Alpine Satellite Development Plan
Final Environmental Impact Statement

Appendix J

Cost Estimates for Alternatives A, B, C, D, and F

The cost information in Table J-1 represents CPAI's best estimate of project costs at the present time. CPAI has provided additional financial information marked "Confidential" to support their costs estimates. Part 2, section 13(c)(4) of Title 43 of the Code of Federal Regulations exempts from disclosure requirements all financial information obtained from a person and privileged or confidential. The information provided by CPAI is thus unavailable for review or request under the Freedom of Information Act.

BLM has verified these cost estimates and related proprietary information. The relative differences between alternatives represent cost estimates for specific requirement changes. This is the only use of this cost information for which BLM has performed an analysis and these costs should not be relied upon for other uses.

TABLE J-1 COST ESTIMATES FOR ACTION ALTERNATIVES (IN MILLIONS OF DOLLARS)

Alternative	Construction	Drilling	Operations and Maintenance	Abandonment	Total
A	584	477	737	581	2,379
B	569	581	794	563	2,507
C-1	742	477	699	648	2,566
C-2	725	503	699	648	2,575
D-1	622	562	850	536	2,570
D-2	648	909	713	482	2,752
F	631	477	737	581	2,426

Source: CPAI 2003j

Notes:

1. The costs presented are based on current dollars rather than constant dollars. Cost estimates for 2003 have been escalated by 3% each year until the project year "expended," and have not been discounted. Thus, timing differences between alternatives result in changes for the cost of the same length of road or a wellpad in the same location. The cost of delay is incorporated into the numbers shown above.
2. Costs elements descriptions:
   a. Construction: All costs associated with surface plant/facilities and infrastructure, including process equipment, buildings, pipelines and VSMs, and mobile equipment. These costs are comprised of design and engineering, construction, and final check-out prior to startup of production.
   b. Drilling: All costs associated with drilling of wells including well permitting, designing, planning and executing drilling operations.
   c. Operations and Maintenance: All costs associated with operation and maintenance of facilities, wells, equipment, and infrastructure beginning with production startup and ending upon cessation of production.
   d. Abandonment: Includes cost of removal of all surface facilities, equipment, pipelines, VSMs, powerlines, and gravel. The estimate also includes cost of reseeding and reclamation of tundra disturbed by gravel. Well abandonment costs for the project, which would total approximately $108 million in current dollar terms, have not been included because such costs would be substantially similar economically across all EIS alternatives.

Major Costs

This subsection provides published or generally available approximations and rules of thumb. Overall, the Alaska Department of Revenue assumes that it costs an average of $3 per barrel to drill and build facilities on the North Slope (AK DOR, 2002), encompassing the construction and drilling costs presented in this appendix. These costs are averages for developments connected to the road system. Higher costs are expected for the Alpine satellites due to the remote location an small field sizes. They further report that Exxon put the cost of developing Point Thomson's 400 million barrels of reserves at $1.2 billion.

Construction

For all alternatives in this FEIS, construction will require ice roads as a first step. In 1997 these were estimated to cost $40,000 per mile (http://.aurora.ak.blm.gov/npra/sympos/html/paper3.html). CPAI states that the 1997 cost is for the ice road without related expenses, and the current cost is $100,000 per mile with all related costs from surveying to post-season cleanup (CPAI, 2004). Just the gravel for one mile of all-season road was estimated by CPAI to cost an average $1.1 million if hauled from the ASRC site outside of the NPR-A. These costs are included into the costs listed below.

Road construction requires a gravel bed elevated some five feet above the tundra, with areas of up to sixteen feet to maintain grade.. Costs for the North Slope estimated by AK Department of Transportation approach $2 million per mile, $200 million for a 102 mile road east of the Colville River to Nuiqsut (Petroleum News, 2003). There is no publicly available estimate of the cost of the Nigliq Channel bridge, however, a 3,200 foot bridge (approximately twice the length of the Nigliq Channel bridge) over the Colville River is estimated by AK Department of Transportation at up to $120 million. Construction and design for the 102 mile gravel road with the 3,200 foot bridge was estimated at $350-400 million to connect Nuiqsut to the Dalton Highway (Petroleum News, 2003).

Pipeline costs for the Onshore Location Alternative for the Liberty EIS were estimated at $2.8 million dollars per mile (MMS, 2002).The same MMS analysis estimated one onshore drilling and production site at $216 million dollars, based on a design developed from the Badami project, with an airstrip and dock.

Note that the cost of not building versus building the road is more than offset by the cost of building air and stand-alone facilities as well as ice roads for the additional years required to support construction, drilling, and production. In addition, the operation and maintenance costs are higher. Also, where a road is not built, the pipeline, with appropriate water crossings, are still necessary.

Drilling

In 1996, the Joint Association Survey on Drilling Costs estimated $2.4 million per onshore oil well in Alaska, excluding sidetrack wells (American Petroleum Institute, 1996). The survey of horizontally drilled wells in Alaska resulted in an average cost of $252 per total foot (true depth plus horizontal reach), or $3 million for a well with a true depth of 7,000 feet and a reach of 5,000 feet.

Operations and Maintenance

The AK DOR reported an estimated lifting cost at $2 per barrel of oil produced in 2002.. These costs are averages for developments connected to the road system. Higher costs are expected for the Alpine satellites due to the remote location an small field sizes.

Abandonment

This activity requires the reverse of the construction steps, without the cost of materials and facilities. For example, where pipe was hauled in and line constructed, it is now dismantled and the material hauled out. Abandonment of developed fields on the North Slope has yet to occur, so other sources of cost information are not available. The GAO report “Alaska’s North Slope: Requirements for Restoring Lands After Oil Production Ceases” (US GAO 2002) indicates that abandonment will cost billions of dollars for the operations built to 2001, but does not provide a per-well or pad estimate.