IRAN UNITED STATES CLAIMS TRIBUNAL

دیوان داوری دعاوی ایران - ایالات متحده

39-391

ORIGINAL DOCUMENTS IN SAFE

Case No. 39 Date of filing: 30 June 1989

** AWARD - Type of Award _____

- Date of Award _____

_____ pages in English _____ pages in Farsi

** DECISION - Date of Decision _____

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** CONCURRING OPINION of _____

- Date _____

_____ pages in English _____ pages in Farsi

** SEPARATE OPINION of _____

- Date _____

_____ pages in English _____ pages in Farsi

** DISSENTING OPINION of _____

- Date _____

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** OTHER; Nature of document: "Statement..." by Kalalian

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- Date 30 June

12 pages in English _____ pages in Farsi

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In the Name of God

CASE NO. 39
CHAMBER TWO
AWARD NO. 425-39-2

PHILLIPS PETROLEUM COMPANY IRAN,
Claimant,

and

THE ISLAMIC REPUBLIC OF IRAN,
THE NATIONAL IRANIAN OIL COMPANY,
Respondents.

STATEMENT BY JUDGE KHALILIAN
AS TO WHY IT WOULD HAVE BEEN
PREMATURE TO SIGN THE AWARD

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1. The text issued today as Award No. 425-39-2 has been signed by only two of the three Arbitrators in Chamber Two: namely Mr. Briner, the third-country Arbitrator, and Mr. Aldrich, the United States Arbitrator.

2. As for myself, who participated as the Iranian Arbitrator only in the deliberative stage of this Case -- and not in the Hearing and other procedural stages thereof-- I had felt that it was necessary for us to sit together in a few further deliberative sessions so that we might perhaps reach agreement on some of the major

points, in the course of discussing and exchanging our views.

3. It was never stipulated ahead of time by Chamber Two that the Award had to be issued on 30 June. But I sincerely wish, if Mr. Briner or Mr. Aldrich did make such an arrangement between themselves or with someone else, that they had informed me of this as well. At any rate, taking me by surprise, Mr. Briner suddenly issued a memorandum at 6 pm on Friday, 23 June, summoning the Members of Chamber Two to his office in order to sign the Award on the Thursday following the Hearing in Case No. 12458 . Ordinarily, Hearings finish at about 6 pm. I certainly felt that the other Members of this Chamber were exerting extreme pressure upon the Iranian Government, and that they wished, in accordance with that same assurance which had indubitably been given to Phillips, to issue the Award in all possible haste and thereby provide Phillips with $55 million in connection with a Joint Structure Agreement (JSA) that had been frustrated upon the occurrence of the 1979 Iranian Revolution.

4. Mr. Briner not only rejected out of hand my proposal to hold further discussions but he even turned down my request for two or three additional meetings to be held only in the first week of July and aimed at continuing with the deliberations. Mr. Briner left The Hague a few moments afterwards on that same Friday afternoon of 23 June.

On Monday, I went to see Mr. Aldrich to request at least a one-week extension, in order for us to deliberate together on the major points which I had come across. He answered, however, that this would be impossible, since he had already gotten his airplane ticket and had to go on a trip, presumably for his

summer holiday. I then telephoned Mr. Briner's office in Geneva at about 10 am; he was in a meeting, and so I left a message, but there was no reply. I called his home at about 2 pm, and his maid said that he was at his office. I called his office once more, and his secretary again gave a negative response; and even though I emphasized that I was his colleague with the Hague Tribunal and had urgent business with him, he never contacted me. Do international arbitral circles condone or even countenance this sort of self-concealment on the part of a supposedly neutral third-party arbitrator?

5. Mssrs. Briner and Aldrich were seemingly only fearful that the signing of a $55 million award against the Government of Iran, including lost profits over a 20-year period in an oil nationalization issue, might be delayed for two or three days. How, therefore, can international academic and arbitral circles possibly consider Mr. Briner an impartial and ethical arbitrator, when he has refused his colleague's request for two or three further meetings in order to complete the deliberations? How can the shameful fact be tolerated that these gentlemen rejected even a two - or three-day delay in signing the Award and thereby placed me in such an impasse that I now find it premature for me to sign the Award? For an arbitrator is not entitled to sign an award prior to conclusion of the deliberations, even if he is subjected to duress and pressure, by whatever means, to do so. As a matter of fact, Chamber Two had not yet completed its deliberations on a number of the most important substantive issues in the Case (inter alia, risk, the discount rate, and the quantity of oil). If the minutes of the deliberations were not secret pursuant to Article 31 of the Tribunal Rules, I would annex them hereto as well.

6. When Mr. Briner became Chairman of Chamber Two in 1985, he had already served for a number of years as a Director of Morgan Stanley, AMOCO's chief witness in support of the DCF method in Case No. 55. Notwithstanding his duty to disclose this relationship, he kept it secret for four years,[1] and yet he continued to adjudicate that Case throughout this period -- a Case which, including the counterclaim therein, involves more than $4 billion.

7. When the challenge mechanism was initially begun, Mr. Briner stubbornly refused to relinquish Case No. 55; but he was compelled to withdraw when Iran left him no room to maneuver, owing to its elaborate and well-argued memorials and to its having revealed the facts in the matter. Now, we see that by issuing this Award, he has also become guilty of a prejudgment in favor of AMOCO in Case No. 55, for in that Case a JSA similar to that in the present Case is involved. I am certain, however, that in view of the misgivings to which the background of this Award gives rise, and in light of the blatant defects therein, which I shall list hereinbelow -- and which I shall subsequently treat at depth in my Dissenting Opinion -- it will not be possible to rely upon this Award as precedent. It is to be hoped that just as Mr. Briner, like the American attorneys, vehemently opposed Professor Virally's views in the Award in Khemco, Case No. 310, and trampled the findings therein under foot, so too will arbitrators dismiss Mr. Briner's business-like Award as constituting a dead-

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[1] For an appreciation of the extent of this concealment, and to study the account of this challenge in full, see Iran's legal and substantive memorials, reprinted in the following sources:
Mealey's Litigation Reports, 21 October 1988, p. G-1; Ibid, 16 December 1988, p. A-2

letter. In fact, by issuing this Award, Mr. Briner has shown that it is not necessary to respect awards by this Tribunal as constituting judicial precedents.

8. Somewhat later, following the resignation of Mr. Böckstiegel as President of the Tribunal, the American Arbitrators insisted that Mr. Briner must absolutely be appointed as President by all means; for otherwise, he would resign and deprive us of the blessings of his presence on this Tribunal. The Iranian Arbitrators did not consider Mr. Briner fit to assume the Presidency and opposed his appointment, especially given that he had just emerged from his defeat in the challenge relating to Case No. 55. The United States Government eventually referred the matter to Mr. Moons, the Appointing Authority, who proceeded to appoint Mr. Briner as President of the Tribunal. See: Annex no. 1 .

9. In addition to all these grounds, Mr. Briner has yet another fundamental defect, namely his lack of concern for engaging in a legal analysis of the issues of a case, due to the fact that by nature he is a business-man. Naturally, someone who is a Director or Member of the Board of approximately 40 major and/or transnational corporations in Switzerland alone (cf. Annex No. 2) cannot possibly think about anything but capital investment and ways and means of accumulating wealth and property. Naturally too, such an individual must not, to date, have written even a single learned article on international law, or a single significant book on law; and it is natural as well, that such a person must be ignorant of, and even hostile to, scholars of international law. For example, he expressed an extreme hostility towards Professor Virally in the present Award. If you will refer to the legal discussion in this Award, you will see just how feeble and insubstantial it is; and if you then compare

it to Partial Award No. 310-56-3 in Case 56 (AMOCO), you will be astonished to find that instead of evincing modesty in the face of knowledge, Mr. Briner has impugned and rejected the most basic of international legal discussions. Here too, this sort of reaction is natural from someone like Mr. Briner, because he must issue an Award which will satisfy the major American oil corporations, whereas in his opinion, learned and academic circles do not deserve much notice. Notwithstanding all this, I had hoped that Mr. Briner was, on the basis of that same acquisitive and capitalist instinct, at least bound by economic principles, if not arbitral ethics. I had hoped that if, despite all the legal principles involved, he still intended to apply the DCF method and to award against Iran for payment of 20 years' lost profits in respect of a lawful nationalization in the oil industry, he would at the very least apply those same principles correctly. On the contrary, however, we find that Mr. Briner has even circumvented only those factors in the DCF method that were detrimental to Phillips. He has also failed to use the correct method of accounting in this Award. Therefore, he has totally avoided mentioning the discount rate, since it would have been highly embarrassing for him to mention in the Award just what discount rate he had used in arriving at the figure of $55 million. If he had intended to use the valid rate applied by the oil industry, namely the "willing buyer" standard, he would have arrived at a figure of approximately $28 million. Yet, whereas he has clearly indicated the quantity, and price of oil and the cost of producing it, he has avoided any mention of the discount rate. It is therefore as though he had only a single mandate in this Case -- namely, to present a gift to Phillips that he would at all events fill its pockets with $55 million in cash at Iran's expense. Mr. Briner even disregarded official

U.S. documents; whereas documents filed by Phillips itself with the US Securities and Exchange Commission indicate that its share of the remaining oil reserves to be produced over the next 20-year period up to 1999 amounted to 15 million barrels and had a total value of about $13 million in 1979, and although a commercial buyer of its shares in 1979 would certainly have based any purchase offer on those documents, Mr. Briner has estimated Phillips' entitlement in the range of 46.5 to 48.5 million barrels and has fixed the value thereof at $55 million in his Award. See, Annex 7 for extracts from 10-k forms filed by Phillips with US Securities and Exchange Commission, copies of which were submitted to this Tribunal by the Respondents.

10. Let us now turn to some of the factual and legal points in the Award, which I shall itemize below, and on which I will elaborate in my Dissenting Opinion.

a) The 1955 Treaty of Amity makes no provision concerning the method of compensation. Therefore, it should be clarified and determined by use of customary and general principles of international law[2]. Mr. Briner has rejected this proposition in para. 110 of the Award.

b) International law has distinguished between lawful and unlawful expropriations. To Mr. Briner there is no difference between them. See, paras. 108-109.

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2 "The wording of the sentence [of Article IV of the Treaty], however, does not solve the problem of the method to be used in order to determine the value of the property." Award in Amoco, para 117. The same finding has been reached by the U.S. Supreme Court in Barco National de Cuba v. Sabbatino, 84, Sup. Ct. 923 (1964).

c) In the Chorzow Factory Case, the Permanent Court of International Justice has also distinguished between the compensation due for lawful expropriations (clearly applicable here, as indeed found by this Tribunal in the AMOCO Partial Award), and that which is due in unlawful expropriations[3]. Mr. Briner considers this distinction to be inapplicable, thereby confounding the meaning of restitution[4] in a very bizarre manner (para. 109).

d) In Chorzow Factory, where the taking was explicitly found to be unlawful, the Court limited the consideration of future earnings to the time of the judgment. In this Case, where the alleged taking is lawful under the Treaty of Amity and thus lost profits should not be considered, Mr. Briner has awarded the lost profits, through applying DCF methodology, for the whole remaining life of the contract, which is twenty years after the alleged taking.

e) In the Award in AMOCO, the late Judge Professor Virally, an internationally distinguished authority, clearly rejected the use of the DCF method in cases of nationalization in the oil industry, i.e. the very issue raised in the present Case. Mr. Briner has ignored that finding for no reason. Mr. Briner relies on Starrett, which is the only award in which this Tribunal has invoked the DCF method and is which totally dissimilar to the present Case (para. 112). Starrett involved a

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[3] See, e.g., Henkin, Pugh, Schachter, Smit, International law, cases and materials, p. 779; o'Connell, International Law, Vol. II, pp. 781, 789.

[4] Cf. Cheng, General Principles of Law, pp. 50-52.

two-year apartment complex project that had been nearly finished and pre-sold. Here, however, 20 years' worth of contractual rights in the oil industry are at issue.

f) It is a well-established principle of international law that compensation should be based on certainty of damages, and not on speculations. Mr. Briner has decided to use a method, the DCF method, in which every single component is highly speculative.

g) The Claimant itself has declared in public records (Annex 7) that its share of the quantity of oil allegedly taken was 15 million barrels. Other contemporaneous forecasts and facts filed by the Respondents also confirmed this figure. Yet Mr. Briner is awarding the Claimant the equivalent of 46.5 to 48.5 million barrels (para. 123).

h) While Mr. Briner has given neither any breakdown nor a reason for his suggested quantities of oil, it appears that he is relying, in part, on reports and statements prepared by the Claimant and its experts as late as in 1983 for the single purpose of these proceedings. See Annex 3.

i) Mr. Briner has included in his Award substantial quantities of oil from secondary recovery projects that were highly speculative and uncertain in 1979 (paras. 120-122, Cf. Annex 3).

j) Although Mr. Briner has admitted that oil price forecasts, in particular those prepared in 1979, were subject to great uncertainties, he has nevertheless based the Award on them (para. 124, Cf. Annex 4).

k) Although the oil price forecast prepared by Chase Econometrics is a major subject of debate in another undecided case (Case 55) involving the same Respondents as in this Case, Mr. Briner has repeatedly referred to it, labelled it very conservative, and finally justified its use in this Award. Mr. Briner has thus gravely prejudiced the Respondents in that Case. See, Annex 4.

l) Furthermore, the very oil price forecast of Chase Econometrics has been clearly rejected in Partial Award No. 310-56-3 by this Tribunal, by no less than the late Judge Virally, as being inherently speculative and erroneous. Mr. Briner has not only ignored this finding, but also attempted to reverse it.

m) Mr. Briner has based his Award on a forecast of ever-increasing prices and on quantities of production two to three times that anticipated prior to the Revolution. He has completely ignored the principle of supply and demand and has used one consequence of the Revolution (increasing prices) while ignoring another (the clear position that oil production would be half of that prior to the Iranian Revolution).

n) Mr. Briner has mixed facts with risks and categorized a number of facts, such as the financial position of NIOC, the ceiling on production, and project delays, as risks. He has excluded the effect of many risks which would have substantially reduced the value of the JSA rights. Furthermore, he has ignored the effect of so-called diversified risks (para. 135).

11. Finally, it is interesting to add also the fact that I obtained evidence showing that certain communications and discussions had been exchanged between Mr. Briner and Mr. Aldrich in connection with the deliberation of Case 39 of which I had been kept uninformed.

The evidence I obtained indicated that Mr. Aldrich had conducted certain computations for the purpose of discounting the future cash flows projected for the Claimant. My review of these computations, which they had used as a base for arriving at their decision on the compensation previously fixed in the final version of the Draft Award, indicated that they had made a serious mathematical mistake.

On 28 June 1989, I wrote a memo to Mr. Briner and Mr. Aldrich and explained to them that the correct application of the DCF formula used in their computations would reduce the compensation to $28 million even on the basis of their own assumptions. I invited them to discuss the issue and make available to me all the memoranda exchanged between them in connection with the deliberation in Case 39. I also asked for an explanation as to why I had not been kept fully informed of the exchange of views and discussions. See Annex 8.

Mr. Briner first denied that he had received any such communication. I immediately wrote a memo to him and asked for a written confirmation of his denial. Mr. Briner declined to confirm in writing his denial and simply stated that he had received some computation done by Mr. Aldrich's legal assistant.

In view of the above, I felt I had been deprived of the opportunity of full participation in the deliberation process in Case 39. I communicated my objection to the manner in which Mr. Briner, in particular, had handled the deliberation process. But, he declined to give any explanation, or any information on the full exchange of views and memoranda between the American arbitrator and himself. He was only interested in getting the Award signed as soon as possible rather than indulging in a proper conduct of judicial proceeding.

The Hague, 9 Tir 1368/30 June 1989

Seyed Khalil Khalilian

ANNEXES TO THE
STATEMENT BY JUDGE KHALILIAN AS TO WHY IT WOULD HAVE BEEN PREMATURE TO SIGN THE AWARD

1. The Episode of Mr. Briner's Presidency in Feb. 1989

2. Répertoire des administrateurs

3. Oil Quantity

4. Oil Prices

5. Cost of Production

6. Risks

7. Form 10-k

8. Memo

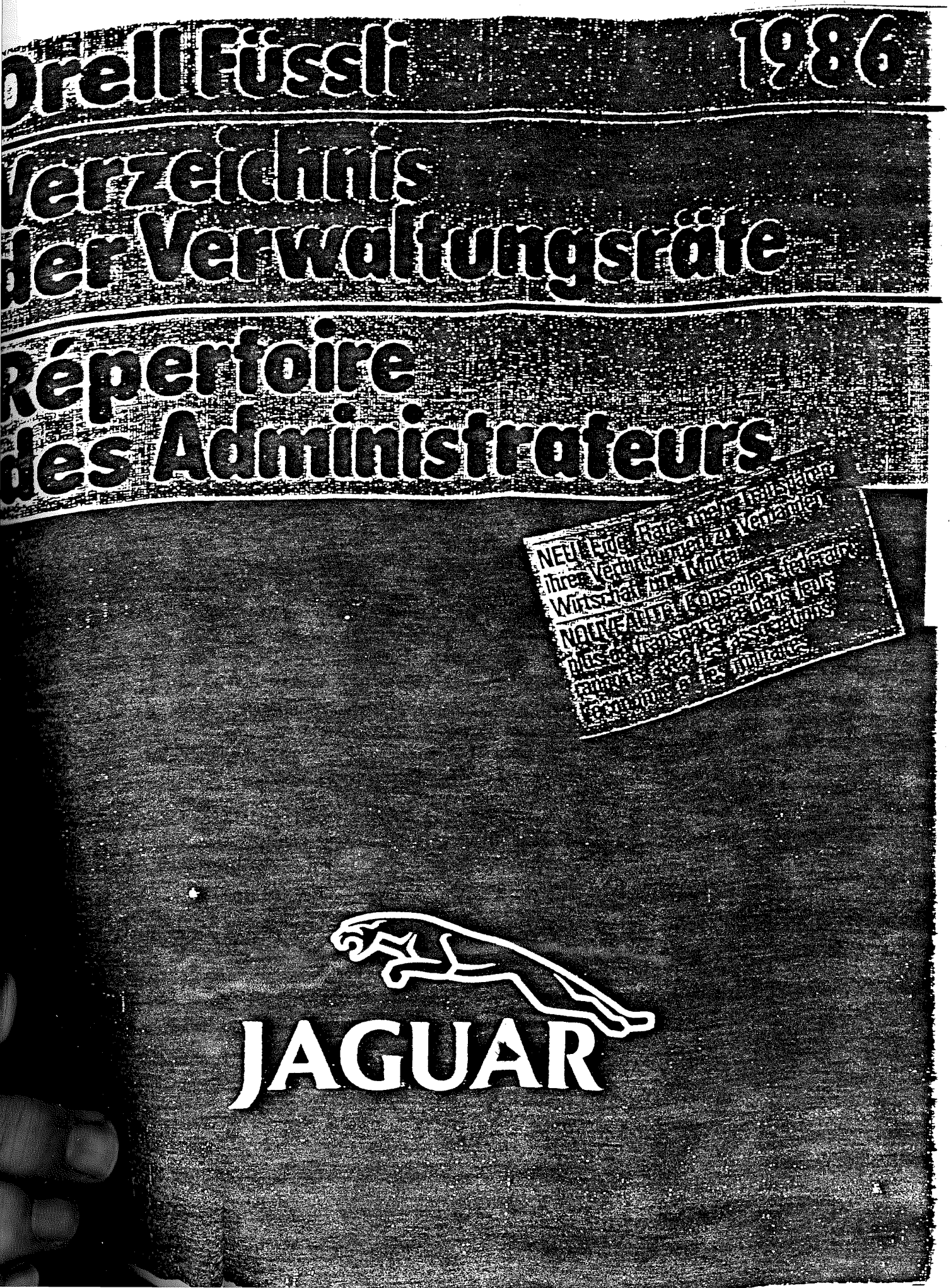
The Episode of Mr. Briner's Presidency

in February 1989

1 The President of the Tribunal should have been appointed by agreement of the Iranian and United States arbitrators. Article III, para. 1 of the Claims Settlement Declaration. Following Mr. Böckstiegel's resignation, the American arbitrators expressed their vehement and unreserved support for Mr. Briner. For their part, however, the Iranian arbitrators believed that it would be improper for Mr. Briner to become President of the Iran-U.S. Claims Tribunal, since he had been challenged by the Iranian Government in Case No. 55 and also because he was born of an American mother (an important fact, by the way, which he concealed from Iran when he was first introduced to the Tribunal in 1985) and undeniably has family and emotional ties to the American society and culture. In addition, given the presence of two other Members of the Tribunal, Professor Arangio-Ruiz and Professor Bengt Broms, who are eminent figures in Western legal circles, the insistence of the American arbitrators would not only seem pointless and incomprehensible to an impartial observer, but he would also regard it as denying individuals more qualified than Mr. Briner an opportunity to become President of the Tribunal. When, for example, we refer to Mr. Broms' record, we see that he has an extensive background not only in administration, but also in academic and university-related areas. For instance, he has authored a number of books, and dozens of articles, in the field of international law. He has frequently served as a member or as the head of Finland's delegations to the UN General Assembly, and he has often presided over, or been an assistant to, UN special commissions. He has taught at a number of universities and been a Law School President; he has also been a member and the Reporter of the International Law Society. He was also nominated to ICSID by the Government of Finland and he has been a member of the Court of Arbitration of the ICC since 1985, a member of the Permanent Court of Arbitration since 1986, a member of the Executive Council of the International Law Association since 1980, the Chairman of the Board of the Institute for Developing States of the University of Helsinki, and Director of the Institute of International Law at the University of Helsinki since 1970. In addition, he has held various other academic and professional positions. Similarly, Professor Arangio-Ruiz not only has an extensive background in academic and university areas but has also served as a member of the Institute of International Law and the United Nations International Law Commission.

Against such an extensive background, it would certainly be mere extemporizing to assume that Mr. Broms or Mr. Arangio-Ruiz would have been incapable of serving as President of the present Tribunal. At any event, once the American arbitrators had despaired of being able to gain the Iranian arbitrators' concurrence in electing Mr. Briner as Tribunal President, the United States Government unilaterally sought recourse to Mr. Moons. As also indicated in advance by the American arbitrators, he appointed Mr. Briner as President of the Tribunal, even though he was aware that Mr. Briner did not enjoy the confidence of the Iranian Government, and also even though this was not only not permitted by the Tribunal Rules, but Article III, para. 1 of the Claims Settlement Declaration expressly provides that the President of the Tribunal shall be appointed by agreement of the Iranian and American arbitrators. Mr. Moons' best argument for his decision was that in view of his more than three years' experience on the Tribunal, Mr. Briner was the most suitable choice, in comparison with Prof. Arangio-Ruiz and Prof. Broms.

(Extract from the opinion published in Iranian Assets Litigation Reporter April 28, 1989, pp. 17202-3)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Verzeichnis
der Verwaltungsräte
Répertoire
des Administrateurs
JAGUAR

Brinner Peter, Stafa
• AG Trudel, Zürich (0.5)
Brinner Roger Dr., 1200 Geneve
k Sorecher Energie AG, Oberentfelden (34.4)
Brinner Robert Dr., 1224 Chêne-Bougeries
k Bostitch AG, Zürich (0.1)
• Burberrys (Suisse) SA., Geneve (0.15)
• Burnov (Europe) SA., Chene-Bougeries (0.05) Pr
k Combined Technologies Comtech SA., Saanen (0.5)
• Conac AG., Studen bei Brugg (0.5)
k Comnow SA., Geneve (4.4)
k Editions Challenge SA, Geneve (0.1)
k Gecosuc SA., Geneve (0.6)
k Grindlay Brandts AG., Zürich (10.0)
k Harlequin Entreprise SA, Fribourg (0.065)
k Heller Freres SA., Fribourg (0.05)
k Hobart AG, Basel (0.7)
k Hobart (Swiss) AG, Regensdorf (2.5) Pr
k Honda Automobiles (Suisse) SA., Satigny (4.0)
k Honda (Suisse) SA, Geneve (3.0)
k Husint SA, Fribourg (2.904)
k Institut Cerac SA, Ecublens VD (2.0)
k Manutention Montage Maintenance M 3 Services SA., Geneve (0.05)
• Morgan Stanley SA., [illegible] (0.5) Pr
k Nitro Nobel International SA, Fribourg (0.7)
k Office nouveau du nettoyage Onet SA., Geneve (0.3)
k Plente SA., Fribourg (1.443)
k Settlements SA., Fribourg (0.15)
k Societe de Participations dans le domaine alimentaire SA, Fribourg (2.0)
k SI Mary Axe SA., Fribourg (0.05)
k Swedish Match Consumer Products SA, Nyon (1.59055)
k The Weir Group International SA, Fribourg (6.0)
• Tranitex SA., Geneve (1.44)
k Tricentrol SA., Geneve (3.0)
k TRW International SA, Geneve (3.99)
k Wallis of London AG, Zürich, Zürich (0.05)
Brinner Robert Georg Dr., Waisenhausstr. 15, 8820 Wädenswil
k Computervision Applied Graphics Systems AG, Zürich (0.25)
k Mineralölwerke AG., Luzern (0.5) Pr
k Walter + Schmidlin Ultraschallsystemtechnik AG, Frauenfeld (0.1)
Brinner Roland E., [illegible] Chêne-Bougeries
k Bostitch (Europe) AG., Zürich (0.05)
Brinner Stephan Dr., Kehlhofhalde 13, 6043 Adligenswil
Diga Immobilien AG, Ebikon (0.1)
Brinner Werner, Unt. Mollenstrasse, 4656 Starrkirch-Wil
• Brinner Hedgo AG., Olten (0.1)
Bringhen Hugo, Kantonsstr. 32, 3930 Visp
k Bringhen Hans, Baumaterial AG., Visp (0.2) Pr
k Frischbeton Baltschieder A.G., Baltschieder (0.1) Pr
k Sand und Kies A.G., Baltschieder (0.1) Pr
• Santag AG., Thun (0.2) Pr
Bringhen Jean-Pierre Dr., Kantonsstr. 32, 3930 Visp
k Bringhen Hans Baumaterial AG., Visp (0.2)
k Deponie Teuftal AG, Mühleberg (1.2)
k Energa Beratungs AG, Bern (0.3) Pr
• Santag AG., Thun (0.2)
Bringolf Alain, Somballe 5, 2300 La Chaux-de-Fonds
k Aresa, Aeroport regional des Eplatures SA, La Chaux-de-Fonds (0.05)
k Bel-Air-Est S.A, La Chaux-de-Fonds (0.12)
k Bloc 30 SA., La Chaux-de-Fonds (0.1)
k Bois-Noir-Ouest S.A, La Chaux-de-Fonds (0.12)
k Centre regional d'incineration des ordures SA (Cridor), La Chaux-de-Fonds (0.1)
k Compagnie des Transports en commun, La Chaux-de-Fonds, La Chaux-de-Fonds (0.65)
k Eclair S.A., La Chaux-de-Fonds (0.108)
k Familia S.A., La Chaux-de-Fonds (0.2)
k Immeubles Avenue des Forges, Modema SA., La Chaux-de-Fonds (0.151)
k Immobiliere Volta S.A., La Chaux-de-Fonds (0.1)
k Scierie des Eplatures SA., La Chaux-de-Fonds (2.0)
k SI Café des Sports SA., La Chaux-de-Fonds (0.05)
k SI Grenier 22 SA., La Chaux-de-Fonds (0.05)
k SI Les Bassets SA., La Chaux-de-Fonds (0.05)
k SI Locative SA., La Chaux-de-Fonds (0.1)
k SI rue Leopold-Robert 114 SA., La Chaux-de-Fonds (0.135)
k SI Sophie-Mairet 13 et 15 SA., La Chaux-de-Fonds (0.1)
k Solouest SA., La Chaux-de-Fonds (0.05)
Bringolf Lucien, r. des Chevreuils 23, 2300 La Chaux-de-Fonds
• Adequa communications visuelles et verbales., La Chaux-de-Fonds (0.05) Pr
BringolfBringolf Reinhard gen. Rene, Hallau
k Spar- und Leihkasse Hallau, Hallau (0.5) Pr
Brinker Alfred Dr., Gevelsberg (D)
• Ruggli Kan AG., Fislisbach (0.05) Pr
Brinkmann Günther, Bremen D
• Isokieba AG, Wettingen (0.1) Pr
Brinkmann Hans Joachim Dr., Detmold D
• Surfasit AG, Malters (0.1) Pr
Brinkmann Heinrich, Untermedstr. 20, 5452 Oberrohrdorf
k Mecatrans SA., Fribourg (0.1)
Brinkmann Horst, Spiesen D
k ASD Autoradio-Soezial-Dienst AG, Zürich (0.16) Pr
Brinkmann Liliane, Husilbechstr. 78, 8041 Zürich
Wegmann & Brinkmann AG, Zürich (0.1)
Brinkmann Reiner, Hüsilbechstr. 78, 8041 Zürich
• Wegmann & Brinkmann AG, Zürich (0.1)
Brintzinger-Broglie Menanne, Guntershausen, 8584 Leimbach TG
k Prografica AG, Baar (0.05)
Briod Bernard, case postale 20, 1822 Chernex
• Briod S.A., Montreux (0.05)
Briod Christian, ch. des Fleurs 15, 1023 Crissier
• Briod Paul SA, Prilly (0.05)
Briod Paul, av. Mont-Goulin 35, 1008 Prilly
• Briod Paul SA, Prilly (0.05) Pr
Briod Pierre-Andre, case postale, 1083 Mezieres VD
• Alicom SA, Mezieres VD (0.1)
k Fibeca SA, Hermenches (1.0)
• Fontex SA., Mezieres VD (0.05)
• Gestifin S.A., Mezieres VD (0.05)
Briod Robert, rte de Brove 1, 1008 Prilly
k Sovecor S.A., Villars-Ste-Croix (0.05)

Brion Alain, Paris F
• Omnium de Petroles SA, Geneve (18.0)
Brion-Castella Claudine, Ris-Orangis
k Castella Sports SA, Bulle (0.1)
Brion Michel, Esery F
• Silverstein SA, Geneve (0.05) Pr
Brioschi Guido, via Nassa 17, 6900 Lugano
• Imcost SA., Lugano (0.05)
Brioschi Guido, str. di Fulmignano 26, 6977 Ruvigliana
• Sogepar SA., Lugano (0.25) Pr
Brique Louis C., r. Lamartine 8a, 1200 Geneve
• SI rue de Candolle 17, Geneve (0.05)
• Sohmo SA, Sion (0.05)
Brique-Tzonwska Renee, r. Lamartine 10, 1203 Geneve
• Radka SA., Vex (0.05)
Briquet Luc, en Genevrez, 1605 Chexbres
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• Antigone S.A., Geneve (0.05)
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k Tanklager Tägerschen AG., Tägerschen (0.6816) Pr
Bristow Thomas H., Billericay GB
• Arkas AG., Zug (0.25) Pr
Britschgi Alois, Mattli, 6072 Sachseln
k Wobag Wohnbau AG Sachseln Sachseln (0.2)
Britschgi Edgar, Feldweg 5, 8134 Adliswil
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k Werbeagentur BMP AG, Zürich (0.1)
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k Decorado AG, Buchs AG (5.0)
• Hassim AG Aarau, Aarau (0.9)
k Hassler Hans AG Bern, Bern (0.45)
k Hassler Hans AG Luzern, Luzern (0.45) Pr
• Hassler Hans AG, Zug, Zug (0.2) Pr
k Hassler Hans AG, Zürich, Zürich (0.3) Pr
• Vidal Vitali AG, Zürich (0.15) Pr
Britschgi Hugo, Schwendli, 6063 Stalden (Semen)
k Hotel Langis AG., Samen (0.8)
• Irving Trading SA., Samen (0.054) Pr
k Wobag Wohnbau AG Sachseln Sachseln (0.2)
Britschgi Ignaz Dr., Poststr. 5, 6060 Sarnen
k Druckgusswerk Fischer AG., Alpnach (0.3)
• Ehna SA., Engelberg (0.1)
k Lignoform Modelbau AG, Samen (0.05)
k Wegenstein Management Holding AG., Samen (0.5)
k Wegenstein Management Samen AG., Samen (0.05)
Britschgi Joseph, av. du Thônex 7, 1226 Thônex
k AG Britschgi zum Kreuz., Sachseln (0.8) Pr, Del
k Les Editions Nagel SA., Geneve (0.25)
• Restaurant Burestube AG., Birrwil (0.1)
Britschgi Leopold, Steinenstr. 5, 6048 Horw
• Durrer & Britschgi AG, Horw (0.05) Del
Britschgi-Irving Margareta, Schwend, 6060 Sarnen
• Irving Trading SA., Samen (0.054) Del
Britschgi Peter, Urdorferstr. 65, 8952 Schlieren
k Brunnmann Brennstoffe AG., Schaffhausen (0.4) Pr
k Bürke AG, Zürich (1.0) Pr
k Frafin AG., Zürich (0.5)
• Magus AG, Zürich (0.054)
k Meyer A.H. AG, Glarus., Glarus (0.05)
k Olbena SA, Menonsio (0.5)
• Oleag AG, Zürich (1.0)
Britschgi Robert, Breitelliweg 5, 6064 Kerns
k Bergbahnen Melchsee-Frutt-Bonistock AG., Kerns (2.2) Pr
k Restaurant Bonistock AG., Kerns (0.6) Pr
Britt Alois, Grossteldstr. 42, 7320 Sargans
• Britt AG., Sargans (0.05)
Britt Anita, Nägeliweg 5, 8274 Tägerwilen
• Britt Holding AG, Winterthur (0.05)
• Hamer-Reisen, Winterthur AG., Winterthur (0.1)
Britt Hanspeter, Gaisbergstr.62, 8280 Kreuzlingen
• Bewatol AG, Zürich, Zürich (0.1)
Britt Karl, Sonnenblick, 7321 Schwendi (Weisstannental)
• Britt & Sonne AG, Karl Meis (0.05) Pr
Britt Rudolf, alt Försterhaus, 7321 Weisstannen
• Britt & Sonne AG, Karl Meis (0.05)
Britt Verena, Dorfli 384, 4856 Balzenwil/Glashutten
• Restaurant Hubeli AG, Murgenthal (0.05)
Britt Viktor, Neugutweg, 8887 Meis
• Britt & Sonne AG, Karl Meis (0.05)
Britz Helmut, Zentralstr. 142, 8003 Zürich
k AG Andermatten Zürich (0.05)
Brivio-Botta Elvezia, via privata Botta, 6850 Menonsio
• Cinzia Partecipazioni SA., Menonsio (0.1)
Brivio Ricardo, Ufficio v.Curti 19, 6900 Lugano
• Commerciale + Labor SA Arti Grafiche, Lugano (0.4) Pr
Brivio Riccardo, Arbostora, 6922 Morcote
• Mammola SA, Lugano (0.05)
k Water Line SA, Mezzovico (6.0)
Brixner Ulrich Dr., Dreieich-Buchschlag D
k BEG Bank Europäischer Genossenschaftsbanken., Zürich (60.0)
Brizon Frédéric, Douvaine F
k Achille Edward SA, Fribourg (0.1)
• Progolf SA, Geneve (0.05)
Brizzi David, Heinrich Guier-Str. 5, 8494 Bauma
• Elektro-Brizzi AG, Bäretswil (0.1)
Brizzi Gertrud, Bahnhofstr. 13, 8344 Bäretswil
• Elektro-Brizzi AG, Bäretswil (0.1)
Brizzi Heinz, Bahnhofstr. 13, 8344 Bäretswil
• Elektro-Brizzi AG, Bäretswil (0.1) Pr
Brizzi Yvan, prom. des Pêcheurs 18, 1950 Sion
k Idees SA, Vetroz (0.1) Pr
Brocard Andre, La Praine, 1315 La Sarraz
• Traitements Thermiques Brocard SA, La Sarraz (0.1)
Brocard Andre, Hippodrome 17, 1400 Yverdon
Electra-Massa, Naters (40.0)
k Port-franc et Entrepots de Lausanne-Chavornay SA (PESA), Chavornay (4.0)
k Usines de l'Orbe, Orbe (1.068)
Brocard Michel, rue Couvaloup 24, 1110 Morges
k Burex SA, Vernier (0.05)
k Tabis Tivoli SA, Lausanne (0.05)

Briner Kurt, rte du Grand-Lancy 146, 1213 Onex
« Sanofi Pharma SA, Plan-les-Ouates (1.73) Del
e Sopharma SA, Plan-les-Ouates (0.05)
Briner Lukas Dr., Vordergasse, 8615 Wermatswil
e Radal-Plan AG, Hegnau, Volketswil (0.2)
Briner Max Dr., Alte Landstr. 115, 8803 Rüschlikon
k Ergon Informatik AG, Zurich (0.05) Pr
e Hatina Bau AG, Baar (2.0)
« Hatina Treuhand AG, Baar (0.1)
e Uniboutz AG, Zürich (0.2)
Briner Nelly, Eggwaldstr.3, 8542 Wiesendangen
k Briner Kieswerke AG, Wiesendangen (0.25)
Briner Peter, Kohlfirststr. 38, 8203 Schaffhausen
« Moersdorff-Scherer AG, Schaffhausen (0.05)
Briner Robert Dr., Ch. Chapeau-Rouge 3, 1231 Chênes-Bougeries
k Agefi Gesellschaft der Agence Economique et Financiere AG, Zürich (0.35) Pr
k Bostitch AG, Zürich (0.1)
e Bostitch (Europe) AG, Zürich (0.05)
e Burberrys (Suisse) SA, Geneve (0.15)
e Burnoy (Europe) SA, Chêne-Bougeries (0.4) Pr
e Conac AG, Studen (0.5)
k Damilow SA, Geneve (0.05)
« Emiiv Marketing SA, Fribourg (1.0)
k Gecosuc SA, Geneve (0.6)
e Gold Fields Holding SA, Geneve (0.1) Pr
k Grindlay Brandts AG, Zürich (10.0)
« H & M Hennes & Mauritz SA, Geneve (1.3)
k Harlequin Entreprise S.A., Fribourg (0.065)
« Harlequin Fribourg SA, Fribourg (0.05)
« Heller Freres SA, Fribourg (0.05)
« Hobart AG, Basel (0.7)
« Hobart (Swiss) AG, Regensdorf (2.5)
« Hofin SA, Fribourg (4.0)
« Honda Automobiles (Suisse) SA, Satigny (4.0)
« Honda (Suisse) SA, Geneve (3.0)
« Husint S.A., Fribourg (2.904)
k Institut Cerac SA, Ecublens (2.0)
Lintas AG, Zürich (0.05)
k Manutention Montage Maintenance M 3 Services SA, Geneve (0.05)
« Morgan J.P. (Suisse) SA, Geneve (10.0)
e Morgan Stanley SA, Geneve (0.5) Pr
k Nitro Nobel Financing and Leasing SA, Geneve (0.1)
k Office nouveau du nettoyage Onet SA, Geneve (0.3)
k Orinter SA, Geneve (0.5)
k Pierre SA, Fribourg (1.443)
k Settlements SA, Fribourg (0.150)
Siber Hegner Holding AG, Zürich (8.0)
k Societe de Participation dans le domaine alimentaire SA, Fribourg (2.0)
k St Mary Axe SA, Fribourg (0.05)
k The Maersk Company (Suisse) SA, Geneve (0.5)
k The Weir Group International SA, Fribourg (6.0)
e Tranitex SA, Geneve
k Tricentrol SA, Geneve (0.3)
e TRW International SA, Geneve (3.99)
k Wallis of London AG, Zürich, Zürich (0.05)
Briner-Eidenbenz Robert Dr., Hummgenstr. 77, 8704 Herrliberg
k Combined Technologie Comtech SA, Vevey (0.5)
Briner Robert Georg Dr., Waisenhausstr. 15, 8820 Wädenswil
k Computervision Applied Graphics Systems AG, Kloten (0.25)
Briner Ruth, Wülflingerstr.224, 8408 Winterthur
e Grogil AG, Winterthur (0.1) Del
Briner Stephan Dr., Kehlhofhalde 13, 6043 Adligenswil
Diga Immobilien AG, Ebikon (0.1)
Briner Werner, Unt. Mollenstrasse, 4656 Starrkirch-Wil
e Briner Hebgo AG, Olten (0.1)
Bringhen Hugo, Kantonsstr. 32, 3930 Visp
« Bringhen Hans Baumaterial AG, Visp (0.2) Pr
k Frischbeton Baltschieder AG, Baltschieder (0.1) Pr
k Kies- und Zementprodukte AG, Susten Gmd Leuk (0.15)
k Sand & Kies AG, Baltschieder (0.1) Pr
e Santag AG, Thun (0.2)
Bringhen Jean-Pierre, Kantonsstr. 32, 3930 Visp
« Bringhen Hans Baumaterial AG, Visp (0.2)
k Deponie Teuftal AG, Muhleberg (1.2)
Kevag Kehrichtverwertungs AG Düdingen, Düdingen (0.1)
Santag AG, Thun (0.2)
Bringolf Alain, Somballe 5, 2300 La Chaux-de-Fonds
« Bel-Air-Est SA, La Chaux-de-Fonds (0.12)
k Bloc 30 SA, La Chaux-de-Fonds (0.1)
k Bois-Noir-Ouest SA, La Chaux-de-Fonds (0.12)
k Centre regional d'incineration des ordures SA (Cridor), La Chaux-de-Fonds (0.1)
« Eclair SA, La Chaux-de-Fonds (0.108)
« Familia SA, La Chaux-de-Fonds (0.2)
k Immeubles Avenue des Forges, Moderna SA, La Chaux-de-Fonds (0.151)
k Immobiliere Volta SA, La Chaux-de-Fonds (0.1)
k Scierie des Eplatures SA, La Chaux-de-Fonds (2.0)
k SI Cafe des Sports SA, La Chaux-de-Fonds (0.05)
k SI Grenier 22 SA, La Chaux-de-Fonds (0.05)
k SI Les Bassets SA, La Chaux-de-Fonds (0.05)
k SI Locative SA, La Chaux-de-Fonds (0.1)
k SI Rue Leopold-Robert 114 SA, La Chaux-de-Fonds (0.135)
k SI Sophie-Mairet 13 et 15 SA, La Chaux-de-Fonds (0.1)
k Solquest SA, La Chaux-de-Fonds (0.05)
Bringolf Lucien, r. des Chevreuils 23, 2300 La Chaux-de-Fonds
k Adequa communications visuelles et verbales, La Chaux-de-Fonds (0.05) Pr
Brink Willem, Schoonhoven (NL)
« Intercoating AG, Bassersdorf (0.6)
Gasthuber Charles, Rheinweg, 8260 Stein am Rhein
e Herose Gabriel AG, Riehen (0.15) Pr
Brinker Alfred, Gevelsberg (D)
e Ruggli Karl AG, Fislbach (0.05) Pr
Brinkmann Günther, Bremen (D)
e Isokieba AG, Baden (0.1) Pr
Brinkmann Hans Joachim, Detmold (D)
e Surfasit AG, Malters (0.1) Pr
Brinkmann Heinrich, Unterriedstr. 20, 5452 Oberrohrdorf
« Mecatrans SA, Fribourg (0.1)
Brinkmann Horst, Spiesen (D)
« ASD Autoradio-Spezial-Dienst AG, Zurich (0.16)
(Fortsetzung)
k Auto Sound AS Radio Marketing AG, Zug (0.05)
Brinkmann Liliane, Hüslibechstr. 78, 8041 Zürich
Wegmann & Brinkmann AG, Zürich (0.1)
Brinkmann Rainer, Hüslibechstr. 78, 8041 Zürich
e Wegmann & Brinkmann AG, Zürich (0.1)
Brintzinger-Broglie Marianne, Guntrashausen, 8584 Leimbach TG
k Prograrica AG, Baar (0.05)
Briod Andre, ch. des Noyers 18, 1032 Romanel-sur-Lausanne
CTSR carrefour du tennis et du squash SA, Romanel-sur-Lausanne (1.55)
Briod Bernard, case postale 20, 1822 Chernex
e Briod SA, Montreux (0.05)
Briod Christian, ch. des Fleurs 15, 1023 Crissier
e Briod, Paul SA, Prilly (0.05)
Briod Daniel, Av. Général Guisan 39, 1009 Pully
k Grapillon SA, Mont s/Rolle (0.5)
Briod Paul, av. Mont-Goulin 35, 1008 Prilly
e Briod, Paul SA, Prilly (0.05) Pr
Briod Pierre-André, case postale, 1083 Mézières VD
e Fontex SA, Mézières (0.05)
e Gestifin S.A., Mézières (0.05)
e SBAG, Schuldner Betreuungs AG, Mézieres (0.05)
Briod Robert, Rte de Broye 1, 1008 Prilly
e Campomat S.A., Villars-Ste-Croix (0.05)
« Sovecol SA, Villars (0.05)
Brion Alain, Paris (F)
e Omnium de Petroles S.A., Geneve (18.0)
Brion Claudine, Ris-Orangis
k Castella Sports SA, Bulle (0.1)
Brion Michel, Esery (F)
e Silverstein SA, Geneve (0.05) Pr
Brioschi Arcangelo, 6951 Oggio
« Bauter SA, Ponte Capriasca (0.05) Pr
Brioschi Flavia, Brioschi, 6951 Oggio
k Bauter SA, Ponte Capriasca (0.05)
Brioschi Guido, Str. di Fuimignano 26, 6977 Ruvigliana-Lugano
e PPA Professional Partners SA, Lugano (0.05)
e Sogepar SA, Lugano (0.25) Pr
k Unicom SA Lugano, Lugano (0.1)
Brioschi-Gianella Luisa, 6900 Lugano
« Clinica San Rocco S.A., Grono (3.3)
Brique Louis, rue Lamartine 8, 1203 Geneve
e Si rue de Candolle 17, Geneve (0.05)
Brique-Tzonwska Renee, r. Lamartine 10, 1203 Geneve
e Radka SA, Les Collons-Vex (0.05)
Brissard Marc, r. du Nant 30, 1207 Geneve
e Antigone S.A., Geneve (0.05)
Brissard Paul, ch. Grange-Canal 31, 1208 Cologny
k Satram-Huiles SA, Basel (0.75)
k Tanklager Tägerschen AG, Tägerschen (0.680) Pr
Bristow Thomas Henry, Billericay (GB)
e Arkas AG, Zug (0.25) Pr
Britschgi Alois, Mattli, 6072 Sachseln
e Britschgi, A. AG, Sachseln (0.05)
Britschgi Blasius, Mattenwilhöhe, 6275 Ballwil
k Buchmann & Britschgi AG, Inwil (0.1) Pr
Britschgi Edgar, Feldweg 5, 8134 Adliswil
e BTX-Partner AG, Zürich (0.05) Del
Combo Management AG, Zürich (0.05)
k Key Trust Company Ltd., Zug (0.100)
e Kybernec AG, Zürich (0.05) Pr
Britschgi Hans Werner, H. Wirri-Str. 10, 5000 Aarau
k Decorado AG, Buchs AG (5.0)
e Hassim AG Aarau, Aarau (0.9)
k Hassler, Hans, AG Bern, Bern (0.45)
k Hassler, Hans, AG Luzern, Luzern (0.45) Pr
e Hassler, Hans, AG Zug, Zug (0.2) Pr
k Hassler Hans AG Zürich, Zürich (0.3) Pr
e Vidal, Vitali AG, Zürich (0.15) Pr
Britschgi Hugo, Schwendli, 6063 Stalden
k Hotel Langis AG, Sarnen (0.8)
e IrvingTrading SA, Sarnen (0.05) Pr
Britschgi Ignaz Dr., Poststr. 5, 6060 Sarnen
e Angelomontana Holding AG, Engelberg (0.25)
k Druckgusswerk Fischer AG, Alpnach (0.3)
e Elfina SA, Engelberg (0.1)
k Landenberg Druckerei, Sarnen (0.3) Pr, Del
k Lignoform Mobelbau AG, Wilen Gde, Sarnen (0.05)
k Wegenstein Management Holding AG, Sarnen (0.5)
k Wegenstein Management Sarnen AG, Sarnen (0.05)
Britschgi Josef, 5708 Birrwil
e Restaurant Burestupe AG, Birrwil (0.1)
Britschgi Joseph, rte de Chêne 105, 1224 Chêne-Bougeries
e AG Britschgi zum Kreuz, Sachseln (0.5) Pr, Del
Britschgi Leopold, Steinenstr. 6, 6048 Horw
e Durrer & Britschgi AG, Horw (0.05) Del
Britschgi-Irving Margarete, Schwend, 6060 Sarnen
e IrvingTrading SA, Sarnen (0.05) Del
Britschgi Peter, Urdorferstr. 65, 8952 Schlieren
k Bruhlmann Brennstoffe AG, Schaffhausen (0.4) Pr
k Bürke AG, Zurich (1.0)
k Frafin AG, Zürich (0.5)
e Magus AG, Zürich (0.054)
k Meyer A H AG Glarus, Glarus (0.05)
k Olbena SA, Menorisio (0.5)
e Olsag AG, Zürich (1.0)
Britschgi Robert, Breitelweg 5, 6064 Kerns
k Bergbahnen Melchsee-Frutt-Bonistock, Kerns (2.2)
k Restaurant Bonistock AG, Kerns (0.6) Pr
Britt Alois, Grossfeldstr. 42, 7320 Sargans
e Britt AG, Sargans (0.05)
Britt Josef Dr., Promenadenstr. 87, 9400 Rorschach
« Airport Altenrhein AG, Altenrhein-Thal (1.0) Del
e Repair AG, Altenrhein, Gde Thal (0.1) Del
Britt Karl, Sonnenblick, 7321 Schwendi (Weisstannental)
e Britt & Sohne Karl AG, Schwendi, Gde Mels (0.05) Pr
Britt Rudolf, alt Forstermaus, 7321 Weisstannen
e Britt & Sohne Karl AG, Schwendi, Gde Mels (0.05)
Britt Viktor, Neugutweg, 8887 Mels
e Britt & Sohne Karl AG, Schwendi, Gde Mels (0.05)
Britz Helmut, Birmensdorferstr. 511, 8055 Zürich
« AG Anderhalden Fenraitort (0.05)
Britz John, London (GB)
« Foto Fast AG, Zermatt (0.1)
Brivio-Botta Elvezia, via Mademo, 6850 Mendrisio
e Cinzia Partecipazioni SA, Mendrisio (0.1)
Brivio Riccardo, 6922 Morcote
e Commerciale-Labor S.A. Arti Grafiche, Lugano
Brix Knud, Juelsminde (DK)
Scheller F.H. AG, Pfäffikon (0.1)
Brizzi David, Heinrich Guter-Str. 5, 8494 Bauma
e Elektro-Brizzi AG, Bäretswil (0.1)
Brizzi Gertrud, Bahnhofstr. 13, 8344 Bäretswil
e Elektro-Brizzi AG, Bäretswil (0.1)
Brizzi Heinz, Bahnhofstr. 13, 8344 Bäretswil
e Elektro-Brizzi AG, Bäretswil (0.1)
Brizzi Yvan, prom. des Pêcheurs 18, 1950 Sion
k Ideas SA, Vetroz (0.1) Pr
Brocard André, La Preyre, 1315 La Sarraz
e Traitements Thermiques Brocard SA, La Sarraz
Brocard André, Hippodrome 17, 1400 Yverdon
Compagnie des chemins de fer du Jura (C.J.), (10.85)
Compagnie du Chemin de fer de Glion aux Roch Naye, Montreux (2.222)
Compagnie du Chemin de Fer d'Yverdon à Ste-C Yverdon (2.4)
Compagnie du Chemin de fer Montreux-Oberla Montreux (10.687)
Compagnie du Chemin de fer Pont-Brassus, La (0.9905)
Electra-Massa, Naters (40.0)
k Port-franc et Entrepots de Lausanne-Chavorna (PESA), Chavornay (4.0)
Simmentalbahn (SEZ), Zweisimmen (3.5025)
k Usines de l'Orbe, Orbe (1.068)
Brocard Michel, rue Couvelsoup 24, 1110 Morges
k Guy & Morisot Burautique SA, Gland (0.100)
k Radio Sonora Kopp et Pellegrino SA, Lausanne
k Tapis Tivoli SA, Lausanne (0.05)
Brocca-Affentranger Brigida, Via al Roccolo 4, 6932 Breganzona
e Geminex SA, Breganzona (0.05)
Broccni Bruno, casa Gembomi, 6925 Gentilino
e Camenzind-Brocchi-Sennhauser Studio d Archi Lugano (0.1512)
Brocchi Pietro, v. Motta 36, 6900 Lugano
e B I N T Finanzgesellschaft fur Holzwerke A.G., (0.054) Pr
e Burck SA, Lugano (0.05)
e Ciw SA, Chur (0.05) Pr
e Daichin S.A., Davos (0.05) Pr
e Delcius S.A., Coira (0.05)
e Delfis SA, Chur (0.05)
e Doha S.A., Chur (0.05)
e Fintermodi SA, Davos (0.05)
e Finwiler AG, Disentis (0.05)
e Formihn S.A., Disentis (0.05)
e Goldlowe S.A., Chur (0.05) Pr
e Grigna SA, Davos (0.05) Pr
e Kinlie SA, Davos (0.05) Pr
e Laelia Societa per investimenti Finanziari industr commerciali, Chur (0.05)
e Pasidamo S.A., Coira (0.05)
e Preies SA, Davos (0.05) Pr
e Severeco SA., Davos (0.05) Pr
e Simser A.G., Chur (0.05)
e Suimohn SA, Disentis (0.05)
Brocco Albert, Rosenweg 2, 3270 Aarberg
k Muwa AG, Lyss (0.05)
Broccois Enrico, 6943 Vezia
k Kurhotel Al Ronc AG, Zürich (2.0)
Broccoli Guilelmo, Monza (I)
k SA Andrea Merzano, Chiasso (0.05)
Broch Béatrice, Les Gentianes, 1637 Charmey
k Repond Andre SA, Charmey (0.3)
k SI Charmessa, Charmey (0.06)
Brochain Robert, Gosselies (B)
k Wimodel SA, Sion (0.05)
Brocher Claudine, 1261 Grens
e Gems, Jacqueline, S.A., Grens (0.05)
Brocher Jacques, 18 Ch. de la Fraterie, 1224 Chene-Bougeries
Comatel SA, Cologny (0.05)
Brocher Jean-François, pl. Bourg-de-Four 9, 1204
e Capirente SA, Geneve (0.05)
Brocher Marie-Lucie dite Lucette, pl.Claparede 1205 Geneve
e Societe de construction de l'Oeillet rouge, Geneve
e Villa Catalonia S.A., Geneve (0.05)
Brochetta Giovanni, vi. Stoppe 4, 6830 Chiasso
e Belpiano SA, Chiasso (0.05)
Brochetta-Romano Myriam, via Stoppa 2, 6830 Chia
e Portochiaro SA, Chiasso (0.05)
Brochin Kurt Dr., Pilatusstr. 15, 4663 Aarburg
e Cumara SA, Orsonna (0.06)
Brocke Karl-Gerhard, Lahr (D)
e Wzçamet AG, Reussbühl/Littau (0.072)
Brocker Herbert, Wiesenstr. 4, 9034 Eggersried
k Zaun Immobilien AG, Speicher (0.06) Del
Brocker Roland, Landermachstr. 18, 9435 Heerbrugg
k Fankhauser + Brocker Architekten AG, Heerbrugg (0.06)
Brockmann Ernst, Unterer Reinweg 30a, 3068 Utzigen
e Wohnshop AG, Bern (0.35)
Brockmuller Ingo, Stollen, 8821 Schönenberg
e Teletron AG, Schonenberg (0.1) Pr, Del
Brod Stephen, Arkley GB
k Stavolt AG, Neuenhof (0.05) Pr
Brodard Albert, Les Mosses, 1688 Sâles
k Brodard & fils, H AG, Fribourg (0.1)
Brodard Alexandre, Les Mosses, 1688 Sâles
« Brodard & fils, H AG, Fribourg (0.1)
Brodard André, rue du Fort-Barreau 31, 1201 Geneve
e Accordeons J. Bernard S.A. Geneve (0.05)
k Intrason SA, Chavannes-pres-Renens (0.05)
Brodard Bernard, pl. Eglise, 1027 Lonay
e Garovan & Brodard SA, Geneve (0.05)
Brodard Charles, 1634 La Roche
e Brodard Charles S.A., La Roche (0.05)
Brodard Charles, 1688 Sâles
« Brodard & fils, H AG, Fribourg (0.1)
Brodard Gabriel, 1634 La Roche
k Societe des remontees mecaniques de la Berra SA Roche (1.7)

Orell Füssli 1987

Verzeichnis der Verwaltungsräte

Répertoire des Administrateurs

Politiker und Hochschulprofessoren mit ihren Verwaltungsrats-Mandaten

«Top 100» der Verwaltungsräte

Hommes politiques et professeurs d'université avec leurs mandats d'administrateurs

Les «Top 100» des administrateurs

Neu überarbeitet! Eidg. Räte: mehr Transparenz ihrer Verbindungen zu Verbänden, Wirtschaft und Militär

Nouvellement remanié! Conseillers fédéraux: plus de transparence dans leurs rapports avec les associations, l'économie et les militaires.

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Bretscher Dieter, Buchenweg 6, 4148 Pfeffingen
e Bretscher Sonne AG., Basel (0.1)
Bretscher Ernst, Sonnenbergstr. 9, 8542 Wiesendangen
e Leemann + Bretscher AG, Bauunternehmung, Winterthur (0.5) Pr
e Leemann + Bretscher AG, Generalunternehmung, Winterthur (0.41) Pr
e Swiss Consulting Ltd., Winterthur (0.1) Pr
Bretscher-Wuthrich Felix, Hotel Schonegg, 4322 Mumpf
k Autobahn-Raststatten Fricktal AG, Rheinfelden (0.05)
e Schonegg AG, Mumpf, Mumpf (0.5) Pr, Del
Bretscher Fritz, Sonnenweg 369, 8523 Hagenbuch ZH
Schreinerei Erman AG, Egg (0.1)
Bretscher Hans Dr., Spitzackerstr. 1, 4103 Bottmingen
k Pro Rheno AG, Basel (50.0) Del
k Pro Rheno Beteiligungs AG, Basel (0.05)
Bretscher Hans, Liestalerstr. 20, 4141 Fullinsdorf
e Bretscher Sonne AG, Basel (0.1) Pr
Bretscher Hans, Kratzstr. 29, 8620 Wetzikon
k Breton Verputz AG, Baretswil (0.05) Pr
e Bretscher Hans AG, Hoch- u. Tiefbauunternehmung, Wetzikon (0.08) Pr, Del
Bretscher Hans J., Breitestr. 9, 8903 Birmensdorf
e Bresco A.-G., Zürich (0.1) Pr
Bretscher Heinrich, casa al lago, 6951 Origlio
e Bretscher & Co Immobilien AG, Winterthur (0.05)
e Bretscher Import-Export SA., Origlio (0.05) Pr
Bretscher Jurg Prof. Dr., Doltschnhalde 9, 8055 Zurich
Kulturama AG, Zürich (0.1)
Bretscher Karl A., Dufourstr. 65, 8702 Zollikon
e Bretscher C.A. AG., Zollikon (0.05) Pr
Bretscher Marta, Breitestr. 9, 8903 Birmensdorf
e Bresco A.-G., Zürich (0.1)
Bretscher Max, 8304 Wallisellen
e Bretscher Max AG, Wallisellen (1.5)
e Steinmann B., AG., Zürich (0.18)
Bretscher Max, 8000 Zürich
e Kunic AG., Zürich (0.1) Pr
Bretscher Ruth, Sonnenbergstr. 9, 8542 Wiesendangen
k Leemann + Bretscher AG, Generalunternehmung, Winterthur (0.4)
Bretscher Ursula, Spitzackerstr. 1, 4103 Bottmingen
e Copartner AG, Basel (0.06)
Bretscher Verena, Bilangstr. 3, 8730 Uznach
k Albrecht-Schlapfer AG., Zürich (0.3) Pr
Bretscher Verena, Sandbuhlstr. 13, 8620 Wetzikon
e Bretscher Hans AG, Hoch- u. Tiefbauunternehmung, Wetzikon (0.08)
Bretschger-Iselin Jenny, 8000 Zürich
e SI La Chandoline., Lausanne (0.05)
Bretz Horst D. Dr., 4303 Kaiseraugst
e Vivaristik AG., Kaiseraugst (0.05) Pr
Bretz Karl-Werner, 1920 Martigny
e Interfecnno Tunneling Equipement Commercial SA, Martigny (0.1) Pr
Bretz Marie U., 4303 Kaiseraugst
e Vivaristik AG., Kaiseraugst (0.05)
Breu-Hanni Berta, Kohlplatz 621, 9410 Heiden
e Breu Metallbau AG, Heiden., Heiden (0.1)
Breu Bruno, Sandstr. 286, 4573 Lohn SO
k Rythalle Soleduro, AG fur Ausstellungen., Solothurn (0.2)
Breu Frieda, Rütistr. 1, 9443 Widnau
k Breu AG, Widnau., Widnau (0.05)
Breu Gérard, Freiburgerstr. 6, 3150 Schwarzenburg
e Breu AG., Schwarzenburg (0.05)
Breu Gerhard, Rudolfstetten-Friedlisberg
k Adec Robot AG, Dietikon (0.5)
Breu Hans, Forrenstr. 20A, 9050 Appenzell
k Ingenieurbüro Herschе AG, Appenzell (0.1)
Breu Hans, Eugst, 9413 Oberegg
Wohnbau AG, Oberegg, Oberegg (0.4)
Breu-Lanz Hansruedi, Feldli 967, 9413 Oberegg
e Breu, Holzbau AG Oberegg, Oberegg (0.4)
k Obag Bau AG, Oberegg (0.1) Pr
Breu Jean-Bernard, 1868 Collombey
k Cocitio SA, Collombey-Muraz (0.05)
Breu Karl, Rütistr. 1, 9443 Widnau
e Breu AG, Widnau., Widnau (0.05) Pr
Breu Marcel, Collombey-Muraz
e Breu Sport SA., Monthey (0.08)
Breu-Bischof Paul, 9413 Oberegg
e Breu, Holzbau AG Oberegg, Oberegg (0.4)
Breu Peter, Kohlplatz 621, 9410 Heiden
e Breu Metallbau AG, Heiden., Heiden (0.1)
Breu Raymond, Freiburgstr. 6, 3150 Schwarzenburg
e Breu AG., Schwarzenburg (0.05) Pr
Breu Rudolf, Sonnenhugelstr. 20, 8580 Amriswil
k Diawa AG., Roggwil (0.19)
Breu-Hanni Rudolf, Kohlplatz 621, 9410 Heiden
e Breu Metallbau AG, Heiden., Heiden (0.1) Pr
Breuer Gerhard H., Ettingen-Kirchen D
k Agropress AG, Basel (0.3)
Breuer Hans, Schiltweg 4, 2503 Biel
e Rauro AG Biel, Biel/Bienne (0.2) Pr
e Sico-Marc AG., Biel/Bienne (0.2) Pr
e Simedic AG., Biel/Bienne (0.1)
Breuer Jurg, Campodolsweg 15, 7000 Chur
k Catram AG., Chur (1.0)
e Prader & Co AG, Chur (1.0) Del
Breuer Rolf E., Francfort-sur-le-Main D
k Deutsche Bank (Suisse) SA., Geneve (30.0)
Breuer Walter, Heidelberg (D)
Hobby-Fashion AG, Uster (0.5)
Breuleux Gerald Dr., 8000 Zürich
k Artig Ltd., Zürich (0.25)
Breun Irmgard, Mannheim
k Cordag AG, Aesch (0.6)
Breun Otto Dr., Mannheim
e Cordag AG, Aesch (0.6)
Breuninger-Schneider Hanna, 5000 Aarau
k Breuninger AG, Aarau (0.1)
Breuninger Heinz, Binzennotstr. 11, 5000 Aarau
k Breuninger AG, Aarau (0.1)
Breuninger Max, Binzennotstr. 11, 5000 Aarau
e Breuninger AG, Aarau (0.1) Pr
Breuninger Ruth, Binzennotstr. 11, 5000 Aarau
k Breuninger AG, Aarau (0.1)
Breunlin Ruth, Margarethenstr. 21, 4450 Sissach
Basler Eisenmöbelfabrik AG, vormals Theodor Breunlin & Cie., Zunzgen (0.3)

Breuss Arthur, Strumbergscherstr. 29, 8907 Wettswil a.A.
e Wohnambiance am Lindenplatz AG, Zürich (0.2) Pr
Breuss-Hirt Verena, Rappenstalstr. 6, 3013 Bern
e Inter-Service-Montagen AG, Bern (0.05)
Breuss Walter, 9100 Herisau
e Breuss AG Walter, Herisau (0.2)
Breval Yves, rte de St-Cergue 111, 1260 Nyon
TAR-Tankanlage Rumiang AG, Rumiang (3.2595)
Breval Yves, 4104 Oberwil BL
k Obag Unterflurbetankungsanlage Flughafen Zürich., Zürich (1.0)
Breymann Mimi, 8000 Zürich
e Immobilien-Aktiengesellschaft Krause-Senn, Zurich (0,36)
Breyton Gilbert, Annecy F
e Terramon-Geweko AG, Toffen (0,12) Pr
Brgamasco Mario, 6614 Brissago
e Carrozzeria Al Ponte SA., Brissago (0.05)
Briand-Niklaus Barbara, 1261 Le Vaud
e Niklaus Ernst AG, Gesellschaft fur Import-Export, Bern (0.25)
e Niklaus Ernst Handels AG., Bern (0.1)
Briand Maunce, 1630 Bulle
k Traversol SA., Yvonand (0.05)
Briand Otto, Haus City, 3954 Leukerbad
e Gunet AG, Leukerbad, Leukerbad (0.05) Pr
Briand Pierre, Case postale, 1348 Le Brassus
k Golay Francois SA., Le Brassus (0.1)
Briand Rudolf, Stegmattweg 23, 3250 Lyss
k Briand & Steiner AG., Lyss (0.1)
Brianza Mario, Mitteiweg 8, 4142 Munchenstein
k Sowag AG fur sozialen Wohnungsbau, Basel (0.925)
Bribosia Dominique, Glimes B
k Carnor SA Holding Company, Auvernier (0,05) Del
Bricciotti Giordano, Hubelweg 19, 5115 Moriken-Wildegg
k Chesionag, Moriken-Wildegg (0.4)
Briccola Enrico, 6943 Vezia
k Kumotel Al Ronco, AG, Zürich (2,0)
Briccos Dante, 4000 Basel
e Urdaba AG, Basel (0.05)
e USB Sportwerbung AG, Allschwil (0.05)
Brichet Pierre, av. Dumas 2bis, 1206 Geneve
e SA Beuret-Square B., Geneve (0.05) Pr
e SA des Deux Parcs no 20, Geneve (0.05)
e SI Pont de Saint-Georges, Geneve (0.05) Pr
Brichet Yvonne, 1200 Geneve
e SI Avenue de la Gare des Eaux-Vives No 18., Geneve (0.05)
Bricka Alfred, Obernai F
k Hager Modula SA., Zünch (0,1)
Briccis Jean, ch. du Reposoir 5, 1260 Nyon
e Barna SA, Geneve, Geneve (0.05)
e Copinger SA, Geneve (0,1)
e Laroca SA, Geneve (0.05) Pr
e Murreau SA, Geneve (0.05) Pr
e Odipar SA., Geneve (0.05) Pr
e Tenm SA., Geneve (0.05) Pr
Bricout Andre, Saarbrucken D
e Bricout SA, Basel (0.2) Pr, Del
Bridel Georges, Tramstr. 46, 8050 Zürich
k SP Societe de Promotion Industrielle et Commerciale à l'Etranger SA., Nyon (0.2)
Bridel Maunce, av. Tribunal Fédéral 5/Case Postale 2231, 1002 Lausanne
e Livres anciens Bridel Maunce SA., Lausanne (0,05)
Bridevaux Manfred, Westbühlstr. 60, 8038 Zürich
k Pluss + Bridevaux + Zimmermann Architekten AG, Zünch (0.05)
Bridger Keith D., Brentwood, Essex GB
k Haaxon AG, Basel (0,2)
Bridgewater Douglas, Henley-in-Arden (GB)
e CPS Computer AG, Zollikon (0.05)
Bridler Emil, unt. Bahnhofstr. 23 b, 8580 Amriswil
k Bridla AG., Amriswil (0,07) Pr
Bridler Marcel, unt. Bahnhofstr. 23 b, 8580 Amriswil
k Bridla AG., Amriswil (0,07)
Bridy Gabriel, 1302 Vuffiens-la-Ville
k Bndy Chamorel Bolomey SA, constructions metalliques., Echallens (0.051) Pr
Bridy Norbert, 2203 Rochefort
e Societe de Financement Progressa SA., Neuchâtel (0,1)
Brieger-Ulrich Marguerite, Breitwiesster. 58, 8135 Langnau a. Albis
k Bneger Verpackungen AG, Zürich (0,18)
Brieger Robert, Breitwiesstr. 58, 8135 Langnau a. Albis
e Bneger Verpackungen AG, Zürich (0.18) Pr
Briemaier Robert, Hauptstrasse, 5032 Rohr
k Furrer J. AG., Rohr (0.225)
Brientini Willy, vic. del Lido 1, 6900 Lugano
k Us Linen Supply SA, Manno (0,3)
Briere Alain, ch. Moise-Duboule 17, 1200 Geneve
k Trollship SA., Geneve (0,2)
Briet Roland-Maxence-Gilbert, 20 r.Albert Gos, 1206 Geneve
k Lombard SA., Geneve (1,0)
Briffod Edouard, Bd. Dapples 15, 1800 Vevey
e Hôtel Bon-Port Montreux S.A., Montreux (0,05)
k Restaurant de La Grappe d'Or SA., Lausanne (0,15)
Briffod Janine, 1212 Lancy
k Public image Service SA., Geneve (0,05)
Briffod Marie-Louise, 1200 Geneve
k Conserves Gras Eug. SA., Carouge (0,075)
Brigatti Bruno, av. de Montchoisi 39, 1006 Lausanne
k Saag SA Akteine., Carouge (0,1) Pr
Brigatti Paola-Maria, Riva San Vitale
e Torrazza SA., Lugano (0,15)
Brigel Jurg, Les Cassarvettes, 1171 Féchy
k Bngel J.H. AG., Stafa (0,5)
k Cendres et Metaux SA., Biel/Bienne (2,8)
Briggen Maya, Wettistr. 5, 9470 Buchs SG
e Marastrans AG, Buchs SG (0,06) Del
Briggen Robert, 8124 Maur
e EDP Support AG, Schwerzenbach (1,3)
Briggen Robert, 8124 Maur
k Zurmuhle H. W. AG, Allendorf (1,1)
Briggen Urs, Bubendörferstr. 9, 4411 Arboldswil
k AG fur Haus- und Gartenbedarf, Sissach (0,4)
Briggen-Bögli Urs, Tannacker 9, 2565 Jens
e SWP Software-Pool AG, Zürich (0,05)
e Unternehmensberatung U. Briggen AG., Glarus (0,05)
Briggen Willi, Simmentalstr. 18, 3700 Spiez
e Portner & Bnggen Holzbau AG, Spiez (0,2)

Brigger Bernhard, Chalet Adler, 3925 Grachen
k Luftseilbahn Grachen-Hannigalp AG, Grachen (1,83) Pr
e Tounstica Grachen AG, Grachen (7,2) Pr
Brigger Bernhard, Eggstr. 60, 8102 Oberenostringen
e Garage Bernstrasse AG, Dietikon (0,1) Pr
Brigger Gerhard, 3931 Staldenried
k Schiffe Gspon AG, Staldenried (0,753)
Brigger Phillipp, 3904 Naters
e RS Trading, Naters (0,05)
Brigger Polykarp, 3921 Staldenried
k Untenagsboden AG Staldenried, Staldenried (0,05)
Brighford Eric-G., Ludwigsburg BRD
e Brantford & Company SA, Geneve (0,1)
Bright Colin, 8810 Horgen
k Hibag Fertilizer AG., Zürich (2,0)
Brignet Jean-Paul, 3941 Lens
k Moreg SA., Visp (0,06)
Brignoli Alexandro, Alte Landstr. 188, 8800 Thalwil
Orka Baden AG., Baden (0,5)
Brignoli Berta, Albisstr. 61, 8183 Adliswil
X-chance Trading Ltd, Zürich (0,05)
Brignoli Dora, 6981 Monteggio
Orka Baden AG., Baden (0,5)
Brignoli Rita, 5502 Hunzenschwil
e Cantamessa AG, Hunzenschwil., Hunzenschwil (0,05) Pr
Brignoli Silvana, Corso S. Gottardo 84, 6830 Chiasso
e Bndes Trading SA., Chiasso (0,05)
Brignoni Franco, Kasthoferstr. 42, 3006 Bern
k Baugesellschaft Nydegg, Bern (0,5)
k Grosse Schanze AG., Bern (3,2)
k Kammerspiele Bern AG., Bern (0,13)
e Ka-We-De, Kunstlerbahn und Wellenbad Dählhölzli-Bern AG., Bern (0,34875) Pr
Brignoni Ots, 6830 Chiasso
e Bednne Elettra SA., Montagnola (0,05)
Brignoni Pietro, v. al Persto 21, 6932 Bregnanzona
e Tresiana S.A., Ponte Tresa (0,05)
Briguet Andre, 1961 Nendaz
k Café-Restaurant Les Gentianes SA, Nendaz (0,35)
Briguet Fabien, r. des Creusets 59, 1950 Sion
k Bnguet et Rudaz S.A., Sion (0,05) Pr
Brik Peter, Liestalerstr. 21, 4414 Füllinsdorf
e Intercaustic AG, Fülinsdorf (0,2) Del
Briker Peter, Dorfstr. 6, 6454 Flüelen
k Bndol AG, Flüelen (0,05) Pr
Brilatti Oswald, Aegerstr. 52, 6300 Zug
e Ofa Bau Ag, Zürich (0,1) Pr
Brillmann Jean, Paris
k Cégos-Idet International SA., Geneve (0,66) Pr
Briner-Schilttler Beatrice, Bannacker 1, 4612 Wangen b. Olten
k Bnner H. AG Metallbauabeschlage-Storenfabnk., Wangen bei Olten (0,3)
Briner-Rest Doris, 8712 Stäfa
e Tunmag-Immobilien AG, Chur (0,05) Pr
Briner Ernest, rue de la Baillive 3, 1205 Geneve
e Le Capncorne SA., Geneve (0,05)
e Unitrex SA., Geneve (0,05) Pr
Briner Ernst, Alpenweg 14, 5703 Seon
k Elektrozinn AG., Oberruti (1,2)
k Metalltechnik AG, Oberruti (0,5)
Briner Ernst K., Sonnenbergstr. 128, 8032 Zürich
e Capitus AG., Schaffhausen (0,3)
e Clavus Holding AG., Zug (0,07)
Briner Fritz, Haus am Wald, 7050 Arosa
e Bupod Corner AG., Arosa (0,05) Pr
Briner-Wirz Gertrud, Wangen b. Olten
e Bnner H. AG Metallbaubeschlage-Storenfabnk., Wangen bei Olten (0,3)
Briner Hans, Bannacker 1, 4612 Wangen bei Olten
e Bnner H. AG Metallbaubeschlage-Storenfabnk., Wangen bei Olten (0,3)
Briner Hans-Peter, Schützenhausweg 19, 4612 Wangen bei Olten
e Bnner H. AG Metallbaubeschlage-Storenfabnk., Wangen bei Olten (0,3)
Briner-Grädel Heinrich, 4656 Starrkirch
e Bnner Hebgo AG., Olten (0,1) Pr
Briner Jakob, Eggwaldstr. 3, 8542 Wiesendangen
k Betonpumpen AG Zürcher Unterland., Kloten (0,4)
k Bnner Beton AG., Pfungen (0,25) Del
k Bnner Kieswerke AG., Wiesendangen (0,25)
Briner Kurt, Obstgartenstr. 28, 8136 Gattikon
e Gnenm & Bnner Treuhand- und Revisions AG, Zürich (0,15) Pr
k Guggisberg Fritz AG, Zürich (0,1) Pr
k Internoico AG, Zug (1,0)
e Profivertneo-Leemann AG., Glarus (0,05)
e Sunson AG., Zug (0,05)
e Tumbler Produktions AG., Zürich (0,05)
k Unwood Holding AG, Dietikon (0,5)
Briner Kurt, rte du Grand-Lancy 146, 1213 Onex
e Barcor SA, Plan-les-Ouates (0,1)
k Sanoh Pharma SA., Plan-Les-Ouates (1,73)
k Sanoh Pharma SA., Plan-Les-Ouates (1,73) Del
e Sopharma SA., Plan-les-Ouates (0,05)
Briner Lukas Dr., 8610 Uster
e Radal-Plan AG Hegnau, Volketswil (0,2)
Briner Max Dr., Alte Landstr. 115, 8803 Rüschlikon
k Ergon Informatik AG, Zürich (0,05) Pr
e Hafma Bau AG, Baar (2,0)
k Hafma Treuhanz AG., Baar (0,1)
Briner Nelly, Eggweidstr.3, 8542 Wiesendangen
k Bnner Kieswerke AG., Wiesendangen (0,25)
Briner Peter, Kohlfirststr. 38, 8203 Schaffhausen
k Moersdorf-Scherer AG., Schaffhausen (0,05)
Briner Peter, 8712 Stäfa
e AG Trudel, Zürich (0,5)
Briner Robert Dr., ch. Chapeau-Rouge 3, 1231 Chênes-Bougeries
k Bostitch AG., Zünch (0,1)
e Burberrys (Suisse) SA., Geneve (0,15)
e Burndy (Europe) SA., Chêne-Bougeries (0,05) Pr
k Combined Technologie Comtech SA., Vevey (0,5)
e Conac AG., Studen (0,5)
k Damiow SA., Geneve (4,4)
k Emily Marketing SA., Fribourg (1,0)
k Gecosuc SA., Geneve (0,6)
k Grindlay Brandts AG., Zürich (10,0)
k Hanequin Entreprise SA, Fribourg (0,065)
k Heller Freres SA., Fribourg (0,05)

k Hobart AG, Basel (0,7)
k Hobart (Swiss) AG, Regensdorf (2,5) Pr
k Hofri S.A., Fribourg (4,0)
k Honda Automobiles (Suisse) SA., Satigny (4,0)
k Honda (Suisse) SA, Geneve (3,0)
k Husini SA, Fribourg (2,904)
k Institut Cerac SA., Ecublens (2,0)
k Manutention Montage Maintenance M 3 Services SA., Geneve (0,05)
e Morgan Stanley SA, Geneve (0,5) Pr
k Nitro Nobel International SA, Fribourg (0,7)
k Office nouveau du nettoyage Onet SA., Geneve (0,3)
k Onnier SA., Geneve (0,5)
k Pienie SA , Fribourg (1,443)
k Settlements SA., Fribourg (0,15)
k Societe de Participations dans le domaine alimentaire SA., Fribourg (2,0)
k St Mary Axe SA., Fribourg (0,05)
k Swedish Match Consumer Products SA, Nyon (1,59055)
k The Weir Group International SA, Fribourg (6,0)
e Tranitex SA , Geneve (1,44)
k Tncentrol SA., Geneve (3,0)
e TRW International SA, Geneve (3,99)
k Wallis of London AG Zürich, Zürich (0,05)

Briner Robert Georg Dr., Watsennaussstr. 15, 8820 Wädenswil
k Computervision Applied Graphics Systems AG, Zürich (0,25)
k Minalforwerke AG., Luzern (0,5) Pr

Briner Roland E. R., 1224 Chêne-Bougeries
e Bostitch (Europe) AG., Zürich (0,05)

Briner Stephan Dr., Kehlhofhalde 13, 6043 Adligenswil
Diga Immobilien AG., Ebikon (0,1)

Briner Werner, Unt. Mollenstrasse, 4656 Starrkirch-Wil
e Briner Hedgo AG., Olten (0,1)

Bringhen Hugo, Kantonsstr. 32, 3930 Visp
k Bringhen Hans, Baumaterial AG., Visp (0,2) Pr
k Fnschbeton Baltschieder A.G., Baltschieder (0,1) Pr
k Sand und Kies A.G., Baltschieder (0,1) Pr
e Santag AG., Thun (0,2) Pr

Bringhen Jean-Pierre, 3930 Visp
k Bringhen Hans, Baumaterial AG., Visp (0,2)

Bringhen Jean-Pierre, Kantonsstr. 32, 3930 Visp
k Deponie Teuftal AG, Mühleberg (1,2)
e Santag AG., Thun (0,2)

Bringolf Alain, Sombaille 5, 2300 La Chaux-de-Fonds
k Aresa, Aeroport regional des Eplatures SA, La Chaux-de-Fonds (0,05)
k Bel-Air-Est S.A, La Chaux-de-Fonds (0,12)
k Bloc 30 SA., La Chaux-de-Fonds (0,1)
k Bois-Noir-Ouest S.A, La Chaux-de-Fonds (0,12)
k Centre regional d'incineration des ordures SA (Cridor), La Chaux-de-Fonds (0,1)
k Ectair S.A., La Chaux-de-Fonds (0,108)
k Familia S.A., La Chaux-de-Fonds (0,2)
k Immeubles Avenue des Forges, Moderna SA., La Chaux-de-Fonds (0,151)
k Immobilière Vorta S.A., La Chaux-de-Fonds (0,1)
k Scierie des Eplatures SA., La Chaux-de-Fonds (2,0)
k SI Cafe des Sports SA., La Chaux-de-Fonds (0,05)
k SI Gremier 22 SA., La Chaux-de-Fonds (0,05)
k SI Les Bassets SA., La Chaux-de-Fonds (0,05)
k SI Locative SA., La Chaux-de-Fonds (0,1)
k SI rue Leopold-Robert 114 SA., La Chaux-de-Fonds (0,135)
k SI Sophie-Mairet 13 et 15 SA., La Chaux-de-Fonds (0,1)
k Soloouest SA., La Chaux-de-Fonds (0,05)

Bringolf Lucien, 2300 La Chaux-de-Fonds
e Adequa communications visuelles et verbales., La Chaux-de-Fonds (0,05) Pr

BringolfBringolf Reinhard gen. Rene, 8215 Hallau
k Spar- und Leihkasse Hallau, Hallau (0,5) Pr

Bringolf Walther, 8200 Schaffhausen
k Unionsdruckerei AG Schaffhausen., Schaffhausen (0,2) Pr

Brink Willem, Schoonhoven NL
k Intercoating AG., Bassersdorf (0,6)

Brinker Alfred Dr., Gevelsberg (D)
e Ruggli Karl AG., Fislbach (0,05) Pr

Brinkmann Günther, Bremen D
e Isokieba AG Baden (0,1) Pr

Brinkmann Hans Joachim Dr., Detmold D
e Surfasit AG , Malters (0,1) Pr

Brinkmann Heinrich, 5452 Oberronrdorf
k Mecatrans SA., Fribourg (0,1)

Brinkmann Horst, Spiesen D
k ASD Autoradio-Spezial-Dienst AG, Zürich (0,16) Pr

Brinkmann Liliane, Hüsllbachstr. 78, 8041 Zürich
Wegmann & Brinkmann AG, Zürich (0,1)

Brinkmann Rainer, 8000 Zürich
e Wegmann & Brinkmann AG, Zürich (0,1)

Brintzinger Marianne, 8584 Leimbach TG
k Prografica AG, Baar (0,05)

Briochi-Gianella Luisa, 6900 Lugano
k Clinica San Rocco SA., Grono (3,3)

Briod Bernard, 1820 Montreux
e Briod S A. Montreux (0,05)

Briod Christian, ch. des Fleurs 15, 1023 Crissier
e Briod Paul SA., Prilly (0,05)

Briod Paul, av. Mont-Goulin 35, 1008 Prilly
e Briod Paul SA., Prilly (0,05) Pr

Briod Pierre-Andre, case postale, 1083 Mézières VD
e Alcom SA., Mezieres (0,1)
e Fontex SA., Mezieres (0,05)
e Gestifin S.A., Mezieres (0,05)
e SBAG Schuichner Betreuungs AG., Mézieres (0,05)

Briod Robert, rte de Broye 1, 1008 Prilly
e Campomat SA., Villars-Ste-Croix (0,05)
k Sovecol S.A., Villars-Ste-Croix (0,05)

Brion Alain, Paris F
e Omnium de Petroles SA., Geneve (18,0)

Brion-Castella Claudine, Ris-Orangis
k Castella Sports SA, Bulle (0,1)

Brioschi Guido, str. di Fulmignano 26, 6977 Ruvigliana
e B H Blumer Holding di Partecipazioni Industriali SA., Lugano (0,2)
e Sogeöar SA Lugano (0,25) Pr
k Unicom SA Lugano , Lugano (0,1)

Brique Louis C., r. Lamartine 8a, 1200 Geneve
e SI Petite Gradelle, Sion (0,05)
e SI rue de Candolle 17 Geneve (0,05)

Brique-Tronwska Renee, r. Lamartine 10, 1203 Geneve
e Radka SA., Vex (0,05)

Briquet Luc, en Genevrex, 1805 Chexbres
e Soforebo SA., Montreux (0,05)

Brissard Marc, r. du Nant 30, 1207 Geneve
e Antigone S.A., Geneve (0,05)

Brissard Paul, ch. Grange-Canal 31, 1208 Cologny
k Satram-Hules SA Basel (0,75)
k Tankiager Tägerschen AG., Tägerschen (0,6816) Pr

Bristow Thomas H., Billericay GB
e Arkas AG., Zug (0,25) Pr

Britschgi Blasius, Mettenwilhöhe, 6275 Ballwil
k Buchmann & Britschgi AG., Inwil (0,1) Pr

Britschgi Edgar, Feldweg 5, 8134 Adliswil
e BTX-Partner AG, Zürich (0,05) Del
k Key Trust Company Ltd., Zug (0,1)
e Kybernec AG, Zürich (0,05) Pr

Britschgi Hans, W., Wirri-Str. 10, 5000 Aarau
k Decorado AG., Buchs (5,0)
e Hassim AG Aarau, Aarau (0,9)
k Hassler Hans AG Bern., Bern (0,45)
k Hassler Hans AG Luzern., Luzern (0,45) Pr
e Hassler Hans AG, Zug., Zug (0,2) Pr
k Hassler Hans AG, Zürich., Zürich (0,3) Pr
e Vidal Vitali AG., Zürich (0,15) Pr

Britschgi Hugo, u, 6010 Kriens
k Hotel Langis AG., Sarnen (0,8)
e Irving Trading SA., Sarnen (0,054) Pr

Britschgi Ignaz Dr., Poststr. 5, 6060 Sarnen
k Druckgusswerk Fischer AG., Alpnach (0,3)
e Efina SA., Engelberg (0,1)
k Landenberg Druckerei., Sarnen (0,3) Pr, Del
k Lignoform Mobelbau AG., Sarnen (0,05)
k Wegenstein Management Holding AG., Sarnen (0,5)
k Wegenstein Management Sarnen AG., Sarnen (0,05)

Britschgi-Chresta Josef, av. Thônex 7, 1226 Thônex
k AG Britschgi zum Kreuz., Sachseln (0,5) Pr, Del
e Restaurant Burestube AG., Birrwil (0,1)

Britschgi Joseph, rte de Chêne 105, 1224 Chêne-Bougeries
k Les Editions Nagel SA., Geneve (0,25)

Britschgi Leopold, 6048 Horw
e Durrer & Britschgi AG, Horw (0,05) Del

Britschgi-Irving Margareta, Schwend, 6060 Sarnen
e Irving Trading SA., Sarnen (0,054) Del

Britschgi Peter, Urdorferstr. 65, 8952 Schlieren
k Bruhlmann Brennstoffe AG., Schaffhausen (0,4) Pr
k Bürke AG, Zürich (1,0) Pr
k Fratin AG., Zürich (0,5)
e Magus AG, Zürich (0,054)
k Meyer A.H. AG, Glarus., Glarus (0,05)
k Olbena SA, Mendrisio (0,5)
e Oleag AG, Zürich (1,0)

Britschgi Robert, Breiteliweg 5, 6064 Kerns
k Bergbahnen Melchsee-Frutt-Bonistock AG., Kerns (2,2) Pr
k Restaurant Bonistock AG., Kerns (0,6) Pr

Britt Alois, Grossfeldstr. 42, 7320 Sargans
e Britt AG., Sargans (0,05)

Britt Hanspeter, 8280 Kreuzlingen
e Bewatol AG, Zürich, Zürich (0,1)

Britt Josef Dr., 9400 Rorschach
k Airport Altenrhein AG., Thal (1,0) Del
e Repair AG, Thal (0,1) Del

Britt Karl, 8887 Mels
e Britt & Sohne AG, Karl, Mels (0,05) Pr

Britt Rudolf, 8887 Mels
e Britt & Sohne AG, Karl, Mels (0,05)

Britt Viktor, Neugutweg, 8887 Mels
e Britt & Sohne AG, Karl, Mels (0,05)

Britz Helmut, Zentralstr. 142, 8003 Zürich
k AG Andermalden., Fenratort (0,05)

Brivio-Botta Elvezia, via Maderno, 6850 Mendrisio
e Cinzia Partecipazioni SA., Mendrisio (0,1)

Brivio Ricardo, 6900 Lugano
e Commerciale - Labor SA Arti Grafiche., Lugano (0,4) Pr

Brixner Ulrich Dr., Dreieich-Buchschlag D
k BEG Bank Europaischer Genossenschaftsbanken., Zürich (60,0)

Brizon Frédéric, Loisin F.
e Progolf SA., Geneve (0,05)

Brizzi David, Heinrich Guier-Str. 5, 8494 Bauma
e Elektro-Brizzi AG., Bäretswil (0,1)

Brizzi Gertrud, Bahnhofstr. 13, 8344 Bäretswil
e Elektro-Brizzi AG., Bäretswil (0,1)

Brizzi Heinz, Bahnhofstr. 13, 8344 Bäretswil
e Elektro-Brizzi AG., Bäretswil (0,1) Pr

Brizzi Yven, prom. des Pêcheurs 18, 1950 Sion
k Idees SA., Vétroz (0,1) Pr

Brobety Paul-André, 1200 Genève
e Holding Arlax SA., Fribourg (0,05)

Brocard André, La Prairie, 1315 La Sarraz
e Traitements Thermiques Brocard SA., La Sarraz (0,1)

Brocard Andre, Hippodrome 17, 1400 Yverdon
Compagnie des chemins de fer du Jura (C.J.)., Tavannes (10,85)
Electra-Massa, Naters (40,0)
k Port-franc et Entrepôts de Lausanne-Chavornay SA (PESA)., Chavornay (4,0)
Simmentalbahn (SEZ)., Zweisimmen (3,5025)
k Usines de l'Orbe., Orbe (1,068)

Brocard Michel, rue Couvelous 24, 1110 Morges
k *Guy & Monsol Bureautique SA., Gland* (0,1)
k Tapis Tivoli SA., Lausanne (0,05)

Brocca-Aflentranger Brigida, via ai Roccolo 4, 6932 Breganzona
e Geminex S.A., Breganzona (0,05)

Broccard Jean-Jacques, 3000 Bern
e Baristti Jean SA., Geneve (2,0)

Brocchi Bruno, casa Gamboni, 6925 Gentilino
e Camenzind-Brocchi-Sennhauser Studio d Architettura S.A., Lugano (0,1512)

Brocchi Pietro, v. Motta 36, 6900 Lugano
e B I N T Finanzgesellschaft fur Holzwerke AG., Davos (0,054) Pr
e Burck SA., Lugano (0,05)
e Ciw SA., Chur (0,05) Pr
e Daichiri S.A., Davos (0,05) Pr
e Delcius S A., Chur (0,05)
e Delild SA. Chur (0,05) Pr
e Dona SA., Chur (0,05)
e Fintermobil S A , Davos (0,05)
e Finwiler Aktiengesellschaft, Disentis/Muster (0,05)
e Formrin S.A., Disentis/Muster (0,05)
e Grigna S.A., Davos (0,05) Pr
e Guerzentobel SA., Davos (0,05) Pr
e Kinile S.A., Davos (0,05) Pr
e Laelia Societa per Investimenti Finanziari Industriali e commerciali SA., Chur (0,05)
e Pasidamo SA., Chur (0,05)
e Prelea SA., Davos (0,05) Pr
e Selection Immobiliare e Finanziaria SA., Chur (0,05)
e Severeco SA., Davos (0,05) Pr
e Simser AG., Chur (0,05)
e Societa Imballaggi Marcallo Holding SA., Lugano (0,05) Pr
e Suimotin S.A., Disentis/Muster (0,05)

Brocco Albert, Rosenweg 2, 3270 Aarberg
k Muwa AG., Lyss (0,05)

Broch Béatrice, Charmey
k Repond André SA., Charmey (Gruyère) (0,3)
k SI Charmessa., Charmey (Gruyère) (0,06)

Brochand Bernard-Maurice L., St-Cloud F
k HCM CSWH AG, Zürich (0,3)

Brochent Bernard, St-Cloud F.
k Heimann Heinz SA., Geneve (0,25)

Brocher Claudine, 1261 Grens
e Gems Jacqueline SA., Grens (0,05)

Brocher Jacques, 1223 Cologny
e Comatel SA. Carouge (0,05)

Brocher Jean-Francois, pl. Bourg-de-Four 9, 1204 Geneve
e Cabirente SA. Geneve (0,05)

Brocher Brocher Marie-Lucie dite Lucette, pl.Claperede 5, 1205 Geneve
e Societe de construction de l'Oeillet rouge, Geneve (0,125)
e Villa Catalonia S.A., Geneve (0,05)

Brochetta Giovanni, vi. Stoppa 4, 6830 Chiasso
e Belpiano SA., Chiasso (0,05)

Brochetta-Romano Myriam, via Stoppa 2, 6830 Chiasso
e Portocniaro SA., Chiasso (0,05)

Brochin Kurt Dr., 4310 Rheinfelden
e Cumara SA., Orselina (0,06)

Brock Günter A., 9410 Heiden
k Klinik am Rosenberg Heiden., Heiden (6,25) Del

Brocke Karl-Gerhard, Lahr D
e Wagamet AG., Littau (0,072)

Brocker Herbert, 9429 Zelg-Wolfhalden
k Zaun Immobilien AG, Speicher (0,06) Del

Brocker Roland, Landernacnstr. 18, 9435 Heerbrugg-Widnau
k Fankhauser + Brocker Architekten AG., Heerbrugg (0,06)

Brockhoff-Schneider Romy, 8610 Uster
e Marko AG für Marketing und Kommunikation, Vaduz, Zweigniederlassung Egg b. Zürich., Egg (0,05)

Brockmann Ernst, Unterer Reinweg 30a, 3068 Utzigen
e Wohnshop AG., Bern (0,05)

Brockmann Uwe, 1200 Geneve
k Experta Administration SA., Geneve (0,5) Del

Brockmuller Ingo, 8821 Schönenberg
e Teletron AG., Schonenberg (0,1) Pr, Del

Brod Stephen, Arkley/Herts GB
k Stavolt AG., Neuenhof (0,05) Pr

Brodard Albert, Les Mosses, 1688 Sâles
k Brodard H. & Fils SA., Sâles (0,1)

Brodard Alexander, 1688 Sâles
k Brodard H. & Fils SA., Sâles (0,1)

Brodard André, rue du Fort-Barreau 31, 1201 Geneve
e Bernard Musique SA., Geneve (0,05) Pr
k Intrason SA., Chavannes-pres-Renens (0,05)

Brodard Béatrice, rue du Fort-Barreau 31, 1201 Geneve
e Bernard Musique SA., Geneve (0,05)

Brodard Bernard, pl. Eglise, 1027 Lonay
e Garovan & Brodard SA., Geneve (0,05)

Brodard Charles, 1630 Bulle
k Brodard H. & Fils SA., Sâles (0,1)

Brodard Charles, 1634 La Roche
e Brodard SA, Charles, La Roche (0,05)

Brodard Daniel, 1700 Fribourg
FGF Machines Agricoles SA., Avry-sur-Matran (0,1)
k Sogimair SA, Corpiens (0,05)

Brodard Gilbert, Scherwyi, 1634 La Roche
e Brodard Gilbert & Fils SA., La Roche (0,075) Pr
k S.I. Les Combes-La Roche, La Roche (0,08)
k S.I. Scherwyi., La Roche (0,05) Pr
k S.I. Scherwyi., La Roche (0,05)

Brodard Henri, 1688 Sâles
e Brodard H. & Fils SA , Sâles (0,1) Pr

Brodard Henri, 1688 Sâles
k S.I. La Rosevre Sâles., Sâles (0,05)

Brodard Jacques, rue de Grouyeres 5, 1636 Broc
k Cave du Vieux Clocher Brodard SA, Broc (0,05) Pr

Brodard Jean-Claude, Scherwyi, 1634 La Roche
k Brodard Gilbert & Fils SA., La Roche (0,075)

Brodard Marc, les Mosses, 1688 Sâles
k Brodard H. & Fils SA., Sâles (0,1)

Brodard Max, Scherwyi, 1634 La Roche
k Brodard Gilbert & Fils SA., La Roche (0,075)

Brodard Michel, 1634 La Roche
k Brodard Gilbert & Fils SA., La Roche (0,075)

Brodard Michele, 1844 Villeneuve
e Electrogamma SA. Corseaux (0,05)
e I.D.E.A. — Inter Development Agency SA., Vevey (0,05)

Brodard Paul, 1711 Treyvaux
k Brodard Gilbert & Fils SA., La Roche (0,075)

Brodard Thecla, Les Mosses, 1688 Sâles
k Brodard H. & Fils SA., Sâles (0,1)

Brodbeck Alban, Eichenstr. 36, 8750 Glarus
e Agentura AG, Glarus (0,05)
e Aktrans System Finanz AG., Glarus (0,05)
e IC Inkasso Commerc AG , Glarus (0,05)
e Sudfrost AG , Glarus (0,05)

Brodbeck Eduard, 4410 Liestal
k Netto-Einkaufsgruppe AG Zofingen., Zofingen (0,5)

Brodbeck Erich, Rankstr. 41, 8645 Jona
e BB-Treuhand AG, Rüti (0,05)

Brodbeck-Javet Gertrud, Sonnenhalting 30, 4153 Reinach BL
e Brodbeck & Achermann AG., Reinach (0,07)

Brodbeck Hans, Mangnanostr. 51, 4059 Basel
k Hechtlacker AG , Basel (0,2)
k Kirschgarten-Druckerei AG , Basel (1,0)

Brodbeck-Pfaff Hans, Burgunderstr. 5, 4410 Liestal
BLT Baselland Transport AG, Arlesheim (13,1)
Parkhaus Buchen AG Liestal (1,31)

Quantity of Oil

1. In para 116, the Award suggests "[t]o determine how much oil could have reasonably been expected in September 1979 to be produced during the term of the JSA, requires first a forecast of the quantity of recoverable oil and the timing of its recovery, which in turn requires an estimate of the total oil reserves in the area covered by the JSA". Had the Tribunal considered a need for determining the quantity of oil a hypothetical reasonable buyer would have been prepared to pay for in 1979, then there would be only one logical method and that being to look at the contemporaneous forecasts officially adopted by IMINOCO at that time, agreed upon by both Parties , together with all other relevant, reliable, and undisputed data existing at that time, giving appropriate consideration to the then existing state of affairs, as far as their effects on such production forecasts are concerned.

   It is quite logical to propose that an imaginary reasonable buyer would perform its own analysis to make sure it is not overpaying. But it is absurd to suggest that such reasonable buyer would ever consider a volume of oil 2-3 times that officially stated by IMINOCO and over 3 times (4 times according to the Claim) what the Claimant itself had declared it to be at the time. This absurdity is what the Award is stating that the Tribunal has considered. The Award is in fact following the path laid by the Claimant, attempting to justify, by some adjustments, those figures the Claimant had found difficult to support.

2. The Award first observes that the evidence and arguments submitted by the Parties on quantity of oil have tended to mix together the questions of the quantity of recoverable oil and the probability of its recovery during the life of JSA. para 117. It then makes the statement that these two questions are analytically quite separate from one another and then concludes "[T]he Tribunal thinks it preferable to examine first the question of the quantity of oil in place that could reasonably have been expected in 1979 to be recoverable by 1999 as a technical matter, given the will both to make the necessary investments to that end and to lift all the available oil" (emphasis added). para 117. It goes on to propose that the probability of such recovery being in fact reached would be considered separately as a part of the perceived risks. I have objected to this and find it necessary to present a detail of my reasons here.

3. Firstly, the questions of quantity of recoverable oil and the probability of it being recovered are not at all separable. The amount of ultimately recoverable oil from a reservoir should surely depend on the method of production as otherwise it would not matter how one develops a reservoir, as one would ultimately get the same volume of recoverable oil. This is logically absurd. It is only logical to assume that the ultimate recovery from a reservoir would depend, amongst other things, on the nature of the production program adopted and the timing of various actions. Therefore, the two questions are closely inter-related and one cannot separate the two in any logical meaningful manner. We do remember from the testimonies of experts, and can see from the evidence, that the Parties and their chosen experts differ substantially on many technical points which cannot be attributed to one of these questions alone. In other words there is no magical

single value for recoverable oil without due regard to past and future state of affairs. It was probably for these obvious facts that even the Claimant has not addressed the two questions separately, as there is only one question of what recovery would be possible, technically and factually, given all the facts. But even this one question, when used for purpose of legal decisions, should not be based on stipulations and speculations.

4. Secondly, the suggestion that the Tribunal should first determine the amount of recoverable oil as a "technical matter" is self-defeating. This is not only due to the facts already mentioned to show that the two questions are not separable but also, and more so, because the Tribunal itself lacks the qualifications, in particular in a case so highly technical. The very arguments presented in the Award are witness to this fact. This highly technical determination is presented in 4 paragraphs each simply stating that "the Tribunal concludes...[1]", with very general references, if at all, such as "views expressed". It was suggested by the Respondents that should the Tribunal ever find it necessary to decide on the validity of arguments put forward by the Parties, it should seek the help of an expert. I have also repeatedly stated to the majority that while there was absolutely no grounds, legal or logical, for considering the DCF methodology, should there have been any point in determining the quantity of recoverable oil, then there would have been no way other than appointing experts in the field to review the case. The Claimant opposed the Respondents' proposal for obvious reasons one need not speculate

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1 See paras 119, 120, 121, 122.

about. However, the stern objections by the other two members of this Chamber requires their explicit clarification.

5. The other observation of the Award concerns the disparities between the estimates of recoverable oil presented by the Parties and their chosen experts. It states "[t]o a large extent, it appears that these great disparities result from the different assumptions about when and whether further investments would be made by the Parties to the JSA, particularly with respect to water injection projects for secondary recovery...". para 118. This is a misrepresentation of facts made for the purpose of implying that the major difference between the Parties concerns timing and value of investments, on which the Tribunal could decide. It is a false statement for three major reasons. One is the fact that even in those cases where investments are a subject of disagreement between the Parties it is not only about when and how much but also about technical and economical considerations. The second reason is that almost 40% of the disparity, between those estimates of the Respondents and those of Core Lab which is apparently the basis of the Claimants final claim, relate to primary recovery. The third and most important point is the fact that all these arguments, are futile as they are stipulation of future events which by nature are speculative and should not enter a legal decision.

6. I believe that the first two points deserve further comments with specific reference to the actual estimates. The estimates of Core Lab and Respondents for

1979-1999 can be summarized as follows[2]: (in 1,000's of barrels).

	Core Lab	Resp.	Diff.	Award
Primary	193,830	105,853	87,977	140,000
Secondary	158,325	39,152	119,173	140,000 to 150,000
Total	352,155	145,005	207,150	280,000 to 290,000

The difference in primary recovery can not be considered as resulting from different assumptions as to when and whether further investments would be made. To a very large extent the difference here (over 40% of the total difference) is due to technical viewpoints. On secondary recovery the difference is almost 120 million barrels. Even if, arguendo, we accept Core Labs' own testimony[3], 75-80 per cent of discrepancy here is associated to timing, thus approx 25% of the difference here, i.e. 29 million barrels, is due to various technical points. So overall, from a total difference of 207 million barrels, 117 million barrels (88+29) are due to different technical approaches. Therefore the Award's observations as to the main reason for the disparities is incorrect and technical reasons account for slightly more than half of the disparities.

7. Insofar as the specific amounts of recoverable oil from each of the fields are concerned, the Award provides no reasoning for its findings except for one or two general remarks. Considering that the Award is

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2 Para 118, the Award.

3 Off. Transcript, pp. 167, 170.

supposed to be a legal finding for the purpose of compensation, these sort of one sided and baseless determinations illustrate nothing but the Chamber's total lack of respect for law to which it is bound. This Tribunal has already ruled that "[O]ne of the best settled rules of law of international responsibility of state is that no reparation for speculative or uncertain damage can be awarded.[4]".

8. A review of the contemporaneous official forecasts, accepted by all parties to the JSA, and Claimant's own official statements show that the total amount of recoverable oil suggested by the Award is two to three times more than those an imaginary reasonable buyer in 1979 would have considered. It is most noteworthy that the Claimant itself had declared its total share of future production from Iran as 15 million barrels at the time of taking (See Claimant's form 10-k) meaning a total future recoverable oil of 90,000 MSTB from all reservoirs.

9. Due to the fact that the Award does not provide any reasonings for its findings, nor does it even give the breakdown of its suggested quantities into respective reservoirs an analysis of the Award and the resulting rejection of it, is only possible by general comments. Naturally, further specific and detailed analysis could be made only if the Award had been presented properly or had due explanations been supplied by the members.

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4 Amoco International Finance Corporation, Award No. 310-56-3, para 238.

(A) Rakhsh Primary Recovery

10. With respect to Rakhsh primary recovery, the Award concludes that a total primary recoverable oil volume of approximately 80,000,000 barrels would reasonably have been estimated in 1979. The respective volumes estimated by Core Lab (basis of the revised Claim) and the Respondents are as follows[5]:

1000's of barrels

	Core Lab	Respondents (100C report)	Award
Arab C	69,217	39,377	not specified
Shuaiba	33,288	18,956	not specified
Mishrif	4,072	--	not specified
Total	106,577	58,333	80,000 ??

The Claimant's original figures (PPCI report of July 15, 1983) were 58,904 for Rakhsh Arab C, 39,960 for Shuaiba and 3,804 for Mishrif.

The forecasts and facts available in 1979 were as follows:

11. a) On Rakhsh Arab C (primary recovery)

(i) The 1975 Second Party report
(ii) The 1976 Geho Report
(iii) The 1977 Case 12 model study
(iv) The final closure of well ARK-7 in June 78 because of erratic flow and excessive water production.

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[5] e.g. Chart H, Claimants Hearing presentations, Off. Trasncript No. 380.

(v) The production of water from ARK-9 beginning in 1978.

While the three forecasts, mentioned above, give an estimate of the recovery in 1979-1999 in the order of 60 million barrels (one sightly less and the other two slightly more) none of the forecast had predicted, or taken any account of problems in ARK-7, ARK-9 and others. For ARK-7, both Claimants and Respondents have made allowances, though not of the same magnitude. On ARK-9, the Respondents have applied a considerable correction while the Claimant (and Core Lab) have basically ignored the problem by simply refuting the trend suggested by the Respondents, but without any suggestion of the trend from their own points of view. The fact that ARK-9 had started producing water in 1978, and continued to do so thenafter is undisputed and cannot be ignored. In the absence of any other prediction, with due regards to this well, than those of the Respondents and ECL, I suggest we had to either accept one of the two or seeked the opinion of an expert. However, there is not a shadow of doubt that such a fact, on a well producing at the highest rate in the Reservoir, would have had a substantial effect on the recoverable oil. Thus the primary recoverable oil from Rakhsh Arab C would be much closer to the Respondents estimate than to the 60 million barrels suggested by the three above mentioned reports. No reasonable imaginary buyer in 1979, of any sense whatsoever, would have failed to consider all the estimates and facts available to it. It could not and would not have ignored the cases of ARK-7 and ARK-9.

12. b) On Rakhsh Shuaiba (primary recovery)

(i) The 1974 AGIP study
(ii) The 1975 Second Party Report
(iii) The 1976 Geho Report
(iv) The 1978 AGIP Report

The figures for oil recovery from 1.1.79 onwards according to these reports are 15,863, 21,065, 20,169 and 16,902 thousand barrels of oil respectively. Therefore there is no support for the Claimant's 39,960 thousand barrels or Core Lab's 33,288 thousand barrels, both estimates being made for this proceedings. The Respondents' estimate of 18,956 thousand barrels seems far more logical and is the only one in the range of those forecasts existing in 1979.

13. c) On Rakhsh Mishrif (primary recovery)

(i) The 1975 Second Party Report
(ii) The 1976 Geho's Report
(iii) ARK-4, the only producer from this reservoir was shut in, in November 78, due to high water production and low well head pressure.

The two reports available on the reservoir both predicted a total depletion of the reservoir and certainly no further production for 1979 onwards. The only producer was also closed in. The Claimant and Core Lab assert that remedial action could not be ruled out and thus estimate another approximately 4 million barrels of oil to be recoverable in 1979-1999 period, (on top of the 2,288,000 barrels produced by 1.1.79). The total ultimate recovery from Mishrif was forecasted

in 1976, by Geho, to be 2,050,000 barrels[6]. The 1975 report on the other hand had estimated the Mishrif together with Arab B, within Arab C[7]. The total ultimate recoverable oil from both Mishrif and Arab B was forecast as 3,508,000 barrels[8].

There is nothing on contemporaneous forecasts and facts which would suggest that any imaginary buyer would have contemplated, and indeed paid for, further recovery from Rakhsh Mishrif.

14. Thus the "conclusion" of the Award[9] that the total primary oil recoverable during the remaining term of JSA would reasonably have been estimated in 1979 at approximately 80,000,000 barrels is in total contradiction with those facts and forecasts available in 1979. The order of error is probably in the range of 20-30 million barrels, if not more.

(B) Rakhsh Secondary Recovery

15. With respect to Rakhsh secondary recovery, the Award asserts a "conclusion" that the total oil recoverable during the remainder of JSA, would reasonably have been estimated in 1979 at somewhere in the range of 75,000,000 to 80,000,000 barrels. There is no mention of any basis for this "conclusion" except for a remark that while the secondary recovery project in the Arab C

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6 Claimant's Geology Report, Doc. No. 135, Annex 2, Page 59.

7 Respondent's Rebuttal, Appendix VII, Doc. 345, Exhibit 3, page 2, Exh. A.

8 Ibid Tab. 2

9 Award, para 119.

reservoir was well advanced and would reasonably have been expected in 1979 to proceed, albeit perhaps with several years delay beyond the 1981 target date, the secondary recovery project in the Shuaiba reservoir was in Sept. 1979 at an early stage at which the necessary plans had neither been made nor were in prospect[10]. However the Award then states "[T]he Tribunal finds that secondary recovery from the Shuaiba reservoir could not reasonably have been expected prior to the late 1980's[11]".

16. The respective amounts of Rakhsh secondary recovery estimated by Core Lab (the basis of the revised claim) and Respondents (100C report) are as follows:

1000's of barrels

	Core Lab[12]	Respondents (IOOC report)	Award
Rakhsh Arab C	50,305	13,576	not specified
" Shuaiba	35,720	2,762	not specified
Total	86,025	16,338	75,000 to 80,000

The Claimant's original figures (PPCI in 1983) were 81,446 for Arab C and 33,945 for Shuaiba.

The facts and forecasts available to a prospective buyer in 1979 were as follows:

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10 Ibid, Para 120.

11 Ibid.

12 e.g. Chart H, Claimant's Hearing Presentations, Off. Trans. Doc. No. 380.

17. a) On Rakhsh Arab C (Secondary recovery)

(i) The earlier studies from 1972 onwards.
(ii) The 1977 Case 13X study
(iii) The background history of Rakhsh Arab C water injection project.
(iv) State of affairs in 1979, within IMINOCO
(v) NIOC's declared position in 1979.

As both Parties have basically agreed that case 13X would have formed the basis of any estimation in 1979, the nature of the study itself needs no discussion as such. The major question, and the basic difference between the Parties, is when and whether Rakhsh Arab C water injection project would be fully implemented. Thus it is the effect of other facts, available in 1979, which should be reviewed with the objective of determining what value a reasonable imaginary buyer in 1979 would give to this project.

18. An observer in 1979 would have noted the following background. In 1972, AGIP presented the results of its studies and the IMINOCO Development Committee declared reservoir studies of Rakhsh Arab C to be of highest priority[13]. In 1973 the result of PPCI model study, including water injection, was accepted by the Reservoir Model Subcommittee. The Development Committee recommended on 3 Oct. 1973 that IMINOCO should begin the Rakhsh Arab C Water flood project immediately[14]. The IMINOCO Board approved the project

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13 Respondents' Brief and Further Evidence, Appendix IV, Vol. III, Doc. No. 272, Annex 4-25.

14 Claimant's Operations Report, Doc. No. 142 page 42.

in Dec. 1973, ordering the tendering for engineering work and directing the Managing Director for ordering of material and drilling of two injection wells[15]. In 1974 Crest Engineering was selected to perform the engineering study and the Development Committee recommended Model 10X as the basis for water injection. No wells were drilled apparently because no drilling rig was available. In 1975 the Second Party (including the Claimant) cancelled all new projects including Rakhsh water injection[16]. In 1976 no progress existed due to Second Party's position which was same as 1975. In June 1977 the Development Committee approved PPCI model and selected Case 13X and recommended its implementation[17]. The Second Party did not give its approval until in December 1977[18]. In 1978 the engineering work was retendered and awarded to AGIP. The drilling of two injection wells was commenced, one completed in 1978 and the other in Feb. 1979. Case 13X required four new injection wells and conversion of two existing wells to injectors together with substantial volume of plant and materials. Any further commitment of the Parties was questioned by the Second Party who directed IMINOCO to include the following in the five year plan.

> "a) The Rakhsh Water Injection project has been approved by First and Second

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15 Doc. No. 272, supra, Annex 4-34, Minutes of 69th IMINOCO Board Meeting.

16 Ibid, Annex 4-35, Minutes of 82nd IMINOCO Board Meeting.

17 Ibid, Annex 4-36, Minutes of Dev. Com. Meeting of June 1977.

18 Ibid, Annex 4-30, Minutes of 106th IMINOCO Board Meeting.

> Party with a fiscal commitment as far as the 1978 budget is concerned"[19].

However, to see what happened to this project we have to see the following paragraph.

19. As regards the status of affairs within IMINOCO in 1979, the following facts could not have escaped the notice of the imaginary buyer. In the 117th IMINOCO Board Meeting in Dec 78, as no budget had been approved by the Parties, the Managing Director was given an ad hoc authorization to proceed only with expenditures concerning normal production operations, and a few projects including Rakhsh Water Injection Project[20]. The meaning and scope of this authorization becames clear in the proceeding Board Meeting, the 118th, a meeting totally ignored by the Award, in which it was stated:

> "After considerable discussions, the Board asked the Managing Director to prepare and send to the Parties the 1358 Budget based on the present situation, and for the interim period, the Board authorized Managing Director to proceed with the expenditures related to the normal running operational necessity excluding expenditures for cleaning of the storage tanks No. 1-3, painting R3-R7, major well work-over and All development expenditures outside the engineering of the Rakhsh Water Injection Projects[21]". (emphasis added)

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19 Respondents' Brief and Further Evidence, Appendix IV, Vol. II, Doc. No. 271, Annex 4-11, Second Party's Comments.

20 Ibid, Annex 4-20, Minutes of the 117th IMINOCO Board Meeting.

21 Doc. No. 272, supra, Annex 4-21, Minutes of the 118th IMINOCO Board Meeting.

The 119th and 120th (last) Meetings of IMINOCO Board[22] confirmed the continuation of decision of the 118th Meeting, there is no mention of these meetings in the Award either. Therefore the only budget approved for this project in 1979 was for the engineering study. The total cost of the engineering studies, according to the Claimant, represents less than 1 percent of the project[23], and a good portion of it had been spent prior to and in 1978. So there was basically no progress of any reasonable dimension to be seen in 1979. As a matter of interest, the AGIP study had progressed to 67% by 19 June 1979. Of interest is the fact that the study had by then stipulated that the main items of materials would cost about US$10 million[24]. The Claimant's Cost Report, estimates the total cost of all Plant and Materials as $5,873,000, almost one half. This will be further discussed later.

20. Another major factor which a prospective buyer would have also taken into account in 1979 was the financial situation of the First Party. Insofar as NIOC's position in 1979 is concerned, it is well known and well understood that the financial situation of NIOC in 1979, and in fact the years after, had changed markedly compared to that in the earlier years. In January 1979 NIOC issued a letter, which was forewarded to the chairmen of all affiliates including IMINOCO. The NIOC letter stated inter-alia

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22 Ibid, Annex 4-23.

23 Claimant's Cost Report, Doc. No. 136, table BI.

24 Doc. No. 272, supra, Annex 4-23, page 6.

> "Therefore, please instruct all your executive and headquarter affairs to reconsider carefully all previous financial commitments, particularly execution of projects[25]". (emphasis added)

The covering letter to Chairman of IMINOCO stated inter alia,

> "... is hereby sent to you for your information and stringent implementation of its text".[26] (emphasis added)

It was also repeatedly stated by NIOC and Government officials that the level of oil production and export of Iran would be far less than that prior to the Revolution. This decision was based on the interests of Iran, a very clear obligation of both Parties to observe under the JSA. Therefore there would be serious doubts as to whether or not projects for additional production with appreciable costs would be ever approved by the First Party and as we have seen financial commitments were limited to 1978. Not only continuation of such a project would have needed the consent of the First Party but also once considered not to be to the interests of Iran, the Second Party would have been obliged to avoid it.

21. Thus, in summary, an imaginary reasonable buyer of Phillip's interests in September 1979 would have been faced with the following facts concerning the Rakhsh Arab C water injection project; a project which had been considered of highest priority in 1973 yet delayed

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[25] Respondents' Brief and Further Evidence, Appendix IV, Vol. IV, Doc. No. 273, Annex 4-56.

[26] Ibid.

and postponed by the Second Party for years up to December 1978. Approximately 20% of the cost estimate had been spent in 1978, but for 1979, where the plan calls for over 40% of the total cost to be implemented, less than 1% of the cost had been authorized, and that for an engineering study already undertaken by a member of the Second Party. A First Party running into financial problems and ordering reconsideration of all projects, the country deciding to substantially reduce its level of production and export, in order to safeguard its interest, a clear indication that the cost of the project would be much higher, and a history clearly showing that a party could and in fact did postpone a project for a very considerable length of time. Such an imaginary buyer would in no way have considered the project to materialize for many years to come, if ever at all, and certainly not in the 80's.

These were not risks, they were facts which had to be considered and taken care of prior to determination of the volume of recoverable oil from such project.

22. There is no logic to assume a sensible, let alone reasonable, buyer to ever indulge in the absurd practice of ignoring all the existing facts to the contrary, and come up with a volume of recoverable oil based on fantasy, and then apply a risk of X percent, as suggested by the Award. If there would be no alternative, then the risk factor would have been very high, or the probability factor would be very small. It should be also pointed out that once a time could be decided upon, then the economics and technicalities of the project would need to be worked out based on new facts. This required an expertise that the Tribunal lacked and thus I, being no exception, will not attempt doing so.

23. It is noted that the Claimant and Core Lab had based their forecasts on a assumed start-up date of 1981 [27], while the Respondents used a start up date of 1991[28]. The facts referred to hereinbefore make the Respondents' assertion far more logical. Thus I believe a reasonable imaginary buyer in 1979 would have seen the project in the same general way as the Respondents and would not have considered more than 14-16 million barrels.

b. On Rakhsh Shuaiba (secondary recovery)

24. The case of Rakhsh Shuaiba is so clear that makes one to wonder what the objective of the Award is. Besides all the relevant facts stated for Rakhsh Arab C with a clear application here, the Claimants have failed to provide any evidence that Rakhsh Shuaiba water injection project had been ever considered since early 70's. They only asserted that it was allegedly on the agenda of a committee meeting scheduled for 1979 and never held. No engineering study, no planning, no budgeting and indeed no discussion of the project ever existed since the considerations in 1970-72 when it was thought that Shuaiba was the more important reservoir in the Rakhsh field. No contemporaneous forecast or plan ever mentioned it and yet the Award suggest that late 80's could be considered as the start-up date. No reasonable imaginary buyer would put its money where the Award is deciding it to have done. Besides the timing, and indeed the whole question of whether the project could be assumed to ever take place, since the

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[27] e.g. Dr. Canaughten's Testimoney, Off. Transcript Doc. No. 380, p. 168.

[28] Ibid.

Claimants and Core Lab failed to rebutt the technical objections raised by the Respondents and based on evidence on record, I consider that the Tribunal should have rejected the Rakhsh Shuaiba secondary recovery in its entirety as I believe no entity of any sense would have paid any money for such a non-existent project in 1979.

(C) Rostam Primary Recovery

25. On Rostam Field primary recovery, the Award reaches a conclusion, without giving any reason for it, that the total oil recoverable during the remainder of the JSA would reasonably have been estimated in 1979 at about 60,000,000 barrels[29]. The relevant estimates asserted by Core Lab (basis of the revised Claim) and Respondents (IOOC report) are as follows:[30]

1000's of barrels

	Core Lab	Respondents (IOOC Report)	Award
a) Rostam Shuaiba	60,339	35,106	not specified
b) " Mishrif	25,257	11,957	not specified
c) " Arab A-1	1,293	--	not specified
d) " Arab C	364	457	not specified
Total	87,253	47,520	60,000

The Claimant's original claim was based on PPCI forecast made in 1983 which estimated the figures at 50,696 for Shuaiba, 16,554 for Mishrif, 2,484 for Arab A-1 and

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29 Award, para 121.

30 e.g. Claimant's Hearing Exhibits, Off. Trancript Doc. 380, Chart H.

363 for Arab C giving a total of 70,097 for Rostam primary recovery.

Contrary to the rule that an award should explain the reasons for the tribunal's finding, the Award does not indicate how such "conclusion" could be reached nor does it give any breakdown of its estimate into various reservoirs. Therefore, I have no alternative but to consider all the reservoirs as the case has been and will be for all "conclusions" suggested by the Award.

a - Rostam Shuaiba (primary recovery)

26. The contemporaneous available forecasts and facts in 1979, on Rostam Shuaiba primary recovery, were:

(i) The 1974 Depletion study "Case-D".
(ii) The 1975 Second Party Report (based on Case D with further extrapolation).
(iii) The 1976 Geho Report.
(iv) The actual performance of the reservoir up to end 1978.
(v) The 1976 imposed GOR limitation of 1320 SCF/STB.

27. The 1974 depletion study had predicted production to end 1988. In 1975, when preparing and presenting its report, the Second Party (including the Claimant) used the same report and extended the production forecast to 1994. Thus the 1975-1988 portion of these two are exactly the same. Both the Claimant and the Respondent have applied a correction factor of 0.92 to these predictions, as the actual production in 1975-1978 period had been 0.92 of that predicted by the model for the same period. Therefore, one should assume that a reasonable imaginary buyer in 1979 would have done exactly the same. The 1975 Second Party report estimated the total recoverable primary oil from Rostam

Shuaiba to be 106,343,000 barrels by end 1994.[31] Correcting the 1975-1994 portion by the agreed correction factor, the corrected total recovery would become approximately 102 million (101,961,560) barrels and deducting the cumulative production as of 1.1.79[32] (68,661,000 barrels) the remaining recoverable oil would have been estimated as 33,339,000 barrels. It should be noted that the same report clearly showed that production would be quite small by 1994 and on a decreasing trend. Therefore, even allowing for another 4½ years with the same rate as in 1994 and without any correction (the 0.92 factor) another 2,250,000 barrels could at most be added resulting in a total primary oil production estimate of 35,589,000 barrels. The Geho report of 1976, estimating the total recoverable primary oil, had estimated it at 113,465,000 barrels which after deduction of cumulative production to end 78, would have given an estimated 44,804,000 barrels remaining primary oil. It should be pointed out that neither Geho report nor the Second Party report (and naturally Case D) had anticipated the GOR limitation of 1976. However in correcting the 1975 Second Party for the actual versus forecast production of 1975-1978, it can be argued that some of that effect has been accounted for. Naturally the Geho report also needs some correction, or on the other hand it can be considered as an optimistic forecast.

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31 Respondents' Rebuttal, Appendix I, Doc. No. 345, Exhibit 3, Economics of Second Party Interest.

32 Claimant's Hearing chart H, Doc. No. 380.

28. There is no doubt that based on all forecasts and facts as available in 1979, the remaining primary recoverable oil for 1979-1999 period would have been estimated to be somewhere under 35.5 million barrels. It should be also pointed out that the Claimant had also asserted that the portion of primary recovery alleged producible by an additional seven wells which were considered for secondary recovery project should be considered with the primary figure. Since that oil, if any, would have been only produced if and when secondary recovery project would be implemented, it should be considered together with the secondary recovery, Infra.

b - Rostam Mishrif (primary recovery)

29. The available forecasts on Rostam Mishrif, in 1979, were the 1975 Second Party and the 1976 Geho reports. The first one predicted an ultimate primary recovery of 31,701,000 barrels[33], while the second predicted an ultimate primary recovery of 32,498,000 barrels[34]. Deducting the cumulative production at 1.1.1979 of 18,793,000 barrels[35], the remaining recoverable oil from Rostam Mishrif would be 12,908,000 according to the 1975 Second Party Report and 13,705,000 barrels according to Geho Report. Thus the evidence as existing in 1979 would have resulted in an estimation in the order of 13 million barrels.

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33 Doc. 345, supra, Exhibit 3.

34 Doc. 135, supra, Annex 2, p. 43.

35 Claimant's Hearing Chart H, Doc. 380.

c - Rostam Arab A-1 and C (primary recovery)

30. These reservoirs are quite small and the contemporaneous forecasts, the 1975 Second Party Report and the 1976 Geho Report would result in remaining recoverable oil of 58,000 barrels and 131,000 barrels respectively for the two together. Therefore, I feel there is nothing worthwhile to discuss except to state that the Core Lab and PPCI estimates of 1983 for Arab A-1 are not supported by the contemporaneous forecasts which both show ultimate recoverable primary oil volumes almost equal to the amounts already produced by that time. There is no reason why an imaginary reasonable buyer should have ever considered paying for oil that all contemporaneous reports prepared by the Second Party, including the seller itself, considered almost fully depleted, with a very small volume remaining.

(D) - Rostam Secondary Recovery

31. The last item considered by the Award is Rostam secondary recovery. In para 122, the Award states "the Tribunal concludes that the total oil recoverable during the remaining twenty years of the JSA would reasonably have been estimated in 1979 at somewhere in the range of 65,000,000 to 70,000,000 barrels". It goes on to assert that the evidence indicates a pilot test project as well as the full-scale engineering project, had been authorized by IMINOCO and draws the conclusion that "[w]hile secondary recovery would have appeared in 1979 to be technically feasible by 1 January 1984, the Tribunal believes that it would have been more prudent to have anticipated completion of the secondary project only by one or even two years after that date". The whole paragraph contains gross misrepresentation of facts and far reached speculations.

However, rather than limiting my comments to the said statements, I will review the item in more detail.

32. The only reservoir in the Rostam field for which secondary recovery had been ever mentioned is Rostam Shuiba and the Claim also concerns only this reservoir, as far as secondary recovery from Rostam is concerned. The relevant volumes asserted by Core Lab (the basis of the revised claim) and the Respondents are as follows[36]:

1000's barrels

Core Lab	Respondents (IOOC Report)	Award
72,300	22,778	65,000 to 70,000

The Claimant's original figure (PPCI) was 86,973 MSTB.

33. Here again the imaginary reasonable buyer would have at his disposal four major items all of which would have required close attention. These were:

(i) Historical Background of the Project.
(ii) State of affairs in IMINOCO in 1979.
(iii) NIOC's status after the Revolution
(iv) A Reservoir engineering study concerning a water injection project that should have started in 1977.

I will give a brief account of each of these four as available in 1979.

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36 Claimant's Hearing Exhibit, Chart H, Doc. No. 380.

34. The history of Rostam Shuaiba water injection goes back to 1968, one year before the field was put on production[37]. The following few years were spent collecting additional and further data which were becoming available through development of and production from the reservoir. In 1973, PPCI began a model study of the field. In 1974 the Development Committee asked IMINOCO to design a water injectivity test in Rostam Shuaiba and to prepare the related feasibility study, it also accepted the PPCI report on history match and depletion predictions. In 1975 the Development Committee reviewed the Reservoir Model Sub-committee's recommendations and accepted the results of model runs in which a number of water injection cases for Rostam Shuaiba were compared. In 1976 the results of injectivity test performed in well AR-28 were reviewed and it was confirmed that the injection rates assumed in the model study could be achieved. The Second Party stated that they were not in a position to give any recommendation on project implementation. IMINOCO recommended that sensitivity studies should be made to find the effect of delayed water injection. The model was based on 1977 starting date, IMINOCO recommended two starting dates for the sensitivity studies, 1980 and 1982[38]. In the same year, Second Party asked for further filed tests and in spite of NIOC's view that the project had been already delayed considerably, the Development Committee recommended that a pilot project should be

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37 Respondents' Brief and Further Evidence, Appendix IV, Vol. I, Doc. No. 270, Annex 4-3, Minutes of the Rostam Field Development Committee Meeting of 27 Aug. 68.

38 Doc. 272, supra, Minutes of Development Committee Meeting of 15 March 76, Annex 4-28.

run prior to proceeding with any full scale project[39]. In 1977, Second Party asked IMINOCO for a preliminary study of the necessary investments and postponed its decision regarding the project[40]. It was on the 17 October 1978 that the Second Party finally announced its agreement with the pilot test adding that "[A]s far as the entire project is concerned, decision will be made, by them, after the results of the pilot test are known and analyzed".[41]

35. The state of affairs in IMINOCO in 1979 as seen in September 79 with regard to Rostam Shuaiba pilot test would show that while in the 117th Meeting of IMINOCO Board of Directors, held in Dec. 78, there had been an authorization for expenses related to the pilot test, the subsequent meeting in the 118th[42], in March had excluded it and that this exclusion had been confirmed and reconfirmed in the 119th[43] and 120th[44] Board Meeting. It is interesting that the 118th, 119th and 120th meetings have been ignored by the Award. Not a single step had been taken towards the implementation of the pilot test, and as the accounts up to Esfand

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39 Ibid, Minutes of Development Committee Meeting of November 76, Annex 4-29.

40 Ibid, Minutes of the 106th Meeting of the IMINOCO Board, 13 Dec. 1977, Annex 4-30.

41 Ibid, Minutes of the 115th Meeting of IMINOCO Board. para 4(b), Annex 4-33.

42 Doc. No. 271, supra Annex 4-21, p. 3, item 6, second para.

43 Ibid Annex 4-22, p. 2.

44 Ibid, Annex 4-24, p. 3.

1358(March 79) clearly show not a single cent spent on it[45].

There is no doubt that any imaginary buyer would take clear note of NIOC's position regarding its financial situation and reconsideration of all projects, see para 20, supra.

36. The other important point to consider is the fact that according to Claimant's own estimates the total cost of the Pilot test, the only part of the Rostam Shuaiba Water injection project which could be considered approved, would be approximately 1 percent of the whole project. Thus 99 percent of the project was certainly not decided upon.

37. Thus, in summary, the imaginary buyer in 1979 would have seen, from the facts available at that time, a project for which reservoir engineering studies had been performed in early-mid 70's, a project continuously delayed, a project with an approval for only 1 percent thereof and even that with no budget, a First Party in financial problems having declared that it would reconsider even current commitments (having no commitment made here except for the 1%). But the Award suggests that such an imaginary buyer would have readily payed for 65 to 70 million barrels of oil based on what an study in early 70's had predicted the secondary recovery would be if started in 1977.

38. I do not consider it necessary to go into a discussion of the said reservoir study for two reasons. Firstly

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[45] Respondents' Rebuttal, Appendix VII, Vol. I, Doc. No. 353, Summary of IMINOCO Annual Expenditures Annex Q1-2.

because I consider the whole concept of secondary recovery from Rostam Shuaiba very speculative, so much that no award could include it. Secondly, because I consider the base reservoir engineering report out of date for any reasonable start-up in the 1990's. There is evidence that even in 1976 and 1977 it was realized that the effect of delay in start-up should be studied, for start-ups in 1980 and 1982. Surely a much longer delay, as must have been expected, would have made the usage of the said report impractical.

39. Finally, the contemporaneous evidence strongly suggest that Rostam Shuaiba secondary recovery as seen in 1979 would have been considered very speculative and could not be considered for any award. I further believe that a figure of approximately 23,000,000 barrels of secondary oil from Rostam Shuaiba, such as the one suggested by the Respondents, can be only considered as "technically feasible" and not in fact realizable.

Oil Prices

1. Paras 124-130 of the Award are allocated to oil prices. The Award observes in the first paragraph that "[W]hile experience shows that forecasting future crude oil prices is difficult and open to a high risk of being proved wrong by the subsequent realities of the actual market, the Tribunal's objective here is to determine the range of expectations that seemed reasonable in September 1979, not the accuracy of those expectations in fact". This statement in itself requires quite a critical review in particular with due regards to the fact that it is stated as a legal observation to be included in a legal statement, in an award.

2. Firstly, we have already seen that production forecasting is speculative and that this very Tribunal has decided that projections into the future, in particular long ones like this case, are speculative and as such should not be considered by the Tribunal. However, forecasting oil prices seems far more speculative than that of future production. It seems, from all the evidence, that oil price forecasts are very subjective. They are viewpoints. As the Tribunal has observed, in quoting the Claimant's expert witness in Case 56, the forecasts of oil prices "are based on available data and expert judgment at the time of valuation"[1].

3. Secondly, by selecting a range, in particular the one here, we do not free the forecast from its speculative and subjective nature. The sum of a number of

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1 Amoco Int. Finance Supra, Partial Award at p. 236.

speculative forecasts is a speculative range. It is most important, in this regard, to point out that the forecasts considered to form a range are all selective. They are all forecasts presented by Claimants in this Case and similar cases, every one of which being based on increasing trend in real value.

4. Thirdly, even if a range could be found which could be considered reasonable, certainly not the case for the one stated by the Award, from which a median could be chosen, then its combination with the speculative production forecast would result in a cash flow far more speculative than each of its constituents. To demonstrate this let us assume, that an average production forecast with a certainty of 70 percent could be obtained and further that a price forecast with a 60 percent chance of being correct could be imagined. Each of these could be considered the most reasonable on its own but the cash flow resulting from the two would have a probability of being right of only 42 percent. Considering the production forecast and price projections suggested by the Award the probability of the resulting cash flow to be reasonable in percentile would probably be a one digit number.

5. In para 125 of the Award, it is again stated that it should be understood that the Tribunal is not going to award "anticipated profits lost" but rather, it is to determine the value of the property taken. It refers to the Amoco International finance Award, supra, on the point that the value of an income-producing going-concern is certainly not the same as the "financial capitalization" value at the time of its anticipated future revenues, and adds that nevertheless the future income producing prospects must be taken fully into account. It finally states that although it is true that history has shown the price expectations generally

held in 1979 were grossly inflated, using such expectation in the determination of the value of the property in 1979 would be neither wrong nor unfair.

6. Insofar as what the Award says the Tribunal is or is not doing with respect to future profits, I will show the reality behind all these demagogical arguments in my Dissenting Opinion at length.

7. The reference to Amoco International Finance Award, supra, is most interesting. That very award rejected DCF method for valuation and one of the reasons for such rejection was the use of the very oil price forecasts we are concerned with here. The Tribunal observed in that case, "Actually, it is well known that oil prices have demonstrated a great instability. Independently of the fluctuations of the free market, decisions relating to fixed prices or to the volume of production, taken in the past by the big oil companies, or more recently by OPEC or other producing countries have been responsible for these price variations. The difficulties and risks of error inherent in every price forecast are therefore considerably aggravated"[2]. (emphasis added)

The same award goes on to conclude on cash flow projections (the result of production and price forecasts), stating:

> "As a projection into future, any cash flow projection has an element of speculation associated with it, as recognized by the Claimant. For this very reason it is disputable whether a

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2 Ibid, para 237.

> Tribunal can use it at all for the valuation of compensation".[3]

Thus it seem that there has been no regards to the legal findings of the Tribunal in the Amoco Award.

8. As regards the last sentence of Para 4, supra, it should be stated that it was not only the subsequent facts and events which made such price forecasts wrong, it is the very nature of such price forecasts that is speculative and thus from the instant they are made they are speculative and subject to being substantially wrong. Furthermore, once one considers the nature of the forecast, oil prices for 20 years to come, and the period during which the forecasts were supposed to have been made, 1979, then the speculative nature goes sky-high, not because of subsequent events, but because of their own nature.

9. Paras. 126 and 127 of the Award appear to be summarizing, or reporting certain parts of, the views expressed by the Parties' expert witnesses. One of the statements made is that "Dr. Stevens also pointed to an alternative price forecast, one done by Chase Econometrics in May 1979..... That Forecast was filed in Case No. 55", and further referring to the same forecast "that forecast, which was the most conservative referred to in evidence...". The conclusion from these statements, and one might even assume the objective, appears in Para 128 where it is stated that "The Tribunal concludes that such a buyer would prudently have anticipated a range of future prices bounded...., and, at the bottom, by a conservative forecast along the lines of that by Chase Econometrics". The

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[3] Ibid, para 238.

propositions put forward in these few paragraphs are very good indicators of the very unfair approach adopted by the Award, twisting the facts and prejudicing the Respondents.

10. Firstly, with reference to Dr. Stenvens, the Award fails to mention how and why he pointed to another price forecast. In his relevant testimony[4], he states clearly that the object of his exercise is not to prove Phillips Iran's numbers "wrong". "The purpose is to show that there are no "right" numbers which could be used to determine compensation by the use of DCF methodology".[5] His testimony was to show that using different assumptions one would get different results none of which would be "wrong" or "right", they would be all speculations. One of the alternative price forecasts he used was the Chase Econometrics about which forecast he observed "it is itself flawed by the atmosphere of uncertainty and general panic which prevailed in mid-1979"[6] and further that "It could be argued quite strongly that given expected lower demand and increased potential supply that the Chase Econometrics forecast was too high".[7] For this reason he also used another price forecast in which he reduced the Chase growth rate by 20 percent. In summary, Dr. Stevens pointed out to many alternative scenarios to

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4 Respondents' Rebuttal, Appendix IV, Economics Reports, Doc. No. 348, Testimony of Dr. Paul Stevens, Exhibit 3.

5 Ibid page 9.

6 Ibid, page 21.

7 Ibid

show that DCF could produce results ranging from 169 to 4 million dollars.[8]

11. Secondly, the evidence shows that the Respondents argued that DCF methodology, being very speculative, should never be used, and or this reason they did not propose a price forecast themselves. Therefore, to label the Chase Econometrics, so pointed out to show the unreliable nature of the method, as the most conservative on record and much more seriously to consider it as a lower bound of range is totally misguided and wrong.

12. Thirdly, as the Award itself states, the Chase Econometrics forecast is the very forecast on which another claimant relies against the very same Respondent. To pick up that forecast here and call it the conservative lower bound of a range of forecasts that a buyer would have used in 1979 is most prejudicial to the Respondents and the Tribunal has no right, and it would be indeed most improper, to pass judgement on a sensitive point of another Case.

13. Therefore, any reference to the validity of Chase Econometrics forecast, one way or other, should be totally ignored. Furthermore, and as repeatedly stated hereinbefore, forecasting 20 years into future, in particular for the price of oil, is a matter already rejected by this Tribunal. In this regard it should be noted that the Tribunal in Amoco International Finance Award, supra, was looking at Chase Econometrics forecasts.

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8 Ibid, page 34.

14. Therefore, as regards Oil Prices, any and all forecasts would be speculative and as such cannot be used to form a legal award. This together with the fact that future profits, revenues or whatever other label is attached thereto, have no place in the valuation of compensation on lawful taking, there is no need to discuss the relative acceptability, if any, of such forecasts or other alternatives.

15. In closing my comments on the quantity of oil and oil prices, I would like to point out a general but important point. I think it most improper and illogical to assume that the value of the Claimant's rights and interests would have been substantially increased by the Iranian Revolution as the contrary is the most commonly assumed case. However it can be easily shown that using the D.C.F. method, the method suggested by the Claimant and the Award, in 1978 would have resulted in a value far less than that calculated in 1979, as the price of oil had been decreasing in real value for a number of years and there were no reasons to assume a change of trend. This fact alone should clearly show how unfair and illogical it would be to base any award on a D.C.F. calculation based on the proposed 1979 data. I will return to this when discussing risks.

Cost of Production

1. I do not intend to analyze, in detail, the assertions made in the Award regarding the subject. The reasons being; firstly that cost estimates and projections into future are by nature speculative and thus not permissible to form a part of any legal award, secondly, that the apparent use of such estimates is basically for the DCF calculations which I regard as unacceptable and inadmissible, and, thirdly, that even if, arguendo, there would be any purpose to develop such estimates, their effect could be easily evaluated.

2. However, having made the general observation in the previous paragraph, I feel it necessary to give some observations with respect to the Award. I wholeheartedly agree that "the Claimant's estimates of future costs under the JSA are substantially too low"[1], but I believe the magnitude of the underestimation to be far greater than 50 to 75 percent, the range suggested by the Award[2]. The Claimant failed to reasonably refute any of the long list of objections raised by the Respondents, the effect of which would appear to substantially exceed the suggested 50-75 percent. There is at least one very clear example in the evidence that the estimates of the 5 year plan, which was never approved by the Parties but was however used by the Claimant, were way off even in 1979. The claimant has asserted that the 5 year plan had estimated the cost of plant and materials and engineering, for Rakhsh

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1 Award, Para 133.

2 Ibid.

Water Injection Project, to be 5,700,000[3] dollars (1978 dollars). Based on this, the Claimant has then asserted that the costs, in 1979 dollars, would be 577,000 for engineering and 5,873,000 dollars for plant and Materials[4]. AGIP, who was carrying out the engineering study of the project was reported in 1979 by no less than Mr. Trampini, the Managing Director, to have estimated the cost of main items of materials to be about 10,000,000 dollars[5]. So in 1979 itself the cost estimates were approximately 100% off. Remembering that the Claimant had allowed neither for the certain increase in the real value of costs nor for the increasing costs with time as equipment and plants age, the overal under estimation would be far more.

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3 Doc. No. 136, supra, Cost Report, page 11.

4 Ibid, Table B.I. on page 13.

5 Doc. No. 272, supra, Annex 4-23, Minutes of the 120th IMINOCO Board Meeting.

Risks

1. In order to demonstrate the unfairness of the illogical finding by the majority, I provide my comments on the "risk" section of the Award. One who applies the DCF method has no choice but to take into account a discount rate, too. In this connection, I will attempt to analyze the matters dealt with in the Award.

2. In para 134, the "Award" basically states the exclusion of "any diminution of value resulting from the taking of the Claimant's property or from any prior threats or actions by the Respondents related thereto". It also states that on the other hand "the Tribunal would not be warranted in ignoring the effects on the value of the property of the Iranian Revolution as they would have been perceived by a reasonable buyer in September 79". I feel the language of the first statement is too general and subject to misinterpretation and I also consider that the question of general risks of nationalization should be clearly addressed and included in the risks which the Tribunal could not be warranted to ignore. I will discuss the two points together as they are interrelated.

3. The Claimant had instructed its experts to exclude any risk for expropriation, arguing that uncompensated expropriation should be excluded by law and asserting that any other taking would be subject to "full" compensation, as interpreted by the Claimant, and thus no risk would be applicable. This question, almost with exactly the same assertions by the two Parties, has been already considered by this Tribunal. In the Amoco International Finance Award, supra, the Tribunal concluded that:

> "The exclusion of uncompensated expropriation is still more troubling. According to the Claimant, such an exclusion was imposed as a matter of law, since the Respondents cannot take advantage of their unlawful acts. The legal principle on which the Claimant relies is undoubtedly correct, but should more accurately be expressed as forbidding the taking into account of the consequences of an unlawful expropriation in the calculation of the compensation to be paid. Conversely, lawful expropriation would not be excluded. The risk of such an expropriation, to be sure, would have constituted a deterrent for any prospective investor, especially if such a taking might occur in the near future. Furthermore, as noted before, compensation in such case of lawful expropriation does not mean restitutioin integrum, as reducing the risk to zero presupposes. In fact, expropriated oil companies have often found it to be in their best interest to accept settlements at net book value of the expropriated asset. Even if such a concession was usually made in the framework of a broader, positive commercial arrangement, this cannot be construed as nullifying the risk of expropriation. The instruction given to the expert by the Claimant assumed that any compensation would reestablish things, at least financially, as they would have been if the expropriation did not take place. In other words, it was grounded on the contention that compensation for a lawful expropriation and damages for an unlawful one are one and the same thing, which the Tribunal has rejected". (see para 247 of the Award)

4. Furthermore, the exclusion of the general risk of nationalization would introduce a very serious and irrational factor into the case. What it would mean is that because the taking has actually taken place, the effects of which on the value are proposed to be fully excluded, the contract has become even more valuable than similar ones concerning natural resources

elsewhere in the world, and in particular in Middle East, which were surely subject to the general risks of nationalization. Such a paradox should be fully rejected and totally avoided.

5. It is, of course, well realized that all such confusions, complications and speculations are unnecessarily introduced into this case, and other similar cases, by the artificial scenario of the "assumed" reasonable buyer in spite of all the facts and evidence. This Tribunal has indeed expressed this view by stating:

> "It is another illustration of the artificiality, in such circumstances, of an exercise devoted to the determination of the price that would result from a free transaction between a hypothetical willing seller negotiating at arms length"[1].

6. Para 135 of the Award discusses the discount rate of 4.5 percent used by the Claimant together with the risks the said rate is alleged to include. It also mentions some of the risks not included in the discount rate, as used by the Claimant, and the alleged reasons thereof. Para 136 then follows with an attempted summary of Respondents' principal criticisms. The Award, however, does not comment on any of the arguments put forth by the Parties. It goes on, in paras 140-152, to discuss certain individual risks to decide whether or not and to what extent they would affect the value of Claimant's alleged rights and interest.

7. I would therefore first point to the so-called real rates of return, then attempt to clarify a few

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[1] Amoco International Finance, Award, supra at 248.

important points mentioned in the context of paras 135 and 136 of the Award showing why a number of the other risks excluded by the Claimant should be included, and finally I will attend to the individual risks which are considered by the Award.

8. In respect of the discount rate, I had discussed the matter at length in my separate memos addressed to the Tribunal. They will be also demonstrated in my Dissenting Opinion.

9. As stated in para 7, supra, I believe a few of the statements made in para 135 of the Award require clarification. Such a need arises from the fact that while the Award has included some of the Respondents' objections to certain of allegations made by the Claimant, there remain quite a few areas which are presented in the Award in such a way that appears to imply their acceptability and validity at least as far as the Tribunal is concerned. These have to be put in the right perspective.

10. Firstly, in the course of discussing Professor Myers' work the Award states "[U]nderlying his conclusion was the assumption that high risks associated with interests in oil reserves in politically unstable areas to a large extent reflect the possibility of expropriation, which, in his view, was to be excluded in this Case". Although I have discussed the general risks of nationalization, I find it appropriate to point out that Mr. Myers' very viewpoint fully supports my observations. This statement clearly shows two things: one that there is a high risk associated with interest in oil reserves in politically unstable areas, and second that Prof. Myers is reported to be apparently of the view that such risks should not be considered on this Case. The high risk referred to, has nothing to do with the

Government of Iran, NIOC or indeed any particular entity. It is a general high risk which exists in certain parts of the world. The JSA interests were subject to this risk prior to the Revolution and would continue to be subject to it should it, hypothetically, change hands. This risk is quite separate from the effect of any specific action allegedly attributed to the Respondents. This risk should never be excluded.

11. Secondly, when discussing other risks, the Award reports Dr. Myers' thinking to be, "they were either eliminated", or "diversified away", because, as the Award states, Professor Myers assumed that the hypothetical buyer would add them to its diversified assets portfolio. There are two points related to this argument. One is that there is no reason whatsoever to assume a wide diversified asset portfolio for the hypothetical buyer. This point is amongst the objections raised by the Respondents referred to by the Award in para 136. But there is a second point which is very important and of direct effects on the valuation. The Award has reported the story as such that it implies that such diversifiable risks are evaporated out as soon as an imaginary buyer with a diversified portfolio of assets would consider buying the Claimant's rights and interests. This is not so at all and Professor Myers specifically and clearly attested to the contrary.

12. In his Supplementary Report[2], Professor Myers clearly states:

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[2] Documents in Support of Claimant's Rebuttal, Doc. No. 325, Supplementary Report of Stewart C. Myers.

> "Does this means that diversifiable risks should be ignored in discounted cash flow analysis? Certainly not, but their forecasted effects should be captured in cash flow forecasts, not in the discount rate[3]".

There is nothing on evidence proving that the Claimant ever did this. Indeed most of Claimant's reference to such risks has been simply that they would be diversified away, and unfortunately the same treatment is suggested by the Award, but the expert, who is supposedly being reported, expressed otherwise in 1986. It should be pointed out that Professor Myers original report in 1983 had said certain events were "random occurrences which, like geological risks are essentially eliminated when an oil reserve is held in a diversified portfolio of other assets"[4] (emphasis added). However and apparently in response to Respondents objections and other experts' views, Professor Myers corrected his own account. However there is no change of either the discount rate or cash flows alleged by the Claimant in 1986 as compared to those in 1983 and nothing has been presented by the Claimant to show that it had actually done what its own expert admitted, in 1986, that should be done.

13. Thirdly, the Award states "Professor Myers suggested that risks and uncertainties related to other three components of the DCF analysis be accounted for in the respective forecasts, and the Claimant asserted that this was the way they were dealt with in its calculations". The truth of the matter is that Professor

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3 Ibid at page 15.

4 Claimant's Economic Reports, Doc. No. 133, Myers Report, page 16.

Myers suggested such exercise for almost all risks as indeed we have just noted this view point being expressed for diversifiable risks. What is more amazing is the Award's treatment of the point. The Claimant has in fact only mentioned, and even that with difficulty, that there could be scenarios giving higher or lower values than the one used, thus alleging its scenario to be the average middle of the line one and thus, somehow, free of those risks. In any range, all the numbers except for the two limits would have figures lower and figures higher than themselves. Surely, such a fact does not make them the middle and most reasonable value in the range as every one would then qualify for such definition which should apply to one only. Furthermore, even averaging will not do. One has to take all probable cases, each with its own probability, to be able to say what the Claimant has so lightly suggested. In the absence of any evidence to the contrary, the Award should have clearly stated the fact that the Claimant had failed to show that it dealt with its calculations in 1983, in accordance to what its expert stated in 1986. Furthermore, all these risks should have been evaluated and applied in the calculations.

14. Thus, it becomes quite clear that the Claimant and its chosen experts had failed to produce any evidence to show that their calculations of either the discount rate or the cash flows had included any allowance for a range of risks including, but not limited to, the general risks of nationalization and all those risks referred to as "diversifiable" risks by Professor Myers. Indeed there is evidence showing that they did not. Therefore any calculation of value involving future risks should have evaluated and included all the risks left out by the Claimant and its expert from their calculations, though they might have referred to

them in their arguments. Of course, even those arguments, if properly analyzed, become witness to the fact that such risk have been in fact ignored in calculations.

15. Para 137 of the Award first notes that since the Tribunal has decided to refrain from performing an alternative DCF calculations, an earlier suggestion of the Award, it will identify which risks are relevant to such analysis and determine their approximate effect of the value of the Claimant's JSA interests. The Award then names the risks which should be analyzed for the mentioned purpose. These are namely the risk that not all recoverable oil might be produced, the risk that world oil prices might prove to be lower than the range foreseen and the risk of coerced revisions of the JSA.

16. I have already explained why a large number of other risks should have also been analyzed and I will, in due course, comment on those which the Award does include in its analysis. However it is the first part of para 137 which requires a critical review to which I will attend next.

17. Although the Award had proposed this line of analysis previously, for example in para 114, the real implications of this illogical approach has become such more clear now that the Award has treated some of the elements such as the quantity of recoverable oil, and future oil prices. Of course, all these unjustified acrobatics and illogical hypothesis stem from the inexplainable insistence of the Award in justifying the use of the DCF method even when it means sacrificing fairness, justice and indeed pure logic. Nevertheless even if one uses the DCF method, for whatever purpose it might serve, the method used by the Award to apparently correct it is in absolute contradiction to

the very principals behind DCF methodology. Therefore I will only explain this second point as I have already, and repeatedly, stated that DCF method, even in its correct form, if there were one, cannot be used.

18. It is well known, and indeed it has been explained in detail by various party experts involved in this Case, that the DCF method is no more than a method of calculation the accuracy of whose results depends on the accuracy of the data used and that it is very time sensitive and the Award itself acknowledges this fact in footnote 35 on page 83. Nevertheless the Award finds it fit to simply apply some sort of overal adjustment for the effect of partially correcting some of the basic data. I had warned the Tribunal of he great injustice which could result from it attempting to make decisions in technical and specialized fields in which it lacks the proper expertise. This is another manifestation of such interference. I have no claim of any expertise in the field but simple logic together with due regards to views expressed and explanations provided by the Parties' experts convince me that the approach adopted by the Award for "correcting" or "adjusting" the DCF results as asserted by the Claimant is wrong and contradictory to the very nature of DCF method.

19. I can see two types of correction with totally different effects. On the one hand we might have corrections which can be directly applied to the result which I will call the first type and on the other we might be faced with corrections which can be only applied in the body of the calculations and not to the result, these I will call the second type. It is this second type of correction that I am addressing and it is this type that we are concerned with for most of the necessary adjustments.

20. Starting with quantity of oil, it can be seen clearly that almost all of the correction, no matter of what magnitude, is of the second type. This arises from the fact that DCF uses the production forecast in yearly figures rather than the overal quantity of oil to be produced. Naturally the only time one could apply the correction to the result would be when, and if, all the yearly figures are to be corrected by the same factor. Here we have a number of reservoirs with different levels of production and indeed different expected trends and these are all mixed together. Furthermore we are faced with forecasts of primary and secondary recoveries. The corrections required for secondary recovery are very much time sensitive and uneven with respect to the overal period of time. Therefore it is mathematically, logically and indeed legally wrong to even think of such simplified overal corrections. An X percent correction in the volume of recoverable oil can affect the overall result by much higher, or much lower, than X percent. Same argument might be applicable to the costs which of course, have a relatively smaller effect than the others.

21. On the price of oil, the correction would be of the first type only if one accepts the trend of the forecast and reduces all yearly values by the same factor. Since this is, apparently, not what the Award is suggesting, then the correction can not be applied directly to the result even if the basic argument regarding future price of oil were correct, which it is not. Therefore the correction here is also of the second type.

22. On the discount rate and risks, almost all corrections would be of the second type. Regarding the discount rate itself, assuming one can be finally achieved, the correction is of second type. As for the risks, since

there is no dispute between the Parties as to the fact that some of these should be taken care of in the cash flows and the others in the final discount rate, all become of the second type.

23. It can be seen from the brief review presented in paras 17-22 hereof that the concept of correcting or adjusting the results of DCF analysis without performing another one is absurd. It makes one wonder about the future of international jurisprudence if such irresponsible and baseless arguments were allowed to become legal findings.

24. Yet another amazing argument appears in para 138. It refers to Respondents' suggestion that Article 35 of the JSA, which made the Claimants' interests transferable only with the consent of NIOC, created an additional risk affecting the value of those interests. It then states "to accepts such a conclusion, however, would require an assumption that NIOC would act in bad faith to prevent the sale of these interests to a qualified buyer, and that is an assumption the Tribunal could not fairly make". Two points need to be made here, one is to clarify the effect of Article 35 and the other is to analyze the ingenious conclusion stated in the Award with respect to NIOC's possible use of the Article.

25. The effect of Article 35 is very clear indeed. It makes the JSA rights of whoever makes the Second Party a restricted one, at least as far as transferring thereof is concerned. The effect of Article 35 is not to be limited to this hypothetical scenario involving the imaginary buyer. The point is that not only the imaginary buyer and the imaginary transaction would have required NIOC and Iran's consent but also the imaginary buyer would be buying rights which could not

be freely transferred in future. It is therefore both the assumed transfer of 1979 and the rights to be transferred that were subject to the stipulations of Article 35 and the risks thereof.

26. However the astonishing part of para 138 is the conclusion it reaches. For whatever the effects of Article 35, to accept the stated argument by the Award would mean that if First Party ever exercised its rights as provided by Article 35, it would be an act in bad faith. If one were to believe the theories put forth by the Award then one would have no alternative but to assume that the signatories to the JSA, in particular those representing the First Party, were insane. It takes insanity on the part of First Party or magic on the part of Second Party to include such rights for the First Party that any exercise thereof would constitute bad faith. In fact a comparison of the wording of Article 35 with other articles involving an approval by the First Party and Iran, for example Article 19.1[5], makes it clear that the right of the First Party and Iran under Article 35 is absolute.

27. To finish its most amazing handling of Article 35, and in simpler words to add insult to injury, the Award adds "Moreover, the Respondents have presented no evidence to show that such an agreement-to-transfer

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[5] Claimant's Exhibits, Doc. No. 132, Exhibit 6, Article 19.1 provides in part

> "..... subject to Governments' written consent which shall be applied for through First Party and shall not be unreasonably withheld or delayed". (emphasis added).

Article 35 does not have such conditions.

provision is peculiar to the JSA and is not common to most oil exploration and production arrangements throughout the Middle East and therefore might depress its value in relation to alternative opportunities".

28. I suggest that the objection is out of context and is directed to the wrong party. It is out of context because there is no doubt that any limitations on the right-to-transfer would have a negative effect on the value of the asset in question, and here the Award is attempting to value the compensation based on hypothetical transfer at arms length. The Tribunal is not valuing the alleged rights on the basis of the value of similar agreements in the Middle East so that the inclusion or exclusion of a similar condition in those agreements could become relevant. It is also directed to the wrong Party. The Respondents have shown that such an article does exist in the JSA under question and have asserted, quite correctly so, that it would have a depressing effect on its value compared to any other asset freely transferable in the market. It is the Claimant who has not provided any evidence whatsoever to show whether such limitation exists in all similar agreements and further, even if that were the case, that it would not affect the value thereof.

29. In Paras 140-152, the Award discusses those risks which it suggestes to have been considered, these being basically of the three types referred to previously. The Award analyses each type of risk, discussing the various individual risks which would give rise to it and concludes, in each part, as to the effect of such risk.

30. Although my method has, so far, been to analyze and discuss the Award in a paragraph-by-paragraph basis, I have to diverge from such method and present my

comments in a conceptual form though I need to point out a few specifics as well.

31. As already noted in Paras 2-5, 10-14 and 24-28, supra, I believe that here are many other risks besides those considered by the Award which would have substantially affected the value of the alleged rights. These risks have been ignored. They must have been carefully recognized, analyzed and included in the proposed valuation.

32. The other major objection of mine to the Award in this area has been explained in paras 17-23, supra. I strongly believe that the majority's main objective in the Award has been to reach a definite amount favorable to the Claimant, without any regards to the basic principal that such objective should meet the tests of a legal finding, to be lawful, just, correct and real. It seems the Award has no time, and indeed no respect, for such principals.

33. The risks should be dealt with properly and five stages are required. First to recognize all risks involved and make sure that facts are not mixed with risks. Second, to classify the risks into those which would affect the individual yearly cash flows uniformly and those which would not have a uniform affect. Third, to give probabilities to those various risks which involve certain parts of cash flows and perform a probability analysis. Fourth to include all uniform risks in discount rate based on a reasonable bench mark. Fifth to rerun all calculations. Interestingly enough this method has been very strongly recommended by Claimant's chosen expert, Professor Myers. The problem there beeing that the methodology recommended by the expert and the calculations carried out by the Claimant, or its other chosen experts, are totally different.

34. Having explained my opinion in para 33, itself very much arguendo as DCF should not be used at all, I see no reason to go into the subjective analysis of some of the risks by the Award. I do however agree with the Award that the effects of certain risks would be very substantial though I may not agree with the arguments therefor. However I strongly disagree with the majority's opinion regarding the effect of some of those risks considered by the Award. I also feel that a number of misconceptions should be pointed out. These I'll do very briefly in the following paragraphs.

35. On the risk that not all the recoverable oil would be produced the draft has mixed facts with risks of both general and specific effects. The financial problems of th First Party was a fact and not a risk. Iran's policies regarding future production would be of two categories. Those policies declared and known by the valuation date, would be facts. That Iran would further decide to change the ceiling would be a risk. On Secondary recovery projects, there would be a good number of years of delay known for a fact in 1979. Then there would be a risk as whether or not these projects would in fact start at those delayed start-up dates. These risks would need to be introduced in the body of cash flows. There are very many instances of such total confusion in the majority's handling of this type of risk. This is not the only shortage in their so-called Award, they have also ignored many of the risks such as those quite high geological and engineering risks involving secondary recovery projects and so on.

36. One of the specific areas that I find most unreasonable is the treatment, by the Award, of risks associated with force majeure, as its effect on production is concerned. This is a good example of the type of

treatment the Award gives to the evidence. Therefore, I will point out a few of the more misleading statements appearing in para 148.

37. The Award states that short term disruptions would not have a significant impact on total production, as subsequent production could be increased to compensate and that the likelihood of long-term ones, such as war; in 1979 was debatable and, furthermore, Article 16(1) of the JSA would extend the term. There are three major statements in para 148 of the Award, all grossly wrong. Firstly the Tribunal is not technically qualified to decide whether or not the production level could be increased to compensate past losses. Secondly the very fact that the occurrence of an event is debatable, makes that event a risk. If one would be sure of its occurrence it would be a fact, and if one was certain that there would be no question of it happening the risk would be zero. It is indeed at times of questioning and debating the likelihood of an event that risks and probabilities should be considered. Thirdly, one should remember that the extension of the term of JSA would have a marked effect on its present day value. It is of interest that even the Claimant's chosen expert, Professor Myers, not only admitted that there would be an effect but also provided methods and examples[6] for a short-term one, labour unrest. Even he was not as generous to the Claimant as the Award, a supposedly legal opinion, is.

38. I will conclude my discussion of risks by commenting on para 149 of the Award concerning the risks associated

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[6] Professor Myers Hearing Testimony. Official Transcripts, pages 853-854.

with oil prices followed by a general observation. This Paragraph refers to a price forecast filed by another Claimant against the same Respondent as "the most conservative contemporaneous forecast in evidence". I have already discussed this matter and strongly objected to this outrageous practice. It also states, in effect, that since it has allegedly assumed a range, there would be no risks. Again I have discussed why such range is in no way representative. So here I will just state the fact that by doing so the Award has shown its extreme one-sided nature. The fact is indisputable that the price forecast considered as the lower bound here, has been already rejected by the Tribunal as speculative[7]. The fact is indisputable that the Claimant's own experts admitted, and indeed explained, the high risks associated with price forecast. Finally it is a fact that oil prices in reality did fall way below those forecasts. The Award somehow finds it fit to ignore all these.

39. One of the most striking features of the Award is its utter vagueness. This is true about it as a whole but more so in the part covering valuation. I have pointed out the irresponsible and illogical treatment of quantity of oil, where not only the total volume suggested is extremely high but also that it has no substantiation. I have also shown that there is no legal basis for use of anticipated future oil prices and that it seems the objective of the Award is to make as many references as possible to another case, involving the same forecast and the same Respondents, thus prejudicing the Respondents. I have further explained the erroneous and unacceptable treatment of

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7 Amoco Int. Finance, Award, supra.

future costs. However, the masterpiece of the Award is its treatment of discount rate and risks where it seems that maximum effort is used to write a lot but commit nothing in a definite form. Of course all these do have an objective which is to conceal the outrageous nature of the compensation awarded.

However, and notwithstanding all the efforts employed by the other two members of this Chamber to hide the reality, it is quite simple to reconstruct the final figure and deduce its basis.

As stated in Para 155 of the Award, it is considered that the Claimant owes 8.8 million dollars to the Respondent for unpaid 1978 dues. On the other hand the Award considers the Respondents owing the Claimant for oil lifted in March-Sept. 1979 and other matters, see same paragraph of the Award, which according to the Claimant would be 3.5 million Dollars. Therefore there would be a net amount of 5.3 million dollars due to the Respondents making it necessary for the DCF results for the 1979 value to be 60.3 (55+5.3) million dollars. Using the other quantities suggested by the Award, a quantity of oil of 285 million barrels, the price forecast so named and 75 percent increase in costs, it can be easily shown that the discount rate would be approximately $7\frac{1}{2}$ %.

It is shameful that, having used outrageous assumptions regarding the quantity of oil and oil prices based on the suggestion that their divergence from realities would be considered under risks, and then having admitted that each of such risks would substantially affect the value, to come up with the equivalent a discount rate of $7\frac{1}{2}$%, supposedly inclusive of all those risks. The tactics used by the other two members

of this Chamber strongly resemble those of the Claimant: Say a lot and do very little.

In short the 55 million dollars awarded by the other two members not only is based on using a methodology already rejected by this Tribunal, and that by no less than an internationally distinguished authority, but also is the result of using the following:

1) A volume of oil over three times that officially declared by the Claimant in 1979.

2) A price forecast proven to be highly over-estimating in fact and found to be opeculative and rejected by this Tribunal.

3) A discount rate supposed to include risks substantially affecting the value, but being in fact less than that suggested by the Claimant's expert witness in 1979 for a concern in U.S.A. with for less risks. The discount rate used is almost one half of that this very Tribunal used for the only DCF based award, Starrett, supra, where again the risks were much lower than this Case.

There seems to be little escape from the apparent conclusion that it would be hard to imagine the other two members of this Chamber having based their finding on any rational. It would be more realistic to assume that the objective had ben a figure, a very high, unjust and unfair one, with a lot of write up, not to justify it, as that would be impossible, but to conceal the unjustifiable nature of it. It is indeed most shameful.

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SECURITIES AND EXCHANGE COMMISSION
Washington, D. C. 20549

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FORM 10-K

ANNUAL REPORT

Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934

For the Fiscal Year Ended

DECEMBER 31, 1979

Commission File Number 1-720

PHILLIPS PETROLEUM COMPANY

(Exact name of registrant as specified in its charter)

Delaware	73-0400345
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

Phillips Building, Bartlesville, Oklahoma 74004

(Address of principal executive offices)

918-661-6600

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, $1.25 Par Value	New York Stock Exchange, Inc. Pacific Stock Exchange, Inc. Toronto Stock Exchange
7¾% Debentures Due 2001	New York Stock Exchange, Inc.
8¾% Debentures Due 2000	New York Stock Exchange, Inc.

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ✓ No ___

Registrant had 154,427,931 shares of Common Stock, $1.25 Par Value, outstanding at December 31, 1979.

MANAGEMENT'S COMMENTS RELATING
TO OIL AND GAS RESERVES AND RELATED INFORMATION
(Continued)

The SEC views the Summary of Oil and Gas Producing Activities Prepared on the Basis of Reserve Recognition Accounting (Summary) as a document under development and recognizes that there are numerous conceptual and implementation issues with respect to RRA that must be resolved.

RRA is premised on the concept that earnings and losses should be recognized at the time reserves are discovered or revised, and as economic conditions change. The concept of RRA is further explained by considering the following points when reviewing the Summary, page S-33:

- The additions to estimated proved reserves of $284 million result from valuing the proved reserves resulting from extensions, discoveries and other additions during 1979, principally in the United States, at December 1979 average realized sales prices, and discounted at 10 percent per annum based upon the anticipated production schedule. The discounted present value cost of $72 million for developing and producing these reserves is estimated based upon 1979 operating experience and is deducted elsewhere in the Summary.

- The average worldwide sales prices for liquids and natural gas increased substantially between December 1978 and December 1979. As a result of these higher prices future net revenues from estimated production of proved reserves increased and, when discounted at 10 percent, provided an additional $8,800 million of present value of estimated revenues as reflected in the Summary.

- Previous reserve estimates and production forecasts were revised during 1979 to exclude Iranian crude reserves (15 million barrels) and the sale in place of crude reserves (19 million barrels) to the Nigerian government. Revisions valued at December 1979 average sales prices less average production costs experienced in 1979, discounted at 10 percent, resulted in a decline in present value of estimated future net revenues of $1,916 million.

- The accretion of discount of $1,006 million was computed by applying the 10 percent discount rate to the beginning-of-year present value of estimated future net revenues.

- The costs of unsuccessful exploration activities during 1979, including impairment of lease acquisition costs and abandonment of suspended exploration projects ($343 million), are reflected in the Summary.

- The costs of exploratory wells drilling at year-end 1979, exploratory projects being evaluated and unproved oil and gas leases are deferred until a final decision regarding

ESTIMATED QUANTITIES OF PROVED OIL AND GAS RESERVES (UNAUDITED)

The Company's estimated net quantities of owned crude oil, condensate and natural gas liquids (liquids) and natural gas reserves are as follows:

	Millions of Barrels			
	United States	Europe-Africa	Other	Total
Proved Liquids Reserves* (1)				
Beginning of 1978	550	1,073	36	1,659
Revisions of previous estimates	2	(65)	(2)	(65)
Improved recovery	23	-	-	23
Purchases of reserves in place	1	-	-	1
Extensions, discoveries and other additions	4	14	-	18
Production	(58)	(59)	(10)	(127)
Sales of reserves in place	-	-	-	-
End of 1978, as previously reported	522	963	24	1,509
Royalty adjustment (2)	-	(10)	-	(10)
Long-term supply agreements (2)	-	-	(8)	(8)
Subsequent event (3)	-	(127)	-	(127)
End of 1978, revised	522	826	16	1,364
Revisions of previous estimates	13	(35)	(16)	(28)
Improved recovery	17	-	-	17
Purchases of reserves in place	-	-	-	-
Extensions, discoveries and other additions	4	-	-	4
Production	(58)	(60)	-	(118)
Sales of reserves in place - Nigeria (4)	-	(19)	-	(19)
End of 1979 (7)	508	712	-**	1,220
Proved Developed Liquids Reserves				
Beginning of 1978	471	610	17	1,098
End of 1978, as previously reported	460	549	24	1,033
Royalty adjustment (2)	-	(5)	-	(5)
Long-term supply agreements (2)	-	-	(8)	(8)
Subsequent event (3)	-	(26)	-	(26)
Reclassified to undeveloped	(5)	-	-	(5)
End of 1978, revised	455	518	16	989
End of 1979 (7)	441	486	-**	927

* Proved reserves include both developed and undeveloped reserves.

**Iranian reserves excluded as a result of internal strife in that country.

To : Mr. Briner
Mr. Aldrich

From : S.K. Khalilian ص

Subject : Draft Award in Case 39

Date : 28 June 1989

The Tribunal Rules of Procedures and standard arbitration practice require that all members of the Tribunal concerned with a case be given the opportunity of participating in all the stages of deliberation before an award is made in that case. No member of the Tribunal should be kept in the dark by the other members about the process of deliberations and the issues which are being discussed in the case with which they are all concerned. Memoranda exchanged between the members are also regarded as part of the deliberation process and should be fully communicated to all the members concerned.

I have recently obtained, from a source which I do not feel obliged to disclose, a memorandum which has been previously communicated to you by Mr. Aldrich without making it available to me. This memorandum indicates that certain discussions and memoranda have been exchanged between you of which I have not been informed.

My review of the memorandum communicated to you by Mr. Aldrich indicates certain computations conducted for the purpose of discounting at 15% the future net cash flow to which the Claimant in Case 39 is allegedly entitled. The schedules attached to the memorandum reveal that a formula has been used in order to calculate the present value of the cash flow projected for the Claimant. The formula is:

$$\text{Present value} = \frac{\text{Future cash flow}}{(1 + r)^{t}}$$

where "r" is the discount rate per period and "t" is the number of periods. Thus, for example, if the expected cash flow in year 20 is $100, then the present value of that $100 at 15% would be calculated as follows:

$$\text{Present Value} = \frac{\$100}{(1 + 0.15)^{20}} = \$6.11$$

In order to arrive at the Present Value of $6.11, the numerator above the line (i.e. $100 in this case) has to be divided by the denominator. The latter is calculated by multiplying (1+0.15) by itself a number of times. In this example, 1.15 is multiplied by itself 20 times, giving a product of 16.36 as the denominator. However, Mr. Aldrich's working sheets attached to his memo reveal that the denominator in this example has been incorrectly calculated by him as follows:

$$1 + (0.15 \times 20)$$

giving a product of 4, by which Mr. Aldrich has divided the $100 in this example. This means that in Mr. Aldrich's working sheets, the present value of $100 in year 20 is calculated as $25(i.e. $100/4) instead of $6.11, which is the correct answer as explained above.

As a result of this obvious mathematical mistake in the application of the DCF formula and in view of the magnitude of the claim in this case, you have arrived at an exorbitant amount inserted in the Draft Award.

However, as indicated in my memo of 27 June 1989, even if we accept, arguendo, the assumptions made in the Draft Award about the quantities of oil, the oil prices and the production costs, still the present value of the cash flows projected by the Draft Award for the Claimant would be reduced to approximately $26 million, if the formula is correctly applied.

As you can see the difference is substantial. I, therefore, invite you to discuss this issue as soon as possible. Furthermore, I hereby put on record my objection to the manner in which you have conducted the process of deliberation in Case 39, as a result of which I have been deprived of the opportunity of full participation in the deliberation in this Case.

In the meantime, I expect you to let me have a copy of all the memoranda exchanged between you in connection with the deliberation in Case 39, together with an explanation as to why I have not been kept fully informed of the exchange of views and discussions between you with respect to this Case.

cc. Registry Officers