XXI. ALTERNATIVE ACTIONS

The potential problems associated with oil, gas, solution mining and gas storage activities are numerous and their actual impacts versus potential impacts on the environment are difficult to differentiate and assess. The range of alternatives available concerning resource development in New York can be grouped into three basic categories.

Alternative A. Prohibition of Resource Development

Alternative B. Removal of Regulation

Alternative C. Maintenance of Status Quo versus Revision of Existing Regulations

A. PROHIBITION OF RESOURCE DEVELOPMENT

Total prohibition would be contrary to state and national interests. Total prohibition would eliminate domestic production of 852,564 barrels of oil, 34.2 billion cubic feet of natural gas and approximately 2.7 million tons of salt per year, and deprive industry and landowners of $100.09 million in income from oil and gas and approximately $63 million from salt production annually. In addition, the lost income and reduction of our domestic supply of oil and gas would necessitate increased imports of oil and gas, increased domestic energy conservation or replacement by alternate energy sources. Currently available alternate energy sources such as coal, oil shale and nuclear have equivalent or more severe environmental impacts or costs (see Table 21.1). A combination of the above alternatives would be necessary to replace the lost oil and gas production should a total or limited prohibition of oil and gas activity occur. Prohibition of underground gas storage would limit gas supplies in the winter months resulting in severe shortages. New York State is the third largest salt producer in the nation and prohibition of this industry could cause nationwide shortages.

TABLE 21.1
Alternate Energy Sources and Associated Adverse Impacts

Source/Action	Impact/Obstacle
Imports (Oil and Gas)	- increased reliance on unreliable foreign sources - adverse effects on trade balance - increased risk of oil spills from tankers
*Energy Conservation	- increased consumer cost - large capital investment - decreased comfort and standard of living
*Coal	- disruption of land - emissions of SO_2 and particulates - water pollution (surface and ground) - increased noise - large amount of water needed for gasification
*Nuclear Fission	- release of small amount of radioactive material and heat - high cost and public concern limiting construction of new plants - no suitable waste disposal solution
Tar Sands	- modification of surface topography - water pollution - dust and vehicle emissions - increased noise level - disposal of residual material - cost not presently competitive
Oil Shale	- disposal of spent shale - disruption of land - dust and vehicle emissions - large quantities of water needed in processing - cost not presently competitive
*Solar	- high initial or fixed cost unattractive to individual home-owner given other alternatives - commercial use not technologically possible at present
*Hydroelectric	- irreversible commitment of land resources - elimination of wildlife habitats - high initial cost - loss of free-flowing river recreation - most favorable sites already in use

NOTE: Some of the Alternate Energy *Sources do not entirely replace petroleum and the numerous derived products such as lubricating oils, plastics, synthetic textiles, pharmaceuticals, insecticides, etc.

TAKEN IN PART FROM: FEIS, 1982, St. George Basin, Minerals Management Service Alaska OCS Program.

Although total prohibition is expostulated by some segments of the population, it is against legislated State and Federal mandates. Everyone uses petroleum and petroleum derived products, but some people oppose oil and gas development in close proximity to their property unless they are receiving royalty benefits.

Although prohibiting oil and gas development would certainly eliminate all of the associated adverse impacts, these impacts would simply be exchanged for the adverse impacts associated with coal, oil shale, additional hydroelectric dams or nuclear plants if we are to maintain the current standard of living. A limited prohibition, such as the restriction of oil and gas drilling and solution salt mining in the most critical and environmentally sensitive areas is a more viable alternative.

B. REMOVAL OF REGULATION

The environmental damage which resulted from past unregulated oil, gas and solution mining activities has been discussed throughout this statement. By 1963, when the State's first comprehensive oil and gas conservation law was passed, surface streams, ground water and land in some areas had been contaminated by oil and salt water. Fluids naturally segregated in the subsurface by impermeable strata had been allowed to commingle in uncased or incompletely cased production and injection wells. Oil and brines had spewed from wells drilled without adequate control. Oil, gas and brine had leaked from improperly plugged and abandoned wells, from wells improperly cased and completed, and from neglected surface storage and gathering systems. Pollutants had leached from unlined pits and holding lagoons. Pollutants had been dumped onto the land and into surface waters from overflowing storage pits and separators.

Not all of the past environmental problems caused by earlier oil and gas operations, can be attributed to an unconcerned, unregulated industry. Many

conscientious operators undertook their operations with real concern for the environment and they used state of the art technology to accomplish their objectives. As with any industry, however, some imprudent operators, free of regulation and surveillance, had failed to adopt technical improvements in equipment and methods and continued operation utilizing obsolescent tools and practices. Blowouts, uncontrollable salt water flows, cave-ins, commingling of subsurface fluids and waste of resources sometimes resulted.

The advent of artificial stimulation and reservoir pressure maintenance techniques to enhance oil production compounded the problems. Both practices involve the pressured injection of fluids (usually freshwater in New York's oil fields) into the hydrocarbon-bearing strata. Improperly equipped injection and production wells in some areas had allowed both injected fluids and produced oil and brine to infiltrate unprotected porous strata or escape to the surface.

Solution salt mining practices where freshwater is injected through wellbores into rock salt beds to dissolve the rock salt and the resulting brine is brought to the surface either through the injection well or through offset wellbores have not changed greatly in the last huundred years. But some earlier solution salt mining operations caused subsidence and contamination of subsurface freshwater zones, because the forces causing wellbore collapse and subsidence were not understood or engineered around.

The practice of collecting and storing salt water and drilling fluids in earthen pits has been especially damaging to the environment. Unlined pits installed in naturally porous soils, or whose bottom rested on fractured or weathered bedrock, allowed waste fluids to percolate into surrounding soils and underlying aquifers. Even when excavated in relatively impermeable soils or lined with impermeable material, the pits were often allowed to fill with

precipitation and overflow onto surface soils and into nearby streams.

Though there are many conscientious operators who use environmentally sound methods to drill and complete their wells and would continue to do so without regulation, there are also those who would not. Due to population pressures, once abundant natural resources are limited. Proper management of these natural resources is so critical that we cannot entrust our environment to unregulated industries again.

In the absence of regulation, few well spacing, lease integration or pool unitization programs would be undertaken. Waste would be common. Superfluous wells would be drilled by small lease holders in an effort to prevent drainage of their oil or gas. Mineral owners unable to finance their own well, and with insufficient holdings to encourage a prospective lessor, would probably find their minerals produced by adjacent wells.

It is also likely that, without statewide regulation, local ordinances restricting mineral exploitation would proliferate, and either discourage investment or make potentially valuable mineral lands unavailable for development.

C. MAINTENANCE OF STATUS QUO VERSUS REVISION OF EXISTING REGULATIONS

The State's oil, gas, solution mining and underground gas storage regulations have not been updated since 1972. The current regulatory program is in need of modernization through updated regulations. The primary mandate of the existing 1972 regulatory program was natural resource management. The primary mandate of the new 1981 and 1984 Oil, Gas and Solution Mining Law and the more recent amendments is not only resource management but also environmental protection. Most of the environmental protection measures mandated by the new Law are currently applied through permit conditions.

Many of the permit conditions have been imposed by the Division in

response to both existing and potential problems that could occur. The oil and gas industry has considered some of the imposed permit conditions unnecessary and their implementation too abrupt. Long term planning is absolutely essential for a financially successful oil and gas development venture. Currently, the industry is having difficulty not only because of low oil and gas prices, but also because it is difficult to adequately plan a long term drilling program with changing drilling, casing and cementing requirements. The revision, publication and uniform enforcement of comprehensive regulations will alleviate these latter problems.

The oil and gas industry has complained that expensive strictures have been added during a time that industry can least afford them. The additional requirements on wells drilled in aquifer areas may add an estimated $1,500 to $15,000 per well. It is true, that these added costs make the average New York oil or gas well extremely marginal at todays' reduced energy prices. Oil and gas development activity in New York State will probably be curtailed until oil and gas prices again increase. The industry has always been cyclic and long term environmental protection cannot be sacrificed for short term cycles of monetary gain or loss.

The monetary benefits to the State and the people of the State from the oil and gas industry can be assessed. From the gross income from oil and gas produced at the wellhead, millions in landowner royalty revenues and State and local property taxes were generated. About $100 million is invested annually in the drilling of new wells even with the current depressed state of the industry. In addition, it is estimated that over 1,500 people in the State are directly employed in the oil and gas industry. The Department has collected $720,000 for the Oil and Gas Account in fees, fines and penalties since 1981.

Unfortunately, a direct comparison between added oil and gas development costs and environmental costs is difficult because there is no widely accepted measure of their value. It is difficult to assign a monetary value to the natural resources enjoyed by all people of the State. Insurance companies and the courts do assign a monetary value or compensation to the human suffering and misery caused by pollution, and it is cheaper to prevent it.

The primary purpose of this Environmental Impact Statement has been to review in a comprehensive manner not only the effect of oil, gas, solution mining and underground gas storage activity in New York State, but also the Department of Environmental Conservation's existing Regulatory Program. Throughout the text, the inadequacy of portions of the existing program has been discussed. Extensive regulatory revisions are needed to formalize the current permit condition system and mitigate the environmental hazards associated with the development of New York's mineral resources.