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Record No. 1969 / 103

Uniform Petroleum Regulations in France - A Model for Australia?

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ABSTRACT

The substance of this report is based primarily on my visit to the Service de Conservation des Gisements in Paris, during my Overseas Study in the second half of 1967.

To provide background, the role of the French Government in petroleum exploration and development is outlined, and the roles of the Direction des Carburants and the Service de Conservation des Gisements defined. These two groups are responsible for advising the Government - through the Ministere de l'Industrie - on policy matters relating to petroleum exploration and development, and also for supervising the existing regulations.

The functions of the Service de Conservation des Gisements are described in detail - since this is primarily the technical division, and comparable in many ways to parts of the B.M.R. and State Mines Departments.

Finally a comparison is made between the integrated and highly centralized system adopted by France for guiding and controlling the development of its petroleum resources, and the situation existing at present in Australia. It is urged that every effort be made to bring about greater co-ordination and if possible greater uniformity in petroleum regulations in this country.

INTRODUCTION

During the second half of 1967 I was sent on Overseas Study by the Bureau of Mineral Resources; this involved visits to Italy, France, the Netherlands, West Germany, Eire and the United Kingdom. The main object of the visits was to widen my sedimentological experience, especially as it affected petroleum exploration.

During almost two weeks in France, I visited the following organizations:-

- Service de Conservation des Gisements, Paris
- Institut Francais du Petrole, Paris
- Societe Nationale des Petroles d'Aquitaine, Pau.

The visit to the Service de Conservation des Gisements was suggested by the Petroleum Exploration Branch of the B.M.R., so that the methods and precedures adopted by the Conservation could be evaluated and compared with comparable measures within the Branch. This report is the outcome of that visit. Additional information was obtained on this general subject during the two other visits noted above, and during some later correspondence.

Clearly both the title and the text of this report cover a much wider field than was originally envisaged; and obviously the implications extend far beyond the Petroleum Exploration Branch of the B.M.R. However I feel that I would be avoiding my responsibilities if I failed to relate my findings in France to the present situation in Australia.

THE GOVERNMENT'S ROLE IN PETROLEUM EXPLORATION

As would be expected, the French Government is vitally interested in achieving a rapid, but well balanced development of France's petroleum industry. The Government has attempted to achieve these dual objectives, by establishing four types of organisations, over which it can exert either direct or indirect control:-

DIRECTION DES CARBURANTS.

This is a policy-making body, whose function is to advise the French Government on matters relating to the exploration, development and utilization of France's petroleum and natural gas resources. The nearest Australian counterpart would be the Resources Policy Division of the Department of National Development.

SERVICE DE CONSERVATION DES GISEMENTS

This body is the technical division of the Direction des Carburants, and is responsible for administering the regulations relating to petroleum exploration in France. Australian counterparts are found within the various State Mines Departments.

GOVERNMENT CONTROLLED EXPLORATION COMPANIES

In order to balance foreign influence in this vital sector of the economy, the French Government has acquired a controlling interest in a number of French-based oil exploration groups. These take the form of "mixed-economy" companies, where both Government and private capital are invested; however, even where the Government is a minority shareholder, it has overriding control in major matters of policy. Additional information on the role of "mixed-economy" companies is given in part of a French Government pamphlet - see Attachment No. 1. The Societe Nationale des Petroles d'Aquitaine and the Compagnie Francais des Petroles are examples. There is no counterpart to this in Australia.

INSTITUT FRANCAIS DU PETROLE

This organization has been set up by the French Government as a centre for advanced teaching and research on matters relating to petroleum, and also to provide a pool of experts, who can assist in the petroleum search both within and outside France. Again there is no counterpart to this in Australia.

Intervention in these four fields appears to be a very sound move on the part of the French Government, in its drive towards achieving a balanced development of its petroleum resources.

As noted above, only the Service de Conservation des Gisements has its complete equivalent in Australia - and we have nine separate organizations carrying out these functions in different parts of Australia and the Territories. An added disadvantage is that all nine of these State Mines Departments and Commonwealth Administration Branches have different sets of rules - and on some occasions it would appear, even different objectives. An up to date summary of this position is given by Cook and Henry (1967). It was for these reasons that I was interested to visit the Service de Conservation des Gisements in Paris in October, 1967. As I stressed in my Interim Report on my overseas visit, I was most impressed with what I saw (see B.M.R. File 66/2010, dated 26.10.67).

FUNCTIONS OF THE SERVICE DE CONSERVATION DES GISEMENTS

As noted above, the functions of the Service de Conservation des Gisements are, broadly speaking, comparable to those parts of our own State Mines Departments and Territory Administration Branches that deal with petroleum exploration. The functions are summarised below:-

- Control of Petroleum Exploration
  - : Allocation of Exploration Permits
  - : Allocation of Exploitation Permits and Concessions
  - : Enforcement of conditions of Exploration and Exploitation Permits and Concessions
- Publication and distribution of information
- Preservation of sub-surface samples.

These functions will now be considered in detail, with special emphasis on those aspects most relevant to Australia's circumstances.

CONTROL OF PETROLEUM EXPLORATION

Allocation of Petroleum Exploration Permits

One of the major responsibilities of the Conservation is the allocation of Petroleum Exploration Permits; these run for periods ranging from 2 to 5 years, and the permit holder can apply for a maximum of 2 extensions - each for the same period as the original permit. With each extension, however, areas must be relinquished:-

First Extension - 50% of total area relinquished.
Second Extension - 25% of remaining area relinquished.

Wherever possible, Exploration Permits have regular boundaries - eastings and northings. The saw-tooth pattern that commonly results from this will have a lower size limit of half-block and will be in multiples of the half-block. (The area of a block will be dependent on the latitude, but is about 72 square kilometres). The major exception to this is where on-shore and off-shore permits abut; in most cases, the boundary between the two is the coastline. A map of petroleum permits at 1:2,000,000 scale is produced regularly; a copy of the September 1967 edition is attached (see Map No. 1.).

The calculation of Exploration Permit size, and area to be relinquished, are based on the actual areas in square kilometres, rather than in terms of blocks or half-blocks, because the block areas are dependent on the latitude. However, though the areas to be relinquished are chosen by the holder of the Exploration Permit, they must be in the form of blocks or half-blocks.

Information relating to the allocation of new Petroleum Exploration Permits, and the re-allocation of relinquished ground, is published by the Conservation in the journal of the Direction des Carburants - "Bulletin Bimestriel d'Information"; this is published every two months, and is issued promptly after the two months have expired. A copy of portion of this journal is attached - Attachment No. 2.

A company wishing to apply for a Petroleum Exploration Permit must submit details of the following:

Precise area requested.
Details of exploration work to be undertaken
Estimated expenditure of the programme.

At this stage, certain details of the application will be published in the next issue of the Bulletin Bimestriel d'Information, and also in the French Government Gazette. This information consists of:-

Name of applicant
Date of application
Area covered by the application
Precise location of area covered by the application

An example of such a notification is found on pages 19, 21 and 22 of Bulletin Bimestriel d'Information, 1967 No. 3 - see Attachment 2. Counter offers for part or all of the area covered by the above application will be considered if submitted within a period of 30 days after the publication of the Application.

Allocation of Petroleum Exploitation Permits and Concessions

If oil or gas is discovered on a Petroleum Exploration Permit in commercial quantities, the tenement holder must obtain an Exploitation Permit or Concession, before production from the field will be permitted. Only the Company holding the current Petroleum Exploration Permit is eligible to apply; however, the stage at which the application is made is left entirely to the Operating Company - drilling up of a field can continue for the duration of the Exploration Permit.

If the company holding the Exploration Permit thinks that the oil or gas field will have only a short life, it will probably negotiate for an Exploitation Permit; this normally covers a period ranging from five to ten years, and can be re-negotiated at the end of that period. If, on the other hand, the oil or gas field is of large extent with development likely to be spread over a long period of time, application for an Exploitation Concession would be made; this generally covers periods in excess of fifty years.

The size of an Exploitation Permit or Concession is dependent on the size of the field, which will have been determined by development drilling and geophysics prior to lodging the Application. All boundaries will be either eastings or northings; subject to this condition, they should represent the closest approximation to the limits of the field. This is clearly illustrated on the 1:500,000 map of the Paris Basin, produced by the Conservation des Gisements - see Map No. 2.

The granting of a Permit or Concession to the holder of the Exploration Permit is dependent on agreement being reached between that company and the Direction des Carburants on details of production, royalties etc. To simplify negotiations, standard specifications are used, and these will need only minor modifications to suit most situations; for instance, there is a sliding rate of royalties to be paid on the production of oil and gas:-

Oil Production (in tons per year)	Royalty as %*
0 - 50,000	0%
50,000 - 100,000	6%
100,000 - 300,000	9%
300,000 -1,000,000	12%
Excess of 1,000,000	14%

Gas Production (in TCF per year)	Royalty as %*
0 - 10.6	0%
Excess of 10.6	5%

Where a company is producing oil or gas from several Permits or Concessions, the royalties to be paid are calculated separately for each field. The above rates of royalties apply to on-shore fields only; at the time of my visit, off-shore rates had not been calculated, but it was generally accepted that they would be lower than on-shore.

Submission of Drilling and Survey Data

The holders of Exploration Permits must submit weekly, monthly and annual reports to the Conservation des Gisements - all of which remain confidential. The Weekly Report is in effect a work-sheet, listing the activity within the Permit; the Monthly Report summarizes the results of drilling, together with details of geological and geophysical surveys being undertaken. The Annual Report - which is forwarded to the Direction des Carburants - summarizes the activities of the Permit holder, and also the expenditure incurred within the Permit.

* Calculated on the well-head valuation.

All drilling and geophysical data must be submitted to the Conservation as soon as practicable after the work has been carried out. All the basic data from gravity and aeromagnetic surveys are made available to the public immediately after the work has been carried out; but all interpretations based on the data - both in the form of reports and maps - remain confidential even after an area has been relinquished. All seismic results - both data and interpretations - remain confidential for ten years, even if the area has been relinquished.

The geophysical data available to the public can be studied in the Conservation des Gisements; however, neither logs nor text can be copied. To ensure maximum utilization of the seismic surveys carried out to date, the Conservation has prepared a set of maps at 1:100,000 scale, showing the positions of all seismic lines and shot points, on a topographic base map.

In the very detailed legend accompanying the map, all the relevant information about the surveys is given - including a code to distinguish the confidential results from those available to the public. This series of maps is still incomplete, but it is planned to cover all areas where seismic surveys have been carried out within the sedimentary basins of France.

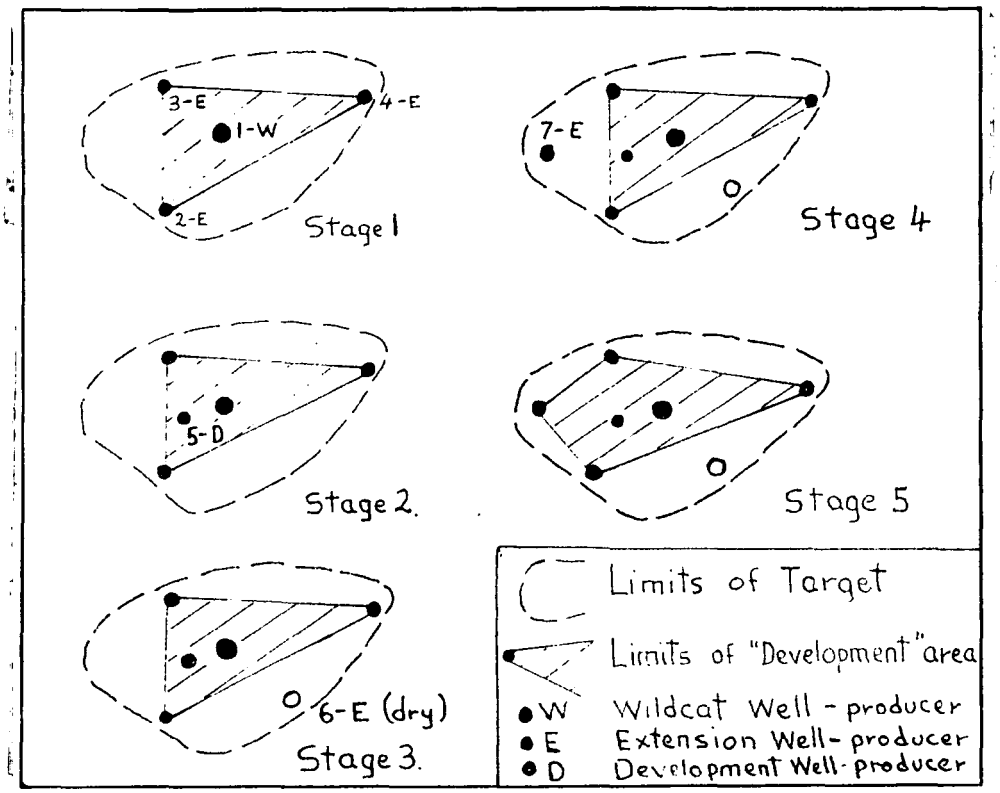
The policy with regard to drilling data is dependent on whether or not the hole is classified as a development well. The threefold classification of wells used by the Conservation is set out below:

Wildcat	-	drilling on a target that has not yielded a producer
Extension	-	drilling beyond the proved limits of a producing horizon
Development	-	drilling within the proved limits of a producing horizon. (In practice this means drilling within the triangle formed by three extension wells).

As will be seen in Figure 1, a minimum of four holes must be drilled on a structure before a new hole could be classified as a development well.

All information on wildcat and extension drilling is available to the public immediately. Copies of all well-logs can be made at the Conservation des Gisements, free of charge; reports on the drilling can also be studied, but not copied. All information on development drilling must also be lodged with the Conservation - but remains confidential indefinitely. This also applies to the sub-surface samples submitted from development wells.

The main result of these regulations is that the great bulk of geologically-significant drilling data relating to the sedimentary basins of France is available to the public very soon after the work has been completed. Even on a structure that is developed into an oil or gas field, the public will have access to all drilling data from at least four holes, and probably far more.



Submission of Sub-surface Samples

Drill core and cuttings from all wildcat, extension and development drilling must be lodged with the Conservation immediately after the completion of the project. Drill cuttings are required from every two or five metres - at the discretion of the Conservation - and as a routine measure thin sections will be made from cuttings at 10 metre intervals. The Conservation will, if necessary, make these thin sections but it has commonly been found that the Operating Companies are quite agreeable to storing their own thin sections in the Conservation. Core chips, taken at one metre intervals, are also sent to the Conservation; these are stored in the same type of 2" x 1" plastic vial as the drill cuttings - and are stored in the same depth sequence as the cuttings.

INDEXING OF DATA AND SAMPLES

All data and samples are indexed and stored, on the following basis:-

Zone No.
Well No.
Depth

The Conservation des Gisements has divided France into 18 zones, each of which encloses, as far as is known, a complete sedimentary basin. Though not necessarily rectangular, the zone boundaries are all either eastings or northings. A copy of the map at 1:2,000,000 scale showing the distribution of zones is attached - see Map No. 1. Wells are numbered by the Conservation sequentially within each Zone.

As soon as the Conservation des Gisements is supplied with details about a well - in the Weekly Report of the Permit Holder - the official abbreviation of the well name, together with the official zone and well number, are published in the next issue of the fortnightly Bulletin Bimensuel d'Information; portion of one such copy is attached - see Attachment No. 3.

DISTRIBUTION OF INFORMATION

The Service de Conservation des Gisements and the parent Direction des Carburants place great importance on the rapid and regular distribution of information affecting petroleum exploration in France. News sheets, journals, maps and even well summary logs are all produced and distributed free of cost. In addition, a wide range of unpublished reports are produced for use within the Direction des Carburants. However, in this report only published data available to the public will be considered in any detail.

Bulletin Bimestriel d'Information

The Bimestriel d'Information is the major reference to petroleum exploration in France. Part of one copy of this publication is attached - Attachment No. 2. It is published every two months, and over 12,000 copies are distributed free. Great care is taken to ensure that the Bulletin is produced on schedule; this involves the distribution of the Bulletin within one month of the most recent figures contained in that number. (As an example, Bulletin No. 3 1967, covering the period 1st May to 30th June would be distributed by the end of July, at the latest).

The following subject matter is included in each number of the Bulletin Bimestriel d'Information:-

Summary of activity in each sedimentary basin
Details of geophysical surveys undertaken during the two month period. A small scale location map is included.
Details of drilling over the two month interval; this will include geological summaries. A small scale location map is included.
Oil and gas production figures for the two month interval - set out for each company, and for each sedimentary basin.
Notification of requests for new Petroleum Exploration Permits.
Statistics of the petroleum industry for the two month period.

Bulletin Bimensuel d'Information

This Bulletin is the fortnightly newsletter of the Conservation, and great care is taken to ensure its distribution on schedule. Approximately 250 copies of each number are printed and distributed free of cost. Part of one such copy is attached - Attachment No. 3.

The following topics are covered by each number of the Bulletin:

Summary of main results of drilling over the two week period.
Full details of drilling activity, including brief summaries of the stratigraphy, and DST results.
Details of wells spudded during the two week period.
Details of wire-line logs run during the two week period.

This information will be compiled from weekly drilling reports; no information concerning development drilling is given.

Well Data Cards

Detailed information on every well drilled in France must be submitted to the Conservation; as mentioned earlier, the bulk of information relating to development drilling remains confidential indefinitely. The following basic information, however, is available from all wells:

Well Name, Number
Precise location
Period of drilling
Precise elevation
Depth

This information is printed on 5" x 3" index cards. These cards are easily reproduced, and available free of charge. A sample card is attached - see Attachment No. 4b.

All information on wildcat and extension wells is available to the public, and progress reports appear at fortnightly intervals in the Bulletin Bimensuel d'Information; at the completion of the project, this information is transferred to detailed Well Data Cards - see Attachment No. 4a. These cards are approximately 10" x 8" and are prepared by offset printing; they are available to the public free of cost. The following information is shown:-

Formation tops
Generalized lithologies (symbolized)
Detailed lithologies
Ages and stages
Wire-line logs run
Drill-stem and other tests run
Drilling data - as for development wells

The formation tops and other lithological data are presented at a standard scale of 1:5,000 - or approximately 417' to 1". These cards are extremely well designed, and serve precisely the same purpose as the Well Data Card and Well Data Summary Card in the Core and Cuttings Laboratory of the Bureau of Mineral Resources. To ensure the widest possible use of the well data, the Conservation uses standard symbols and abbreviations; the standard reference is the 1960 published report of the committee set up by the French petroleum industry to standardize the full range of symbols, patterns and conventions used by petroleum engineers and geologists - Burger (1960). Parts of this publication are attached - see Attachment No. 5.

Map of Petroleum Permits in France

"Permetres des Titres Miniers d'Hydrocarbures", at 1:2,000,000 scale is produced by the Conservation des Gisements - and revised every six months. It shows the current Exploration Permits and Exploitation Permits and Concessions, and also the areas for which Exploration Permit Applications have been received. The colour coding on the map indicates the various permits held by the different companies. Pipelines and major petroleum installations are also shown. A copy of the 2nd edition for 1967 is attached - see Map No. 1.

Map of Permit Boundaries and Wells in each Sedimentary Basin

A map at 1:500,000 scale is produced - and updated periodically - by the Conservation des Gisements for each of the sedimentary basins that can be regarded as prospective for hydrocarbons. As an example the "Bassin Parisien" map has been included in this report - see Map No. 2. This map shows all Exploration and Exploitation Permits and Concessions, together with the precise location, name, number and classification of each well drilled for oil and gas. In addition most deep water bores, and all stratigraphic drilling undertaken by the Bureau de Recherches Geologiques et Minieres (French equivalent of the B.M.R.) are plotted. Outcropping basement is also shown.

Map of Seismic Surveys - on 1:100,000 Sheet Areas

The "Plan de Position des Lignes" series of maps utilize the standard 1:100,000 Geographic Series, with seismic information superimposed in red. The maps show the positions of all seismic surveys, traverse lines and shot holes. The legend is very complete, and includes a small scale location map of the areas covered by the various surveys, together with all relevant details about the surveys themselves. Surveys still on the confidential list are clearly indicated.

The Conservation des Gisements plans to prepare maps of this type, and at this scale, to cover all the seismic surveys run, and to revise them regularly; however, the programme is still in its early stages and a complete set has not yet been built up.

It is obvious from the wide range of published data - in reports, and on index cards and special maps - that every effort has been made by the Direction des Carburants and the Service de Conservation des Gisements, to ensure the widest possible distribution of information. No charges of any sort are levied. In the case of logs and reports that cannot be copied, adequate facilities are made available within the Conservation for the examination of the data.

The Service de Conservation des Gisements undertakes a limited amount of detailed study of the sub-surface samples and the corresponding wire-line logs; selection is on much the same basis as adopted by the B.M.R. in Australia - if the drilling is from an area already being studied by Conservation, or if a specific query arises, the material will be examined. Normally the studies undertaken by the Conservation are either related to the proving of reservoirs or to the more fundamental questions of basin form and evolution; however, some studies are related to policy matters, and are undertaken at the request of the Direction des Carburants. As these reports commonly use information obtained from development wells, they are seldom available to the public.

AVAILABILITY OF SUB-SURFACE SAMPLES

As described earlier in this report, the Conservation des Gisements receives drill cuttings and core chips from all wells drilled by holders of Exploration and Exploitation Permits and Concessions in France. In addition, material is received from some deep water bores, and from stratigraphic drilling carried out by the Bureau de Recherches Geologiques et Miniers. With the exception of material from development wells (which remains confidential indefinitely), every effort is made to ensure that samples are available for examination as soon as possible after their arrival at the Conservation. None of the material can be removed from the Conservation - and no sampling of core or cuttings is permitted.

CONCLUSIONS

It was clear that in the Direction des Carburants and the Service de Conservation des Gisements, the French Government had a very powerful and very effective means of directing and controlling petroleum exploration and utilization in France. The marriage of the technically-oriented Conservation des Gisements to the policy-making Direction des Carburants seems to have been conspicuously successful; this is probably due - in part at least - to the fact that each has its own clearly defined objectives.

While some may feel that the conditions laid down by the Conservation are rather severe on the permit-holders, nevertheless they represent a single, coherent, and co-ordinated set of regulations - tailor-made to Government policy. From our point of view it is not the detail of the specific regulations that is important, so much as the concept of having one organization - logically divided into a policy and a technical division - responsible for implementing all aspects of Government policy relating to petroleum exploration, development and utilization.

I feel that in Australia serious consideration should be given to the establishment of a comparable organization, to be responsible for both the policy and the technical sides of petroleum exploration, both on-shore and off-shore, on an Australia-wide basis. I am aware of the constitutional pitfalls surrounding the proposal, but I suggest that the gains would be so great for all concerned that the most thorough study of the matter is justified.

I am encouraged by the widespread acceptance of the Petroleum (Submerged Land) Act of 1967 - in which the Commonwealth's role in off-shore petroleum exploration is recognized. This could be a most useful precedent in seeking the States' co-operation on the more contentious issue of on-shore exploration.

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Attachment N° 1

II

THE "MIXED-ECONOMY" COMPANIES

The "mixed-economy" companies (Sociétés d'économie mixte) may be regarded as representing an intermediary stage between liberal capitalism and State capitalism. In these companies, public capital is associated with private capital. This formula, which developed rapidly between the two wars, today concerns in particular the fields of transport, petroleum, and territorial planning and development. The "mixed-economy" company is a corporate body in private law, but a large number of rules departing from ordinary law are applied to it.

A big development

Since the end of the First World War, there has, in fact, been a multiplication of State-run industrial and commercial establishments. The formula of the "mixed-economy" company has greatly developed. This form of company may be regarded as an intermediary stage between liberal capitalism and State capitalism, since in it public and private capital coexist.

Such collaboration offers numerous advantages. In the first place, public bodies may derive pecuniary advantages from such a formula, since they will share in the profits of the enterprise. And secondly, the "mixed-economy" company is a limited company, which gives more flexibility to the State's intervention.

A large number of "mixed-economy" companies were established during the inter-war period. At the time they often replaced conceded public services, the successive deficits of which ran the risk of compromising the repayment of loans made by the State. Thus, the convention of 31st August 1937 established the Société Nationale des Chemins de Fer Français, a "mixed-economy" company which regrouped the various private companies, and which is now nationalised. During the same period, other "mixed-

economy" companies were established in their own right : one may cite the examples of the Compagnie Nationale du Rhône and the Compagnie Française des Pétroles.

On the morrow of the Second World War, the "mixed-economy" companies lost some of their popularity. The formula was criticised as limiting economic intervention by the State, since private capital remained associated in the management. Nationalisation, on the other hand, makes it possible to eliminate all private capital. But shortly afterwards, the "mixed-economy" companies underwent further developments. Today, the evolution tends to make this formula a means of associating local communities and public bodies. There are many examples, in particular in the field of town and country planning, of "mixed-economy" companies (such as the companies of regional development) in which private enterprises and various public bodies participate.

THEIR LEGAL NATURE AND THEIR STRUCTURE

A corporate body in private law

Despite the participation of the State, the "mixed-economy" company remains a corporate body in private law. This solution was supported by the Tribunal of Conflicts in the 1963 judgment concerning the "Société de l'autoroute de l'Estérel". The main legal problem is to know whether or not the "mixed-economy" company falls within the general category of public enterprises. No answer to this question is given in the texts, and it has been left to case-law to define criteria.

The preponderant influence of the State

It thus appears that for there to be a "mixed-economy" company, the State must have a real interest in the affair and possess a preponderant influence. One is, therefore, led to make a distinction between companies in which the existence of public capital is of a fortuitous nature (inheritance or distraint) and companies in which the presence of the State is justified by objects of

general interest. In the latter instance, when the State has only a minor holding, State control over the management of the company is often ensured by special rules.

A structure different from that of limited companies

The structure of "mixed-economy" companies often reveals considerable departures from the rules of commercial law.

True, the capital remains divided into shares; the directing organs are those of private law : general meeting, board of directors, general manager-chairman. Lastly, the legal system applicable is that of private law.

However, the ordinary law of limited companies applies only if there are no derogations. But is has seemed necessary to give the State powers greater than those which it would enjoy under the application of ordinary law. This means that there are important differences between limited companies and "mixed-economy" companies.

From the financial point of view, the State is not an ordinary share-holder; its shares are, indeed, often non-transferable. In addition, there is some control over the State's co-partners; transfers of shares are approved by the board of directors, and shares must be registered ones.

As far as the structure is concerned, the fundamental principles of limited companies are usually set aside, in particular the principle according to which the rights of partners are proportional to the capital they contribute.

In the general meeting, the State is represented like any other share-holder; in actual fact, the general meeting does not elect the board of directors and is controlled by the State by means of the frequent application of the system of preferential voting.

In the board, the directors are appointed by the State, and the latter enjoys special privileges; it is often over-represented, and State directors are at times present on the board of companies with regard to which the State is no more than a creditor. Thus, in the Compagnie Nationale du Rhône, the State possesses 16 of the 40 seats because of the guarantee granted to bonds issued by the company. The State directors, finally, often have a suspensory veto.

The chairman of the board of directors and the general manager are either appointed by the State or by the board with the approval of the State.

Finally, with regard to supervision, the system follows the rules of public law. Thus, in addition to the usual checks by the general meeting and the auditors, there is a supervision through the intermediary of a Government auditor and a State comptroller. When public bodies are the biggest share-holders, other examinations may be effected, in particular by the Contracts Commission, the Commission for the Auditing of the Accounts of Public Enterprises, and Parliament.

EXAMPLES OF "MIXED-ECONOMY" COMPANIES

The main "mixed-economy" companies at present existing concern the fields of transport, petroleum, and of town and country planning.

The Compagnie Générale Transatlantique became a "mixed-economy" company in 1933 through the transformation of State debts into shares. Identical measures were taken in 1948 in the case of the Compagnie des Messageries Maritimes. These two shipping companies are largely controlled by the State.

In the matter of petroleum, the two main "mixed-economy" companies are the Compagnie Française des Pétroles in which the State, a minority share-holder, has special privileges, and the Union Générale des Pétroles, established in 1960.

Finally, there are a large number of "mixed-economy" companies whose activity concerns the development of the territory, and town and country planning, which include, for instance :-

- The urban equipment companies, established in 1955 to help communities to carry out exceptional works, such as : operations covering areas to be urbanised as a matter of priority, urban renovation, or investment in the industrial areas.

The development and equipment companies were also set up in 1955. Their role is to carry out surveys and initiate the major works relating to regions that are generally vast. Among the most important of these companies, are : the "Compagnie d'Aménagement du Bas-Rhône-Languedoc", the "Société d'Aménagement des Friches de l'Est", the "Compagnie d'Aménagement des Landes de Gascogne", etc.

Since their establishment, these companies have accomplished important work, notably in the matter of irrigation and agricultural development.

Attachment N°2

MINISTÈRE DE L'INDUSTRIE

DIRECTION DES CARBURANTS

SERVICE DE CONSERVATION

BULLETIN BIMESTRIEL D'INFORMATION

Principaux résultats obtenus par les organismes de recherche de pétrole
du 1er mai au 30 juin 1967

1967 - N° 3

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TABLE DES MATIÈRES

ACTIVITÉ DE GÉOPHYSIQUE

AQUITAINE

(Zone 12)

E.R.A.P.

Permis de Comminges.

L'équipe sismique réflexion numérique C.G.G. S. 1423 a commencé l'étude « Lannemezan » le 22 mars. A la fin du mois de mai, 57,36 km avaient été exploités en couverture 4 ou 6.

L'étude de sismique réflexion « Aurignac » a débuté le 10 avril par une série d'essais qui se sont achevés vers la fin du mois d'avril. L'exploitation a commencé début mai, mois au cours duquel la mission numérique C.G.G. S. 1428 a effectué 28,6 km en couverture 4.

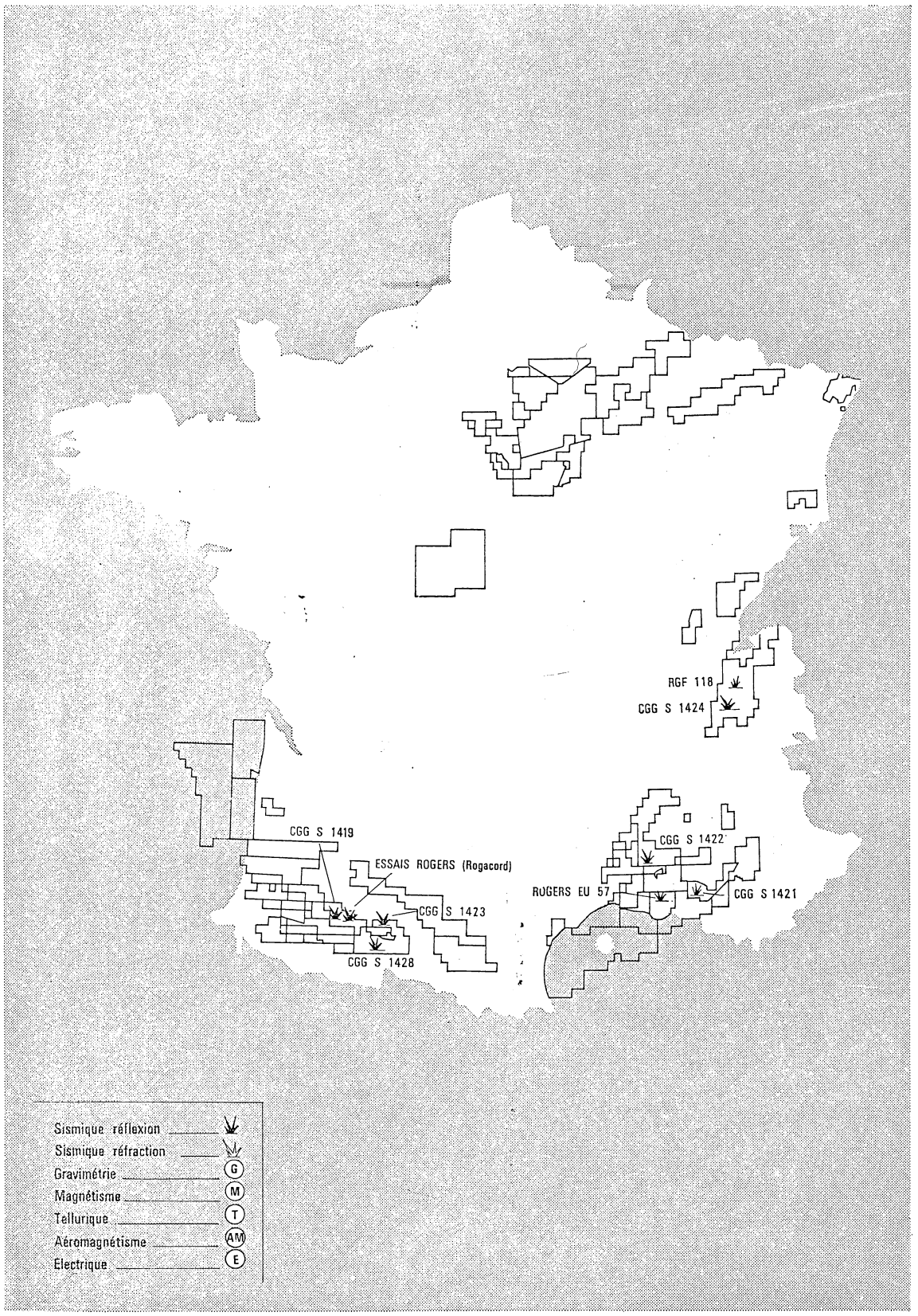
S.N.P.A.

Permis de Chalosse et Bigorre.

L'équipe sismique réflexion numérique C.G.G. S. 1419 poursuit l'étude « Chalosse-Bigorre ». Au cours des mois d'avril et de mai 66,89 km ont été exploités en couverture 12.

Une mission ROGERS opérant selon le procédé « Rogacord » a effectué un profil d'essai de 12 km en couverture 12.

activité géophysique



ACTIVITÉ DE FORAGE

ALSACE
(Zone 11)

EURAFREP.

MORSCHWILLER 3 a été arrêté à 1 268,7 m dans l'Eocène, atteint à 1 235 m. Ce niveau s'est montré compact et sans indice.

SPECHBACH 1 reprend l'étude des objectifs de l'Eocène et du Dogger à 6 km au sud-ouest du forage précédent et se poursuit actuellement à 1 194 m. La série suivante a été rencontrée : Stampien de 18 à 184 m; Samoisien de 184 à 1 021 m; Eocène possible de 1 021 à 1 043 m; Rauracien de 1 043 à 1 123 m et Callovo-Oxfordien depuis 1 123 m. Aucun indice ne s'est manifesté jusqu'à présent.

AQUITAINE
(Zone 12)

E.R.A.P.

GAUJACQ 1 a pour objectifs les réservoirs du Jurassique supérieur et accessoirement les carbonates de l'Albo-Aptien sur le flanc sud de l'accident triasique de Bastennes-Gaujacq. Le forage est à 1 683 m dans le Crétacé supérieur, atteint à 1 102 m.

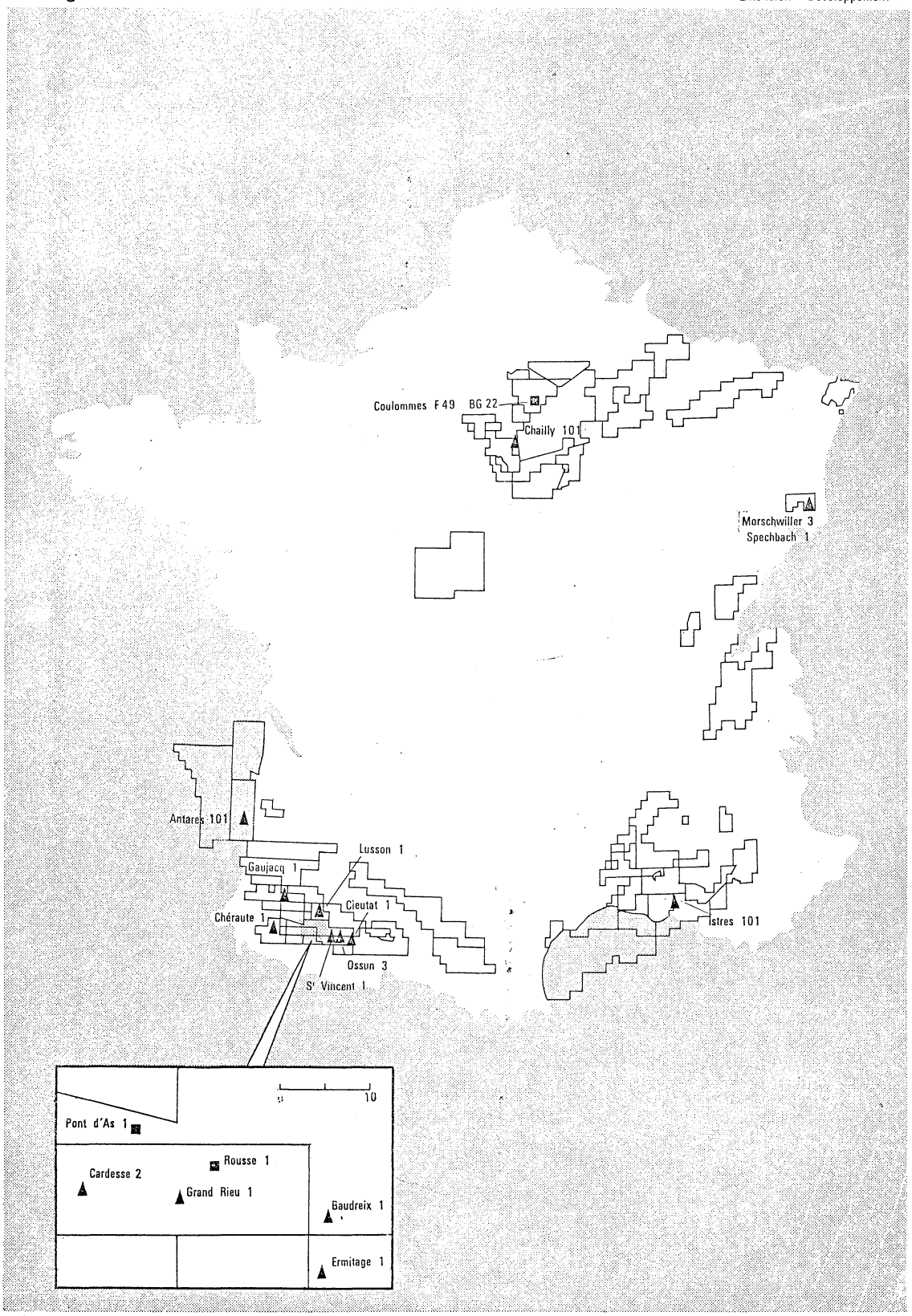
ESSO.

ANTARÈS 101 a rencontré les marno-calcaires de Lamarque à 3 145 m, le calcaire de Saint-Martin à 3 539 m, les marnes à Ammonites à 3 598 m et les calcaires à Filaments, objectif principal du forage, à 3 700 m. Une forte venue d'huile dans la boue s'est manifestée à 3 513 m à la base des marno-calcaires de Lamarque. Un test réalisé au droit de cette zone (3 497-3 526 m) a confirmé les mauvaises caractéristiques du réservoir. Les calcaires à Filaments ont montré des indices d'huile et de gaz dans les niveaux B (3 804-3 884 m) et D_2/D_3 (3 980-4 040 m environ) qui se sont révélés compacts sur carotte.

CHERAUTE 1 se poursuit à 5 504,5 m dans une série de marnes à intercalations de calcaires argileux datée de l'Aptien supérieur.

Sondages en cours

Exploration ▲
Extension Developpement ▣

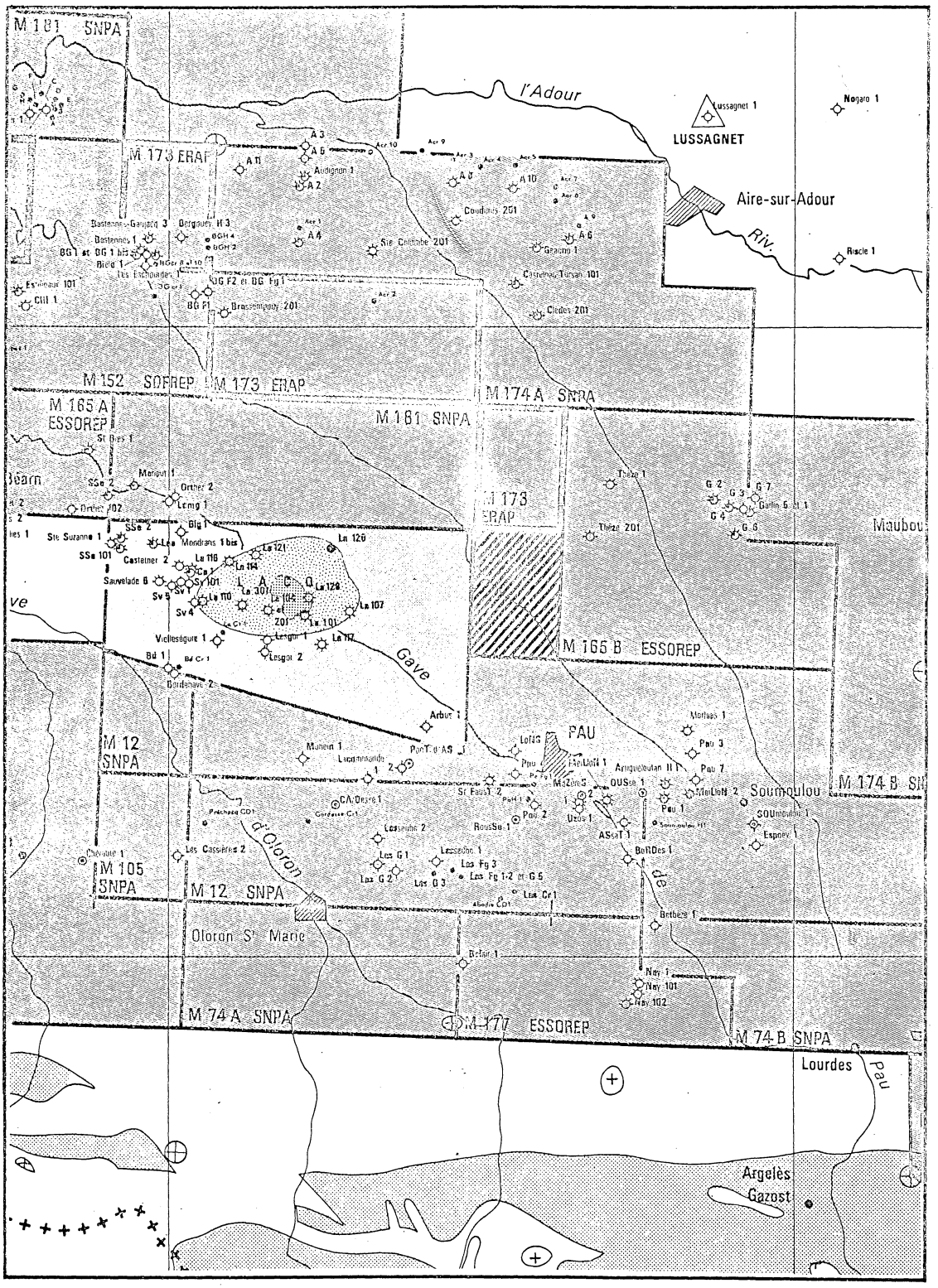


TITRES MINIERS

DEMANDE D'EXTENSION DU PERMIS DU LUY DE FRANCE (ERAP — M 173)

PERMIS DU LUY-DE-FRANCE (M 173).

Pétitionnaire : E.R.A.P.
Demande d'extension : pétition du 9 mai 1967.
Superficie sollicitée : 73 km².



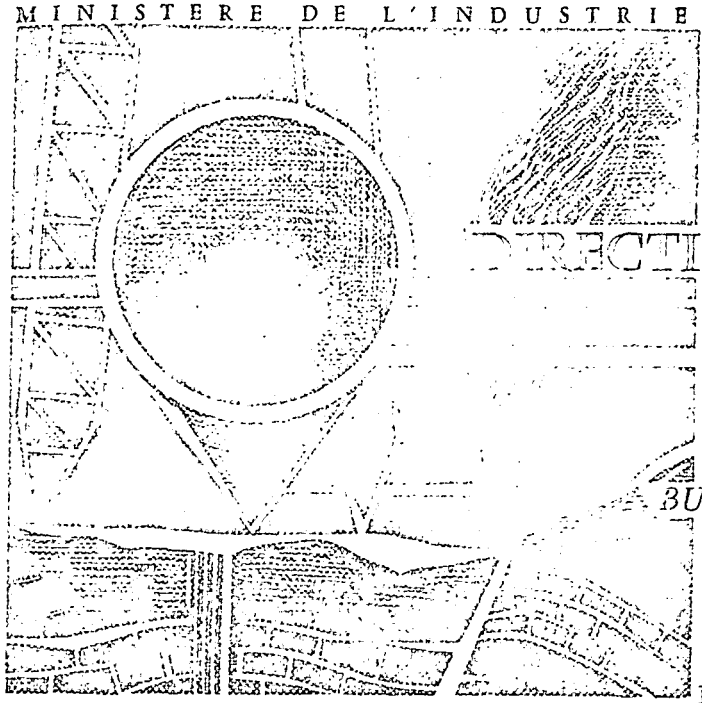
ECHELLE : 1: 500000

Demande M 617 Extension du Permis M 173 Luy de France **ERAP**

23.

Attachment B

MINISTERE DE L'INDUSTRIE



DIRECTION DES CARBURANTS

SERVICE DE CONSERVATION

BULLETIN BIMENSUEL D'INFORMATION

228, Avenue Napoléon-Bonaparte, 92 Rueil-Malmaison, Tél. 927-27-75

BULLETIN N° 190 – 30 Septembre 1967

PRINCIPAUX RESULTATS OBTENUS PAR LES ORGANISMES DE RECHERCHE DE PETROLE

DU 15 AU 30 SEPTEMBRE 1967

AQUITAINE.

GAUJACQ 1 (ERAP) se poursuit dans des calcaires aptiens où des indices d'huile continuent à se manifester.

ALDEBARAN 1 (ESSO) a atteint le Wealdien vers 3.080 m et le Purbéckien vers 3.335 m.

AINHICE 1 (ESSO) a atteint le Lias carbonaté à 1.475 m, plus haut que prévu. Les Calcaires à Filaments (1.088 – 1.370 m) ont donné de l'eau salée en test.

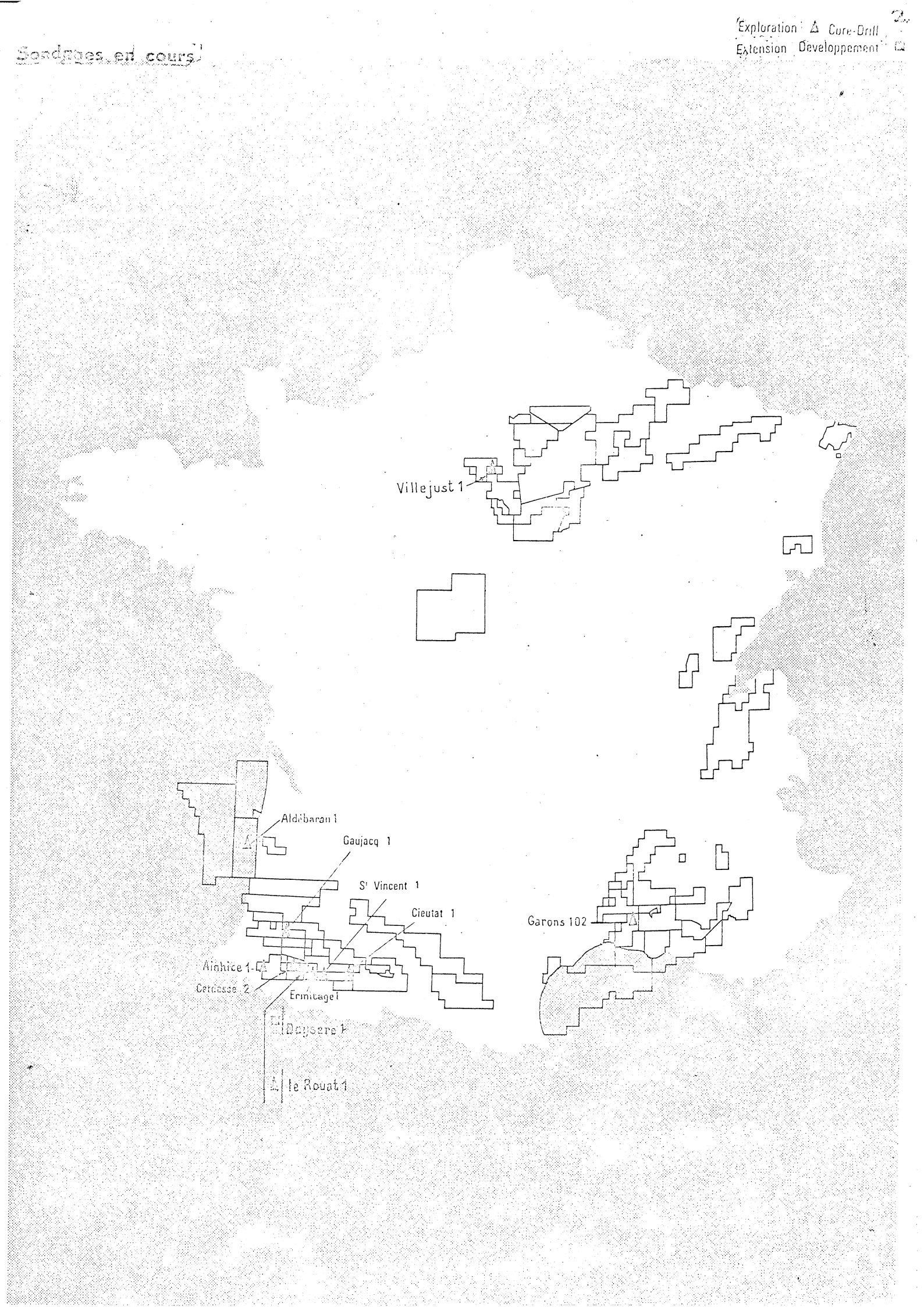
CIEUTAT 1 (SNPA) a rencontré le toit des Calcaires des Canyons à 4.712 m.

BASSIN DE PARIS.

VILLEJUST 1 (ERAP) s'est achevé sans succès pétrolier à 1.581 m. Le Dogger a débité de l'eau douce.

Sondages en cours

Exploration △ Core-Drill
Extension Developpement □



BULLETIN N° 190 - 30 septembre 1967

ZONE 12 (Aquitaine)

ERAP W 1879 GAUJACQ Gaq 1 /19.05.67/Em. J 1250 ERAP 7 //02.10.67/4187,6
Aptien.
Calcaire beige à débris zoogènes. Indices d'huile.
DST 4041,6-4059 = 870 l huile et gaz en 0 H 45.
DST 4082,1-4093 = 1500 l huile et gaz en 1 H 25.
DST 4098,4-4113 = 750 l huile et gaz en 0 H 50.
DST 4117,6-4128 = 2001 huile et gaz en 0 H 50.
DST 4135,6-4146 = sec (T.O. 0 H 35).

ESSO W 1885 ALDEBARAN 1 /29.07.67/Na 1625 NEPTUNE //02.10.67/3392
Purbeckien.
Wealdien vers 3080 m.
Purbeckien vers 3335 m.
Grès grossiers et conglomératiques à ciment siliceux et argileux.

ESSO W 1883 AINHICE 1 /28.08.67/Id. S 7x11 FOREX //02.10.67/1620
Lias.
Flysch de 0 à 696 m.
Albien de 696 m à 1068 m.
Oxfordien de 1068 à 1088 m.
Calcaires à Filaments (Callovo-Dogger) de 1088 à 1370 m.
Lias marneux de 1370 à 1475 m.
Sinémurien calcaire de 1475 à 1495 m.
Hettangien dolomitique de 1495 à 1616 m.
Depuis 1616 m, calcaire bioclastique.
DST 1184-1216 m = 9800 l E.S. (4 g/l) en 1 H.

SNPA W 1877 CIEUTAT CET 1 /1.04.67 /Id. S 7x11 FOREX //29.09.67/4734,9
Calcaire des Canyons (toit à 4712 m).

SNPA W 1880 ST VINCENT SVT 1 /01.05.67/Em A 1500 SFPLF //29.09.67/3353,3
Flysch Crétacé supérieur.

SNPA W 1882 ERMITAGE ERM 1 /16.06.67/G.D. 2100 FOREX //29.09.67/2168
Flysch Crétacé supérieur.

SNPA X 1884 BAYSERE BAY 1 /01.08.67/G.D. 2100 FOREX //29.09.67/2592,5
Flysch Crétacé supérieur.

SNPA W 1878 CARDESSE CAD 2 /24.04.67/Id. S 7x11 SFPLF //29.09.67/4542,1
Flysch Crétacé supérieur.

SNPA W 1886 LE ROUAT LRT 1 /27.08.67/U.R. 914 FORASOL //29.09.67/1527,7
Eocène.

...

ZONE 14 (Bassin Parisien)

T ERAP W 3316 VILLEJUST 1 /10.09.67/Id. H 40 ERAP //24.09.67/1581
Dogger

Dogger à 1550,5 m
DST = 1547,4 – 1581 = 10.800 l ED (ClNa 2 g/l) en 1h35

ZONE 18 (Couloir Rhodanien, Languedoc et Provence)

ERAP K 1281 GARONS 102 /13.09.67/Id. H 30 ERAP //02.10.67/510

IMPLANTATIONS NOUVELLES

BULLETIN N° 190 - 30 septembre 1967

ZONE 12 (Aquitaine)

X 12-1887 67 M 140 64 SNPA PONT D'AS PTS 2
x= 368.527 Zs= 143,84
y= 114.975 Zt= 148,44

ZONE 18 (Couloir Rhodanien, Languedoc, Provence)

W 18-1282 67 N 72 30 SNPA LES ANGLES M.An 1
x=793.140 Zs= 90,30
y=187.620 Zt= 96,10

-=-=-=-=-=-=-=-=-=-

CAROTTAGES SISMIQUES

ZONE 12 (Aquitaine)

12-1389 - LE PORGE Pg 1

12-1415 - MEOS 1

=-=-=-=-=-=-=-=-=-

DIAGRAPHIES - LOGS HABILLES

BULLETIN N° 190 - 30 septembre 1967

D I A G R A P H I E S

ZONE 12 (Aquitaine)

12-1866 - CHERAUTE CHE 1

IL	42	IL	45	5656/6030
GRN	32	GRN	35	5350/6029
GRN	42	GRN	45	5655/6087
SL	42	SL	45	5656/6028

12-1878 - CARDESSE CAD 2

LL	22	LL	25	999/3192
GRN	12	GRN	15	0/3193
SL	22	SL	25	997/3192

12-1881 - LUSSON 1

CE	12	CE	15	1538/1837
IL	12	IL	15	12/ 607
SL	12	SL	15	12/ 604

Attachment No. 4a.

Type	Zone	Numéro	An.	Permis	Dép.	Opérateur	Nom
W	14	1756	59	M 19	51	RAP	MONTMIRAIL

M 2

X : 1,3033g E (686.090) Y : 54,2746g (128.080) Z_s : 166 Z_t : 170,90

Tubages
9 5/8 à 321,7
7 à 1831,5
Le 1/2 Liner 1880

Début 24/8/59 Fin 27/10/59 Fond 2223,0

P	Coupe	Car.	Étage	LITHOLOGIE
10			TERTIAIRE	Calc. Jaunâtre très siliceux - meulière
38				Calc. beige-clair à pâte fine, siliceux par endroits intercalations de marne
45				Calcaire marneux fin gris-beige
79				Calcaire à pâte fine gris-blanchâtre
109				Argile brunâtre ou gris-vert ; lignite
			SENONIEN	Craie blanche à rognons de silex brun
				Pyrite
430			TURONIEN	Craie grise, blanchâtre
605			CENOMANIEN	Craie gris-blanchâtre assez dure et passant à un calcaire crayeux
673				Marne argileuse gris-clair, glauconieuse
710			ALBIEN	Marne argileuse gris-foncé à noire, finement sableuse
756				Sable glauconieux, fin à moyen, verdâtre plus ou moins argileux
830			APTIEN	Argile brunâtre à kaki
874				Marne argileuse grise à gris-foncé
890			BARR.	Argile bariolée
910				Argile grise à niveaux oolithiques
935			NEOCOMIEN	Marne gris-sombre plus ou moins sableuse à rares passées de marno-calcaire
964-72				Argile gris-brun, sableuse et grès fin, glauconieux
				Argile gris-foncé plus ou moins sableuse
1012			PURBEC.	Calcaire marneux blanchâtre ; intercalations de marne argileuse, d'anhydrite, dolomie
1066			PORTL.	

MESURES ÉLECTRIQUES — ESSAIS

CE 10 - 300 - 1827 - 1889,1 - 2221
ML 1827 - 1888,7
L 1827 - 1888,8
MLL
IL
GBN
Ø 800 - 1829
TH

Ind.

CCL		Sonic	
P		CVL	
D		Sismo	

P	Coupe	Car.	Étage	LITHOLOGIE	Ind.	ESSAIS
			PORTLANDIEN	Calcaire à pâte fine, gris-beige		
				Exogyres		
1205						
				Marne grise à gris-foncé		
				Intercalations de calcaire marneux gris-beige ou beige		DST - 1241,8 - 1261,6 2 h.
						1.200 l. eau (0,25 g/l)
				Schistes bitumineux (1236-1240)		
1380			KIMMERIDGIEN	Calcaire à pâte fine ou oolithique		
				Intercalations de grès fin argileux compact (1505-24)		
1533				Marne grise finement gréseuse avec intercalations de calcaire marneux gris-beige		
1715			CALLOVO - OXFORDIEN	Marne grise à gris-foncé finement sableuse		
				Minces lentilles de grès fin gris-clair		
1829		1		Ensemble noduleux de calc.gris-clair et de marne		DST 1 - 1830,7 - 1838,7 échec
1831		à		Calc.oolithique à graveleux		DST 2 - 1831,5 - 1838,7 1 h. échec
1857				Calc.à pâte fine compact gris à gris-beige	⊕	DST - 1831 - 1840 sec
1866		11	DOGGER	Calc.gris oolithique à graveleux		DST 3 - 1831,5 - 1848 2 h.30'
		12				1.700 l. huile émulsionnée de gaz + boue
		13		Calcaire gris-beige plus ou moins clair, graveleux, à pâte fine, à petits galets gris-foncé ; quelques points argilo-bitumineux - Lamell. Gast. Forams		DST 4 - 1841,5 - 1851
						1.640 l. huile
						135 l. ES 11,2 g/l
1972				Calcaire oolithique gris ou graveleux gris-beige		DST 6 - 1864 - 1872 3 h.
				Polypiers - Forams		3,140 l. E boueuse émulsionnée d'huile et d
2023						gaz (sel 14,9 g/l)
				Calcaire gris finement gréseux microcristallin		
2104				Marne argileuse gris-foncé gréseuse et micacée		
2117		14		Calc.gris-clair compact, cristallin, gréseux, pyriteux		
2125		15 à 17		Calcaire gris gréseux, compact à Chailles, gris-foncé - Nodules		
2177		18		Calcaire gris, légèrement gréseux		DST 7 - 2195,2 - 2210,3 1 h.30 sec
2209		à 22	LIAS	Marne grise indurée à lentilles gréso-calc., puis argile foncée schisteuse et micacée depuis 2211		
	2223,0					

EXTRAIT DES RAPPORTS MENSUELS

MONTMIRAIL Attachment No. 46

14-1756

W 14-1756 59 M 19 51 RAP

Mt 2

x= 686.090 y= 128.080 L.I

x= 1g3033 E y= 54g2746 Zs= 166 Zt= 170,90

24/8/59 - 27/10/59 p= 2223

Attachment N°5

CHAMBRE SYNDICALE DE LA RECHERCHE ET DE LA PRODUCTION
DU PÉTROLE ET DU GAZ NATUREL

ESSAI DE NORMALISATION DES FIGURES, SIGNES CONVENTIONNELS ET ABRÉVIATIONS POUR LOGS ET CARTES

COMITÉ DES TECHNICIENS

COMMISSION EXPLORATION

SOUS-COMMISSION SUBSURFACE

PREMIÈRE PARTIE

FIGURES, SIGNES CONVENTIONNELS ET ABREVIATIONS POUR LOGS DE SURFACE ET DE FORAGES

DEUXIÈME PARTIE

FIGURES ET SIGNES CONVENTIONNELS POUR CARTES ET PLANS

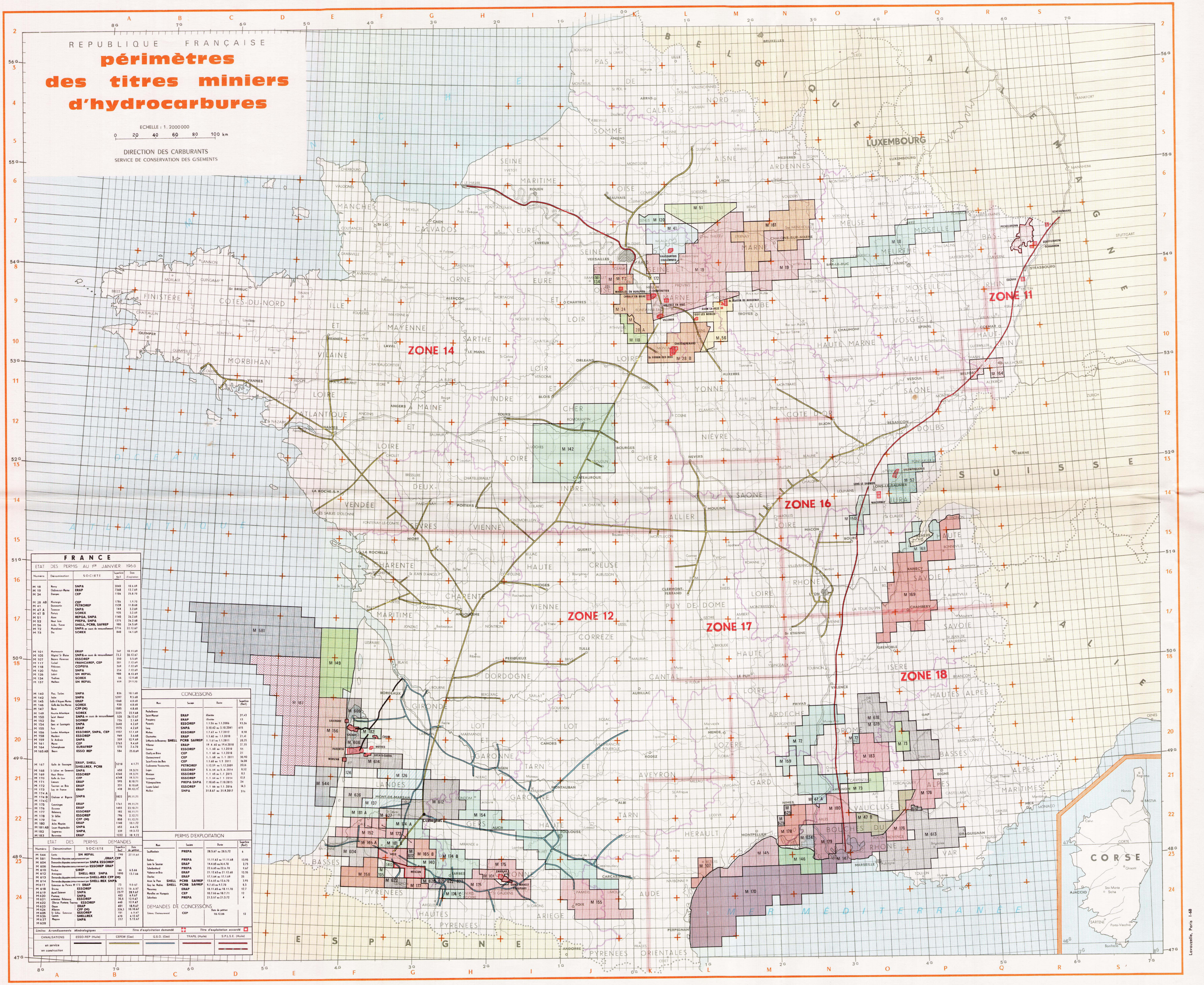
REPUBLIQUE FRANÇAISE

périmètres des titres miniers d'hydrocarbures

ECHELLE : 1: 2000000

0 20 40 60 80 100 km

DIRECTION DES CARBURANTS
SERVICE DE CONSERVATION DES GISEMENTS



FRANCE

ETAT DES PERMIS AU 1ER JANVIER 1968

Numéro	Dénomination	SOCIETE	Superficie Km2	Date d'expiration
M 18	Nancy	SNPA	3040	10.6.69
M 19	Châlons-sur-Marne	ERAP	7368	13.7.69
M 24	Etampes	CEP	1106	25.8.70
M 28 AB	Montargis	CEP	1786	1.9.70
M 41	Dammartin	PETROREP	1538	11.8.68
M 47 A	Tarascon	SNPA	144	3.2.69
M 47 B	Pertuis	SOREX	935	3.2.69
M 51	Aisne	REPGA, SNPA	1140	26.2.69
M 52	Haut Jura	PREPA, SNPA	1375	26.2.68
M 56	Aube, Yonne	SHELL, PCRB, SAFREP	980	24.5.69
M 72	Montélimar	SNPA en cours de renouvellement	2716	22.12.67
M 73	Die	SOREX	840	14.1.69
M 101	Montmaurin	ERAP	247	18.11.69
M 105	Hôpital St Blaise	SNPA en cours de renouvellement	73,2	30.12.67
M 107	Béziers Florensac	ESSOREP	350	5.5.69
M 117	Corbeil	FRANCAREP, CEP	201	7.12.69
M 118	Pithiviers	COPEFA	369	7.12.69
M 120	Valois	SNPA	254	7.12.69
M 126	Labrit	SN REPAL	980	8.12.69
M 134	Yvelines	SOREX	66	12.9.68
M 137	Meilhan	SN REPAL	919	29.9.70
M 140	Pau, Tarbes	SNPA	836	10.1.68
M 142	Indre	SNPA	5397	9.5.68
M 145	Golfe d'Aigues Mortes	ERAP	1060	4.8.68
M 146	Golfe des Stes Maries	SOREX	930	4.8.68
M 147	Berre	CFP (M)	1585	4.8.68
M 149	Hourtin Atlantique	SOREX	2325	22.9.68
M 150	Saint Amour	SNPA en cours de renouvellement	528	26.12.67
M 152	Dax	SOFREP	726	2.1.69
M 154	Gers et Lauragais	SNPA	3640	4.2.69
M 155	Foix	ERAP	1975	4.2.69
M 156	Landes Atlantique	ESSOREP, SNPA, CEP	1937	17.1.69
M 158	Mauléon	ESSOREP	949	3.6.68
M 159	St Ambroix	SNPA	359	12.9.69
M 161	Marne	CEP	2763	9.4.69
M 164	Schweighouse	EURAFREP	570	2.6.70
M 165 AB	Béarn	ESSO REP	584	25.8.69
M 167	Golfe de Gascogne	ERAP, SHELL SHELLREX, PCRB	5210	4.1.71
M 168	St Julien en Genevois	SNPA	650	19.3.71
M 169	Haut Rhône	ESSOREP	4260	19.3.71
M 170	Golfe du Lion	CFP	6248	19.3.71
M 171	Limours	ERAP	595	8.10.71
M 172	Tournan en Brie	ERAP	331	8.10.69
M 173	Luy de France	ERAP	438	30.12.71
M 174 A M 174 B M 174 C	Chalosse et Bigorre	SNPA	1822	19.11.71
M 175	Comminges	ERAP	1761	19.11.71
M 176	Durance	ERAP	1455	23.10.71
M 177	Rébénacq	ESSOREP	182	10.11.71
M 178	St Gilles	ESSOREP	796	2.12.71
M 179	Crau	CFP (M)	850	11.12.71
M 180	Arles Mouries	ERAP	1140	10.1.72
M 181 AB	Louer-Hagetaubin	SNPA	653	4-4-72
M 182	Lagnerau	SNPA	339	19-3-72
M 183	Baronnies	ERAP	1222	18 9.72

ETAT DES PERMIS DEMANDES

Numéro	Dénomination	SOCIETE	Superficie Km2	Date de pétition
M 544	Contis	SN REPAL	790	27.11.61
M 581	Demandes déposées concurremment par	,ERAP, CFP		
M 604	Demandes déposées concurremment par	SNPA ESSOREP		
M 606	Demandes déposées concurremment par	ESSOREP ERAP		
M 610	Verdon	SIREP	46	6.5.66
M 612	Armagnac	SHELL-REX SNPA	1890	13.7.66
M 613	Demandes déposées concurremment par	SHELL-REX CFP (M)		
M 614	Demandes déposées concurremment par	SHELL-REX SNPA		
M 617	Extension du Permis M 173	ERAP	73	9-5-67
M 618	Drome	ESSOREP	2571	16 .6.67
M 619	Aurel-Sisteron	SNPA	2577	28.9.67
M 620	Pontacq	SNPA	403	6.9.67
M 621	extension Rébénacq	ESSOREP	30,5	12.9.67
M 622	Oloron Pontacq Tourray	ESSOREP	440	12.9.67
M 623	Ossun	ERAP	401	18.9.67
M 624	Albaron	CFP (M)	326,5	10.10.67
M 625	St Gilles Extension	ESSOREP	151	6.9.67
M 626	Castets	SHELLREX	470	4.12.67
M 627	Magron	SNPA	217	5.12.67
M 628				

CONCESSIONS

Nom	Société	Durée	Superficie (Km2)
Pechelbronn			
Saint-Marcet	ERAP	illimitée	37,43
Proupiary	ERAP	illimitée	13
Parentis	ESSOREP	1.1.56 au 1.1.2006	93,36
Lacq	SNPA	3.10.42 au 3.10.2041	415
Mothes	ESSOREP	1.7.62 au 1.7.2012	8,58
Chartrettes	ERAP	1.1.60 au 1.1.2010	21,41
St Martin de Bossenay	SHELL PCRB SAFREP	1.1.61 au 1.1.2011	20,35
Villemer	ERAP	19.4.60 au 19.4.2010	21,55
Cazaux	ESSOREP	1.1.60 au 1.1.2010	55
Chailly en Bière	CEP	1.1 60 au 1.1.2010	21
Chateaurenard	CEP	1.1.60 au 1.1 2011	30,90
Saint Firmin des Bois	CEP	1.1.60 au 1.1 2011	16,08
Coulommes Vaucourtois	PETROREP	1.12.59 au 1.12.2009	20,16
Lugos	ESSOREP	5.6.64 au 5.6.2014	11,52
Mimizan	ESSOREP	1.1 65 au 1.1 2015	11,5
Lavergne	ESSOREP	1.1.64 au 1 1 2014	12,8
Valempoulières	PREPA-SNPA	7.10.65 au 7.10.2015	24
Lucats Cabeil	ESSOREP	1.1 66 au 1.1.2016	14,3
Meillon	SNPA	31.8.67 au 31.8.2017	316

PERMIS D'EXPLOITATION

Nom	Société	Durée	Superficie (Km2)
Soufflenhein	PREPA	28.5.67 au 28.5.72	6
Eschau	PREPA	11.11.63 au 11.11.68	13,95
Lons le Saunier	ERAP	14.4.65 au 14.4.70	2,75
Scheibenhard	PREPA	22.6.65 au 22.6.70	9,67
Valence en Brie	ERAP	21.12.63 au 21.12.68	13,35
Charlas	ERAP	17.1.64 au 17.1.69	25
Avon la Peze	SHELL PCRB SAFREP	13.6.65 au 13.6.70	3,95
Gisy les Nobles	SHELL PCRB SAFREP	9.7.65 au 9.7.70	5,3
Macornay	ERAP	18.11.65 au 18.11.70	12,7
Marolles en Hurepoix	CEP	10.7.66 au 10.7.71	12
Schirrhein	PREPA	21.3.67 au 21.3.72	4

DEMANDES DE CONCESSIONS

Nom	Société	Date de pétition	Superficie (Km2)
Extens. Chateaurenard	CEP	16.12.66	12

Limites Arrondissements Minéralogiques — Titre d'exploitation demandé — Titre d'exploitation accordé

CANALISATIONS	ESSO-REP (Huile)	CEFEM (Gaz)	G.S.O. (Gaz)	TRAPIL (Huile)	S.P.L.S.E. (Huile)
en service en construction					

Lavanzelle, Paris 1-68

BASSIN PARISIEN

ECHELLE : 1 : 500000

- Sondage de reconnaissance structurale ●
- Emplacement de sondage ○
- Sondage en cours ⊙
- Sondage sec ⌖
- Sondage avec indice d'huile ⌖
- Sondage avec indice de gaz ☼
- Sondage producteur d'huile ●
- Sondage producteur de gaz ☼
- Gisement d'huile ▨
- Gisement de gaz ▨
- Permis de recherche 🟦
- Permis d'exploitation ▨
- Concession 🟥
- Cristallin Cristallophyllien +
- Paléozoïque ▨

Date de mise à jour 1er janvier 1968

Service de Conservation des Gisements d'Hydrocarbures

Numéro	Dénomination	SOCIETE	Superficie Km2	Date d'expiration
M 18	Nancy	SNPA	3040	10.6.69
M 19	Châlons-sur-Marne	ERAP	7368	13.7.69
M 24	Etampes	CEP	1106	25.8.70
M 28 AB	Montargis		1786	1.9.70
M 41	Dammartin	PETROREP	1538	11.8.68
M 47 A	Tarascon	SNPA	144	3.2.69
M 47 B	Perthuis	SOREX	935	3.2.69
M 51	Aisne	REPGA, SNPA	1140	26.2.69
M 52	Haut Jura	PREPA, SNPA	1375	26.2.68
M 56	Aube, Yonne	SHELL, PCRB, SAFREP	980	24.5.69
M 72	Montélimar	SNPA	2716	22.12.67
M 73	Die	SOREX	840	14.1.69
M 74 AB	Nay		620	5.7.67
			216	30.6.69
M 101	Montmaurin	ERAP	247	18.11.69
M 105	Hôpital St Blaise	SNPA	73,2	30.12.67
M 107	Béziers Florenzac	ESSOREP	350	5.5.69
M 117	Corbeil	FRANCAREP, CEP	201	7.12.69
M 118	Pithiviers	COPEFA	369	7.12.69
M 120	Valois	SNPA	254	7.12.69
M 126	Labrit	SN REPAL	980	8.12.69
M 134	Yvelines	SOREX	66	12.9.68
M 137	Meilhan	SN REPAL	919	29.9.70
M 140	Pau, Tarbes	SNPA	836	10.1.68
M 142	Indre	SNPA	5397	25.5.68
M 145	Golfe d'Aigues Mortes	ERAP	1060	4.8.68
M 146	Golfe des Stes Maries	SOREX	930	4.8.68
M 147	Berre	CFPM	1585	4.8.68
M 149	Hourtin Atlantique	SOREX	2325	22.9.68
M 150	Saint Amour	SNPA	528	26.12.67
M 152	Dax	SOFREP	726	2.1.69
M 154	Gers et Lauragais	SNPA	3640	4.2.69
M 155	Foix	ERAP	1975	4.2.69
M 156	Landes Atlantique	ESSOREP, SNPA, CEP	1937	17.1.69
M 158	Mauléon	ESSOREP	949	3.6.68
M 159	St Ambroix	SNPA	359	12.9.69
M 161	Marne	CEP	2763	9.4.69
M 164	Schweighouse	EURAFREP	570	2.6.70
M 165 AB	Béarn	ESSO REP	584	25.8.69
M 167	Golfe de Gascogne	ERAP, SHELL SHELLREX, PCRB	5210	4.1.71
M 168	St Julien en Genevois	SNPA	650	19.3.71
M 169	Haut Rhône	ESSOREP	4260	19.3.71
M 170	Golfe du Lion	CFP	6248	19.3.71
M 171	Limours	ERAP	595	8.10.71
M 172	Tournan en Brie	ERAP	331	8.10.69
M 173	Luy de France	ERAP	438	19.11.71
M 174 A M 174 B M 174 C	Chalosse en Bigorre	SNPA	1822	19.11.71
M 175	Comminges	ERAP	1761	19.11.71
M 176	Durance	ERAP	1455	23.10.71
M 177	Rébénacq	ESSOREP	182	10.11.71
M 178	St Gilles	ESSOREP	796	2.12.71
M 179	Crau	CFP (M)	850	11.12.71
M 180	Arles Mouries	ERAP	1140	10.1.72
M 181 AB	Louer-Hagetaubin	SNPA	653	4-4-72
M 182	Lagnereau	SNPA	339	19-3-72
M 183	Baronnies	ERAP	1222	18 9.72