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Strategic and Political Dimensions of the Brazil-Bolivia Gas Pipeline Project

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The discovery of enough gas in Bolivia's Oriente to supply major markets on Brazil's Atlantic coast is an opportunity to strengthen the economic viability and modernization of both countries. Political and institutional difficulties inside Brazil, blocking most policy decisions, are delaying execution of this project. Many Bolivian leaders doubt that the forces driving the two countries toward making this deal can overcome these difficulties in time to avoid a collapse of Bolivia's foreign trade, placing at risk its political and economic stabilization of the past decade.

This report focuses mainly on political risk inside Bolivia, during the life of the proposed project, in the context of Bolivia's historic relationship with Brazil and its recent economic and institutional development. We first will analyze Bolivia's revived political economy as it developed since the hyperinflation of the mid-1980s. We next will review the oil and gas politics of the South American heartland over the past six decades, evolving toward the umbrella agreement signed by Presidents Itamar Franco of Brazil and Jaime Paz Zamora of Bolivia on February 17, 1993. We then will explore different kinds and degrees of political risk during construction and operation of the pipeline during the life of the contract. Finally, we will evaluate the strategic implications of the deal for both countries.

1. Bolivia's Political Economy of Stabilization and Foreign Aid

Since the hyperinflation of 1984-85, when consumer price increases peaked at an annual rate of 24,000%, Bolivia not only has avoided political and economic disintegration but also has advanced toward consolidating its democracy and a free market economy. These advances will be tested by elections in June 1993 and by the need of the new government to deal with the collapse of Bolivia's official exports.

In 1990-92 Bolivia's official trade balance suffered massive deterioration, of nearly 15% of gross domestic product (GDP). While exports fell by 27%, imports nearly doubled to breed a trade deficit of more than 10% of GDP. The ballooning trade deficit reflected two basic problems: (1) the long-term economic decline of the *altiplano*, the highland plateau stretching the length of Bolivia where most of its 6.5 million people are concentrated, and (2) the dominant role of foreign aid, which has become Bolivia's biggest industry. Against a trade deficit of nearly $600 million, foreign governments, private donors and international agencies in 1992 poured $750 million into the country, roughly 14% of GDP, enabling Bolivia not only to finance a surge of imports but to increase foreign exchange reserves as well. Adding to this abundance of outside money is the cocaine trade by which, according to a new GATT study, illegal exports of coca paste earned another $700 million in 1992, breeding in the domestic economy a "Dutch disease" of excessive dollar inflows and an overvalued local currency.

Foreign aid and the cocaine trade are now the key to political and economic stability in Bolivia and to its relations with the outside world. In this context, the role of foreign governments (United States, Japan) and international agencies (World Bank, Inter-American Development Bank) is critical both to building the pipeline to send gas to Brazil and to understanding the country's political and economic structure. The institutional apparatus for receiving international aid is far more developed, flexible and articulated than is the capacity for production and export. Since 1952, Bolivia has received more foreign aid per capita than any other country except Israel.[i] Foreign donors feed a large share of the urban population and finance routine government functions such as road repairs, collection of statistics and epidemiological control. In these and other ways, they employ and develop a many of Bolivia's educated people, who might emigrate otherwise for lack of other opportunities. Since the New Economic Policy of President Victor Paz Estenssoro (1985-89) stopped the hyperinflation, foreign aid agencies have paid the salaries of consultants assuming senior staff roles in public administration, with key roles in making policy. The government of President Jaime Paz Zamora (1989-93) quickly realized that political stability and flows of foreign aid would be endangered if the preceding government's stabilization policies were not continued. The availability of food donations and foreign exchange in the cities has stimulated intense migration. Between the censuses of 1976 and 1992, the distribution of Bolivia's population shifted from 58% rural to 58% urban, with cities such as Sucre, El Alto, Cochabamba, Trinidad and Santa Cruz growing by between 4% and 9% yearly, comparable to African rates of urbanization that are unprecedented in the world's history.

Flows of foreign aid have masked and cushioned the economic crisis bred by the secular decline of exports of minerals from the *altiplano* , leading to a shift of economic activity to the lowlands east of the Andes that has been taking place since the 1950s. The proposed gas pipeline from Santa Cruz to São Paulo would consolidate this shift. Part of Bolivia's recent trade deficits are caused by further sharp declines in mineral exports from $641 million in 1980 to $356 million in 1991, a fall of 45% in nominal values and two-thirds in constant dollars. Exports of tin, the main foreign exchange earner in the 20th Century, peaked in 1929 at 47,000 tons of metallic content and fell since then to roughly 16,000 tons in 1992.[ii] Unable to develop other kinds of exports, Bolivia still depended on minerals for 42% of its exports in 1991, down from 62% in 1980. A key reason for Bolivia's pressing for the gas deal with Brazil is an expected fall in domestic production of liquid fuels in the teeth of rising demand, which would create a growing need for hard currency to pay for oil imports in the future.[iii] The state oil company, Yacimientos

Petroliferos Fiscales Bolivianos (YPFB), was expected to contribute, as taxes and direct transfers, 47% of the National Treasury's 1992 income in a country where other tax revenues amounted to only 8% GDP.[iv] A fall in oil production and gas revenues thus could be a major shock for Bolivia's tiny and volatile economy.

The questions raised by shrinking exports and by excessive dependence on foreign aid are not being discussed in campaigns for election of a new President and Congress in June 1993. As in the 1985 and 1989 elections, the new President would be chosen by Congress among the three leading candidates, since none are likely to win an absolute majority of popular votes. Democratic practice is now the norm, after a turbulent history punctuated by roughly one military coup yearly in Bolivia's first 150 years as a republic, with nine Presidents in 1978-82 alone. Democratic practice has been institutionalized to the degree that there has been no serious military uprising in more than a decade. However, the political parties are weak. The underlying assumption of most politicians is that Bolivia can be sustained indefinitely by ample flows of foreign aid, despite today's turmoil in world politics and shifts in the interests of the donor nations.

There are two main strategic considerations. First, while foreign aid has great impact on Bolivia's tiny economy, its has cost little in terms of the donor nations' resources. Second, aid to Bolivia over the past half-century brought stability and development to the South American heartland in response to a series of threats since the Great Depression, involving geopolitical rivalries at work in the Chaco War (1932-35) between Bolivia and Paraguay, the bloodiest conflict in the Americas since the U.S. Civil War and in Latin America since the Independence Wars; in German diplomacy and espionage in South America before and during World War II; in communist activity in Bolivia during the Cold War and in the drug wars of the 1970s and 1980s. Each of these threats prompted a new kind of United States involvement. After confiscation of Standard Oil of New Jersey's tiny Bolivian operations in 1937, Secretary of State Cordell Hull told Bolivia's Ambassador to Washington that "in this dangerous, chaotic world situation there never was such a ripe plum dangled before a hungry person than Latin America appears to be to...lawless nations, hungry as wolves for vast territory with rich undeveloped resources such as South America possesses...."[v]

In those days, the crescent of sedimentary basins running east of the Andes, from the *llanos* of Venezuela and Colombia to the desert valleys of northwestern Argentina, was seen by some geologists and oil industry executives as a possible source of petroleum potentially as important as the Middle East.[vi] Standard Oil had been sending geological field parties into these remote regions since the early 1920s. While the big discoveries of Occidental and Shell in eastern Colombia and the Peruvian jungle in the late 1980s can be seen as long-delayed confirmation of earlier optimism, hopes of finding giant or super-giant fields in the lowlands of Bolivia and Paraguay and in Argentina's sub-Andean valleys have receded. However, while previous discoveries were marginal in size and marketability, improvements in technology and infrastructure now give Bolivia's modest gas reserves strategic importance for São Paulo and other Brazilian cities and for Bolivia's own economic viability.

2. Geopolitics of Oil and Gas in South America's Interior

The proposed Santa Cruz-São Paulo pipeline is the latest attempt to solve the problem of access of the resources of Bolivia's Oriente to world markets. Both Brazil and Bolivia are countries where, for centuries, weak central governments sought to develop and manage large parts of the South American heartland with low population densities. Bolivia's defeats have been dramatic. It lost large slices of its original territory to its neighbors. Throughout its history, Bolivia has been plagued by problems of space, population density and communications, again and again threatening its survival as a national state. Its past role in the world economy might have promised some success in overcoming difficulties like these. In the 17th Century silver mining complex of Potosí, Bolivia, harbored the biggest and richest export enclave of the preindustrial West and the largest urban concentration in the New World (120,000 population by 1610, against 200,000 for London around the same time). Mining at Potosí was supported by an extensive system of draft labor and food and materials supply, extending over much of what is now the north of Argentina and the highlands and valleys of Peru and Bolivia. Nevertheless, following collapse of the Potosí mining boom, internal communications had deteriorated so badly that a British diplomat reported in 1827: "the roads throughout Bolivia are only adapted for mules and llamas --a cart or carriage road does not exist in any part of the Republic, and with the exception of one or two carriages used in religious ceremonies at Chuquisaca (Sucre), a wheeled vehicle does not exist in any part of Bolivia."[vii] Simón Bolívar, whose name the new republic bore, questioned its viability soon after it declared Independence in 1825: "Bolivia cannot remain as she is, because the Río de la Plata and the Emperor of Brazil would eventually bring about the destruction of that Republic."[viii] Despite such catastrophic predictions, repeated many times, despite poverty and illiteracy and hundreds of episodes of political disorder, Bolivians developed a surprisingly strong sense of national cohesion and identity. In the absence of alternative opportunities, development of this cohesion and identity accelerated in the postwar decades, fed by migrations, racial mixing and large amounts of foreign aid in Bolivia's Oriente, the main source of gas supplies for the pipeline to São Paulo. The city of Santa Cruz has grown since 1950 at an astonishing rate, by nearly 7% yearly, to reach a 1992 population of 695,000, with migrants of highland Amerindian descent *(kollas)* now outnumbering native lowlanders *(kambas)*..

This is a sudden awakening from stagnation. Since the 16th Century, bands of white men and *mestizos* roamed the vast and trackless frontier east of the Andes to form isolated and often ephemeral settlements. Santa Cruz de la Sierra, at the western hub of the proposed pipeline, was founded by the Spanish conqueror Ñuflo de Chávez in 1560, 200 miles east of its present location. The old site soon was abandoned because of Indian attacks. The town grew to 9,000 population in 1825 and expanded slowly to reach 25,000 a century later and 41,000 by 1950. The region suffered big losses of population in the Chaco War. However, from the ashes of this conflict came the oil-for-railways agreements with Argentina and Brazil , a big step toward overcoming the historic problem of access.

A lack of exportable commodities impeded development of modern transport infrastructure (transcontinental railroads and highways) in the South American heartland until the late 20th Century.[ix] Brazil first proposed a railway from Santos on its Atlantic Coast to Arica (Chile) on the Pacific in 1871 in one of eight major transportation plans, involving creation of rail and canal links between major river systems, that were devised in the half-century before World War I to deal with the diabolical problems of continental logistics.[x] While the United States completed its first transcontinental railway in 1869 and Russia its trans-Siberian railroad in 1902, construction of Brazil's rail link to the Pacific --joining the network serving Bolivia's Andean mines-- began only in 1905 and still is unfinished.

The first breakthrough came in the rails-for-oil deals signed with Argentina and Brazil. The first agreement was signed with Argentina in 1922 and gradually was expanded in the 1930s and 1940s. Bolivia repaid Argentina's railway loans with oil, with movement in both directions on a modest scale. Small quantities of Bolivian oil were sent through Argentina's Campo Durán pipeline to a refinery on the Paraná River. By 1967 only 30,000 tons of general cargo was being carried on the railway to Santa Cruz, increasing to 50,000 tons in the late 1960s as pipe and equipment were shipped northward to build the pipeline promoted by Gulf to send gas to Argentina. Bolivian Gulf was nationalized in 1969 while the duct was under construction and replaced by YABOG, a subsidiary of YPFB, which delivered an average of 188 million cubic feet daily for the life of the contract (1972-91) for total billings of $4 billion. Gas sold by foreign companies working exploration blocks by 1991 became a majority of exports, flowing continuously despite hyperinflation and political convulsions in both countries and despite large Argentine payments arrears. These arrears finally were settled in a Clean Slate *(Borrón y Cuenta Nueva)* agreement in 1989 by which Argentina's $310 million gas debt to Bolivia was swapped for $800 million in Bolivia's long-term debt to Argentina, with 18% of future payments going into a common public works fund. Argentina no longer needed Bolivian gas and its arrears resumed shortly thereafter.

The importance of these previous export deals lies less in the scale of financial and gas flows than in the infrastructure and institutional practice developed, helping to prepare Bolivia for the much larger project for a gas pipeline to Brazil. Earlier rails-for-oil deals between Brazil and Bolivia, beginning with the 1938 Roboré accord, were much more ambitious in scope but were frustrated by the meager resources that both parties could mobilize. The diplomacy of all four countries in the region --Argentina, Bolivia, Brazil and Paraguay-- was driven by strong geopolitical ambitions and fears. The Roboré accord, signed a year after the Standard Oil nationalization, reserved large areas of the Bolivian Oriente for exploration by Brazil-Bolivian joint ventures that never went into action. The initial capital for exploration was Standard Oil's geological studies, provided by Bolivia, and a US$750,000 loan from Brazil, to be repaid in oil. Brazil then was struggling to explore, integrate and develop its own continental territory with meager financial and technological resources. At the inauguration in 1955 of the Corumbá-Santa

Cruz railway, Bolivian President Victor Paz Estenssoro argued in a memorandum to Brazilian President José Café Filho:[xi]

> Those who negotiated the 1938 Treaties were ignorant of the petroleum industry and its needs. For this reason, since 1938 we maintain inactive an enormous wealth of liquid fuels....The prospective zone reserved in the 1938 Treaties and its complementary agreements is eight times greater than all areas assigned to YPFB. Nobody knows how much longer this enormous territory will remain unexplored if we stick to all the provisions of the 1938 Treaties. For Brazil, this is simply a theoretical guarantee that fails to fulfill the basic function of a guarantee for timely payment of debt.

It would be dangerous for the proposed Santa Cruz-São Paulo pipeline project to follow the payment terms of the previous agreements. In the 1950s as in the 1980s, YPFB was a major propagator of public deficits and inflation, trading in its foreign accounts at the artificially low official exchange rate, instead of the more realistic parallel rate, some 20 to 50 times higher. According to Professor George Jackson Eder, the U.S. economic stabilization adviser to the Bolivian government in the 1950s: "Pipelines were purchased from Brazil at prices higher than they could be bought elsewhere, the cost being disguised by the exchange rate and by arrangements for the purchase of Bolivian oil in 'treaty dollars' that could only be exchanged for Brazilian goods at exorbitant prices. As an example of unrealistic accounting, in 1955 YPFB bought 20 tank cars, worth over $15,000 each, and paid for them through the Central Bank at the boliviano equivalent of $675 each."[xii] As for the rails-oil deal with Argentina, Bolivian exports were "payable in treaty dollars so that this trade must be looked upon a subtraction from the nation's wealth rather than as a source of income."[xiii] These previous experiences led the present Bolivian government to press for and win provisions for payment in convertible dollars in its agreement with Brazil on the proposed gas pipeline.

3. Political Risks of the Santa Cruz-São Paulo Pipeline

An international energy supply system, like the proposed pipeline to move natural gas to São Paulo and other Brazilian cities from the reservoirs of eastern Bolivia, involves institutional relationships between the participating nations and between different interests and groups within each country. Political risk to the proposed pipeline would be increased by reduction or elimination of foreign aid that sustains Bolivia's political integrity and its relations to the outside world. The new Clinton Administration in Washington is studying reductions in foreign aid to many countries, and especially to Bolivia in view of perceived failure of U.S.-aided efforts to reduce coca plantings for the international cocaine trade. Bolivia's long-term stability depends upon developing economic viability in other areas. The Bolivia-Brazil gas pipeline is a key part of this effort.

It is important to contrast the political and physical infrastructure today with conditions earlier in this century. In 1918, Standard Oil engineers reckoned that the only way to market oil from Santa Cruz would be a pipeline to the Paraguay River, 500 miles away, and from there to barge the oil 700 miles downstream to Buenos Aires, at a capital cost of $12 million [$100 million in 1993 money]. By 1927, Standard's total Bolivian production averaged only 71 barrels daily,[xiv] but the company kept trying to overcome the problem of access, only to be entangled in a web of nationalisms and geopolitical rivalries that led Argentina to veto the export of Bolivian oil through its river ports.[xv] The same entanglements led to nationalization of Standard's Bolivia operations after the Chaco War.

By the 1990s, institutional relationships in the South American interior have been strengthened by dramatic improvements in communications. Not only were highways and railroads built, but radio stations and airstrips multiplied. Satellite links now tie remote parts of Bolivia into global networks of television and data transmission. The pipeline exporting gas to Argentina has operated continuously for two decades. Bolivian soybean planters recently established their own outlet to the Paraguay River to sell their output through Argentine ports. In the early 1980s a former New *York Times* reporter observed: "In recent years, all of Bolivia's endemic disadvantages --its landlocked borders, inaccessible interior, ingrained governmental corruption and long-standing tradition of contraband-- have quickly emerged as pillars of strength for the cocaine industry."[xvi] The cocaine trade shows how better communications have strengthened eastern Bolivia's ties to the world economy. Under these changed conditions, what political risks would a Santa Cruz-São Paulo gas pipeline project face in coming decades?

Political and economic instability?

There is some danger that the paralysis of political decisions in Brazil, now blocking the pipeline deal, may be followed by instability in Bolivia. The danger lies mainly in the continuing weakness of Bolivia's political institutions. Like politicians in other countries emerging from hyperinflation, Bolivia's leaders have learned caution in recent years. The main threat to stability would lie in the fiscal and welfare effects of any cut in flows of hard currency from foreign aid and the cocaine trade in the absence of new kinds of export growth. The outcome of the 1993 elections of a new President and Congress may indicate the capacity of Bolivia's institutions to deal with these contingencies.

Terrorist acts?

The world petroleum industry gained broad experience with terrorist sabotage in recent decades. Its experience shows that, except when pumping stations and compressors become targets in open warfare, terrorist activity seldom stops pipeline flows for long. An outstanding example is the Venezuelan guerrilla insurgency of the 1960s, when high-volume pipelines were damaged frequently without causing major interruptions of oil exports. There are no signs on the horizon of this kind of belligerency in Bolivia.

Nationalization?

The furies of Bolivian nationalism led to takeover by YPFB of the operations of Standard Oil in 1937 and Gulf in 1969. These two foreign companies discovered most of Bolivia's modest petroleum reserves until now. The rhetoric enveloping these nationalizations portrayed foreign oil giants as siphoning away Bolivia's vast natural resources. By now, Bolivians see that these resources are not so vast and that financial and technical capacity of foreign companies are needed badly to sustain domestic oil production, which has fallen from 40,000 barrels daily (BD) in 1975 to 24,000BD today and, according to a U.S. Embassy report, "no major field discoveries appear to be in the offing."[xvii] The impact of falling crude oil production is compounded by big increases in consumption and by the politicization of YPFB's operations. Politicization led to overstaffing, building of uneconomic refineries, underpricing of fuels, frequent strikes and maintaining marginal fields to avoid creating local unemployment. Technicians say that much of YPFB's production comes from marginal fields and installations that operate at a loss but cannot be shut down for political reasons.

Expiration in May 1992 of the 20-year contract to export gas to Argentina, extended through 1993 at much lower prices, creates very powerful incentives to realize the Santa Cruz-São Paulo pipeline project as quickly as possible within a stable institutional framework. Given the structural problems in Bolivia's current accounts, only an extreme fury of self-destruction could rupture this framework. Under much less financial pressure, Bolivia fulfilled its commitments for gas deliveries to Argentina in exemplary fashion, with less than 48 hours of accumulated interruptions over 20-years, despite large arrears ($310 million) in

Argentine payments. Wrapped into this agreement was a World Bank loan and payments into a New York escrow account for compensation for the 1969 Gulf nationalization, which was completed by 1979.[xviii]

Strikes?

Bolivia has been plagued by strikes, for both political and economic motives, throughout the postwar decades. While future strikes cannot be excluded, the present political climate favors untrammeled operation of a Bolivia-Brazil pipeline as a national priority. Presumably, a well-paid pipeline workforce in the private sector would not be eager to join political strikes. This contingency depends on the institutional environment in which the project takes place.

Regional separatism?

Regional interests long have used the threat of separatism to extract rents from the central government in La Paz. Moreover, as in many rich and poor countries during the 1980s and 1990s, decentralization of government operations and revenues is taking place in Bolivia, embodied in a Decentralization Law now before Congress. The most effective agent of local interests has been the Santa Cruz Committee, which obtains from La Paz generous oil and gas royalties for regional development projects. Central governments long have been sensitive to regional claims because of previous territorial losses. These sensitivities led to the laying of telegraph lines in 1922 between La Paz and Santa Cruz and other towns of the Oriente, which did not prevent local revolts, including the seizure of public buildings in 1924 by revolutionaries in Santa Cruz, who declared Independence and decided to request annexation by either Brazil or Argentina before they were suppressed by 1,000 Bolivian troops sent from Cochabamba. After Bolivia's defeat in the Chaco War, many Paraguayans favored annexation of Santa Cruz

Department.[xix] Bolivian diplomats pressed intensive postwar negotiations in Rio de Janeiro, Buenos Aires and Washington to avoid loss of oil-bearing territory.

The threat of secession has receded in recent years because of ethnic mixing from migration and improved transportation and communications links between the Andes and the Oriente. In terms of political risk to the proposed Santa Cruz-São Paulo pipeline, a secessionist movement would favor the Bolivian regional interests most closely tied to Brazil.

4. Final Strategic Considerations

Exports of large quantities of gas from Bolivia to Brazil is of great strategic interest to both countries. Negotiations are evolving in institutional conditions much more developed and promising than the predecessor "rails for oil" deals with Brazil and Argentina and the 20-year contract to export gas to Argentina. These three countries today have much more realistic ideas of their own potential and limitations, apart from Bolivia's desperate need to develop a new source of official export income. The new agreement would be backed by a degree of international financial, political and technological support lacking in the previous accords. All three countries have learned the hardships of living at the margin of international political and financial structures, which are lessons not to be forgotten quickly. These changed conditions offer strong incentives for successful execution for pipeline construction and scheduled gas deliveries for the life of the contract. If today's political and institutional impasse in Brazil can be overcome, there is ample reason to expect that other conditions for successful operation will fall into place.

La Paz-São Paulo, April 1993

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[i] For details, see Norman Gall, *El Alto de LaPaz: A Report to the World Bank on the Origins and Prospects of Poverty in Bolivia .* La Paz-São Paulo-Washingto: May 1985.
[ii] For an account of the rise and fall of Bolivia's tin industry in this century, see Norman Gall, *Bolivia: The Price of Tin. Part I; Patiño Mines and Enterprises. Part II: The Crisis of Nationalization.* American Universities Field Staff Reports, 1974.
[iii] Herbert Müller Costas, *El Contrato de Venta de Gas al Brasil.* La Paz: Müller & Associados, August 1992. Müller is Bolivia's Minister of Energy and Hydrocarbons.
[iv] Fernando Urquidi, *Bolivian Petroleum Industry Development and Outlook: 1991.* La Paz: United States Embassy, April 1992/p12; World Bank, *Bolivia: Updating Economic Memorandum.* Report No. 11123-BO. Washington: October 8, 1992/p8.
[v] Quoted in Bryce Wood, *The Making of the Good Neighbor Policy.* New York; Norton, 1961/p181.
[vi] Albert J. Brokaw, "Oil," *Foreign Affairs.* October 1927.
[vii]. J.B. Pentland, quoted in J. Valerie Fifer , *Bolivia: Land Location and Politics since 1825.* Cambridge University Press, 1972, p. 18.
[viii]. J. Valerie Fifer, *Bolivia: Land Location and Politics since 1825.* Cambridge University Press, 1972 p16.
[ix] For a discussion of these difficulties, see Norman Gall, *Letter from Rondonia. Part II: Strategic Reach.* AmericanUniversities Field Staff Reports, 1978.
[x] Maps andsummaries of these plans are in Ministério de Transportes, *Planos de Viação: Evolução Histórica.* Brasília 1974.
[xi] Raúl Botelho Gosálvez, *Proceso del Imperialismo del Brasil: De Tordesillas a Roboré.* La Paz, 1960 p155.
[xii] George Jackson Eder, *Inflation and Development in Latin America: A Case History of Inflation and stabilization in Bolivia.* Ann Arbor: Michigan International Business Studies, No. 8, 1968/p60.
[xiii] Ibid. p506.
[xiv] George Sweet Gibb and Evelyn Knowlton, *History of the Standard Oil Company (New Jersey): The Resurgent Years, 1911-27.* New York: Harper Bros. 1956/p382-3.
[xv] George Philip, *Oil and Politics in Latin America: Nationalist Movements and State Com panies.* Cambrige University Press, 1982/p194.
[xvi] Jonathan Kandell, *Passage through El Dorado: Traveling te World's Last Wilderness.* New York: Morrow, 1984/p232.
[xvii] Fernando Urquidi, *Bolivian Petroleum Industry Development and Outlook: 1991.* La Paz: United States Embassy, April 1992/p12.
[xviii] Comité Boliviano del Consejo Mundial de la Energia, *Veinte Años de Exportación de Gas.* La Paz, April 1992/p29-30.
[xix] J. Valerie Fifer, *Bolivia: Land Location and Politics since 1825.* Cambridge University Press, 1972 pp206&216.