

PHOENIX CORPORATION

1000 ANDERSON ROAD, WHELAN, VIRGINIA 22182

(703) 790-1450 • TWX 710-833-0323



September 18, 1979

Ms. Sandra Wastler
Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Sandra:

I hope that the final report provides you with the necessary evaluation of the EDCON report. As I stated in that report we generally concur with their findings. However, it must always be remembered that magnetics is inherently ambiguous and the interpretation of such data is as much an art as a science. Thus there are some aspects of the data interpretation that could be reevaluated in the light of additional information. I'll attempt in this letter to answer the additional questions that you posed on some aspects of the magnetic data.

First of all I think that a southwesterly dip for the plate contact (or at least the serpentine bodies in the Decatur plate) is equally likely. This is more consistent with the structure of the isolated anomalies and their interpretation (e.g., Lyman Hill) and seems more geologically plausible as serpentine bodies are either absent or extremely deep (as evidenced by our Figure 1) in the area mapped as Shuksan. I was quite impressed with the team of John Whetten and Rick Blakely, and think that their combined expertise can best address this problem.

As far as the question of a fault in the Skagit Valley, it seems unlikely especially if it would be buried under only 1,000 feet of material. It is apparent that the Decatur is definitely not at that depth (if there, it must be extremely deep). If there is some other material there, say with a susceptibility contrast of .001 cgs units, then a fault with a 1,000 foot displacement would give considerable anomalies even at 2,500 depth (less displacement would produce less amplitude anomalies but not in direct proportion). Thus the likelihood of a fault in this area seems low but more strict bounds could be put on any hypothetical fault given the geological conditions and types of rocks involved. With such information the magnetic anomalies could be modeled.

1259 049

The B and B fault is a definite linear magnetic feature on the aeromagnetic map, but I concur with EDCON's finding that it is undoubtedly the trace of the plate contact (again if the Decatur were faulted in this region, the downthrown side would have to be quite deep). I guess I keep referring to the more magnetic province as the Decatur terrain. This is a result of having talked to Whetten and having examined the U.S.G.S. regional map. I think that it shows that this is a coherent unit and that the hypothetical B and B fault in the vicinity of the plant is simply the boundary between this highly magnetic unit and the less magnetic Shuksan. As I mentioned in our report it was disappointing that EDCON did not consider the U.S.G.S. data more.

I have some difficulty in answering your question about the Loveseth fault as we no longer have any of the data to examine. I remember our discussions about it and the mention of some modeling but I also think that something led us away from the necessity for doing such. I would have to see the data again to comment with any confidence on this. However, you might check to see if this is not associated with the Devil's Mountain fault zone, i.e., some contact or drag feature.

I hope these answers help in your deliberation. Please do not hesitate to call at any time (I'll try to be more accessible).

Sincerely,

PHOENIX CORPORATION

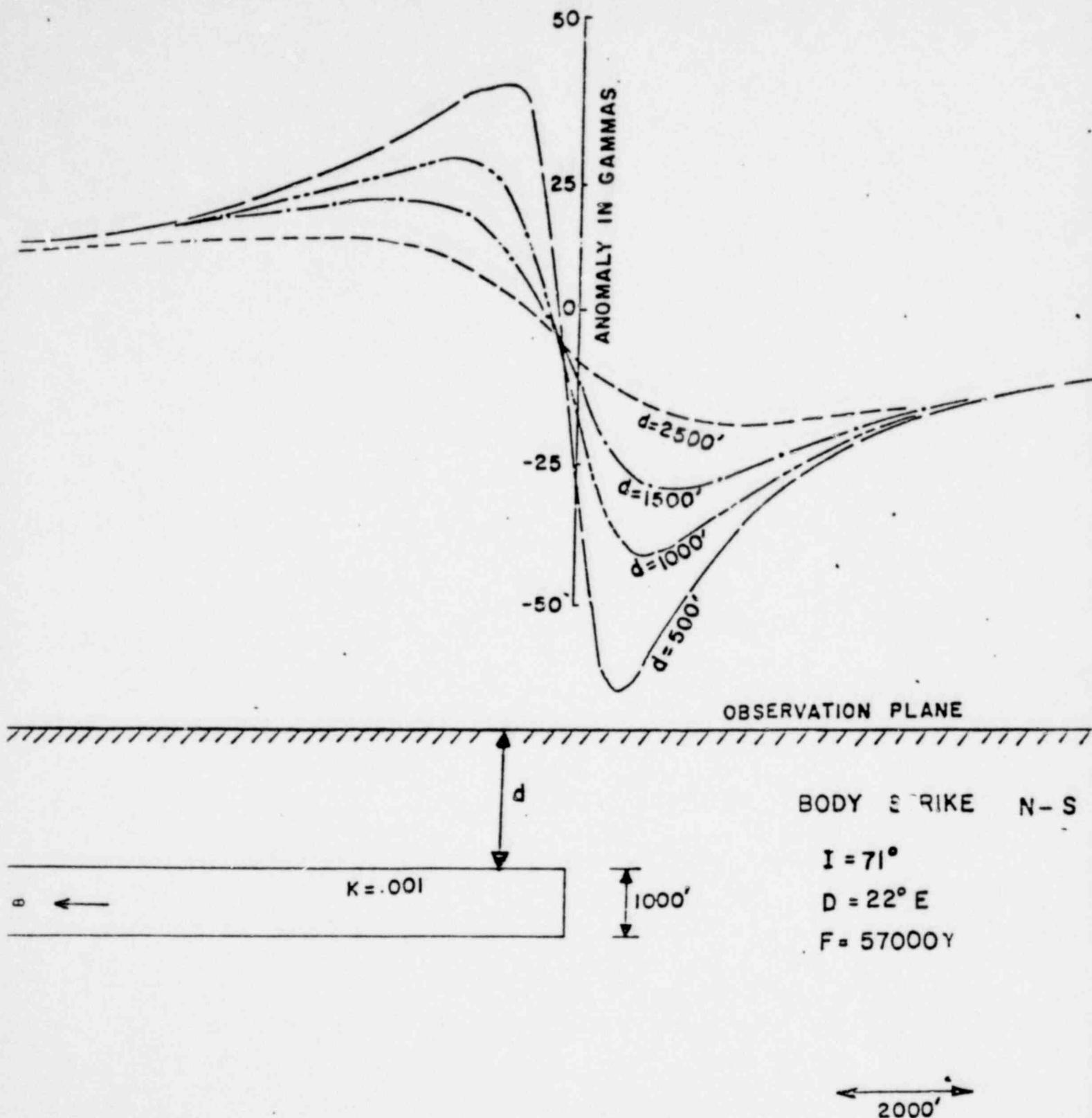
Robert D. Regan ^{KE}

Robert D. Regan, Ph.D.
Director, Earth Sciences Division

RDR:ke

Enclosure

1259 050



ANOMALY DUE TO A FAULT

1259 051