

**“MINERALS”, “PETROLEUM” AND
“OPERATIONS” IN THE MINERAL
AND PETROLEUM RESOURCES
DEVELOPMENT ACT 28 OF 2002:
A GEOLOGIST AS DEVIL’S
ADVOCATE FOR A CHANGE?**

PJ Badenhorst*
BLC LLB LLM LLM LLD
Professor of Law
Nelson Mandela Metropolitan University
Port Elizabeth
Consultant, Bowman Gilfillan Inc

with
RW Shone
BSc(Hons) PhD
Professor in the Department of Geology
Nelson Mandela Metropolitan University
Port Elizabeth

SUMMARY

This article examines the meaning of “minerals”, petroleum, “operations” and activities in relation to such substances to determine the ambit of the application of the Minerals and Petroleum Resources Development Act 28 of 2002, the type of rights necessary for such operations and activities and the ambit of these rights. The examination of the meaning of these concepts takes place with reference to prior definitions in statutes and also from a natural science and geology perspective. An attempt is made to show that the legal definitions do not always correspond with the geological meanings and the meanings on the ground. It is questioned whether in recent legislation why more reliance is not placed on input from geologists in the field.

* I remain responsible for the correctness of the end product.

1 INTRODUCTION

The rights to prospect and mine earth and mineral resources undoubtedly extend back to the earliest Stone Age when hominids competed for the best tool-making materials. Might rather than right probably served to resolve ownership disputes which arose then and later during the bronze and iron ages. Since the discovery of minerals in South Africa we have over the years progressed to the point that such disputes and the rights of mining companies and the general public are governed by legislation. As will be shown in this article the applicability of laws to prospecting and mining of minerals is determined by legal definitions of substances and activities or operations in respect of such substances. In spite of this, the growing need in developing countries to protect the interests of all competing parties, as well as the competed-for resources demands an ever more carefully constructed legislative framework.

Most South African legislation starts at the first section with definitions of concepts that are referred to in the provisions of the Act¹ and which at times determine the scope of application of the particular statute. Mineral and petroleum legislation has over the years defined "minerals",² classes of minerals³ and "petroleum"⁴ as well as different activities in relation to these

¹ See, however, for instance s 102 of the Mine Health and Safety Act 29 of 1996.

² In s 1 the Minerals Act 50 of 1991 a mineral is defined as follows: "[A]ny substance, whether in solid, liquid, or gaseous form, occurring naturally in or on earth, in or under water or in tailings and having been formed by or subjected to a geological process, excluding water, but including sand, stone, rock, gravel and clay, as well as soil, other than topsoil". "Water" itself is excluded from the definition of a "mineral". The Minerals Act 50 of 1991 had been amended by s 1(h) of the Minerals Amendment Act 103 of 1993 to define "topsoil" as "that layer of soil covering the earth and which provides a suitable environment for the germination of seed, allows the penetration of water, is a source of micro-organisms, plant nutrients and in some cases seed, and of a depth of 0.5 meter or any other depth as may be determined by the regional director for each mining area". See earlier criticism by Badenhorst and Van Heerden "Weereens die Betekenis van die Woord Mineraleal – *Van Waveren v Swart*" 1991 *TSAR* 181 192; and Kaplan and Dale *A Guide to the Minerals Act* (1991) 32-33 as to the absence of a definition of "topsoil". Kaplan and Dale 33 argue that the phrase "occurring naturally" is not intended to govern the phrase "or in tailings". They correctly point out that tailings are of their very nature not natural but artificial. In terms of s 1 "tailings" means "any waste rock, slimes or residue derived from mining operation or processing of any mineral". In *Elandsrand Gold Mining Company Limited v JF Uys* Case number 9915/93 (T) 23 unreported, it was accepted as arguable that a gold-bearing solution that escaped from tanks into a river and flowed on to another person's land may fall within the definition of "tailings". S 1 of (the repealed) Mines and Works Act 27 of 1956 also had a similar definition of a "mineral".

³ The following classes of minerals were distinguished in s 1 of the Mining Rights Act 20 of 1967 and the Precious Stones Act 73 of 1964 (and preceding legislation): "base minerals", "precious metals", "natural oil" and "precious stones". In terms of s 1 of the Precious Stones Act "precious stones" meant diamonds, rubies, sapphires and any other substances, which the State President had proclaimed to be precious stones. In terms of section 1 of the Mining Rights Act "precious metals" includes gold, silver, platinum and iridium, and any other metals of the platinum group, and the ores of any such metals, as well as any other metals, which the State President had proclaimed to be precious metals. "Natural oil", as defined in terms of s 1 the Mining Rights Act, meant "any liquid or solid hydrocarbon or combustible gas existing in a natural condition in the earth's crust, but does not include coal or bituminous shales or other stratified deposits from which oil can be obtained by destructive distillation, or gas arising from marsh or other surface deposits." "Base mineral"

substances in the respective statutes.⁵ The meanings assigned to these definitions fulfilled the important function of determining the parameters of the particular statute. Such meanings have to be determined in accordance with the ordinary rules of interpretation of statutes.⁶ Even though the courts rely extensively on the expert opinion of geologists as to the scientific meaning of minerals,⁷ the legal meaning is in the final analysis determined by a court.⁸ Apart from the ordinary rules of interpretation of statutes, the Mineral and Petroleum Resources Development Act 28 of 2002 (hereinafter "the MPRDA") prescribes specific rules of interpretation. Firstly, in so far as the common law is inconsistent with the MPRDA, the Act will prevail.⁹ Secondly, upon interpreting any provision of the Act, a reasonable interpretation, which is consistent with the objectives of the Act,¹⁰ has to be followed.¹¹ Over the years the activities envisaged in mineral laws, such as "prospecting"¹² and "mining",¹³ also had been defined by the legislature and

meant "any substance, whether in solid, liquid, or gaseous form, occurring naturally in or on the earth, which has been formed by or subjected to a geological process, but does not include (a) precious metals; (b) precious stones; (c) natural oil; (d) water, not being taken from a borehole, well, excavation or natural saltpan for the extraction therefrom of a substance in solution therein and of commercial value; and (e) soil, not being taken from the earth for the extraction therefrom of a substance of a commercial value contained therein for the manufacture therefrom of a product of commercial value."

⁴ See, for instance, the definition of "petroleum products" in the Petroleum Products Act 120 of 1977 as will be indicated in 3 below.

⁵ See, in general, Franklin and Kaplan *The Mining and Mineral Laws of South Africa* (1982) 29-35; Badenhorst, Pienaar and Mostert *Silberberg and Schoeman's Law of Property* 5ed (2006) 698-700; and Badenhorst and Mostert *Mineral and Petroleum Law of South Africa* (2004) Revision Service 3 6-9 to 6-14.

⁶ *Falcon Investments Ltd v CD of Birnam (Suburban) Pty Ltd* 1973 3 SA 384 (A) 400B-C; and *Belville-Inry Edms Bpk v Continental China (Pty) Ltd* 1976 3 SA 583 (C) 585-588.

⁷ See, for instance, *Minister of Land Affairs v Rand Mines Ltd* 1998 4 SA 303 (SCA).

⁸ *Finbro Furnishers (Pty) Ltd v Registrar of Deeds, Bloemfontein* 1985 4 SA 773 (A) 791F and 804D-807C-D.

⁹ S 4(2).

¹⁰ S 2 of the Act has the following objectives: (a) the recognition of the internationally accepted right of the State to exercise sovereignty over all the mineral and petroleum resources within the Republic; (b) to give effect to the principle of the State's custodianship of the nation's mineral and petroleum resources; (c) the promotion of equitable access to the nation's mineral and petroleum resources for all the people of South Africa; (d) the substantial and meaningful expansion of opportunities for historically disadvantaged persons, including women, to enter the mineral and petroleum industries and to benefit from the exploitation of the nation's mineral and petroleum resources; (e) the promotion of economic growth and mineral and petroleum resources development in South Africa; (f) the promotion of employment and advancement of the social and economic welfare of all South Africans; (g) the provision of security of tenure in respect of prospecting, exploration, mining and production operations; (h) the putting into effect of s 24 of the 1996 Constitution which grants an environmental right by ensuring that the nation's mineral and petroleum resources are developed in an orderly and ecologically sustainable manner while promoting justifiable social and economic development; and (i) ensuring that holders of mining and production rights contribute towards the socio-economic development of the areas in which they are operating.

¹¹ S 4(1).

¹² Franklin and Kaplan 468; Badenhorst *Die Juridiese Bevoegdheid om Minerale te Ontgin in die Suid-Afrikaanse Reg* (1992) (LLD thesis) 131 (hereinafter "Badenhorst *Minerale*"); and Badenhorst "Betekenis van die begrip 'prospekteer' in die Suid-Afrikaanse reg" 1994 *TSAR* 495.

¹³ Franklin and Kaplan 467; and Badenhorst *Minerale* 131-144.

interpreted by the courts. As stated, these definitions also determined the scope of application of mineral and petroleum legislation. The legal meanings attached to substances such as “mineral” and “petroleum” and “operations” do not only define the ambit of application of a particular statute but also the ambit of rights in respect of such “minerals”, class of minerals or “petroleum”.

In this article the legal meaning of “minerals”, “petroleum” and different kinds of activities and “operations” in relation to such substances, as defined in the MPRDA, will be discussed. During the discussion the scientific or geological meaning of these definitions will also be mentioned.

The purpose of this article is to show the scope of application of the provisions of the MPRDA in respect of specific substances and specific activities or operations in relation thereto. The article will also attempt to show the impact of these definitions on the type of rights, permission or permits to be granted in terms of the provisions of the MPRDA and the content of these rights, permissions or permits. These definitions impact not only on how wide the statutory net is cast but also on determining the type and content of rights granted. For instance, a company intending to remove river sand for sale as building sand needs to ascertain whether it has to comply with the provisions of the MPRDA, what sort of a right, permission or permit it has to obtain and what the content of the right, permission or permit will be.

The methodology to be followed is first to introduce the reader briefly to the different kinds of rights, permissions or permits in relation to minerals and petroleum that may be granted in terms of the MPRDA. A detailed or critical discussion of these rights will not be provided and is to be found in the standard works on mineral and petroleum law.¹⁴ Thereafter the meaning of “mineral” and “petroleum” will be examined critically with reference to definitions of the past and for a change to take note of the scientific or geological meanings as well. The same exercise will be undertaken in respect of activities or operations in respect of these substances. An attempt will be made to show that despite the value of the legal definitions of substances and activities in the past it is time perhaps to allow geologists and scientists to provide a new input in relation to the definitions due to advances in natural sciences and geology.

2 MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT

The term “resources” used in the title of the Act is not defined in the MPRDA, but “minerals” and “petroleum” are separately defined in section 1.¹⁵ The

¹⁴ Dale, Bekker, Bashall, Chaskalson, Dixon, Grobler and Loxton *South African Mineral and Petroleum Law* (2005) (loose-leaf); Badenhorst and Mostert *Mineral and Petroleum Law of South Africa* (2004) (revision service); Badenhorst, Mostert and Dendy “Minerals and Petroleum” *LAWSA* 2ed Vol 18 2007.

¹⁵ It should be noted that in terms of property law theory, the object of the right to minerals or petroleum is the land itself. See Badenhorst *Minerale* vi-vii and 4; and see also s 5(1).

term "petroleum" has in the past been used in a separate statute¹⁶ or amalgamated into the Mining Rights Act.¹⁷ Thereafter, it was treated uniformly in Mineral Act¹⁸ which dealt with the prospecting and mining of all minerals.¹⁹ Especially, the meaning of "minerals" has been a legal bone of contention²⁰ and requires some discussion.

In terms of the MPRDA a distinction is made between rights in respect of minerals or petroleum and the land to which the right relates. The meaning of these concepts will be dealt with in 3 below.

2 1 Rights to minerals

The Minister of Minerals and Energy may grant reconnaissance permissions, prospecting rights, permission to remove minerals during prospecting operations, retention permits, mining permits and mining rights to "minerals".²¹ These rights²² can briefly be described as follows:²³

- (a) A reconnaissance permission to minerals²⁴ is a right, granted by the state to an applicant, which entitles the holder thereof to enter land for the purposes of "reconnaissance operations".²⁵ Reconnaissance as an activity is not defined in the MPRDA. The content of reconnaissance permission is further circumscribed by the definition of "reconnaissance operations".²⁶ Thus, a holder of a reconnaissance permission is entitled to carry out any operation to the search for a mineral by geological, geophysical, photo geological surveys and remote sensing techniques. The holder is, however, not entitled to conduct prospecting operations or mining operations²⁷ or apply for a prospecting right or mining right.²⁸
- (b) A prospecting right is a right, granted by the state to an applicant, which entitles the holder thereof (prospector) to: (i) prospect for minerals; (ii) apply for permission from the state to remove and dispose of bulk

¹⁶ Natural Oil Act 46 of 1942.

¹⁷ 20 of 1967.

¹⁸ 50 of 1991.

¹⁹ Dale *et al* MPRDA-478.

²⁰ Already in 1982 Franklin and Kaplan 26 observed that there is probably no area of mineral law that has attracted more judicial and academic attention than the meaning of the word "mineral". This tendency has continued until this day. See for instance, Badenhorst "For Old Time's Sakes, Meaning of a 'Mineral'? – *Armstrong v Sehadew Oree t/a Oree's Cartage and Plant Hire* 2004 3 SA 152 (SCA) 2004 *Stell LR* 464.

²¹ S 3(2)(a).

²² Ito s 5(1) prospecting rights and mining rights are limited real rights. As to a discussion of the nature of these rights, see Badenhorst "Nature of New Order Rights to Minerals: A Rubikian Exercise Since Passing the Mayday Rubicon With a Cubic Circonium?" 2005 *Obiter* 505.

²³ Badenhorst 2005 *Obiter* 509.

²⁴ Unlike a "reconnaissance permit" to petroleum, the notion of a "reconnaissance permission" to minerals is not defined in s 1 of the Act.

²⁵ S 15(1).

²⁶ See 4 1 below.

²⁷ S 15(2)(a).

²⁸ S 15(2)(b).

samples of minerals found during prospecting;²⁹ (iii) apply for the renewal of a prospecting right;³⁰ and (iv) apply for a mining right to minerals.³¹ The entitlement to prospect for minerals entails that the holder of a prospecting right may:³² (i) enter the land for purposes of prospecting;³³ (ii) prospect for his or her own account for mineral(s);³⁴ (iii) remove and dispose of the mineral(s) found during prospecting for testing, identification and analyses;³⁵ (iv) use water³⁶ or sink a well or borehole for prospecting usage; and (v) carry out any other activity³⁷ incidental to “prospecting operations”. According to the general principles of mineral law, a prospecting right does have as its content the entitlement to mine and dispose of minerals.³⁸ The meaning of the notions of “prospect/prospecting” and “prospecting operations” is further circumscribed by the respective definitions of “prospecting” and “prospecting operations”, as will be indicated in 4.1 below.

- (c) Permission to remove minerals during a prospecting operation is a right, granted by the state to the applicant, which entitles the holder thereof to remove and dispose of bulk samples of prospected minerals for his or her own account.³⁹
- (d) A retention permit is a statutory right issued by the state which entitles its holder to: (i) the suspension of the terms and conditions of his or her prospecting right;⁴⁰ (ii) apply for renewal of the retention permit;⁴¹ or (iii) apply exclusively for a mining right.⁴²
- (e) A mining permit is a statutory right issued by the state, which entitles its holder to: (i) prospect for minerals;⁴³ (ii) mine for minerals on a small

²⁹ S 19(1)(c) read with s 20(2).

³⁰ S 19(1)(a).

³¹ S 19(1)(b).

³² S 5(3).

³³ The prospector may be accompanied by employees. The prospector may also bring onto the land any plant, machinery and equipment for prospecting purposes. The prospector may further build, construct and lay down any surface or underground infrastructure which may be required for prospecting purposes.

³⁴ Prospecting may only be undertaken for minerals for which the prospecting right has been granted.

³⁵ S 20(1).

³⁶ Use of water is, however, subject to the National Water Act 36 of 1998. Such use of water may be from any natural spring, lake, river or stream on the land or any excavation previously made and used for prospecting purposes.

³⁷ The activity may, however, not contravene the provisions of the MPRDA.

³⁸ See Franklin and Kaplan 16.

³⁹ S 20(2).

⁴⁰ S 32(2).

⁴¹ S 34(1)-(2).

⁴² S 35(1).

⁴³ In terms of the common law, a mining right also includes the entitlement to prospect: *Edwards (Waaikraal) Gold Mining Co Ltd v Mamogale NO and Bakwena Mines Ltd* 1927 TPD 288 298; *Hudson v Mann* 1950 4 SA 485 (T) 488; and Franklin and Kaplan 7. It is submitted that this interpretation in terms of the common law is consistent with the provisions and objectives of MPRDA: see 1 above.

scale; and (iii) apply for renewal of such permit in limited instances.⁴⁴ Mining on a small scale would be if the mineral can be mined optimally within two years and the mining area does not exceed 1,5 hectares in extent.⁴⁵ The entitlement to mine for minerals entails that the holder of a mining permit may:⁴⁶ (i) enter the land for purposes of mining;⁴⁷ (ii) mine for his or her own account on or under that mining area for the mineral; and (iii) use water⁴⁸ or sink a well or borehole required for prospecting or mining usage. The meaning of the notion "mine/mining" is further prescribed by the definition of the concept "mine", as will be discussed in 4.3 below.

- (f) A mining right is a statutory right, granted by the state to the applicant, which entitles the holder to: (i) prospect for minerals;⁴⁹ (ii) mine for minerals; and (iii) apply for a renewal of the mining right.⁵⁰ The entitlement to mine entails that the holder of a mining right:⁵¹ may (i) enter the land for purposes of mining;⁵² (ii) mine for his or her own account for mineral(s);⁵³ (iii) remove and dispose of mineral(s) found during prospecting or mining; (iv) use water⁵⁴ or sink a well or borehole required for prospecting or mining usage; and (v) carry out any other activity⁵⁵ incidental to "mining operations". The meaning of the notions "mine/mining" and "mining operations" is further prescribed by the respective definitions of "mine" and "mining operations", as will be indicated in 4 3 below.

⁴⁴ S 27(8)(a).

⁴⁵ S 27(1).

⁴⁶ S 27(7)(a), (b) and (d).

⁴⁷ The permit holder may be accompanied by employees. The miner may bring onto the land any plant, machinery or equipment for mining purposes. The miner may further build, construct and lay down any surface or underground infrastructure which may be required for the purposes of mining.

⁴⁸ Use of water is subject to the provisions of National Water Act 36 of 1998. Such use of water may be from any natural spring, lake, river or stream, situated on, or flowing through, the land or any excavation previously made and used for prospecting or mining purposes.

⁴⁹ In terms of the common law, a mining right also includes the entitlement to prospect: *Edwards (Waaikraal) Gold Mining Co Ltd v Mamogale NO and Bakwena Mines Ltd* 1927 TPD 288 298; *Hudson v Mann* 1950 4 SA 485 (T) 488; and Franklin and Kaplan 7. It is submitted that this interpretation in terms of common law is consistent with the provisions and objectives of MPRDA: see 1 above.

⁵⁰ S 25(1).

⁵¹ S 5(3).

⁵² The miner may be accompanied by employees. The miner may also bring onto the land any plant, machinery and equipment for mining purposes. The miner may further build, construct and lay down any surface or underground infrastructure which may be required for mining purposes.

⁵³ Mining may only be conducted for minerals for which the mining right has been granted.

⁵⁴ Use of water is, however, subject to the National Water Act 36 of 1998. Such use of water may be from any natural spring, lake, river or stream on the land or any excavation previously made and used for prospecting or mining purposes.

⁵⁵ The activity may, however, not contravene the provisions of the MPRDA.

2 2 Rights to petroleum

Chapter 6 of the MPRDA also makes provision for the granting by a designated agency⁵⁶ of reconnaissance permits and technical co-operation permits for petroleum or by the state of exploration rights and production rights for petroleum.⁵⁷ These rights can briefly be described as follows:

- (a) A reconnaissance permit is a right granted by the designated agency which entitles its holder to conduct "reconnaissance operations" for petroleum in accordance with the reconnaissance programme.⁵⁸ The meaning of reconnaissance is not defined in the MPRDA. The content of the reconnaissance permission as a right is further circumscribed by the definition of "reconnaissance operations".⁵⁹ Thus, a holder of a reconnaissance permit may carry out any operation to search for petroleum by geological, geophysical, photo-geological surveys and remote sensing techniques. The holder is, however, not entitled to conduct exploration operations or production operations or apply for an exploration right or production right.⁶⁰
- (b) A technical co-operation permit is a right granted by the designated agency which entitles its holder to (i) carry out a technical co-operation study⁶¹ in accordance with the technical co-operation work programme,⁶² and (ii) to apply for an exploration right to petroleum in respect of the area to which the right applies.⁶³
- (c) An exploration right is a right granted by the state which entitles its holder to (i) explore for petroleum; (ii) apply for the renewal of an exploration right;⁶⁴ and (iii) apply for a production right in respect of the petroleum and the exploration area.⁶⁵ The entitlement to explore for petroleum entails that the holder of an exploration right may:⁶⁶ (i) enter the land for purposes of exploration;⁶⁷ (ii) explore for his or her own

⁵⁶ Ito s 70 the Minister may designate a state organ, agency or company belonging to the state to perform the function of the Minister for purposes of chapter 6. The South African Agency for the Promotion of Petroleum Exploration and Exploitation (Pty) Ltd has been designated accordingly: GG 26468 of 2005-06-18.

⁵⁷ S 3(2)(a).

⁵⁸ See s 75(5)(a).

⁵⁹ See 4 1 below.

⁶⁰ S 69(2)(a), which applies provisions regarding prospecting and mining to petroleum and mineral exploration, however, does not refer to s 15(2). This omission by the legislature should be rectified.

⁶¹ The notion of a technical co-operation study is not defined in the MPRDA or the MPRD Regulations.

⁶² See s 78(2)(a).

⁶³ S 78(1).

⁶⁴ S 82(1)(b).

⁶⁵ S 82(1)(a).

⁶⁶ S 5(3).

⁶⁷ The explorer may be accompanied by employees. The explorer may also bring onto the land any plant, machinery and equipment for exploration purposes. The explorer may further build, construct and lay down any surface or underground infrastructure which may be required for exploration purposes.

account for petroleum;⁶⁸ (iii) remove and dispose of the petroleum found during prospecting for testing, identification and analyses;⁶⁹ (iv) use water⁷⁰ or sink a well or borehole for exploration usage; and (v) carry out any other activity⁷¹ incidental to "exploration operations". The notion of "explore/exploration" is not defined in the MPRDA. As will be indicated, the meaning thereof has probably to be determined with reference to the definition of "exploration operations". The meaning of "exploration operations" is determined by its definition, as will be indicated in 4 4 below.

- (d) A production right is a right granted by the state which entitles its holder to (i) produce petroleum for its own account; and (ii) exclusively apply for a renewal of a production right.⁷² The entitlement to produce petroleum entails that the holder of a production right may:⁷³ (i) enter the land for purposes of production of petroleum;⁷⁴ (ii) produce petroleum for his or her own account;⁷⁵ (iii) remove and dispose of petroleum found during exploration or production;⁷⁶ (iv) use water⁷⁷ or sink a well or borehole required for exploration or production usage; and (v) carry out any other activity⁷⁸ incidental to "production operations". The notion of "produce/production" is not defined in the Act. As will be indicated, the content of a production right has probably to be determined with reference to the definition of "production operations". The meaning of "production operations" is determined by its definition, which will be indicated in 4 5 below.

3 MEANING OF "MINERAL" AND "PETROLEUM"

As stated in the introduction of 2 above, the MPRDA basically distinguishes between two kinds of resources, namely a "mineral" and "petroleum". The mineral or petroleum also seems to be treated as an object different from the land containing it.

⁶⁸ Exploration may only be undertaken for petroleum for which the exploration right has been granted.

⁶⁹ S 82(1)(c).

⁷⁰ Use of water is, however, subject to the National Water Act 36 of 1998. Such use of water may be from any natural spring, lake, river or stream on the land or any excavation previously made and used for exploration purposes.

⁷¹ The activity may, however, not contravene the provisions of the MPRDA.

⁷² S 86(1)(a).

⁷³ S 5(3).

⁷⁴ The producer may be accompanied by employees. The producer may also bring onto the land any plant, machinery and equipment for production purposes. The producer may further build, construct and lay down any surface or underground infrastructure which may be required for production purposes.

⁷⁵ Production may only be conducted for petroleum for which the production right has been granted.

⁷⁶ S 86(1)(b).

⁷⁷ Use of water is, however, subject to the National Water Act 36 of 1998. Such use of water may be from any natural spring, lake, river or stream on the land or any excavation previously made and used for exploration or production purposes.

⁷⁸ The activity may, however, not contravene the provisions of the MPRDA.

The word “mineral” can generally be used in different meanings. Firstly, it can be used in its usual or popular or so-called narrow meaning that does not include substances such as sand, stone and clay. Secondly, it can be used in its exceptional and so-called wide meaning whereby everything in the earth’s crust except that which belongs to the animal or plant kingdom is included. Thirdly, it can be used in its scientific or technical sense, that is an inorganic substance having a definite chemical composition and possessing certain characteristics not easy to define.⁷⁹

A “mineral” is defined in section 1 of the MPRDA⁸⁰ as “any substance, whether in solid, liquid or gaseous form, occurring naturally in or on the earth or in or under water and which was formed by or subjected to a geological process, and includes sand, stone, rock, gravel, clay, soil and any mineral occurring in residue stockpiles or in residue deposits, but excludes – water, other than water taken from land or sea for the extraction of any mineral from such water; petroleum; or peat”.

The requirement of “natural occurrence” of a “mineral” in the definition of a “mineral” in the Minerals Act was explained as follows in *Elandsrand Gold Mining Company Limited v JF Uys*:⁸¹

“[The words ‘occurring naturally in or on the earth’] do not mean that the mineral must be in the form in which it is found in its natural state when it is found, for example, as gold bearing ore. The words mean merely that the substance must be one which occurs naturally in the earth. Gold occurs naturally in the earth in various forms. It occurs both as ore and as pure gold in the form of nuggets. Alluvial gold is different in form and appearance from gold which is made far below the earth surface, but both forms are minerals. What is excluded is (sic) man-made substances.”

The court in the *Elandsrand* decision did, however, not deal with the phrase “having been formed or subjected to a geological process”. The interpretation given to the requirement of natural occurrence of a “mineral” in for purposes of the Minerals Act⁸² in *Elandsrand Gold Mining Company Limited v JF Uys* mentioned before, may be used in the interpretation of the definition of “mineral” in the MPRDA.

The definition of a “mineral” in the MPRDA is to some extent an improvement of the definition of “minerals” in the Minerals Act,⁸³ from which it was probably copied.⁸⁴ First, the erroneous linking in the definition of a “mineral” in the Minerals Act of “tailings”, which are by their very nature artificial and man-made,⁸⁵ with the phrase “occurring naturally” has not been

⁷⁹ *Brick & Potteries Co v Registrar of Deeds* 1903 TS 473; *Brick & Potteries Co Ltd v City Council of Johannesburg* 1945 TPD 194; and *Loubser v SAS & H* 1976 4 SA 589 (T). (But see, to the contrary, *Gibb v Du Toit* 1938 1 PH M36 (W) 58; and Badenhorst “Mining and Minerals” *LAWSA* Vol 18 (Franklin) (1999) first reissue par 17.

⁸⁰ 28 of 2002.

⁸¹ Case number 9915/93 (T) unreported 18. For a discussion of the decision, see Badenhorst 1995 *TSAR* 172.

⁸² 50 of 1991.

⁸³ See fn 2 above.

⁸⁴ Badenhorst and Mostert 13-8.

⁸⁵ See Kaplan and Dale 33.

repeated. Secondly, unlike the Minerals Act, a clear distinction is made between substances occurring naturally and being formed by or subjected to a geological process and minerals occurring in residue stockpiles and deposits. For the sake of clarity it is specifically stated in the definition of the MPRDA that sand, stone, rock, gravel, clay and soil qualify as minerals.⁸⁶ Also included is water taken from the land or sea but only if the extraction of any mineral from the water is possible. The rider makes the definition of a "mineral" in this regard wider than the definition thereof in the Minerals Act which excluded water in general.⁸⁷ However, the use of the word "mineral" as occurring in residue stockpiles and deposit in the definition of a "mineral" in the MPRDA seems unfortunate. In other words, a substance qualifies as a "mineral" if a "mineral" occurs in residue stockpiles and deposits, which is nonsensical.⁸⁸ Stated differently, the concept "mineral" is defined by using the word "mineral" as part of the definition. The reference to substances "in or under water" would encompass, for example, minerals in or under the seashore, territorial waters, continental shelf, rivers, salt pans, swamps, lakes or any other body of water.⁸⁹

The definition of a "mineral" in the MPRDA is limited somewhat in that water *per se*, "petroleum" and "peat" are expressly excluded from the definition of a mineral. As seen before, the concept "soil" was also included in the definition of a "mineral" in the Minerals Act,⁹⁰ but "topsoil" was specifically excluded and later defined.⁹¹ In the present definition "soil" is included but "topsoil" is not accordingly excluded even though the MPRDA does contain a similar definition of "topsoil"⁹² which is not linked to any definition or provision of the Act.⁹³ The oversight either results in the definition of "topsoil" being treated as *pro non scripto*⁹⁴ or urgently requires rectification by the legislature by the linking of "topsoil" to the definition of "mineral".⁹⁵

The concept "residue stockpile" is defined as "any debris, discard, tailings, slimes, screening, slurry, waste rock, foundry sand, beneficiation plant waste, ash or any other product derived from or incidental to a mining operation and which is stockpiled, stored or accumulated for potential re-

⁸⁶ Badenhorst and Mostert 13-8.

⁸⁷ See Kaplan and Dale 32.

⁸⁸ Badenhorst and Mostert 13-8.

⁸⁹ See Kaplan and Dale 32.

⁹⁰ 50 of 1991.

⁹¹ See fn 2 above.

⁹² "Topsoil" is defined as follows in s 1: "the layer of soil covering the earth which – (a) provides a suitable environment for the germination of seed; (b) allows the penetration of water; (c) is a source of micro-organisms, plant nutrients and in some cases seed; and (d) is not of a depth of more than 0,5 metres or such other depth as the Minister may prescribe for a specific prospecting or exploration area or a mining area".

⁹³ The concept of "top soil" as two words is used in reg 77(1) of the Mineral and Petroleum Resources Development Regulations R 527 GG 26275 of 2004-04-23.

⁹⁴ Dale *et al* MPRDA-53.

⁹⁵ The omission is not dealt with in s 1 of the draft Mineral and Petroleum Resources Development Amendment Bill, 2005, as published in GN 27987 GG of 2005-08-31; and Mineral and Petroleum Resources Development Amendment Bill, 2007 [B10-2007].

use, or which is disposed of, by the holder of a mining right, mining permit or production right".⁹⁶ The concept "residue deposit" means "any residue stockpile remaining at the termination, cancellation or expiry of a prospecting right, mining right, mining permit, exploration right or production right".⁹⁷ Tailings produced under mining rights prior to the MPRDA do not qualify as "residue deposits" or "residue stockpiles" due to the definitions of residues and are not regulated by the Mineral Petroleum Resources Development Act.⁹⁸

From the definition of a "mineral" one may deduce that in order for any substance to qualify as a mineral for purposes of the MPRDA the following requirements have to be satisfied, namely the substance:

- (a) must either be in solid, liquid or gaseous form; and
- (b) has (i) to occur naturally in or on the earth, in or under water; and (ii) to have been formed by, or subjected to, a geological process; or
- (c) has to occur in residue stockpiles or residue deposits.

Minerals as defined scientifically, are characterised by having a more or less fixed chemical composition and structure.⁹⁹ This differs markedly from the legal definition of a mineral wherein "any substance, solid, liquid or gaseous formed by a geologic process and including sand, stone, rock, gravel, clay or soil but excluding petroleum or water" is covered by the term "mineral". For a geologist, however, the mineral quartz is defined as silicon dioxide characterised by a particular spiralled arrangement of silicon and oxygen atoms; other minerals composed of silicon dioxide but with a different structure are assigned different mineral names, as are minerals composed of different elements (haematite, for example, the common ore of iron, is composed of ferric oxide). Rocks, on the other hand, are composed essentially of various mineral fragments and/or fragments of a variety of rocks. "Soil" and "sand" consist of weathered and decomposed rock materials; in the case of sand, the average grain size lying between 2mm and 0.0625mm in diameter. "Silt" and "clay" are finer-grained rock- and mineral derived-weathering products. Some of these materials are likely to be found in "residue stockpiles". Peat, which is essentially decomposed plant material in the process of being coalified, is exempt from the legal definition of a "mineral" but coal (the final product of coalified peat) is not. This could lead to legal difficulties in that coal (a valuable mining commodity) is essentially a more refined form of carbon fuel than is peat, and the definition of what is coal and what is peat is really a matter of water and carbon content.¹⁰⁰

These legal definitions (which fail to correspond with accepted geological definitions) may appear to simplify what is and is not a "mineral" but the legal

⁹⁶ Definition of "residue stockpile" in s 1.

⁹⁷ Definition of "residue deposit" in s 1.

⁹⁸ Dale *et al* MPRDA-81.

⁹⁹ See text of fn 79 above.

¹⁰⁰ Bates and Jackson *Glossary of Geology* 3ed (1987) 497.

definitions are perhaps so vague as to constitute grounds for all sorts of objections and arguments, especially in the context of prospecting and mining. Scientific or geological definitions may provide more certainty and should be used to give more fixed content to the definition of "minerals".

"Petroleum" is defined in section 1 of the MPRDA as: "any liquid, solid hydrocarbon or combustible gas existing in a natural condition in the earth's crust and includes any such liquid or solid hydrocarbon or combustible gas, which gas has in any manner been returned to such natural condition, but does not include coal, bituminous shale or other stratified deposits from which oil can be obtained by destructive distillation or gas arising from a marsh or other surface deposit".¹⁰¹

The phrase "any liquid, solid hydrocarbon" in the first sentence should rather read "any liquid or solid hydrocarbon" in so far as liquid also refers to hydrocarbon. The definition is largely a repetition of the definition of "natural oil" in the Mining Rights Act.¹⁰² In the past the definition of "natural oil" has been regarded as clear, precise and self-explanatory.¹⁰³ The definition of "petroleum" has, however, been amplified by the inclusion of "gas" which "has in any manner been returned to such natural condition".¹⁰⁴ From this definition one may deduce that in order for any substance to qualify as "petroleum" for purposes of the MPRDA, the following requirements have to be satisfied, namely the substance:

- (a) may either be any liquid or, solid hydrocarbon or combustible gas existing in a natural condition in the earth's crust;
- (b) may include any liquid or, solid hydrocarbon or combustible gas which has returned to a natural condition in the earth's crust; and
- (c) may not be coal, bituminous shale or other stratified deposits from which oil can be obtained by destructive distillation or gas arising from a marsh or surface deposit.

For purposes of the transitional arrangements in respect of OP26 leases and OP26 subleases¹⁰⁵ in Schedule II of the Mineral Petroleum Resources Development Act, that were granted originally in respect of "natural oil", the continued use of latter term would remain relevant during the period of transition.

It should be noted that the meaning of a similar term is for purposes of a particular Act, and a similar term may have another meaning for purposes of another statute. For instance, a "petroleum product" is defined in section 1 of the Petroleum Products Act¹⁰⁶ as "any petroleum fuel and any lubricant, whether used or unused, and includes any other substance which may be used for a purpose for which petroleum fuel or any lubricant may be used."

¹⁰¹ Definition of "petroleum" in s 1.

¹⁰² 20 of 1967.

¹⁰³ Franklin and Kaplan 31 and 341.

¹⁰⁴ Badenhorst and Mostert 13-9.

¹⁰⁵ For a discussion of "OP26 rights"; and see Badenhorst and Mostert Ch 26.2.

¹⁰⁶ 120 of 1977.

Defining petroleum as any naturally existing hydrocarbon solid, liquid or combustible gas found in the earth's crust seems to comply quite well with what geologists understand petroleum to be.¹⁰⁷ Here the emphasis may be placed on the part of the definition which reads "naturally existing", given that here are some chemical compounds (such as olefins) which commonly occur in refined petroleum products but are not known to occur in natural deposits.

4 ACTIVITIES AND "OPERATIONS"

Usually mineral exploitation is undertaken in two distinct phases: Prospecting is first undertaken, whereby the prospector searches for minerals. Thereafter mining is undertaken, whereby operations are carried out with the object of winning minerals from the earth.¹⁰⁸ These two activities have always been defined in mining laws.¹⁰⁹ For instance, in the Mining Rights Act 20 of 1967, the Precious Stones Act 73 of 1964 and Minerals Act 50 of 1991, a distinction was drawn between the activities of "prospecting" and "min[ing]"¹¹⁰ by means of definitions. The restrictive definition of "prospecting" by the legislature had resulted in the situation that activities investigating mineral occurrence by means of aerial surveys or instruments traversing, but not disturbing, the surface of land or mining operations carried out at a depth on adjoining properties did not amount to "prospecting" or "mining".¹¹¹

In the MPRDA the legislature has by means of definitions distinguished the following types of "operations" by holders of respective rights:

- (a) reconnaissance operations;
- (b) prospecting operations;
- (c) mining operations;
- (d) exploration operation;
- (e) production operations.

The Legislature also recognizes the following activities:

- (a) prospecting;
- (b) mining;
- (c) exploration; and
- (d) production.

¹⁰⁷ Bates and Jackson 497.

¹⁰⁸ See Lowe, Dale, De Kock, Froneman and Lang *Elliot the South African Notary* (1987) 213; and *Douglas v Baynes* 1907 TS 513.

¹⁰⁹ See Badenhorst *Minerale* 124ff.

¹¹⁰ The definition of "mine", used as a verb.

¹¹¹ Franklin and Kaplan 342; and Badenhorst *Minerale* 131. As to similar problems with the definition of "mining", see Franklin and Kaplan 339.

In addition to “prospecting” and “mining” in respect of minerals, “exploration” and “production”, as equivalent activities, in respect of petroleum are thus recognised. Activities investigating mineral occurrence by means of aerial surveys or instruments traversing, but not disturbing the surface of land or mining operations carried out at a depth on adjoining properties are now covered by “reconnaissance operations”. It is, however, submitted that activities such as “reconnaissance”, “exploration” and “production” should also have been separately defined by the legislature.

The meaning of these “operations” and activities requires some further examination because once it becomes clear that conduct constitutes specific operations or a type of activity then a corresponding right, permission or permit to minerals or petroleum has to be obtained for such conduct.

For example, De Beers Exploration launched the world's first airship designed to explore for mineral deposits in a venture that will cost the diamond giant between \$8 million (R50 million) and \$10 million a year.¹¹² The theoretical question arose as to whether De Beers Exploration making use of the airship to “search” for diamonds in Botswana would constitute “reconnaissance operations” or “prospecting operations” if it entered South African airspace. After discontinuing its operations after an accident in Botswana,¹¹³ it became a moot point.

4 1 Reconnaissance operations

A “reconnaissance operation” is defined as “any operation carried out for or in connection with the search for a mineral or petroleum by geological, geophysical and photogeological (sic) surveys and includes any remote sensing techniques ...”¹¹⁴ The concepts “prospecting operation” of minerals or “exploration operation” of petroleum¹¹⁵ are excluded from the definition. As indicated in 2.1(a) and 2.2(b), a reconnaissance permission or permit has as its content or encompasses “reconnaissance operations”.

Reconnaissance may take place in terms of reconnaissance permission for minerals or a reconnaissance permit for petroleum. The distinction between exploration and reconnaissance for petroleum is unclear in that the definition of exploration operation in the MPRDA does not expressly or impliedly refer to physical activities and, therefore, could include remote sensing techniques.¹¹⁶

Scientifically, some remote sensing methods (for example, seismic exploration) necessarily involve drilling, blasting and/or the use of heavy

¹¹² See <http://www.busrep.co.za/index.php?fArticleId=2868528> and http://www.modern-airships.info/en/zeppelin/de_beers_amsterdam_2005.html accessed on 2008-02-13.

¹¹³ See in general <http://www.debeersgroup.com/debeersweb/General/News+Archives/Airship+damaged+on+the+ground+by+a+severe+wind.htm> accessed on 2008-02-13.

¹¹⁴ Definition of “reconnaissance operation” in s 1.

¹¹⁵ Definition of “reconnaissance operation” in s 1. In s 1(o) of the Mineral and Petroleum Resources Development Amendment Bill, 2007 it is proposed that only prospecting and exploration “other than acquisition and processing of new seismic data” will be excluded.

¹¹⁶ Dale *et al* MPRDA-85.

jack-up vibrator trucks. This would apply particularly in the instance of onshore petroleum exploration, but also in the search for other types of mineral deposits.¹¹⁷

4 2 Prospecting operations and prospecting

“Prospecting operations” is defined as “any activity carried on in connection with prospecting”.¹¹⁸ “Prospecting” in turn, means “intentionally searching for any mineral by means of any method –

- “(a) which disturbs the surface or subsurface of the earth, including any portion of the earth that is under the sea or under other water; or
- (b) in or on any residue stockpile or residue deposit, in order to establish the existence of any mineral and to determine the extent and economic value thereof; or
- (c) in the sea or other water on land.”¹¹⁹

The definition of “prospecting operations” is broader than the meaning of the term “prospecting”. Prospecting operations, therefore, do not only include the physical prospecting activities, but also any activity carried on in connection with prospecting.¹²⁰ Non-physical activities such as desk-top studies, assays, analyses or interpretations before, during and after prospecting would qualify as “prospecting operations”.¹²¹ The element of intentionally searching for a mineral distinguishes it from mining.¹²² Prospecting would normally involve smaller scale operations than those associated with any subsequent mining activities.¹²³ The “sea” is “the water of the sea, as well as the bed of the sea and the subsoil thereof below the low-water mark”.¹²⁴ The sea has to be within:¹²⁵

- (a) the territorial waters¹²⁶ of South Africa, including the water and the bed of any tidal river and of any tidal lagoon;
- (b) the exclusive economic zone;¹²⁷ and

¹¹⁷ See Boggs *Principles of Sedimentology and Stratigraphy* 3ed (2001) 532-537.

¹¹⁸ Definition of “prospecting operations” in s 1.

¹¹⁹ Definition of “prospecting” in s 1. A definition of “earth” is absent. The definition in s 1 of “land” also includes “the surface of land and sea, where appropriate”. As to the definitions of residue stockpile or residue deposit, see par 3 above.

¹²⁰ Dale *et al* MPRDA-82.

¹²¹ *Ibid.*

¹²² Dale *et al* MPRDA-78.

¹²³ Dale *et al* MPRDA-79.

¹²⁴ Definition of “the sea” in s 1.

¹²⁵ Definition of “sea” in s 1.

¹²⁶ Ito s 4(1) of the Maritime Zones Act 15 of 1994 the sea within a distance of twelve nautical miles from the baseline constitutes the territorial waters. South African law applies to the territorial waters (s 4(2)).

¹²⁷ Ito s 7(1) of the Maritime Zones Act 15 of 1994 the sea beyond the territorial waters but within a distance of two hundred nautical miles from the baselines constitutes the “exclusive economic zone”. The low-water line constitutes the baseline (s 2 of the Maritime Zones Act). The State has the same rights and powers in respect of all natural resources in the exclusive economic zone as it has in respect of its territorial waters (s 7(2) of the Maritime Zones Act).

(c) the continental shelf.¹²⁸

Prospecting would take place in respect of a prospecting area. A "prospecting area" is the land which is the subject of any prospecting right.¹²⁹

Like before, the emphasis is on searching as opposed to winning a mineral for purpose of mining.¹³⁰ Unlike the definition of "prospecting" in the Minerals Act, it is not required that searching for a mineral must also be by excavation or drilling necessary for purpose of searching minerals. The definition is now wider than before, because it includes searching by any method. It is also wider because disturbance of the earth is not required for searching in residue stockpiles or deposits or the sea or water.¹³¹ Unlike the previous definition, "mining"¹³² is not excluded from the definition of "prospecting". In terms of the MPRDA a prospector is, generally, entitled to remove and dispose of prospected minerals that are required for testing, identification or analyses.¹³³ If a holder of a prospecting right, however, wants to remove and dispose for the holder's own account of bulk samples of minerals found during prospecting operations in terms of a prospecting right, the relevant official's written permission has to be obtained.¹³⁴

Soil sampling, conducted by the diamond industry for location of trace minerals indicative of diamond deposits, will fall within the definition of "prospecting" and hence constitutes prospecting because the taking of soil samples involves the disturbance of the surface of the earth.¹³⁵

It is submitted that a distinction ought to have been made in the definition of "prospecting" between the intentional searching activities (namely, disturbance of the earth, in or on residues or the sea or water on land) and the purpose of the activities (namely, to establish the existence and economic value of a mineral). In other words, the purpose stated in (b) of the definition of "prospecting" ought to have applied in general.¹³⁶

Drilling and/or blasting operations may be essential to ensure adequate prospecting. In almost all cases, prospecting with the aim of locating and evaluating a possible ore body requires extensive drilling and sampling of drill cores or cuttings produced in the drilling process. This involves accessing the prospecting site with relevant equipment, at the very least truck-mounted drills, site clearing and the building of access roads. These activities come very close to, or might be considered as acts of "mining". In some cases, as for example in the evaluation of an identified kimberlite pipe, bulk samples would have to be taken in order to establish the probable ore

¹²⁸ Ito s 8(1) of the Maritime Zones Act 15 of 1994 the "continental shelf as defined in Article 76 of the United Nations Convention on the Law of the Seas, 1982 adopted at Montego Bay on 10 December 1982 constitutes the continental shelf". See further s 8(2).

¹²⁹ Definition of "prospecting area" in s 1.

¹³⁰ See Kaplan and Dale 30.

¹³¹ See also Dale *et al* MPRDA-81.

¹³² Mine as a verb.

¹³³ S 5(3)(c) of the MPRDA read with 20(1).

¹³⁴ S 20(2).

¹³⁵ Dale *et al* MPRDA-85 and MPRDA-80.

¹³⁶ Badenhorst and Mostert 13-12.

reserves accurately. This would involve what might be deemed to be “mining” on a limited scale, but it is a very necessary part of the prospecting process and therefore what might properly be termed “prospecting operations”.

It is interesting that the re-processing of say seismic data, could be described as “reconnaissance”. It is reconnaissance in the broadest possible sense, because it is or may be part of a concerted reconnaissance effort, but it does not necessarily involve any physical prospecting activities. This is interesting, because if we accept a definition of reconnaissance which transcends the physical then the definition of what is and what is not reconnaissance needs to be widened in other areas.

4 3 Mining operations and mining

A “mining operation” means any operation relating to the act of mining and matters directly incidental thereto.¹³⁷ To “mine”, in this context, means “any operation or activity for the purposes of winning any mineral on, in or under the earth, water or any residue deposit, whether by underground or open working or otherwise and includes any operation or activity incidental thereto.”¹³⁸ It is argued that mining includes any operation or activity incidental thereto, and additionally the term “mining operation” includes matter directly incidental to such incidental operations or activities.¹³⁹

Mining would take place in respect of a mining area. A “mining area” in the present context means the land for which a mining right or mining permit is granted.¹⁴⁰

The inclusion of winning from a “residue deposit” in the definition of “mine” is necessary because extraction and recovery from, for instance, a mine dump would not at common law be regarded as mining.¹⁴¹ The legislature seemed to have omitted the words “residue stockpile” from its definition because the working of residue stockpiles produced under a mining right

¹³⁷ Definition of “mining operation” in s 1.

¹³⁸ Definition of “mine” as a verb. Unlike the definition of “mine” in the Minerals Act, a definition of mine as a noun is absent. This omission is receiving the attention of the legislature by the inclusion in s 1 (d)(a) of the Draft Mineral and Petroleum Resources Development Amendment Bill, 2005 and s 1(k) of the Mineral and Petroleum Resources Development Amendment Bill, 2007 of a proposed definition of the concept “mine” (used as a noun). The definition of “mine” (used as a verb) in the MPPRD Act is not changed by s 1(d)(b) of the Draft Mineral and Petroleum Resources Development Amendment Bill. The definition of “mine” as a verb is to be amended by section 1(k) of the Mineral and Petroleum Resources Development Amendment Bill, 2007 by deletion of the phrase “any operation or activity incidental thereto” and the addition of the phrase “or under the relevant mining area”.

¹³⁹ See Dale *et al* MPRDA-50 and MPRDA-60.

¹⁴⁰ Definition of “mining area” in s 1. In s 1(e) of the Draft Mineral and Petroleum Resources Development Amendment Bill, 2005, the definition of a “mining area” is proposed to be amended to refer also to a “production right” which seems incorrect because provision is already made for a production right in the definition of a “production area” in s 1 of the MPRDA. See 4.5 below. A new definition of a “mining area” is proposed in s 1(m) of the Mineral and Petroleum Resources Development Amendment Bill, 2007.

¹⁴¹ Kaplan and Dale 28; and Franklin and Kaplan 339.

does not fall within the definition of mine as a verb.¹⁴² The winning of a mineral does not include searching for a mineral.¹⁴³ Unlike the definition of “mine” (as a verb) in the Minerals Act, there is no explicit reference to “prospecting” for a mineral. It is arguable that “prospecting” for purposes of the MPRDA is included under mine as a verb because of the use of the wider phrase “operation or activity incidental thereto”.¹⁴⁴ Similarly, prospecting would also be included under “mining operation”.¹⁴⁵

In *Albertonse Stadsraad v Briti Bk*,¹⁴⁶ the Supreme Court of Appeal decided with reference to the definition of “mine” (as a verb) in section 1 of the Minerals Act and the words “excavation or borehole” that the bringing of clay deposited earlier in a colliery, and the ripening of clay with a bulldozer does not constitute “mining”.¹⁴⁷ It is submitted that the said interpretation of “mine” may also be applied to the definition of “mine” in the MPRDA.

In essence the act of mining should imply the primary excavation and/or removal of mineral and/or rock materials or naturally occurring petroleum which has not previously been stripped and deposited.

4 4 Exploration operations

An “exploration operation” refers to “the re-processing of existing seismic data, acquisition and processing of new seismic data or any other related activity to define a trap to be tested by drilling, logging and testing, including extended well-testing of a well with the intention of locating a discovery.”¹⁴⁸

“Exploration” is not separately defined in the Act. Exploration would take place in respect of an exploration area. An “exploration area” is the area comprising the block or blocks depicted in an exploration or production right.¹⁴⁹ A “block” is the area of land or sea, including the sea bed, identified as a block by co-ordinates on a map prepared by the designated agency¹⁵⁰ and situated wholly or partly in South Africa or its exclusive economic zones and which includes any part of such block.¹⁵¹

¹⁴² See also Dale *et al* MPRDA-81. The omission is not dealt with in the Mineral and Petroleum Resources Development Amendment Bill, 2005 and 2007.

¹⁴³ See Kaplan and Dale 29.

¹⁴⁴ See Dale *et al* MPRDA-79 and MPRDA-48.

¹⁴⁵ Dale *et al* MPRDA-60.

¹⁴⁶ 2003 5 SA 157 (SCA) 163H/I-J.

¹⁴⁷ The court reasoned as follows: “Die klei wat die respondent uit groef C na die oppervlak sou gebring het (as dit nie vir die oorstroming was nie) en die rypmaakhandeling wat die respondent in groef C uitgevoer het (en sou uitgevoer het as dit nie vir die oorstroming was nie) sou natuurlik nie op die maak van enige uitgraving in die aarde neergekom het nie, en nog minder op die maak daarvan ‘met die doel om na ‘n mineraal te soek of ‘n mineraal te win’. Die mineraal wat hier ter sprake is, was reeds gewin. Die verdere verwerking daarvan ten einde dit gebruiksgereed te maak en die vervoer daarvan na die vervaardigingsaanleg val nie onder die omskrywing van ‘myn’ in die Wet nie” (163J-164B).

¹⁴⁸ Definition of “exploration operation” in s 1.

¹⁴⁹ Definition of “exploration area” in s 1.

¹⁵⁰ See fn 54 above.

¹⁵¹ Definition of “block” in s 1.

4 5 Production operations

A “production operation” refers to “any operation, activity or matter that relates to the exploration, appraisal, development and production of petroleum”.¹⁵² Even operations, activities or matters that indirectly relate to exploration, appraisal, development and production will fall within the definition of “production operations”.¹⁵³ The reference in this definition also to “exploration” blurs the distinction between exploration and production and should be qualified to refer to exploration in connection with production.¹⁵⁴ It is argued that the reference to appraisal should be qualified to indicate that it is a reference to appraisal during production.¹⁵⁵

“Production” of petroleum is not defined in the MPRDA. Production would take place in respect of a production area. A “production area” is the area which is subject to a production right.¹⁵⁶

5 CONCLUSION

For more than a century in South Africa the legislature relied on scientific knowledge in its classification of minerals and classes of minerals and activities like prospecting and mining. The courts have over the years relied on expert evidence in these matters. Over the years these classifications were copied in more or less the same form. Some new activities such as “reconnaissance”, “exploration” and “production” were introduced in the MPRDA. At the end of the day it will be up to a judge to decide what constitutes “minerals”, “petroleum” or a specific activity for purposes of the MPRDA. With the rapid advancement of science, during especially the last decade, it would have been opportune for the legislature to learn from geologists the more up to date meaning and parameters of these concepts. As the MPRDA is a recent piece of legislation, these concepts should receive the attention of the legislature in eagerly awaited amendments¹⁵⁷ to the MPRDA. Perhaps it may be wise to rely on geologists as the devil’s advocates for a turn.

¹⁵² Definition of a “production operation” in s 1.

¹⁵³ Dale *et al* MPRDA-76.

¹⁵⁴ Dale *et al* MPRDA-76 to MPRDA-77.

¹⁵⁵ Dale *et al* MPRDA-77.

¹⁵⁶ Definition of “production area” in s 1.

¹⁵⁷ As to the latest attempt, see in general the Mineral and Petroleum Resources Development Amendment Bill, 2007.