

Book G

1980 Notes on an Assessment of the 1970 Data

By
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The Notes pages appear to contain cursory assessments of the Wold-Crosby reflection seismic sections that were recorded in 1970 on Flathead Lake. The assessments appear to have been made sometime in early-to-mid 1980. The notes were written in pencil, and many of the notes were written on the backs of copies of university internal correspondence, which, probably, ended up as “scratch paper” on the author’s desk. The front sides of the original sheets can be easily read on the pages that are stored with the other surviving documents from the survey in the University of Montana, Maureen and Mike Mansfield Library, K. Ross Toole archive. The sheets of paper on which the notes were written are thin enough that, even in the scanned images, the text, including dates, on the original front sides of the sheets can be read by horizontally flipping the image in an image editor. [The Line B](#) notes are an example of this transparency.

The author of the notes is not known, but, based on a personal communication with Johnnie Moore, University of Montana Department of Geosciences emeritus faculty, during initial development of this archive around 2012, the notes could have been made by Anthony Qamar, who was a geophysicist on the faculty at the UM Department of Geosciences in 1980. The assessment of the data was apparently made in advance of a second seismic survey on the lake, i.e., the survey conducted by UM graduate student Jerry Kogan and described in his thesis ([Kogan, 1980](#)¹).

An example of the assessment and a hint that the assessment was part of the planning for a new survey can be seen in the notes for [Line P](#).

Line P

Prahl has sketched in a fault wherever the bedrock reflections slope down. Even where there are sediments above a “fault”, they don’t seem to show any offset. Should go over this area just to get a better look.

“Prahl” is Sidney Prahl, who was acknowledged by [Wold](#) (1982) and who was the co-author of the [Silverman](#) et al. (1971) map. The field recordings of Lines [O](#) and [P](#) are the only ones with significant interpretation lines drawn on them, though some other field recordings have the water bottom event interpreted, and some field recordings have two way times of some events indicated.

The notes page for [Line A](#) in this book is different from the rest. The sheet that was scanned in 2006 for the Line A notes file, which is in this book, is, in fact, headed with the label “Line A”, but it is a table of numbers not notes in the form of the rest of the notes pages. The Line A page also has coding that appears to be a Fortran format statement. One column of numbers is faint

¹ The date of the Kogan thesis is noted as 1981 in some places and 1980 in others. The 1980 date is carried by the University of Montana library through which the thesis is available [online](#).

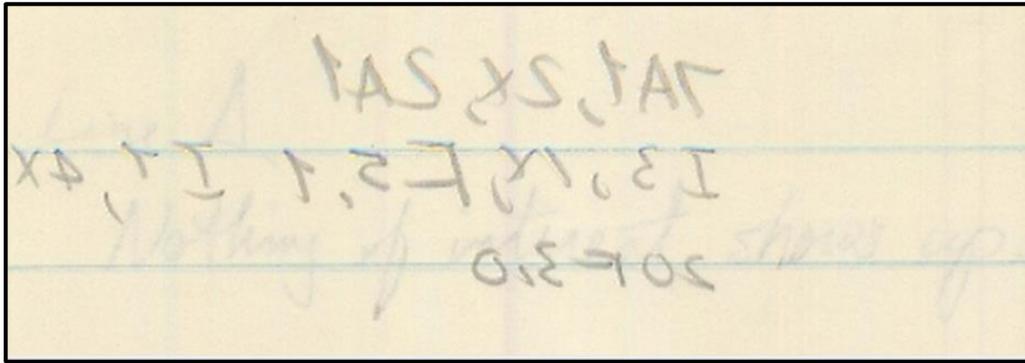


Figure 1. Line A note read through the paper. This image was made by horizontally flipping the image in Book G for the notes for Line A then zooming in on the upper left corner of the flipped image. This area turns out to be behind the code that appears to be a Fortran format statement. Though pale, the notes text “Line A Nothing of interest shows up” can be read.

and ranges from 0 to 16. These correspond to positions along the line that are marked on the [original field recording for line A](#). The second column of numbers is reflection time in milliseconds of some horizon, probably the water bottom.

The reverse side of the sheet with the table of numbers for Line A actually contains the notes on the assessment of the data from Line A (Figure 1). The actual note, which is in the form of all of the other notes in the collection, is, simply, “Line A Nothing of interest shows up”. Someday, when I am at the library, I will scan the real notes for Line A and add them to this book.

No notes are in the set of original documents for Line H. Similarly, the field recording, the redisplayed section, the bathymetry, and the cross section for Line H are missing. [Line H](#) extended westward across the lake from the survey crew’s base of operations at Yellow Bay, passed north of Wild Horse and Cromwell Islands, and ended near Dayton, MT. The notes for [Line G](#) hint that the Line H materials were in the set of documents at the time that the notes were written, i.e., early 1980. A comment in blue ink on the actual note side of the Line A sheet states “Line H missing 1-12-93” (Figure 2). This notation being in blue ink is clearly different from the Qamar 1980 notes that were written in pencil.

I have known of the notation regarding Line H being missing since the earliest days of assembling material for this archive. However, I only recently keyed on the fact that it was on what should have been scanned initially as the notes page for Line A.

Notes in blue ink and a handwriting style similar to the “1-12-93” date appear on the notes pages for Lines I, J, K, L, O, and S. All of the ink notations were probably written around that January 1993 date.

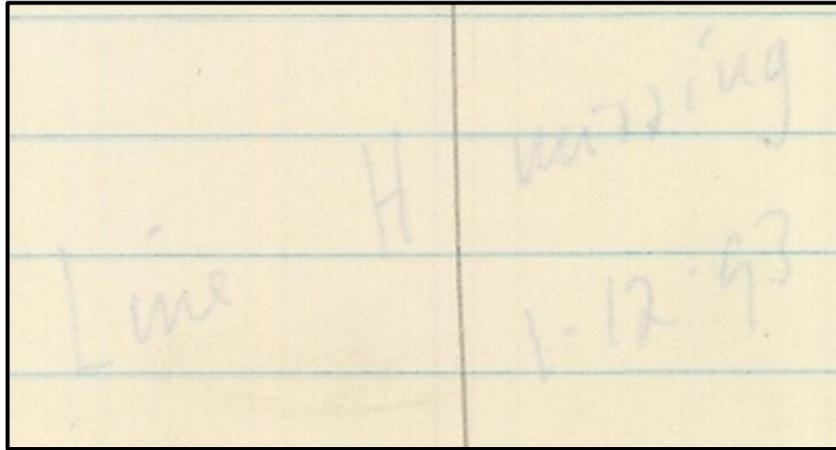


Figure 2. Notation regarding missing Line H documents. This image was made in the same way as Figure 1, i.e., flip image horizontally and zoom in on the area of interest. Notation is in blue ink though it is pale in this image. The bright blue color of the ink can be seen in the notes pages for Lines I, J, K, L, O, and S.

References Cited

- Kogan, J., 1980, A seismic sub-bottom profiling study of recent sedimentation in Flathead Lake, Montana: UM masters thesis.
- Silverman, A. J., Pevear, D. R., and Prah, S. R., 1971, Bathymetry of Flathead Lake, Montana: unpublished. (URL: <http://scholarworks.umt.edu/cgi/viewcontent.cgi?filename=2&article=1015&context=flathead&type=additional>)
- Wold, R. J., 1982, Reflection seismic study of Flathead Lake, Montana, USGS Miscellaneous Field Studies Map MF-1433: US Geological Survey. (URL: <https://pubs.usgs.gov/mf/1433/plate-1.pdf>)

Citing this Narrative

For “books”, i.e., the ScholarWorks term for a folder or a directory, ScholarWorks will display a Recommended Citation for the entire book. Some of the books (directories) in this collection have what ScholarWorks calls “supplemental material” (files). ScholarWorks does not suggest a citation for the individual files, and you may have occasions when you want a reader to be able to find exactly what you are talking about in your own work.

Therefore, I am suggesting a citation for this narrative. My suggested citation is in a little different form than the ScholarWorks form, but that is not critical. Every medium has its preferred format. The important components of a digital citation are the author(s), the title of the

work, the year of creation, the name of the collection in which the work appears, and the URL of the work. The following meets those specifications.

Lankston, R. W., 2023, "G. 1980 Notes on assessment of the 1970 data – narrative by Robert W. Lankston" in *1970 Flathead Lake Seismic Survey*. URL: <https://scholarworks.umt.edu/cgi/viewcontent.cgi?filename=1&article=1005&context=flathead&type=additional>

You can find the URL for my narrative by moving your mouse to the Download button next to the narrative title in the list of files for the book. Right click the mouse and, in the pop-up options box, choose to copy the link address. Then, the address is in your clipboard, and you can drop the text string of the address into your work.

I would suggest the same citation format and the same technique for capturing the URL of the supplemental files that form the heart of the content of this book. For the Line B notes, specifically, the citation could look like:

Qamar, A., 1980, "G. 1980 Notes on assessment of the 1970 data – Line B notes" in *1970 Flathead Lake Seismic Survey*. URL: <https://scholarworks.umt.edu/cgi/viewcontent.cgi?filename=3&article=1005&context=flathead&type=additional>

In this case, the author is who generated the notes, and the date is when the data were plotted. The author of the files, other than my narrative, is listed after the book title on the ScholarWorks page, and the year of creation is listed in the Date field below the list of available files. Those author and date fields are ones that I set when I enter the metadata for the book.

Feedback

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