

Public-data File 86-45

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS  
MONTHLY REPORT FOR SEPTEMBER 1977

By

Staff

Alaska Division of  
Geological and Geophysical Surveys

June 1986

THIS REPORT HAS NOT BEEN REVIEWED FOR  
TECHNICAL CONTENT (EXCEPT AS NOTED IN  
TEXT) OR FOR CONFORMITY TO THE  
EDITORIAL STANDARDS OF DGGS.

794 University Avenue, Basement  
Fairbanks, Alaska 99709

## RESOURCE INVESTIGATIONS

# MEMORANDUM

# State of Alaska

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff  
State Geologist

DATE: September 26, 1977

FILE NO:

TELEPHONE NO:

FROM: Gilbert R. Eakins  
Chief Mining Geologist

SUBJECT: Monthly report  
August 25 thru September 23

Was on vacation during the latter part of August and up till September 26.

STATE  
of ALASKA

# MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: ☐

Ross G. Schaff *RGS*  
State Geologist

DATE:

October 20, 1977

FILE NO:

TELEPHONE NO:

FROM:

Jim Riehle *JR*  
Geological Engineer

SUBJECT:

Monthly Report: September 1977

## A. Consultations

1. Federal: Bruce Molnia, USGS Pacific-Arctic Marine Geology Branch (sent package of raw data from last April's joint field investigations in Gulf of Alaska, to be included in report on coastal geologic hazards; follow-up phone call from Molnia to discuss data).
2. State: DNR Planners (meeting of all DNR personnel working on Coastal Zone, to report on progress of various projects; Finley and Riehle attended for DGGs, reported on Kenai Peninsula geologic hazards report, Prince William Sound and Gulf of Alaska geologic hazards report, and "Areas of Particular Concern" report).
3. Other: Frank Mielke, Kenai Borough; (provided available data and reports on geologic hazards studies, Kenai Peninsula area; will send copies of Riehle-Reger-Carver report, and McGee Geologic Report on Water Salinities.

## B. Conferences

None

## C. Research

1. Completed Kenai-English Bay coastal hazards report with Reger and Carver. Main geologic hazards are: (1) mass wasting all along Lowlands coast and locally south of upper Kachemak Bay; (2) large slumps (landslides) near Homer, SE of Sheep Creek, and near Seldovia on coast; (3) tsunami hazard in low areas immediately adjacent to the coastline; (4) avalanches in Kenai Mountains between Sheep Creek and English Bay; (5) direct and secondary effects of large earthquakes occurring outside of Lower Cook Inlet, as well as within; recurrence analysis suggests that a magnitude 8 earthquake could occur within the Cook Inlet area once every several hundred years, and a magnitude 7 event about once in 75 years.
2. Began final compilation of surficial geology map of eastern Prince William Sound.
3. Undertook, with Bill Long, preliminary investigation of limits of flooding from old highway bridge and downstream, during past Lake George breakout floods on Knik River. No breakouts have occurred since 1966 and subsequent land developments have begun to spread into what we think may be the old flood plain.

October 20, 1977

4. Finley and I have identified some 20 areas of particular concern from the statewide coastal zone, based on documented geologic hazards. One basis for defining such areas is degree of present or pending developments; thus, not all known hazardous areas of the coastal zone are automatically included.

D. Reports

1. Completed "Surficial Geology and Geologic Hazards of the Coastal Zone from Kenai to English Bay" with D. Reger and C. Carver (individual report).
2. Completed and released for publication "Photointerpretation Map of Surficial Geology of the Coastal Zone from Fox River to English Bay, Alaska" (AOF-110).

STATE  
of ALASKA

# MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: ☐

Ross G. Schaff  
State Geologist

DATE:

FILE NO: \* October 24, 1977

TELEPHONE NO:

FROM:

Steve Hackett  
Geophysicist

SUBJECT:

Monthly Report: September 1977

*SHH*  
*\* written 9/26/77*

## A. Consultations

Agency	Date	Topic	Results
1. USGS (Mayfield)	9-1-77	Ambler River quad. AMRAP report	Report format review and deadlines
2. ADGGS (Reger)	9-6	Geologic Hazards (Avalanche)	defined needs and study areas
3. USGS (Ovenshine) ADGGS (Schaff)	9-13	Wiseman aeromag. contract	joint project to acquire regional geophysical data in central Brooks Range
4. ADGGS (Conwell)	9-19	Purkey-pile project	integrated field data and outlined report goals
5. ADGGS (Dillon)	9-26	Wiseman project	plotted up locations and sample description for physical property determinations.
6. ADGGS (H. Potrowski) UAF (D. Stone)	9-26	College Lab (geophysics)	outlined goals, equipment needs and agreement to expand lab capabilities.

## B. Research

1. Alaska Peninsula geophysical:
  - began reducing 1977 field data
  - compiling regional geology over study area
  - integrating and reprocessing 1974 gravity data
2. Brooks Range geophysical:
  - began reducing 1977 field data
  - moderating aeromagnetic contract while being processed through Department of Administration
  - continue processing and interpreting Siniktanneyak Mtn. gravity data and rock samples
  - indexed 1977 rock samples for physical property determinations

October 24, 1977

3. Talkeetna-Kashwitna-Susitna geophysical:
  - integrating USGS gravity data and ADGGS 1976 data --- plan to open-file maps and tabulated values.
4. N. Flank Alaska Range geophysical:
  - integrating USGS gravity data (Healy quadrangle)
  - need to reduce 1977 geophysical data
  - processing and interpreting ground magnetic survey (Purkey-plle project)
5. Geophysical computer project
  - continue working with Mike Lee, computer analyst
  - need computer programmer to adapt geoscience subroutines and establish program library
6. Geologic hazards (avalanche)
  - literature review
  - defining project areas and priorities for mapping through D. Reger
  - preliminary indexing of available air photos along Seward Hyw.
- C. Miscellaneous
  - attended a few session during the Alaska Science Conference Captain Cook Hotel, Anchorage September 22-24.
  - Defense Mapping Agency requested that G-108 LaCoste Rhomberg gravimeter be returned --- due to an urgent requirement for use on a high-priority DoD project.
  - need assistance in computer programming --- to adapt geoscience (geology and geophysics) subroutines to State of Alaska and U of A Anchorage Node Systems.

## MEMORANDUM

## State of Alaska

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff  
State Geologist

DATE: September 26, 1977

FILE NO:

TELEPHONE NO:

FROM: Richard D. Reger *RR*  
Geologist

SUBJECT: Monthly report  
August 26 thru September 23

A. I was involved in the following consultations during the period August 26 thru September 23, 1977:

1. (8/29) - Discussed radiocarbon dating laboratories with Ron Bruun, University of Utah.
2. (9/8-9/14) - Talked with Peter Hanley, Dames and Moore Consultants, re status of mapping in the Susitna River basin and the southern Kenai lowlands.
3. (9/20) - Discussed status of surficial mapping in south-central Alaska with Neal Michaelson, BLM.
4. (9/21) - Discussed mapping of surficial deposits in the new capital site with Dick Moorhouse, Capital Site Planning Commission.

B. I conducted research on the following project during the period August 26 thru September 23:

1. Mapping surficial geology of southern Kenai lowlands.

C. Status of reports and publications.

1. Photointerpretation of the southern Kenai lowlands is completed and the transfer of data to mylars is 85% completed. Three maps will be published as AOF-112 next month.
2. Spent considerable time critically reviewing the Benson/Motyka report on the volcanic hazards of Mt. Wrangell and vicinity. A great deal of polishing and reorganization are necessary before the report is ready for publication.
3. Klenle/Johnson have completed a draft of their report on the volcanic hazards of Augustine Volcano. The manuscript is being reviewed by the USGS and their final report should be submitted to us for publication in 2-3 weeks.
4. Starting initial editing of landform atlas by Kreig/Reger. Plates are all drafted and most of the figures completed.

D. Miscellaneous

1. (9/2-9/5) - With Paul Metz of MRL, University of Alaska, led a field trip to the Atigun Canyon area on the north side of the Brooks Range. Participants were mostly faculty and students of the Geology Department, University of Alaska, Fairbanks.
2. No word yet on my acceptance to the National Avalanche School given by the U.S. Forest Service at Reno, Nevada from October 31 thru November 4.



3. Jeff Kline and Cheri Carver are continuing their mapping of the Hatcher Pass area. Jeff is inventorying the field equipment.
4. (9/16) - Jeff Kline and Tom Bundtzen went to Banner Creek (Richardson district) to field check a map for the Short Notes article by Bundtzen/Reger and collect more data.
5. (9/19-9/22) - Jeff Kline and Tom Bundtzen made a short field excursion to Lake Clark to collect additional field data.

## MEMORANDUM

## State of Alaska

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF GEOLOGICAL &amp; GEOPHYSICAL SURVEYS

TO: Ross G. Schaff  
State Geologist

DATE: September 26, 1977

FILE NO:

TELEPHONE NO:

FROM: Thomas K. Bundtzen *TKB*  
Mining Geologist

SUBJECT: Monthly report  
August 26 thru September 23

Work accomplishments

1. (9/3-12) - Annual leave, moose and sheep hunting.
2. (9/13-15) - Corresponded with W. Gilbert on need to continue this years programs, at least partly through next summer, pending approval. Discussed field findings with J. Dillon and others; began organization of this year's data.
3. (9/15-16) - Reviewed Short Note contributions by Paul Metz and Motyka for Frank Larson.
4. (9/19-22) - Prospect examination on Lake Clark as part of Lake Clark land assessment project.

Correspondence with government agencies

1. (9/23) - Discussed recent uranium anomalies released by USBM with Karen Clautice and others; apparently no "hard rock" discoveries have yet been found in the area outlined in their report.

Correspondence with public

1. (9/20-22) - Howard Bowman, prospector on Lake Clark, about past production and mining methods used on Portage Creek.
2. (9/23) - Louis Fenton about gold deposits in "headwaters that never thaw."
3. (9/16) - Gil Monroe about samples he brought in for analyses from his mining properties near Delta Junction.

## MEMORANDUM

## State of Alaska

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYSTO: Ross G. Schaff  
State Geologist

DATE: September 26, 1977

FILE NO:

TELEPHONE NO:

FROM: John Dillon  
Mining GeologistSUBJECT: Monthly report  
August 26 thru September 23

## A. Consultations

<u>Agency</u>	<u>Date</u>	<u>Topic</u>	<u>Results</u>
U.S. Geol. Survey	9/1-9/20	Series of consultations w/ Tom Owenshine and Bill Silberman to obtain funds for a co-operative zircon dating program.	USGS promised funds for dating 8 zircon separates. Joint tenancy of data required.
University of Calif. at Santa Barbara	9/15	Consulted w/Dr. George Tilton to see if his lab could date the zircon separates by U/Pb methods.	He agreed to date 8 zircon separates at <u>about</u> \$500 per separate.

## B. Research

1. Completed summer field research program at Crevice Creek in the Brooks Range.
2. Spent a month working out Ernie and Wild Lakes with co-operative helicopter support from the U.S. Geological Survey.
3. Began processing rocks for trace element and major oxide analyses, thin section, and age dating.

## C. Report and publications

1. Completed drafting for short note paper on seismicity in the western Gulf of Alaska.

## MEMORANDUM

## State of Alaska

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff  
State Geologist

DATE: September 26, 1977

FILE NO:

TELEPHONE NO:

FROM: Wyatt G. Gilbert *WG*  
Geologist

SUBJECT: Monthly report  
August 25 thru September 25

A. Consultations

1. State

<u>Agency</u>	<u>Date</u>	<u>Topic</u>	<u>Results</u>
1. DGGG	9/12	Met with State Geologist in Anchorage office to discuss budget.	

II. Federal - none.

III. Other

1. Robert Blair	9/23	Discussed mineral potential of Paleozoic rocks in Alaska.
2. Getty Oil		

B. Conferences - none.

C. Research

1. Accomplishments

1. Cataloged specimens from 1977 field season.
2. Map compilation of Alaska Range data.

D. Status of report & publications

1. Geologic report #50 - - published.

STATE  
of ALASKA

# MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

TO: ☐

Ross G. Schaff ✓  
State Geologist

DATE:

October 17, 1977

FILE NO:

TELEPHONE NO:

FROM:

Mark Howland *MH*  
Geologist I

SUBJECT:

Monthly Report:  
August 25 - September 25

## A. Consultations

1. Discussed lake data for Prudhoe Bay area with Brent Petrie, DNR (8-29-77).
2. Discussed Prudhoe Bay project with Brent Petrie, DNR (9-12-77).
3. Discussed field equipment with USGS, Anchorage Subdistrict (9-15-77).
4. Discussed ground-water modeling of North Kenai area with USGS (9-13-77).

## B. Status of Reports and Publications

1. North Kenai open-file: Revised report sent to USGS, Menlo Park regional office for further review. Frank Larson has edited the report.
2. Prudhoe Bay report: Hydrologic summary section written. Section sent to Randy Updike for review and merging with main text.

## C. Research

1. Started initial ground-water modeling of North Kenai area with USGS. reviewed computer manual and started test runs.

## D. Miscellaneous

1. On leave 8-30 to 9-2.

## PUBLICATIONS

## MEMORANDUM

## State of Alaska


DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff  
State Geologist

DATE: September 26, 1977

FILE NO:

TELEPHONE NO:

FROM: Frank Larson   
Publications Specialist

SUBJECT: Monthly report  
August 26 thru September 23

Progress for the month of September 1977 includes the following.

#### EDITORIAL

- Pasted up Mines & Geology Bulletin.
- Edited and pasted up Geologic Report 55, "Short notes on Alaskan Geology."
- Wrote PO for printing of Energy Resource map.
- Continued edit on Geologic Report 48, "Geology of Craig A-2 quadrangle" (Herreid, Bundtzen).
- Wrote press release for ERTS map.
- Reedited Special Report 8, "Chignik coals" (Conwell, Triplehorn).
- Edited AOF-112, "Water-table aquifer of North Kenai" (Howland).
- Edited AOF-114, "Kodiak source-rock potential" (Lyle, Palmer).
- Edited Geologic Report 59, "Mount Galen Volcanics" (Gilbert and others).

#### TYPING

- Typeset Mines Bulletin.
- Typed rough drafts of Geologic Report 55.
- Typeset contributions for same.
- Typed letters and memos.
- Typeset legends for Energy Resource map.
- Typed rough draft of Special Report 8.
- Filled requests for publications.
- Miscellaneous xeroxing, errands.

#### CARTOGRAPHY (College)

- Completed artwork for Geologic Report 55.
- Continued work on Energy Resource map.
- Miscellaneous errands.

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DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

Monthly Work Report

Month of September 1977

	Fairbanks	Anchorage	Juneau	Ketchikan	Total
1. Visitors	196	173	35	81	485
2. Annual reports	6	5	5	0	16
3. Miscellaneous papers	2	73	4	0	79
4. Miscellaneous publications	8	54	4	34	100
5. Requests for information received by mail	83	55	40	1	179
6. Requests for information received by phone	10	144	21	43	218
7. Rock samples	13	0	0	0	13
8. Bibliographies	1	5	0	6	12
9. Geologic & Geochem reports	38	143	0	7	188
10. Information circulars	109	160	63	37	369
11. Laboratory notes & reports	1	18	8	0	27
12. Aeromag maps	60	7	0	0	67
13. Special reports	1	12	7	1	21
14. Alaska Open File Reports	24	13	2	0	39
15. Letters	0	1	9	6	16
16. Monthly Mines Bulletin	2,812	0	13	3	2,828
17. Xeroxing (pgs.)	0	386	500	0	886
18.					
19.					
20.					



MINERAL LABORATORY

# MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

## State of Alaska

TO: Ross Schaff  
State Geologist  
Anchorage

DATE: September 29, 1977

FILE NO:

TELEPHONE NO:

FROM: Henry Potworowski *HSP*  
Minerals Lab Supervisor  
College

SUBJECT: Monthly Report - September 1977

1. The full rock analysis capability has been finally achieved. Nam Veach can now determine  $H_2O+$  and  $CO_2$ . A memo to this effect is being sent to all geologists.
2. The "letter of interest" from ERDA, requesting us to analyze 2,000-2,500 samples of rock and sediments for uranium and thorium has finally arrived. Several additional requests by Bendix indicates that a slightly revised cost sharing estimate is in order. I have discussed that with Richard Tobias, subcontract administrator for Bendix, and he fully agrees. Gil Eakins is preparing an updated contract proposal which should be in the mail today.
3. Dave Stone, Steve Hackett and myself have talked over the possible upgrading of Stone's lab with equipment purchased by the state (FY79) but as yet, no firm basis for a possible contractual relationship has been arrived at.
4. Personnel matters going on smoothly and no visible problems for now.

# DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

## WEEKLY LABORATORY WORK SUMMARY

for the week of 9-1 to 9-16

	Public** Samples	Determin- ations	Division* Samples	Determin- ations
Backlog from last week	228		551	
Submitted during week	0		0	
Completed during week	0	0	126	914
Cumulative completed since January 1	605	7,367	1,364	6,512
Backlog at end of week	228		425	

Remarks:

Signed Mona J. Bector Date September 16, 1977

\*Division and other samples or special investigations not formally reported.

\*\*Individual determinations, including optical emission spectrography, X-ray diffraction and emission, microscopic work, etc.

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

WEEKLY LABORATORY WORK SUMMARY

for the week of 9-19 to 9-30

	Public** Samples	Determin- ations	Division* Samples	Determin- ations
Backlog from last week	228		425	
Submitted during week	126		84	
Completed during week	109	1,515	0	0
Cumulative completed since January 1	714	9,882	1,364	6,512
Backlog at end of week	245		509	

Remarks:

Signed

Monag Bector

Date

September 30, 1977

\*Division and other samples or special investigations not formally reported.

\*\*Individual determinations, including optical emission spectrography, X-ray diffraction and emission, microscopic work, etc.

## REGULATION AND INFORMATION

# MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF GEOLOGICAL &amp; GEOPHYSICAL SURVEYS

## State of Alaska

TO: Ross G. Schaff  
State Geologist

DATE: September 26, 1977

FILE NO:

TELEPHONE NO:

FROM: Cleland N. Conwell  
Mining Engineer

SUBJECT: Monthly report  
August 26 thru September 23

### A. Consultations

<u>Agency</u>	<u>Date</u>	<u>Topic</u>
I. Federal		
1. Environmental Protection Agency (Martin Mitchell)	9/8	Conference on coal research.
2. Environmental Protection Agency (Martin Mitchell, Douglas Lowery of Fbks., John F. Martin, Jack Hubbard of Cincinnati)	9/13	Held conference on land reclamation on new strip mine bill. Others attending were E. Wolff and P.D. Rao of University of Alaska, and J.C. Barker of USBM.
3. USBM (Robert Bottege)	8/3	Requested assistance in a reply to a request to Rep. Seiberling - (re D-2 lands).
II. State		
1. Div. of Land & Water Management (L.W. Brys)	8/25	Mined land reclamation.
2. Div. of Energy & Power Development (Gene Rutledge)	8/29	Re: Geothermal.
3. Div. of Land & Water Management (L.W. Brys)	9/7	Re: Foreclosure of B & R bond and use of money for reclamation.
4. Div. of Energy & Power Development (Terry Dale)	9/8	Re: Alaska coals.
5. Div. of Energy & Power Development	9/20	Re: Coals north of Alaska Range.

### III. Other

1. ARCO (Gary Player) 9/9 Tonzona coal field. Coal exploration.

### B. Conferences

1. September 22 and 23 - Alaska Coal and the Pacific - Workshop.

### C. Research

1. Energy in Alaska
2. Review field work - Talkeetna (D-5) quadrangle.
3. Status of Opp's and Cpp's.
4. (Library) offshore mining.

### D. Status of reports

1. State energy resource map - preparing final draft.
2. Chignik-Herenden Bay coals - Don Triplehorn reviewing.

3. History - Past, Present, and Future of Offshore Mining in Alaska - draft prepared.

E. Mine Inspection

1. Usibelli - - September 7 - Coal mine.
2. B & R - - September 7 - Abandoned coal mine.

F. Other

1. Reviewing the federal strip mining bill.

DIVISION OF GEOLOGICAL SURVEY  
MONTHLY CENTRAL RECORDING WORK SUMMARY  
For Period Ending 9-26-77

	Claim Loc. Notices		Affidavits of Labor		Deeds	Misc.	Total	
	Doc.	Clms	Doc.	Clms	Doc.	Doc.	Doc.	Clms
Backlog	10	10	2	2	10	44	66	12
Received	1,445	1,445	184	1,250	30	195	1,854	2,695
Processed	1,452	1,452	184	1,250	19	234	1,889	2,702
Backlog	3	3	2	2	21	5	31	5
Cumulative Received Since Jan. 1	8,065	8,065	501	6,650	203	724	9,493	14,715
Cumulative Processed Since Jan. 1	8,130	8,130	629	8,789	217	724	9,700	16,919

REMARKS:

Processed 1,889 mining claim documents and distributed reports and miscellaneous activities as per attached listing.

Carole - personnel work and delivery orders.

Mona Rector was out of state September 5 thru 21, Carole and I answered telephone and distributed information and reports during her absence.

Had 15 visitors in Friday who indicated they were going up to stake the "uranium discovery" in the Mt. Prindle area, Circle quadrangle. The U. S. Bureau of Mines had a news release last week regarding this and caused quite a bit of excitement in town. Jim Barker of the Bureau of Mines said he had handed out about 90 copies of their open file report on Friday.

Signed   
Mining Information Specialist



Mining Information Section

9-26-77

Requests answered:

Mail

Telephone

3

38

Distribution:

Information  
Circulars

Reports

20

Geologic

Geochemical

6

Miscellaneous

Xeroxing 293 pages

Number of Visitors 135