All internal combustion engines installed on a vessel or platform shall be so constructed or enclosed as to be rendered externally spark proof; and exhaust pipes shall be either insulated, cooled or otherwise constructed so as to preclude the ignition of flammable vapours.</p>	<p>(2) Where persons are required to work on artificial islands and fixed structures where no telecommunication exists, a vessel with communication as required by this regulation shall be in attendance at all times.</p>	
Fuel tanks.	<p>98. (1) All temporary fuel stocks shall be stored in a manner approved by the Commissioner.</p> <p>(2) All waste and drainage from fuel tanks shall be disposed of in a manner approved by the Commissioner.</p>	<p>101. (1) the person-in-charge shall at all times keep a record of all persons on board the platform or on their way to and from the platform</p> <p>(2) The record shall specify the name of the individual and the name of the company or agency by whom he is employed.</p> <p>(3) The record shall be made available at any time for examination by an inspector.</p>	Record of Persons on Board.
General safety requirements.	<p>99. (1) Any derrick, mast, draw-works, link, elevator-tong, machinery, tool or other equipment which is unsafe or so constructed, placed or operated that it does not afford reasonable safety from accidents, shall not be used.</p> <p>(2) All hand tools shall be kept in a good state of repair.</p> <p>(3) Every scaffold, stage, walkway, working platform, stairway and ladder, whether temporary or permanent, shall be substantially constructed and shall be maintained in safe condition.</p>	<p>102. The person-in-charge shall insure that all personnel leaving on a platform or vessel and all persons visiting platforms or vessels are briefed concerning the safety provisions of these Regulations before embarking at the shore.</p>	Briefs on safety regulations.
		<p>103. The person-in-charge shall cause to be displayed where appropriate, the following notices or combinations of them-</p>	Notices.

NO ENTRY TO UNAUTHORISED PERSONS
 NO SMOKING OR NAKED LIGHTS
 SAFETY HELMETS SHALL BE WORN
 DANGER- GAS
 DANGER – EXPLOSIVES IN USE

And any other notices warning the workmen and all other persons of any specific condition, which in the interest of safety to life and property would need to be made known.

Special reports.

104. (1) the person-in-charge shall report immediately by telephone, facsimile, telex or other immediate means to the Commissioner with confirmation and details by letter as soon as possible thereafter-

- (a) all fires which occur at any well or any marine installations under his control;
- (b) any breaks or leaks in tanks or pipelines or auxiliary installations from which loss of oil or gas has occurred;
- (c) any well flowing uncontrolled; and
- (d) any fatal or serious accident to personnel.

(2) The person-in-charge shall submit once per month to the Commissioner on a form approved by him, a report containing a summary of accidents that have occurred during the previous month.

PART VIII – HEALTH

First Aid.

105. (1) The person-in-charge shall provide or cause to be provided and maintained on all platforms and all vessels such First Aid equipment and facilities as may be required in each case by the Commissioner.

(2) A person trained in First Aid shall be readily available to attend to any sick or injured person.

Ambulance stations.

106. (1) Ambulance stations shall be maintained by the operator at such points as the Commissioner shall direct.

(2) Ambulance stations shall be equipped with the first aid kit

as provided for in regulation 105 of these Regulations and any additional equipment that the Commissioner may direct which may include resuscitation apparatus, asbestos suits and other special equipment.

(3) The Commissioner may require the maintenance of portable oxygen inhalation rescue apparatus to be kept at a place specified by him in the licensed area.

107. It shall be the duty of the operator to cause such number of employees as the Commissioner considers necessary to be trained in the use and maintenance of rescue and resuscitation apparatus and first aid equipment.

Training of rescue teams and persons in First Aid.

108. Every person shall wear an approved safety helmet when engaged in any activity where a hazard from falling objects exists.

Wearing of hel-

109. Every person shall wear suitable eye protection equipment where a hazard to eye safety exists.

Eye protection.

110. A person directly engaged in operations hazardous to the feet shall wear steel-toed, non-slip safety boots or shoes.

Safety boots.

111. (1) A person whose duty it is to oil, grease or attend to moving machinery shall wear close-fitting and close-fastened garments which cannot easily get caught or become entangled in the machinery.

Special clothing.

(2) Every person shall wear suitable protective clothing or devices when engaged in any activity where the exposure of any part of his body to any substance is known to be injurious to the skin.

(3) Where any clothing of a person is soaked with flammable liquids or injurious chemicals, he shall remove the clothing immediately.

112. All confined areas where operations could lead to the emission and accumulation of explosive mixtures or toxic gases shall be provided with suitable means of ventilation and with a continuous ventilation monitoring system approved by the commissioner which shall be fitted with an audible warning device.

Ventilation of confined areas.

Working in contaminated atmospheres.

113. (1) No person shall be allowed or made to work in the vicinity of any area where a deficiency of oxygen may exist, or where there is a danger of exposure to injurious gases, fumes or dust in sufficient quantity to create a hazard unless that person is protected by approved respiratory apparatus.

(2) Where a person may be exposed to injurious gases the person-in-charge shall keep or cause to be kept at a readily accessible place at the site of operations, at least two units of respiratory apparatus approved by the Commissioner as suitable for the nature and possible concentration of the gases and shall ensure that the equipment is maintained in good working order at all times.

(3) Where a person may as part of the petroleum operations, be required to use respiratory apparatus, the person-in-charge shall ensure that that person receives sufficient instruction and practise in its use.

Warnings of Presence of hazardous gases.

114. At appropriate distances from every place where gases such as hydrogen sulphide are or could be a hazard, the person-in-charge shall cause to be displayed suitable signs warning of the presence of the gases and any person observed approaching that place shall be warned of the danger that exists.

Exhaust gases.

115. The exhaust gases from engines or motors or devices using gas in place of steam or air to operate pumps and other power driven equipment shall be discharged in a direction and location where they will not create a health hazard to any person.

DAILY DRILLING REPORT		Report
Well No.		Page
Contractor		Date

DAYS FROM SPUD [_____] RIG [_____]

PRESENTOPER [_____]

PTD [_____] OTD [_____] 24 HR PROGRESS [_____]

NEXT CSG DEPTH [_____] CSG SET AT [_____] PROGRAM TD [_____]

LST SURV. DEPTH [_____] DEV [_____] DIR [_____] LST BOP TEST [_____]

BIT NO SIZE MFG TYPE SER. NO JETS BITOUT FTG HRS

[_____] [_____] [_____] [_____] [_____] [_____] [_____] [_____] [_____]

BHA [_____]

BIT NO WOB RPN PMP LINER PRESS SPM GPM AVDC AVDP B/U

[_____] [_____] [_____] [_____] [_____] [_____] [_____] [_____] [_____] [_____] [_____] [_____]

ECD BHHP

[_____] [_____]

LITH/REMARKS [_____]

MUD DAILY COST [_____] [_____] MW [_____] VIZ [_____] PV [_____]

YP [_____]

GELS [_____] PH [_____] FL/FC [_____] HT/HP [_____] ALK [_____]

CL-PPM [_____] TH [_____] %SAND [_____] %SOLIDS [_____] %OIL [_____]

%WATER [_____]

MTB [_____] FL-TEMP [_____] PORE PRESS [_____] LEAK OFF [_____]

MUD HOLE VOL [_____] ACTIVE [_____] RESERVE [_____] TOTAL [_____]

MUD USED [_____]

KICK CONTROL PUMP 1 PRESS [_____] SPM [_____] PUMP 2 PRESS [_____]

SPM [_____]

GAS UNITS BG [_____] DAILY [_____] COM [_____]

PERSONNEL REQ'D:

.....

TRUCKS ARR/DEP:

.....

Signed:.....
 (Drilling Supervisor)

Approved:
 (Operations Manager)

SCHEDULE 2. reg. 29.

CASING AND CEMENTING REPORT

Well No. Contractor	Report No. Page	Date
------------------------	--------------------	------

Hole Size Depth: Previous Casing: At:

String Composition:

No. of pieces	Size, Weight, Grade, Thread, etc.	Length, Depth

Position of Centralisers: _____

Cementing Data: _____

Preflush: _____

Cemented With: _____

Circulate Casing time: Mines Act BBLs/Min

Mix & Pump cement Rate: BBLs/Min Displacement Rate

BBLs/Min

Final displacing pressure: PSI bumped plug with: PSI

Float held: yes/no Returns Gull/partial/nil

Circulated Toc from pressures: From Volumes

Cementing Contract: _____

Remarks:
 Signed : _____
 (Drilling supervisor)

Approved: _____
 (Operations Manager)

SCHEDULE 3.

reg.29.

**CHOKE MANIFOLD AND BLOW-OUT
PREVENTER TEST REPORT**

Well No.		Date	
Contractor		Page 1 of 4	
RIG			
Test status:	initial	Weekly	Ram Change
	Date of last test	/ /	Hydril Change
Top joint casing: size: Wt: Grade: Burst rating (80 %):			

CHOKE MANIFOLD PRESSURE CHECK

1. Circulated clear-fresh water through manifold: Yes No
2. Pressure tested each manifold gate valve: Yes No
3. Pressure tested each manifold plug valve: Yes No
4. Size of positive choke beans installed
5. List date pressure gauge calibrated
6. Function operated remote adjustable choke:
7. Remote gauge operable: Yes No Date last calibration? / /
8. Pressure rating of buffer tanks?.....psi

**CHOKE MANIFOLD AND BLOW-OUT PREVENTER TEST
REPORT**

Well No		Date	
Contractor		Page 2 of 4	

B. CHOKE AND KILL VALVE PRESSURE CHECK

1. Is casing annulus valve open? Yes No
2. Circulated clear-fresh water through kill line? Yes No
3. Pressure test (fill in appropriate to your system)

Test Results

	<i>Low press</i>	<i>High press</i>	<i>Low Fail Pass</i>	<i>High Fail Pass</i>
Outer Choke value				
Inside Choke Value				
Outer Kill Valve				
Inside Kill Valve				
Adjustable Chokes				
Remote Chokes				
Other				

4. Remarks.....

C. LEAK-REPAIR RECORD FOR SECTION A AND B

Where leaking

How Repaired

CHOKE MANIFOLD AND BLOW-OUT PREVENTER TEST REPORT

Well No. Contractor	Date Page 3 of 4
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D. BOP STACK PRESSURE CHECK

(Note: Fill in data, which only applies to your BOP stack)
Blow-out preventer arrangements

	<i>Number</i>	<i>Size</i>	<i>Working</i>	
			<i>Pressure Rating</i>	<i>Test Pressure</i>
Annular
Pipe Rams
Blind/Shear

E. TEST RESULTS

	<i>Closing</i>		<i>Opening</i>		<i>Test Pressures</i>		<i>Results</i>			
	<i>Pr</i>	<i>Pr</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>(F)</i>	<i>(P)</i>	<i>(F)</i>	<i>(P)</i>
	<i>Vol</i>	<i>Time</i>	<i>Vol</i>	<i>Time</i>	<i>Low</i>	<i>High</i>				
Annular (up)				
Annular (low)				

Pipe Ram (up)	.....	.....	.....	.....	.....	.....
Pipe Ram (mid)	.....	.....	.....	.....	.....	.....
Blind/shear	.....	.....	.....	.....	.....	.....
Pipe Ram (low)	.....	.....	.....	.....	.....	.....
Blind Ram	.....	.....	.....	.....	.....	.....

CHOKE MANIFOLD AND BLOW-OUT PREVENTER TEST REPORT

Well No. Contractor	Date Page 4 of 4
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F. AUXILIARY EQUIPMENT

	<i>Test Pressure</i>	<i>Pressure Test Results</i>	
		<i>Psi</i>	<i>Fail</i>
		<i>Pass</i>	
Upper Kelly cock		
Lower Kelly cock		
Drill pipe Safety valve		
Back press valve		
Other		

G. CHOKE AND KILL VALVE PRESSURE CHECK

1. Was the test recorded on IADC? Yes No
2. Was fresh water/glycol mix left in choke/kill? Yes No
3. Was a pressure chart used at the high-pressure pump unit? (Chart to be attached to the report). Yes No
4. Pressure tested from main remote panel.
5. Function tested from main remote panel.
6. Remarks/suggestions

.....

Signed: (Drilling Contractor, Tool pusher)	Distribution:
Signed: (Drilling Supervisor)	
Approved:	

**SCHEDULE 4.
KICK SHEET**

Well No.		Date:		
Contractor		Page		
Hole size	Last casing size	Shoe depth	TVD	MD
MAASP	Casing Burst	Max Mud Weight		
Barytes on site	On order	Reserve	Mud	
STRING CONTENTS			ANNULUS	
CONTENTS				
Pipe Size	Capacity	Length	Volume	Section
				Capacity
				Length
d.c				Casing
d.c				Casing
d.p				O/Hole
d.p				O/Hole

Surface equipment.		
Total contents of string		Total Contents of Annulus
Pump 1 Liner Size	Max Press.	EFF % Output per stroke
Pump 2 Liner size	Max Press.	EFF % Output per stroke

	PUMP 1	PUMP 2	TRAVEL TIMES (mins/strokes)
	SPM P scr	Output SPM P scr	Sur-Bit Bit-shoe Shoe-Choke
		Output	
	Total		
<hr/>			
<hr/>			
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Depth of kick	TVD	MD	Mud Wt in Hole (W1)
Stabilised DP Pres	Pdp	Annulus press. P	
Kill Mud Wt W2		Baryte required	
Initial Circulating Press		Final Circulating Press	
P			
R			
E			
S			
S			
U			
R			
E			

SURFACE TO BIT STROKES

Signed:	(Drilling Supervisor)
Approved:	(Operations Manager)

HENRY MUGANWA KAJURA,
Minister of Natural Resources.

