

B. Multiple resource planning:

The key to orderly and wise resource development is planning. For example, many people consider the Piceance Creek Basin oil shale area of Colorado as possessing value for oil shale only. This is not the case. Not only oil shale but valuable and potentially valuable oil, gas, aluminum and sodium are also known. Surface values include watershed, significant wildlife and recreation, scenic values, grazing and ranching. Depending on methods of extraction, mineral development could cause air and water pollution and aesthetic damage. Proper planning can minimize these undesirable impacts.

Conflicts of resource use are inevitable and even if mineral development predominates, as seems likely, all the development will not proceed at the same time or place. Multiple-use, with proper planning, can still take place. Other uses can often be accommodated elsewhere.

Mineral development will place increased demands on water and electric power supplies. Urban development planning and road planning will be vital. All of the previous planning has been on the basis of an industry on private lands near the edge of the Basin with urban development taking place along the Colorado River. Planning of development of the Federally-owned center of the Basin is needed.

The first step in proper planning is to bring together the basic information. This step is called resource analysis or inventory which involves gathering information from all available sources on all the various resources involved and placing this information in useful form—often on maps. For example, even on oil shale, the information on the resource is badly fragmented and scattered. Where and what quality are the low grade resources in relation to the richer deposits? What is the land ownership and status? Often this phase alone will reveal certain relationships or inter-relationships which are not readily apparent—yet are vital in proper planning.

The second step would be the analysis of the invention information and tentative subdivision of the Basin into various resource units. This might involve leasing units considering such things as types of multiple-mineral deposits, types of mining or extractions, surface values, aesthetic values, pollution control, etc. It is possible that because of pollution or aesthetic or other considerations certain special controls or stipulations would be required in some areas. It is conceivable that units would be established for nuclear and other in situ testing, various types of underground mining, open pit mining, oil-shale-development-only areas, multi-mineral development areas, buffer or pillar areas around oil and gas wells, urban sites, plant sites, critical water areas, etc. The timing and scheduling of development is obviously an important factor. The key to this step is comprehensive planning for the Basin as a whole and relating the individual units to the whole and to each other.

The third phase which can be done concurrently with steps 1 and 2 is economic analysis. The lack of adequate economic analysis has been a continuing criticism of resource planning since the Paley Commission Study. Decision makers need the results of such analysis in order to make informed decisions. Economic studies are needed in such things as: conflicting and complementary resource-use benefit-cost analysis; alternatives in leasing, such as, terms and royalty; need for and possible effects of various types of incentives; allocation of receipts from leasing (in view of potential revenue, what alternatives may be worth considering); economic effect of alternatives in extraction, such as, recovery and conservation; and benefit-cost analysis of environmental effects of mineral development. No duplication of existing or planned economic studies by other agencies, universities or others is planned; in fact, the proposed studies complement each other.

This resource offers unique opportunities for close cooperation with private industry and local and State governments in the development of plans.

IMPACT OF AN OIL SHALE INDUSTRY ON ITS ENVIRONMENT

Objectives

1. To obtain solutions to problems arising from waste materials—especially air and stream pollutants—that will be produced in industrial oil-shale operations.
2. To devise and demonstrate economical methods of restoring mined areas and converting spent-shale dumps to attractive and useful grounds.