

## DIVISION OF COMPLIANCE

Memo Route Slip

Action Information Concurrence Review  
 Comment Note & Return Per Our Telecon File

R. W. Kirkman Region I		
J. G. Davis Region II		
R. C. Hageman Region III		
D. I. Walker Region IV		
R. W. Smith Region V		
Glen D. Brown Region IV	X	

SUBJECT: ATLAS MINERALS, DIVISION OF ATLAS CORPORATION, P.O. BOX 488, MOAB, UTAH - SOURCE MATERIAL LICENSE NO. R-161 (DOCKET NO. 40-3453)

Reference is made to your memorandum to me dated December 2, 1966, above subject, concerning the analytical procedures employed by the licensee. I have spent considerable time reviewing the license files, the CO files, the analytical procedures, etc., and I have the following comments:

1. This question was first raised on page 10 and in the memorandum of transmittal of an inspection report dated March 6, 1963, prepared by Roger Woolsey. The differences in the analyses for radium were a factor of about 5-6, for thorium a factor of about 50-70, and for uranium there was no appreciable difference. A review of both CO files and the license files reveals that no one questioned these differences, although it was brought to the attention of both SLR and DML.

2. As you know, the licensee has an exception from Part 20 for the discharge of liquid effluents into the unrestricted areas, provided they abide by certain procedures, one of which is a letter dated October 11, 1962. This October 11, 1962 letter had 11 exhibits attached, one of which outlined the licensee's procedures for the analysis of radium, uranium and thorium. I reviewed these procedures and found that they do not speak to any filtering process before treatment. In fact, they follow pretty closely to the step-by-step procedure set forth on page 12 of "Determination of Radium 226 and Thorium 230 in Mill Effluents" by Ebersole, Harbertson, et al, dated October 1959. In short, the licensee has not violated any of the procedures to which he is bound.

(continued)

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DEC 16 1966

FROM:

Jack R. Roeder, CO:HQ

DATE:

20.22 H-3-d

3. With regard to the 592 notes which accompanied your memorandum to me, there appears to be a discrepancy in both the second page of Exhibit B (memorandum dated May 21, 1965, Woolsey to Page) and paragraph 34 of the 592 notes. Both refer to the acidification of the samples prior to filtration with "2% HCl." Page 9 of the document referenced in paragraph 2 above calls for the addition of "sufficient concentrated nitric acid (emphasis added) to make the sample 2% acid by volume." I am pointing this out only because later in the May 21, 1965 memorandum it is stated "We prefer the ID technique because it is our opinion that 'solubility' is defined as being soluble in human body fluids and acidification with dilute HCl would be more representative of the process which takes place in the human gut." I assume this is the definition of solubility which is mentioned in your December 2, 1966 memorandum to me. I believe there is a big difference between acidification with 2% HCl and the addition of concentrated  $\text{HNO}_3$  to make the sample 2% acid by volume. Furthermore, it appears that the reason for acidification is not to approximate what happens in the gut, but rather to assure that the sample contains the radium which might be expected to be redissolved under conditions different from those at the point of sample collection.
4. I also reviewed Exhibit A of the 592 notes (your memorandum to Paulus dated December 9, 1964) and discussed it with Lee Rouse. The difference between column 1 and 2(a) for the radium analysis is only a factor of about 2.5, and for the thorium analysis is practically insignificant. This leads me to believe that the addition of the nitric acid made no appreciable difference.
5. Section 20.106(d) states that the limits of Appendix B apply at the boundary of the restricted area or at the point where the material leaves a conduit. Hence, the limit for soluble radium must be applied to the material sampled at that point. If it could be shown that (1) a portion of the insoluble radium released was subsequently redissolved in the river; (2) the redissolution process measurably increased the radium concentrations in the river; and (3) the ID acidification technique accurately reflected the degree of redissolution, then we might have a case for specifying particular analytical procedures. In the absence of such information, however, we see no reason for questioning the licensee's analytical technique.

(continued)


6. Finally, after reviewing the entire file, I can't get too concerned over the releases of effluents by this licensee. It appears that they have been within the limits of their license without taking any credit for the large volume of flow in the Colorado River. I note that paragraph 37 of the 592 notes states that independent samples were taken. I would be interested in the results. Unless these are significantly different from the licensee's results, I am considering the matter of the differences in analysis techniques closed.

cc: R. G. Page, SLR

REGION IV REPORT ROUTE SLIP

20.106 (a)

Atlas Minerals                      Smith  
 Licensee                                      Inspector  
R-161                                      11/9-10/66  
 License No(s).                              Date of Inspection

Phase	Submitted	Begun	Completed
Report Writing or Recording		11/21	11/23
Typing Draft	11/23	11/23	11/23
Inspector's Review		11/25	11/26
<del>Return</del> Reviewer	11/25	11/30	11/30
*Inspector Revising			
*Reviewer			
*Other			
Final Typing		11/28	11-28
Inspector Read & Sign			
Reviewer or Director Sign			
Date Transmitted	DEC 2	1966	

\*When Applicable.

592



PART 1

Inspector: SMITH, G.H.

Date of Inspection: 11/9-10/66

Licensee: Atlas Minerals  
Division of Atlas Corp.  
P.O. Box 488  
Moab, Utah

Address: \_\_\_\_\_

License No.: R-161 (Docket # 40-3453)

II:

AEC-591 \_\_\_\_\_

A. Clear case (Initial/Reinsp) \_\_\_\_\_

B. Clear case (F/U of 592) \_\_\_\_\_

C. Noncompliance case \_\_\_\_\_

III:

AEC-417 \_\_\_\_\_

A. Immediate Public Health and Safety  
Threat \_\_\_\_\_

B. Expenditure of more than nominal sum  
for compliance \_\_\_\_\_

C. Excess of 90 days appears necessary  
to achieve enforcement \_\_\_\_\_

D. N/C items of particular  
complexity \_\_\_\_\_; Licensing  
problems \_\_\_\_\_; Requires  
Headquarters interpretation \_\_\_\_\_

E. Appropriate for "Notice of Alleged  
Violation" \_\_\_\_\_

F. Uncorrected previous noncompliance  
\_\_\_\_\_

G. Other \_\_\_\_\_

IV:

AEC-592 Yes

A. Involves nonsignificant risk Yes

B. Involves significant risk \_\_\_\_\_

PART 2

I-II  
R(3)

Date Dispatched DEC 2 1966

Suspense Date \_\_\_\_\_

V and VI:

1. Adequate reply received from licensee:

\_\_\_\_\_; Copy to L&R for info \_\_\_\_\_  
(Date)

2. Inadequate reply received from licensee:

Forwarded to L&R for action \_\_\_\_\_  
(Date)

3. No reply received from licensee and  
forwarded to L&R for action \_\_\_\_\_

Note: If F/U is made on No. 1, 2, or 3  
above, check a. or b. below:

a. F/U shows satisfactory corrective action:

cy AEC-591 to L&R for info \_\_\_\_\_

TWX report to L&R \_\_\_\_\_

b. F/U shows incomplete corrective action:

TWX report to L&R \_\_\_\_\_

VII:

ELAPSED DAYS INFO:

No. of days from date of Inspection to  
issuance of AEC-592:

10 or less \_\_\_\_\_; 11 to 15 \_\_\_\_\_; 16 to 20 \_\_\_\_\_;

21 to 25 \_\_\_\_\_; over 25 \_\_\_\_\_

From issuance of AEC-592 to licensee reply:

20 or less \_\_\_\_\_; 21 to 30 \_\_\_\_\_; 31 to 40 \_\_\_\_\_;

over 40 \_\_\_\_\_

From Inspection date to date of F/U Inspection:

20 or less \_\_\_\_\_; 21 to 40 \_\_\_\_\_; 41 to 60 \_\_\_\_\_;

61 to 90 \_\_\_\_\_; 91 to 120 \_\_\_\_\_

VIII:

Additional follow-up by agreement with L&R  
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