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WASHINGTON D.C. 20548

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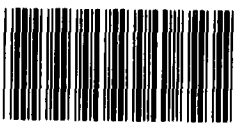
July 18, 1980

The Honorable Henry M. Jackson
Chairman, Committee on Energy
and Natural Resources
United States Senate



The Honorable Mark O. Hatfield
Ranking Minority Member
Committee on Energy
and Natural Resources
United States Senate

Subject: Oil and Gas Potential in the William O. Douglas Arctic Wildlife Range (EMD-80-104)

As you requested on June 10, 1980, supplemented by discussions with your office, we examined the Interior Department's study of the oil and gas potential of the William O. Douglas Arctic Wildlife Range in northeast Alaska to assure that all pertinent data is being provided to the Committee without modification or change.

We examined all data made available to us and spoke with people involved in the study. Unfortunately, our review was hampered by the Department's refusal to provide copies of all documentation. We were allowed to examine the data but were not given copies of pertinent reports and other documents.

We satisfied ourselves, however, that the data presented in Interior's July 10, 1980, report to your Committee accurately reflects the data developed by the experts in the Geological Survey, and that the experts were given full latitude in developing the information. In addition, the Survey's team followed the approach requested by your Committee, and--given the absence of any seismic (i.e., geophysical) or any subsurface drilling data on the Wildlife Range itself--did the best they could with what they had. Interior's public report on the results, however, is highly condensed and excludes certain data that would seem highly relevant in any assessment of the Range's oil and gas potential.

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assessing the NPRA under section 105(b) of the Naval Petroleum Reserves Production Act of 1976. Some of this data was run five or six times until the Committee felt comfortable with the output. Apparently no documentation was retained for any but the final run. There was also no documentation of each Committee member's personal input into each parameter or factor--only one overall consensus after the Committee was through deliberating. In addition, there were no minutes or other record of what transpired during the deliberations.

The computer calculated probabilities of the total oil and gas in place--as well as for each of the 10 areas--and also estimated the probabilities of pool size. The data was then provided to the Resource Appraisal Review Committee, composed of nine U.S. Geological Survey representatives, and assisted by three representatives from the Department of the Interior. There was no industry or State representation. We were told that the Interior Department members were concerned mainly with applying the computer program to the data and did not participate in the decisionmaking process. We were told the Review Committee's primary purpose was to subject the data to a rigorous review and cross-examination. The Review Committee re-ran the data twice in an attempt to further refine it.

ANALYSIS OF THE DATA

Your letter to us specifically asked whether any study data was changed as Interior's report to the Senate Energy Committee was developed. The answer is yes. Many changes were made along the way, some documented, and some not. Most Committee members felt they were aware of the changes and the rationale and were in agreement with them; however, some were not aware of the impact of the changes.

The changes did not appear to us to be a major redirection of the study (although some changes were significant); instead they were attempts by the Committees to refine the data's accuracy. For example, the main changes made by the Review Committee's re-running of the computer program were to acknowledge the possibility of more deposits of oil and gas, but they also reflected a reduction in the size of each prospect. Following are the results of each successive run:

The results of the Committees' efforts were a rather lengthy Geologic Assessment Committee report--about 45 pages--and a much shorter Review Committee report. These had not been finalized at the time of our review. We were allowed to look at the draft report, but were denied copies, so we are unable to provide copies to you.

Our analysis identified one factual deviation between these reports and Interior's July 1980 report released to the public. The deviation concerns the supposition included in Interior's report--as well as its news release--that only about 20 to 25 percent of any oil discovered in the Range might actually be recovered because it may be heavier than conventional crude oil. This, however, is not included in the Survey's reports nor supported by the Assessment Committee experts we questioned concerning this matter.

In addition--although not a change in the data--because of the condensing of Interior's July report, there was obviously considerable information in the Committees' reports that was not made public. The two most significant omissions we identified were (1) absence of the full range of confidence levels. These should have been provided in order to show the Committees' thinking of the entire range instead of just two points on the scale and (2) absence of data on pool size which significantly influences the economics of the situation. We copied this information by hand and it is presented in table 1.

The final drafts of the Committee reports were being circulated among the members for comment during the time of our review, and most members had not yet read them. Also, Interior's July 1980 report was released just as we were completing our work, so we were not able to obtain all Committee members' views on that report either. However, of the Committee members we questioned, most were reasonably satisfied with the estimates developed--although not satisfied with the Department of the Interior's news release downplaying the oil and gas potential of the Range.

Some Committee members were uncertain about the merits of the methodology used, which deviated in several respects from that generally used by the Survey. Most of the members we spoke with, however, were comfortable with the methodology. The basic methodology was developed by the Canadian Geological Survey and modified by the U.S. Department of the Interior. The approach used is more costly and time-consuming than the Survey's traditional approaches, but is considered desirable because

Table 2

Comparison of Oil and Gas Potential of NPRA and Wildlife Range

Probability that quantity is at least given value	NRPA		Wildlife range	
	Oil	BOE (note a)	Oil	BOE (note a)
100%	-	-	0	0
99	-	-	0	.33
98	-	-	.03	.49
97	-	-	.08	.61
96	-	-	.12	.75
95	1.04	2.08	.16	.86
90	1.35	2.66	.38	1.31
75	-	-	1.12	2.48
50	6.03	8.57	2.71	4.74
25	10.01	13.26	5.87	8.52
10	13.72	17.33	11.29	14.71
5	16.45	20.35	17.03	20.53
4	-	-	18.67	22.17
3	-	-	20.44	24.79
2	-	-	24.86	28.85
1	24.80	30.00	31.99	36.64
0	-	-	92.10	96.83

a/Billion barrels of oil equivalent; includes both oil and natural gas.

Source: Wildlife Range data was hand-copied by GAO personnel from computer data in Survey offices in Anchorage, Alaska, on July 11, 1980. NPRA data from the "Final Report of the 105(b) Economic and Policy Analysis," Department of the Interior, December 15, 1979.

Thus, the Survey's analysis of the Wildlife Range compares quite favorably with the NPRA in terms of the possibility of large, commercial-sized deposits.

Further, the Wildlife Range pool size was downgraded to the figures shown on the previous page by the Resource Appraisal Review Committee. To reflect the possibility of smaller pools, the number of drillable prospects was increased, but the size of each deposit reduced. Not all those we spoke with were aware that the pool size had been reduced with each re-run of the data. We assume that the deposit size was reduced to avoid unrealistically increasing the total resources in place. The changes in pool size with each successive run can be seen on table 1.

It was also pointed out to us by a Committee member that in addition to the potential for large deposits, the economic viability of the Wildlife Range is further strengthened by its relative nearness to transportation such as the Trans-Alaska Pipeline System.

CONCLUSIONS

The Committees convened by the U.S. Geological Survey to assess the oil and gas potential of the Wildlife Range consisted of an impressive body of expertise, and they appear to have been given full independence in performing their appraisal.

Changes were made, but they were made by the Committee members in an attempt to refine the data, and most of the Committee members we spoke with were satisfied with the estimates developed. It was also the view of most of those with whom we spoke that the Range has very high oil and gas potential--something not reflected in the Department of the Interior's news release on its study.

Given the absence of geophysical and exploratory drilling data, and after examining the full Range of potential developed by Survey's Committees, closing of the range to oil and gas exploration is not in our view supportable. On the contrary, the information developed by Survey Committees appears to support a decision for exploration to acquire more data before a decision is reached.

Finally, because Interior would not furnish us the data, we are unable to provide copies of the data generated by Interior supporting the study. We are generally aware, however, of what documentation is available and we will be glad to discuss it with you should you desire.

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