



THE STATE OF WYOMING

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ED HERSCHLER
GOVERNOR

Department of Environmental Quality
Water Quality Division

HATHAWAY BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

November 5, 1976

Distribution Officer, WH-552
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Subject: Onshore Segment of the
Oil and Gas Extraction
Point Source Category

Dear Sirs:

I have had the opportunity to review the regulations adopted October 13, 1976, entitled, Onshore Segment of the Oil and Gas Extraction Point Source Category. The State of Wyoming has several sharp disagreements with the content of these regulations and suggests that the regulations be modified to incorporate the items described below:

1. The Division believes that prohibition of discharge, except when beneficial agricultural use is shown, is unreasonable because:
 - a. In arid areas one of the most important beneficial uses of produced water is for wildlife watering. Under the Federal regulations this is not recognized. Under the Federal regulations it is likely that a large number of water sources which are extremely important to wildlife would have to be eliminated. The "Beneficial Use" sub-category should be modified to allow discharges to continue when the State wildlife management agency indicates that the discharge is beneficial to fish and/or wildlife.
 - b. We are confident that almost all produced water discharges in this State are used beneficially, either directly or after entering a natural water course. It is unclear under the Federal regulations whether a claim of beneficial use by a water appropriator would be accepted if the only result of the produced water discharge was to augment flow in a natural stream. To address this question, I suggest that

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it be assumed the water is beneficially used as long as it meets basic chemical quality criteria (see our proposed regulations, Section 4). In those cases where the discharge does not meet the basic chemical quality conditions but beneficial use is shown, variances on a case by case basis should be granted.

- c. In the proposed Federal standards for new sources, it is difficult to understand how beneficial use will be shown before the discharge even begins. Permits for new sources must be issued prior to commencement of the discharge. I would suggest that the more logical approach would again be to establish basic chemical effluent limits. Any new discharge which meets these limits would be allowed to discharge, any that did not would not receive a permit.
2. The Division believes that the EPA effluent limitation on oil and grease of 45 mg/l is much too high and proposes 10 mg/l as a more desirable number.

The 10 mg/l limitation has always been used in Wyoming, even before creation of the DEQ. It is felt that at concentrations above 10 mg/l a "sheen" will begin to appear on the water but that at below 10 mg/l no sheen will appear. However, this rule does not always apply. For example, if the oil is highly emulsified, often no sheen is visible, but the oil and grease content may be well over 10 mg/l. Because the 10 mg/l limitation was based on a subjective (appearance of a sheen) rather than scientific premise, the limitation has received criticism.

Therefore, in order to determine whether a 10 mg/l limitation on oil and grease was justifiable on a practical basis, the Department and the Wyoming Game and Fish Department began an intensive oil treater survey in February 1975. There are currently 380 oil treater facilities operating under permit in Wyoming. For the purpose of the survey, ten of those facilities were chosen for intensive oil and grease monitoring. In selecting the ten facilities the following factors were taken into consideration:

- a. The facilities represented a wide range of treatment technologies;
- b. The facilities represented a wide area of the State;
- c. Facilities with a wide range of ownership were represented (internationals such as Amoco and Union, and small independents such as Webster);
- d. The facilities represented were properly designed and generally well maintained;

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- e. The facilities had to be easily assessible to sampling personnel; and
- f. The facilities had to treat a wide range of water volumes.

A listing and description of the facilities chosen for the survey is given in Exhibit C. Exhibits D, E, and F give the results of the survey. Of most importance is a comparison of the last two columns of Exhibits E and F. Exhibit E indicates that when the chosen facilities were operating abnormally and/or the facilities were not properly maintained, 66% of the samples collected exceeded 10 mg/l. On the other hand, Exhibit F shows that under normal operation and maintenance only 5% (a total of 4) of the samples collected exceeded 10 mg/l. The four values exceeding 10 mg/l in Exhibit F were: 10.1; 10.4; 13.2; and 25.8. In enforcing any kind of an effluent standard the accuracy of the test procedures as well as what constitutes a "significant" violation must be considered. For oil and grease the Department policy is that a significant violation of the oil and grease standard of 10 mg/l occurs only when a value exceeding 20 mg/l is recorded. Using this criteria, only one value (25.8 mg/l) or 1.3% of the samples collected represented a significant violation during the time the facilities were being operated and maintained normally. As the oil companies continue to tighten-up their operation and maintenance procedures, we have found the number of oil and grease violations to be steadily dropping.

One argument given for adopting a high oil and grease standard is the fact that the approved analytic technique for oil and grease (freon extraction) will sometimes extract elemental sulfur along with hydrocarbons. In practice, we have found that this phenomenon occurs rarely and that when it does the portion of sulfur is usually quite low. In cases where this problem does occur, it has been our practice to allow some leeway in interpretation of laboratory results. To raise the limitation on oil and grease to as high a level as 45 mg/l just to allow for this problem is certainly not justified and allows too much room for sloppy operation at those facilities where sulfur is not a problem.

Therefore, it is the position of the Division that it is not unreasonable to require proper design, operation, and maintenance of oil treater facilities, and that if proper design, operation, and maintenance is achieved, the evidence shows that a limitation of 10 mg/l can be achieved consistently.

We believe that produced waters with 45 mg/l of oil and grease as allowable under the Federal regulations would render the produced water unusable for stock and wildlife. In fact, oil spill regulations prohibit discharges which would cause a film, sheen, or discoloration of the water (40 CFR 110). If the regulatory agencies allow effluents to contain 45 mg/l of oil,

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they will in effect be authorizing oil spills via the discharge permit program. Also, since the regulatory agencies must show a significant violation before they can proceed with enforcement action, the true allowable upper limit for oil and grease would actually be even higher than 45 mg/l.

3. The Division does not agree with EPA that small operators in the "stripper" category should be given special treatment. Though the quantity of oil produced at these facilities is low, very often the quantity of water produced is quite high. Since the pollution potential is directly related to the quantity of water, not oil, the Division feels that all oil treater facilities should be treated the same.
4. The Federal regulations require no discharge of waters associated with the drilling of wells such as drilling muds and drill cuttings. The Division agrees with this provision.

Sincerely,

John F. Wagner
Water Quality Specialist
Water Quality Division

JFW/bjt

Enclosures

cc: Robert Sundin, Director, DEQ, Cheyenne, Wyoming
Bill Garland, Supervisor, DEQ, WQD, Cheyenne, Wyoming
Bob Burm, EPA, Denver, Colorado