

Quadrangle, Ohio—Shelby Co.," 7.5 minute series (topographic), 1961 (photoinspeted 1973).

(c) *Boundaries.* The Loramie Creek viticultural area is located entirely within Shelby County, Ohio. The boundaries are as follows:

(1) From the beginning point of the boundary at the intersection of State Route 47 and Wright-Puthoff Road, the boundary runs southward on Wright-Puthoff Road for a distance of 1½ miles to the intersection of the Wright-Puthoff Road with Consolidated Railroad Corporation (indicated on the U.S.G.S. map as New York Central Railroad);

(2) Then along the Consolidated Railroad Corporation right-of-way in a southwesterly direction for a distance of 2½ miles to the intersection of the Consolidated Railroad Corporation right-of-way with Loramie Creek;

(3) Then upstream along Loramie Creek in a northwesterly direction for a distance of approximately 3½ miles to the intersection of Loramie Creek and State Route 47;

(4) Then eastward on State Route 47 for a distance of approximately 4½ miles to the beginning point of State Route 47 and Wright-Puthoff Road.

Signed: November 10, 1982  
Stephen E. Higgins,  
Acting Director.

Approved: November 16, 1982.  
David Q. Bates,  
Deputy Assistant Secretary (Operations).  
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## DEPARTMENT OF LABOR

### Occupational Safety and Health Administration

#### 29 CFR Part 1910

[Docket H-103S]

#### Educational/Scientific Diving

**AGENCY:** Occupational Safety and Health Administration, Labor.

**ACTION:** Final rule.

**SUMMARY:** OSHA is exempting scientific diving from coverage of 29 CFR Part 1910, Subpart T, Commercial Diving Operations, provided that the scientific diving is under the direction and control of a diving program utilizing a diving safety manual and a diving control board meeting certain specified criteria. Based on comments, data and other information contained in the record, OSHA has determined that there are significant differences between commercial diving and scientific diving

and that the diving programs followed by the scientific diving community have resulted in an effective system of self-regulation. OSHA believes the exemption will allow the scientific diving community to perform significant underwater scientific research activities while maintaining the safety and health of scientific divers.

**EFFECTIVE DATE:** This final rule becomes effective on November 26, 1982.

**FOR FURTHER INFORMATION CONTACT:** Mr. Glen E. Gardner or Ms. Joanne E. Slattery, U.S. Department of Labor, Occupational Safety and Health Administration, Room N3463, 200 Constitution Avenue, NW., Washington, D.C. 20210, (202) 523-7225.

#### SUPPLEMENTARY INFORMATION:

##### I. Background

On November 5, 1976, OSHA published a notice of proposed rulemaking with respect to commercial diving operations (41 FR 48950). This proposal was published concurrently with a notice of hearing on commercial diving operations issued by the U.S. Coast Guard (41 FR 48969). Public hearings were held by OSHA, with the participation of the Coast Guard, in New Orleans, Louisiana, on December 16-21, 1976, and January 10-14, 1977. The record of this rulemaking was used in the development and promulgation of the OSHA final standard, published July 22, 1977 (42 FR 37650), and the Coast Guard's notice of proposed rulemaking, published November 10, 1977 (42 FR 58712).

The OSHA final standard for commercial diving operations, codified as §§ 1910.401-441, Subpart T of 29 CFR Part 1910, did not exempt diving operations performed for scientific research and development purposes. However, the Coast Guard proposal, which was similar in content to the OSHA final standard, proposed to exempt diving performed solely for scientific research and development purposes by educational institutions (educational/scientific diving) and retained the exemption in its final rule, published November 16, 1978 (43 FR 53683).

Since the publication of Subpart T, OSHA has received requests from various individuals and organizations to reconsider its coverage of educational/scientific diving because they believe the application of Subpart T to this type of diving is inappropriate. They have noted that it is customary for the educational/scientific diving community to follow well-established, consensual standards of safe practice. The first set of consensual standards was developed

by the Scripps Institution of Oceanography of the University of California (Scripps) in the early 1950's. In 1973, diving safety boards and committees from ten major educational institutions involved in scientific diving met and accepted the *University of California Guide for Diving Safety* as a minimum standard for their individual programs (Ex. 4:1). Therefore, it was contended that most educational institutions that had diving programs were complying with this consensual standard with limited modifications for regional and operational variations in diving before the publication of the OSHA final standard. These educational institutions pointed to their excellent safety record prior to OSHA, attributing it to the effectiveness of their self-regulation.

Additionally, they noted that significant differences exist between commercial diving and educational/scientific diving. For example, the educational/scientific diver is an observer and data gatherer who chooses the work area and diving conditions which will minimize environmental stresses and maximize the safety and efficiency of gathering data.

They noted, in contrast, the commercial diver is an underwater construction worker, builder and trouble shooter whose work area and diving conditions are determined by the location and needs of the project.

Based on the concerns expressed in these requests, OSHA published, on August 17, 1979, an advance notice of proposed rulemaking (ANPR) (44 FR 48274) to obtain additional information concerning which provisions of Subpart T were causing the most difficulty for the educational/scientific diving community, and what modifications to the Subpart should be considered. Educational institutions submitted 25 of the 51 comments that OSHA received in response to the ANPR, and were unanimous in recommending an exemption of their diving activities from coverage under Subpart T. The majority of the remaining comments supported an exemption for all segments of the scientific diving community.

Commenters recommending an exemption continued to contend that the application of Subpart T to scientific diving is inappropriate because there are very significant differences between this type of diving and commercial diving; that they have been self-regulating their scientific diving programs for more than two decades; and that their programs are patterned after those safety standards and training procedures developed for scientific

research diving at Scripps in the early 1950's. They further asserted that the Scripps model has been very effective as evidenced by their safety records. Several commenters submitted accident data associated with their diving experience to illustrate their safety record.

The responses to the ANPR, together with other information and data contained in the record, convinced OSHA that there was a significant difference between educational/scientific diving and commercial diving; that the safety record of the educational/scientific diving community represented evidence of its successful self-regulation; and, as a result, an exemption for educational/scientific diving might be justified.

Accordingly, on March 26, 1982, OSHA published a notice of proposed rulemaking to exempt from Subpart T, diving "performed solely for marine scientific research and development purposes by educational institutions" (47 FR 13005). It should be noted that the notice proposed to exempt educational/scientific diving activities only from Subpart T and not from other applicable OSHA regulations. For example, educational/scientific diving employers, like any other employers, are required to comply with 29 CFR Part 1904 concerning the recording and reporting of occupational injuries and illnesses.

Although it was proposed to exempt only educational institutions which perform scientific diving, OSHA raised the issue of whether the proposed exemption should be broadened to include the scientific diving community in general. The notice of proposed rulemaking contained the following questions in order to solicit data and information for determining if the final rule should contain exemption for other segments of the scientific diving community.

1. Should OSHA adopt the exemption provided by the U.S. Coast Guard standard (§ 197.202(a)(2)) which states that the Coast Guard standard does not apply to any diving operation "performed solely for research and development for the advancement of diving equipment and technology?"

2. Should OSHA exempt all scientific diving? If so, how should OSHA define those activities which constitute scientific diving?

3. Should OSHA only exempt scientific diving when such diving complies with an alternative standard which provides divers a comparable level of safety and health as OSHA's Subpart T standard?

Interested persons were given until May 10, 1982, to submit written

comments, views, and arguments in response to the notice of proposed rulemaking.

The International Brotherhood of Carpenters and Joiners (Carpenters Union) (Ex. 5: 3) requested a hearing and stated its objection to the proposed exemption and to the possible expansion of the exemption to other segments of the scientific diving community. The Carpenters Union suggested that in lieu of granting an exemption to the scientific diving community, employers should seek a variance from Subpart T under section 6(d) of the Occupational Safety and Health Act.

On May 26, 1982, OSHA published a notice (47 FR 22972) extending the comment period, as requested by the American Academy of Underwater Sciences (Ex. 5: 46), to June 18, 1982, and scheduling an informal public hearing to be held June 29-30, 1982, in Washington, D.C., and to continue in Los Angeles, California, July 7-9, 1982. The purpose of the informal public hearing was to receive testimony on whether OSHA should grant an exemption from the commercial diving standard for educational/scientific diving, the nature of any exemption and whether the scope of the exemption should be broadened to include other segments of scientific diving. In addition to the general issue as stated above, OSHA invited testimony on the appropriateness of the section 6(d) variance mechanism in dealing with the scientific diving question.

The Administrative Law Judge presiding at the hearings allowed 15 days from the completion of the hearing on July 9, 1982, to submit post-hearing comments, and another 15 days for filing arguments and briefs relating to the hearing issues. The Administrative Law Judge certified the record of the hearing to the Assistant Secretary of Labor for Occupational Safety and Health on September 3, 1982.

In this preamble, OSHA identifies exhibits submitted to Docket H-103S with parentheses (Ex. 5). Comment numbers follow the exhibit in which they are contained (Ex. 5: 24). If more than one comment within an exhibit is cited, the comment numbers are separated by semicolons (Ex. 5: 24; 102). The page number (p.) is also cited if other than page one. The transcript of the hearing (Tr.) is cited by page (Tr. 72).

## II. Summary and Explanation of the Final Rule

This section includes an analysis of the record of evidence and the policy considerations underlying the issuance of this final rule.

OSHA received 164 written comments in response to the notice of proposed rulemaking (47 FR 13005). The comments were submitted by educational institutions, private companies, public agencies, associations, a union, and individual scientific divers. They represent a variety of geographical locations including the Virgin Islands, New York, Massachusetts, Washington, Oregon, California, Hawaii, Texas, Florida, Rhode Island, North Carolina, Virginia, and Maryland.

The transcript of the hearing consists of more than 600 pages of testimony. Nine post-hearing exhibits were submitted, consisting of post-hearing comments, arguments, or briefs.

As indicated above, the notice of proposed rulemaking proposed to exempt diving performed solely for "marine" scientific research and development purposes. However, numerous commenters (e.g., Ex. 5: 13; 42; 76; 117; 142) pointed out that "marine" should not be included in the exemption.

For example, the Vice Chancellor for Faculty and Staff at the California State University and Colleges (Ex. 5: 13) noted:

We would like to suggest however, that the word "marine" be dropped since it may be misconstrued as referring only to ocean related diving while much scientific research and development diving \* \* \* is carried out in lakes, rivers, etc.

The Environmental Health and Safety Officer for the University of California, Berkeley (Ex. 5: 69) remarked:

Many important scientific research projects are conducted in lakes and streams and may not be included in the exemption. I believe that this is not the intent of the modification.

It was not OSHA's intention to draw such a distinction and therefore the word "marine" is not included in the final exemption.

When the proposal was published, the record contained information concerning exemption of the scientific diving community in general and not just scientific diving performed by educational institutions. Thus, in the notice of proposed rulemaking as discussed above, OSHA asked if all scientific diving should be exempted. In response to this question, the vast majority of the comments, as well as hearing testimony, addressed this broader issue of exempting all scientific diving from the standard for commercial diving operations.

Commenters noted that the scientific diving community includes more than just educational institutions; that regardless of who is performing the diving, scientific diving is different from

commercial diving; and that an effective system of self-regulation, modeled after the Scripps program, is evidenced by an exemplary safety record and exists throughout the scientific diving community. Over 135 commenters and many witnesses at the hearing supported an exemption for all scientific diving. The following commenters are representative of those supporting an exemption for all scientific diving.

A scientific diver from California's Department of Fish and Game (Ex. 5: 7 p.2) stated:

I \* \* \* believe that OSHA should exempt all scientific diving from Subpart T. The consensual standard developed by the scientific community represents decades of accumulated wisdom and experience of the divers themselves, including those in private, governmental, and educational organizations, and has resulted in an excellent safety record.

Another scientific diver (Ex. 5: 76) indicated:

\* \* \* I strongly urge that this exemption be extended to include all scientific diving. The scientific diving community as a whole (including not only educational institutions but also governmental and private institutions conducting scientific research) has been effectively self-regulated since the inception of scientific diving. Virtually all scientific diving operations (public and private) have adopted a consensual standard of safe practices based upon the Scripps Institution of Oceanography Manual for Diving Safety. The efficacy of this consensual, self-regulatory approach has been attested to by the excellent safety record \* \* \*

A scientific diver from the University of Southern California (Ex. 5: 135) stated:

Our present system, which has a long and successful record for insuring diver safety, should be allowed to remain in effect. This should include all scientific diving, freshwater and marine, through educational and research institutions, since this is the domain in which the system has worked to date. The present system has the respect of the scientists, is responsive to our research needs, yet has proven itself by providing a remarkably safe environment for underwater research.

The President of MBC Applied Environmental Sciences (Ex. 5: 137A p. 2) remarked:

OSHA should exempt all scientific diving. The first generation of scientific divers developed a set of consensual safety standards more than two decades ago at a single institution, Scripps. Today those same basic standards have been refined and spread nationwide by recipients to include academic and private research organizations, state, local, and the federal government. This wide acceptance is a result of demonstrated safety for the individual and it is not employer-specific.

Based on the overwhelming support from comments and hearing testimony, as well as other information contained in the record, OSHA believes that an exemption is justified for all scientific diving, not solely scientific diving performed by educational institutions. Additionally, based on the record and discussed later in this notice, OSHA has specified conditions that scientific diving programs must meet before members of the scientific diving community may avail themselves of the exemption. Therefore, OSHA has broadened the exemption to include all segments of the scientific diving community.

The following narrative discusses the reasons and conclusions reached by OSHA for exempting the scientific diving community from Subpart T. Members of the scientific diving community contended that the application of Subpart T to scientific diving is inappropriate, since the tasks performed by commercial divers are different than those performed by scientific divers (e.g., Ex. 5: 1; 19; 67; 105; 156), (e.g., Tr. 59-60, 232, 358, 568-569). For example, the campus Diving Officer from the University of California, Santa Barbara (Tr. 568) stated:

What the individual does when he or she reaches the worksite is where the distinction should be made. Scientific divers do not use explosives, we do not get involved in shipwrecking, we do not get involved in heavy salvage. We are involved in studying animals and plants and living organisms in their environment.

The Diving Safety Officer from Moss Landing Laboratories (Tr. 358) noted:

\* \* \* I believe that scientific divers are a completely and entirely different class of divers with respect to working conditions, tools and equipment used and risk exposure. Commercial divers typically are involved in underwater construction, repair and maintenance, often in emergency capacity under potentially hazardous conditions. In contrast is the scientific diver who gathers specimens, conducts experiments, photographs the environment, and in general only uses lightweight simple tools underwater.

The President of MBC Applied Environmental Sciences (Tr. 337-337A), in reference to Subpart T, remarked:

These regulations were intended for the commercial diving industry, plainly, and is pointed out in the original emergency temporary standard, supporting documentation, published in the **Federal Register** \* \* \*

The scientific diving community does not engage in the shipbreaking, salvage or related kinds of activities as pointed out in that document. Nor does it use generally oxy or cutting equipment, electric arc welders or explosive devices.

However, the Carpenters Union, and others, expressed the concern that it may be difficult to clearly distinguish commercial diving operations from scientific diving operations. From this perspective, the Carpenters Union contended that an exemption which was too broad could result in commercial diving operations being characterized as scientific diving operations and might possibly deny the protection afforded by Subpart T to its members. The representative of the Carpenters Union (Tr. 98-99) asserted:

\* \* \* we have had, from the very beginning, a great concern that in approaching this problem—in not a careful manner, that OSHA could draft an exemption that would be so broad that it would deny protection under a standard that we worked many years to develop, to many of our members who are working in the commercial diving community.

The Business Representative from the Pile Drivers (associated with the Carpenters Union), Local 34, (Tr. 287) stated:

No clear distinction between segments of the diving community exist(s).

We have members of our organization who by the nature of their mobility and qualification blur any distinction between the segments within the diving community.

Based on the comments and other information contained in the record, OSHA believes, and the final rule recognizes, that the tasks performed by commercial divers are different than those performed by scientific divers. Commercial diving activities necessitate the use of heavy tools and include such tasks as placing or removing heavy objects underwater, inspection of pipelines and similar objects, construction, demolition, cutting or welding, or the use of explosives.

In contrast, the sole purpose of scientific diving is to perform scientific research which includes such tasks as scientific observation of natural phenomena or responses of natural systems, and gathering data for scientific analysis. The tasks performed by scientific divers are usually light, short in duration, and if any handtools are used, they are usually no more than simple non-powered handtools such as screwdrivers and pliers.

Because of the differences in tasks performed, OSHA believes that clear distinctions can be made between scientific diving and commercial diving and has incorporated these distinctions in the definition of "scientific diving" in the final rule. As will be discussed below, OSHA believes that its definition of "scientific diving" addresses the concerns expressed by the Carpenters

Union and others as to limiting the scope of the exemption, and virtually eliminates the potential for overlap and confusion between scientific diving and commercial diving.

Members of the scientific diving community stated that their effective system of self-regulation is the major reason why scientific diving operations should be exempted from Subpart T. It was asserted that this diving community has been effectively self-regulated for approximately three decades, and that its scientific diving programs are modeled after the Scripps program developed in the early 1950's. The Deputy Director of the Scripps Institution of Oceanography of the University of California, San Diego (Ex. 5: 125 pp. 1,2) expressed his belief of why the system has been so successful:

I believe that a major factor in the success of the Scripps program has been that it is a program formulated, monitored, and enforced by working divers at the institution with the assistance of diving physiologists and safety officers. It is one matter for a diver to answer for an infraction to an outside regulatory agency and another matter to answer to one's peers. The fact that individual divers are involved in rulemaking and enforcement of rules that by consensus have been designed to safeguard divers in general and in the specific circumstances of scientific diving require each diver to examine the potential for misadventure in all of his diving activities.

I note with considerable pride that the Scripps diving safety program, including our manual for diving safety and our Diving Control Board, has become the prototype for most institutional diving safety programs here and abroad.

The majority of commenters (e.g., Ex. 5: 9; 28; 60; 102; 137; 162) as well as witnesses at the hearing (Tr. 33, 163, 321A, 531) favored this system of self-regulation because it is formulated, monitored, and enforced by working divers.

For example, a research specialist from the University of California, Santa Barbara (Ex. 5: 22) stated:

Our local Diving Control Board continually monitors diving activity, both to insure compliance with the Manual for Diving Safety and to review for any needed updates to provide greater safety. This peer review of dive operations has been very effective. The combined expertise of practicing scientific divers which has been accumulated and put into practice through this system has made it one of the best systems that I am aware of.

The Chairman of the Diving Safety Board at the State University of New York at Stony Brook (Ex. 5: 27) indicated:

All diving operations are subject to peer review and oversight on an ongoing basis to ensure compliance with the regulations of the manual in all aspects of the project.

A scientific diver from California State University (Ex. 5: 35) noted:

Our scientific diving program (about 500 to 800 dives per year) has never had any accidents or incidents. All scientific diving activities, including the certification of divers in our program, are regulated by our Diving Control Board which used a peer review system.

The Diving Officer from Moss Landing Laboratories (Ex. 5: 42) remarked:

We have a diving control board that consists of the diving officer, diving control chairman, environmental health and occupational safety officer, and four elected divers from our laboratory. Their responsibilities include peer review of all diving operations, the issue, reissue or revocation of diving certificates, changes in policy and amendments to the diving safety manual, and training and annual re-certification of divers. I feel that it is important to stress the fact that our diving control board is made up of divers themselves, who have effectively self-regulated our diving program for the past 15 years.

A commenter from Oregon State University (Ex. 5: 59) observed:

Our diving safety record has been outstanding. Our manual for diving safety (a descendant of the Scripps diving regulations) is continually updated to remain abreast of current technology. The University Diving Control Board oversees all diving activities to insure compliance with accepted diving safety standards. The Diving Control Board conducts peer review of the diving operations and requires diver certification.

Based on the comments and testimony concerning this issue, OSHA is convinced that the elements of the Scripps program are responsible for the scientific diving community's effective system of self-regulation. As will be discussed later in this notice, OSHA, as well as the scientific diving community itself, believes that certain elements derived from the Scripps program must be followed to continue the scientific diving community's effective system of self-regulation.

Members of the scientific diving community also asserted that the excellent safety record of their diving community is evidence of effective self-regulation. Over 90 commenters and most of the witnesses testifying at the hearings (e.g., Tr. 33, 175, 478, 558) discussed their accident and injury experience to illustrate the safety record of their diving programs.

For example, a commenter from Massachusetts Institute of Technology (Ex. 5: 26) stated:

Available information does not support the need for more regulatory controls where self-regulation based on established prudent practices has resulted in an exemplary accident/injury record. The MIT Safety

Office, for at least the last twenty one (21) years, has not received a single report of injury or illness to any of our employees who dive for research/scientific purposes. To my knowledge, this includes three hundred (300) dives per year. \* \* \*

A scientific diver from the University of California, Santa Barbara (Ex. 5: 44) discussed his part in their program:

I have had no accident or near-accident in 11 years of regular diving to do scientific research sanctioned by the University. My exemplary safety record, I believe, is the result of our well-conceived standards which we divers, ourselves, have developed and updated.

The Pacific Gas and Electric Company diving safety record (Ex. 5: 74) was also described as follows:

Pacific Gas & Electric employees have performed underwater research activities since 1973, logging approximately 3,500 dives with an accrued time of approximately 2000 underwater hours. In that time there has never been a diving accident or incident.

The Director of the Institute of Marine Resources of the University of California (Ex. 5: 117 p.2) stated:

The University of California's diving safety standards are self imposed. The overall effectiveness of self regulation through self-imposed underwater diving safety standards and regulations is proven by the fact that our students, faculty, researchers, and their assistants who have need to dive have completed more than 80,000 dives between 1955 and 1982 with only one pressure-related injury reported.

A comment from the University of Michigan (Ex. 5: 122) remarked:

The safety record of the University of Michigan is representative of our scientific diving community. During the period of 1960-1981 University of Michigan academic, scientific, and technical personnel participated in and/or supervised more than 16,000 person dives (or pressure exposures) without incidence of employee injury other than a few minor ear infections and superficial abrasions or sea urchin spine type injuries.

Marineland (Ex. 5: 127) indicated:

For the past 27 years, Marineland has made over 82,000 scheduled in-house and open ocean dives, with no diving related deaths or pressure related injuries.

Finally, a research scientist from the University of California (Ex. 5: 148) described his experience:

More than 5,000 dives have been made under my direction in these research efforts \* \* \* None of my divers has had an accident related to pressure or from any other cause.

The Pile Drivers expressed concern that OSHA might decide to grant an exemption to the scientific diving community based solely on their safety

record. The Business Representative for the Pile Drivers (Tr. 286B) stated:

\*\*\* it is our understanding that those who seek to become exempt from OSHA regulations have an honorable safety record which (I would like in that) respect to commend them on that point. And, as for the safety record, it is something to be proud of. However, it is not reason enough to be exempt \*\*\*

Additionally, the Carpenters Union questioned the analysis of the data submitted to the record which was used to describe the safety record of the scientific diving community (Tr. 102-106), (Ex. 23). For example, after its analysis of the data, the Carpenters Union contended that the scientific diving community has a high fatality rate compared to other industries. In evaluating the data, the Carpenters Union used data from a 1974 study (Ex. 19) which estimated the educational/scientific diving population. A more recent estimate (1980) submitted to the record (Ex. 4: 2) indicated this diving population to be much larger. If the fatality rate were calculated using the larger diving population, the fatality rate, while much lower than that computed by the Carpenters Union, could still be a cause for concern.

The Carpenters Union, compared the scientific diving fatality rate to fatality rates calculated by the Bureau of Labor Statistics (BLS) for large industry divisions which only include workplaces with 11 or more employees. The BLS fatality rates do not reflect the total number of fatalities in those industry divisions because of the number of smaller workplaces that are not included in their survey. The data used by the Carpenters Union encompasses virtually all of the scientific diving workplaces regardless of the number of employees per workplace. Therefore, a comparison between the Carpenters Union fatality rates and BLS's rates is inappropriate. Even if a comparison were meaningful, BLS has indicated that large sampling errors exist in their fatality rate estimates.

OSHA also believes that numbers of fatalities alone may not accurately represent or reflect the risks involved in an occupation. The total numbers of injuries and illnesses must also be considered in evaluating the safety record of an industry. In this regard, OSHA conducted an analysis of the data which considered all aspects of the safety record of the scientific diving community, i.e., number of injuries, illnesses, and fatalities.

The methodology which OSHA used in evaluating the injury and illness experience of the scientific diving community is the same methodology

BLS utilizes for determining industry incidence rates. The BLS methodology of determining incidence rates is a nationally recognized method which includes fatalities, illnesses and injuries in the evaluation of the safety experience of an industry. For purposes of calculating incidence rates, each annual survey conducted by BLS covers workplaces of all sizes, and is not limited to workplaces with 11 or more employees. This method permits a valid comparison between industries regarding their incidence rates.

OSHA received incidence data from the scientific diving community through a survey performed for OSHA under a 1980 contract (Ex. 4: 2). This survey has since been updated (Ex. 15A) to include 88 institutions with a diving population of 5,441 covering an approximate period from 1965 through 1981.

The survey revealed four deaths and 18 pressure-related accidents during the period studied. As discussed at the hearing (Tr. 480), however, data more recently compiled by the University of Rhode Island (URI) reported an additional two deaths. Additionally, eight cases of suspected decompression illnesses and seven cases of minor ear problems were reported during this same period (Ex. 5: 151 p. 4). Although exposure time is lacking for several of these incidents, and not all of these incidents are OSHA-recordable, OSHA has included all reported fatalities and injuries for the purpose of computing an incidence rate. This results in a total of 39 incidents (six deaths and 33 injuries/illnesses).

In evaluating the data concerning the safety record of the scientific diving community, OSHA has used the BLS incidence rates contained in its annual survey for 1979 (Ex. 4: 8) for comparison to industry divisions and single industries. The BLS occupational incidence rates are computed on the basis of 100 workers each working 2,000 hours a year. The formula is as follows.  $(N/EH) \times 200,000 = \text{incidence rate per 100 full-time workers where—}$

N=number of injuries and illnesses (including deaths) or lost workdays  
 EH=total hours worked by all employees during calendar year  
 200,000=base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year)

As stated, the survey consisted of a diving population of 5,441 (Ex. 15A). Even assuming that all 39 incidents occurred in one year, instead of over 15 years as reported, the incidence rate would be:

$$(39/(5441 \times 2000)) \times 200,000 = .7$$

Further, assuming that all 39 incidences were attributable only to educational/scientific divers with a population of 2340 (an early 1970's estimate (Ex. 19)), which of course they are not, the incidence rate would be:

$$(39/(2340 \times 2000)) \times 200,000 = 1.66$$

Finally, if the 39 incidents are averaged over a 15-year period using the diving populations explained above, the incidence rates would be:

$$(2.6/(2340 \times 2000)) \times 200,000 = .1$$

$$(2.6/(5441 \times 2000)) \times 200,000 = .04$$

Any of these incidence rates compare very favorably with the following rates from other industry divisions and industries with low incidence rates (Ex. 4: 8):

Divisions and industries	BLS 1979 incidence rate
Private sector .....	9.5
Manufacturing .....	13.3
Construction .....	16.2
Mining .....	11.4
Banking .....	1.7
Educational services .....	3.3

OSHA believes that this favorable comparison of incidence rates, along with other data contained in the record, is, indeed, evidence of an effective system of self-regulation by the scientific diving community. OSHA further believes that this effective system of self-regulation mitigates risks associated with scientific diving and, therefore, increased risks to scientific divers would not result if removed from coverage under Subpart T.

One of the issues addressed in this rulemaking concerns the appropriateness of the scientific diving community seeking an exemption, rather than a variance, from Subpart T. The Carpenters Union remarked that an exemption from the OSHA standards would be unprecedented by making a broad incursion into a safety standard without considering the variance alternative.

OSHA would like to note that exemptions to OSHA standards based on differences in hazards and exposure are not uncommon. Indeed, as an example, OSHA has previously exempted instructional diving using SCUBA from Subpart T because the following distinctions could be made between diving instructors and commercial divers: instructors are student oriented; they have the choice of the dive site; and, they do not utilize heavy construction tools, handle explosives, or use burning and welding tools. Additionally, instructors are

rarely exposed to adverse sea states, temperature extremes, great depths, poor visibility, or heavy workloads (42 FR 37650). Based on these differences, OSHA determined that instructional diving should be exempted from the standard for commercial diving operations.

Similarly, although scientific diving was originally included in the standard for commercial diving operations in 1977, OSHA now believes that a substantial basis exists in the record of this rulemaking, also to exempt scientific diving from the standard for commercial diving operations. Further, OSHA believes that the conditions to be imposed on scientific diving programs under the final exemption will assure that the protections provided by the Occupational Safety and Health Act are maintained.

The representative for the Carpenters Union (Tr. 99) in discussing the variance procedure stated:

From the very beginning, we have taken the position that if the scientific community is stating that they have an equally protective system, so far as we know, the variance procedure is the appropriate procedure under the OSHA Act to offer an equally protective system so that persons who would seek to avoid the intention of the Act and who can characterize themselves as scientists, but don't comply with any set of rules, would not be allowed lawfully to function and violate the Act through an improperly or overly broad definition.

However, members of the scientific diving community contended that it would be more appropriate to exempt scientific diving operations from Subpart T rather than obtaining a variance because a variance would do no more than require compliance with an alternative standard, which they have effectively done, voluntarily, for more than three decades.

A witness at the hearing (Tr. 35, 37) stated:

\*\*\* by definition, the variance would be to operate under an alternative standard . . . the alternative would be the standard we have been the authors and custodians of for three decades. Why then, since the consensual mechanism is in place, and its success as shown by the safety record is clear, should the federal government, or anyone else, wish to intervene or replace it with a standard such as Subpart T, which is so demonstrably flawed for our purposes?

\*\*\* the enormous expenses involved simply to continue something which has been ongoing in a safe and healthful way, would result in a number of terminated programs. This would be a disaster of the first magnitude for the United States. The programs we represent focus on the individual as being trained to assume responsibility for his or her own safety. This system has worked remarkably well. No

amount of federal rulemaking, either directly or under a variance, can add one iota to this philosophy or to extend the safety record.

Members of the scientific diving community expressed concern that the time involved in obtaining a variance, the resultant delays in carrying out research activities, as well as the costs involved in obtaining a variance or in requesting modifications of variances might curtail or eliminate important research projects and thus be detrimental to their scientific research programs (e.g., Tr. 35, 53, 184-185, 212-213, 547-548).

For example, the Chairman of the Diving Safety Board at the University of New York at Stony Brook (Tr. 210) stated:

\*\*\* it is my position that this would be a needless and expensive burden that literally all institutions conducting scientific diving would be forced to undertake since all would require a variance regardless of the size of their operations, perhaps even on a project-by-project basis, this mechanism is not appropriate to this situation given that large numbers of institutions have been identified as conducting scientific diving projects.

In my own case with limited research funds and a budget cycle that operates annually, a delay of a minimum of three months for a variance will effectively stop my funding.

Finally, a scientific diver from the University of California, Santa Cruz (Ex. 5: 150) observed:

\*\*\* the Carpenters Unions suggestion that OSHA should grant a variance instead of an exemption for scientific diving seems based on the misconception that it is the scientific employers who are requesting exemption. In fact, the pressure for exemption comes primarily from the employees, the divers themselves who have developed the consensual scientific diving standards for their own safety, and largely independently of the administrative structure of the institution to which they belong.

OSHA believes that the variance procedure would place additional unnecessary burdens on all parties involved since each employer seeking relief from Subpart T would have to obtain a variance whether on an individual basis or as a part of a group. Completion of the variance procedure may take 120 days and in some cases a year or more. The amount of time involved in processing variance requests, as well as the potential number of variances which may have to be obtained, could significantly limit scientific diving programs conducted by scientific organizations.

OSHA is convinced that it can provide more comprehensive relief to the scientific diving community through rulemaking then it could through a multiplicity of variance applications. Further, by delineating both the scope of

scientific diving and the conditions upon which exemption rests, OSHA is assuring that exemption is attained only by limited category of operations, and only under carefully prescribed conditions.

OSHA received substantial comment in the rulemaking record on the question of how the term "scientific diving" should be defined in the final rule. Many commenters and witnesses recommended the adoption of the California OSHA (CAL/OSHA) definition for scientific diving (e.g., Ex. 5: 27; 61; 102; 155), (e.g., Tr. 46, 182, 353). Additionally, a post-hearing comment representing the membership of the American Academy of Underwater Sciences (AAUS) (Ex. 25) supported a definition of scientific diving which was an extension of the CAL/OSHA definition.

Both the CAL/OSHA definition and the definition supported by AAUS distinguish between scientific diving and commercial diving by focusing on who is performing the diving, rather than on the tasks being performed. For example, CAL/OSHA defines scientific diving as "all diving performed by employees necessary to, and part of a scientific research or educational activity; in conjunction with a project or study under the jurisdiction of any public or research or educational institution or similarly recognized organizations, departments, or groups." (emphasis added)

The definition for scientific diving suggested by AAUS would extend the CAL/OSHA definition to include additional criteria with respect to who is performing the diving and, additionally, requirements to assure compliance with the scientific diving community's system of self-regulation.

Although OSHA agrees with the need to make a clear distinction between scientific diving and commercial diving, the agency believes that its definition of scientific diving should focus primarily on the types of tasks performed and the objectives to be attained. The record reflects that it is the actual work being performed that forms the basis for distinguishing scientific from commercial diving.

Further, the Carpenters Union (Tr 99) expressed concern that OSHA might develop a definition for scientific diving that would be overly or improperly broad which would allow persons who seek to avoid the intention of the Occupational Safety and Health Act to characterize themselves as scientific divers. OSHA agrees that a definition should not be overly or improperly broad and believes that this concern is

addressed by focusing on the tasks of the diver in the definition.

Accordingly, the OSHA definition in the final rule states that scientific diving means "diving performed solely as a necessary part of a scientific, research, or educational activity by employees whose sole purpose for diving is to perform scientific research tasks." For added clarity, the definition gives examples of tasks that would be considered to be commercial and not scientific diving, even if they were performed by a scientific diver. Thus, if an employee was diving for the purpose of scientific observation of marine life and, in addition, was also inspecting a pipe for cracks, the exemption would not apply since the *sole* purpose of the dive would not be scientific research.

OSHA's definition of scientific diving, by focusing on tasks performed, makes no distinction between scientific diving performed for profit or non-profit. The scientific diving community consists of various types of entities such as educational institutions, governmental organizations and private concerns, all of which have contributed to the scientific diving community's safety record. Commenters (e.g., Ex. 5: 81; 122; 155) and witnesses at the hearing (Tr. 57, 164, 182, 214, 236, 338A, 571) noted that those who perform legitimate scientific diving, whether it is for profit or non-profit purposes, and follow consensual guidelines, should be covered by the exemption. OSHA agrees that if the sole purpose for diving is to perform scientific research tasks, then further distinctions are not justified.

The Carpenters Union expressed concern that programs may exist that do not follow the scientific diving community's system of self-regulation (Tr. 194). A representative of the American Academy of Underwater Sciences indicated that if such programs do exist, they would be imprudent programs (Tr. 194). OSHA agrees that such programs would be imprudent and believes that scientific diving programs must meet certain conditions in order to qualify for the exemption. In particular, OSHA wishes to assure that programs are in conformance with the Scripps concepts and that they continue to adhere to the community's effective system of self-regulation. Further, representatives of the scientific diving community indicated at the hearing (Tr. 46-48, 182, 208, 215-216, 236, 326, 353-353A, 444, 453, 470-472, 519-520, 570) and in a post-hearing comment (Ex. 25) that conditions placed on the exemption would be beneficial to the scientific diving community in preserving the integrity of their programs.

Therefore, the final rule sets forth elements which a scientific diving program must have in order to be exempted from Subpart T. These elements are based on the Scripps program and also reflect recommendations and criteria derived from the comments and diving safety manuals submitted to OSHA (e.g., Ex. 5: 27; 39; 49; 73; 127; 137B; 142). These conditions will assure that the reasons for exemption continue.

First, the diving program shall have a diving safety manual which includes at a minimum, procedures covering all diving operations specific to the program; procedures for emergency care, including recompression and evacuation; and criteria for diver training and certification.

OSHA believes that a diving safety manual is essential for any diving program. The record demonstrates that scientific diving programs maintain their own diving manual tailored to the needs of their programs.

Second, the program shall include a diving control board with the majority of its members being active divers and which shall at a minimum have the authority to approve and monitor diving projects; review and revise the diving safety manual; ensure compliance with the manual; certify the depths to which a diver has been trained; take disciplinary action for unsafe practices; and assure adherence to the buddy system for SCUBA diving.

As indicated above, the diving control board must assure adherence to the buddy diving system for SCUBA diving. The buddy diving system means a diver is accompanied by and is in continuous contact with another diver in the water. The buddy diving system is a fundamental practice followed by the scientific diving community (e.g., Ex. 5: 29A2; 61; 72; 137B), (e.g., Tr. 203-204, 319-319A, 451, 511) and is based on mutual assistance. The California Advisory Committee on Scientific and Technical Diving (Ex. 4: 3) stated that "by being together in buddy pairs, these divers can recognize and solve minor problems before they develop into emergencies. If an emergency should develop, a buddy can render aid immediately."

The Director of the Division of Diving Control of the University of California, Berkeley (Ex. 5: 143 p 2) remarked:

The buddy system, a cornerstone in scientific diving practice, means that I will take care of you and protect your life and you will take care of me.

OSHA believes that the scientific diving community's prohibition of solo diving and its reliance on the buddy

diving system for SCUBA diving (the primary diving mode used in the scientific diving community (Ex. 4: 3)), had enhanced the safety of the scientific diver and is reflected in the scientific diving community's safety record. Therefore, OSHA has determined that the buddy diving system should be included in the conditions for exemption.

For the reasons discussed above, OSHA believes that the diving control board with its system of peer review is essential to the safety of diving operations. Therefore, a scientific diving program will not be exempted from Subpart T unless it has a diving control board which exercises authority over the program, as set forth above.

In conclusion, based on the record of this rulemaking and the above discussion, OSHA believes that these conditions are both feasible and necessary.

OSHA raised two other issues in the notice of proposed rulemaking. One concerned the adoption of the Coast Guard exemption of diving performed solely for research and development for the advancement of diving equipment and technology. Many commenters suggested that such an exemption would bring greater consistency to the Coast Guard and OSHA standards. However, no supporting data were provided to demonstrate that such an exemption is necessary. Therefore, OSHA believes there is no need to provide this separate exemption.

The final issue raised by OSHA concerned whether OSHA should only exempt scientific diving when such diving complies with an alternative standard. The majority of those who commented on this issue rejected it (e.g., Ex. 5: 27; 48; 78; 102; 127; 152). Since the scientific diving community has maintained an effective system of self-regulation, they contend that promulgation of an alternative OSHA standard will not increase diver safety. They believe that if they are allowed to follow their own Scripps-type programs that have safety as their main purpose, this will continue to serve the purposes of the Occupational Safety and Health Act. For example, the Vice Chancellor for Faculty and Staff Affairs at the California State University and Colleges (Ex. 5: 13 p.3) stated:

The scientific community has developed and been in conformance with safety standards based on the practical experiences of the divers themselves long before OSHA. Exemption from OSHA does not mean that the community will be without safety standards for the scientific community will continue a long established practice which

has resulted in a nearly perfect safety record. The self-imposed safety standards and procedures will continue to be regularly updated, revised, and applied to specific geographical problems. This flexibility to meet technological changes and the special requirements of specific geographical areas must be retained by the scientific community. We feel that OSHA diving regulations are not remotely comparable to those of the scientific diving community for purposes of the individual diver's safety and health.

A research diver from the University of California, Santa Barbara (Ex. 5: 22 p.2) remarked:

An alternative already exists, in the form of the presently used scientific diving consensual standard. No constructive purpose will be served by taking responsibility for this standard away from the user group especially since they have accumulated a safety record which is a standard in itself.

A commenter from Occidental College (Ex. 5: 111 p.2) stated:

\*\*\* we reject the notion that OSHA only exempt scientific diving when such diving complies with an alternative standard comparable to OSHA's Subpart T standard. Without question, the present scientific diving standard is continuously amended in response to technological advances as well as to developments in underwater physiology. By utilizing a flexible and evolving diving standard, the scientific diving community is assured of a standard that conscientiously focuses on providing maximum safety and health.

The Diving Officer for Old Dominion University (Ex. 5: 120 p.2) indicated:

Question 3 is confusing to me, as the scientific educational community has had diving regulations for three decades and OSHA now is saying we are the "alternative". Our standards have been molded and shaped over the years based on experience, study, etc., and they work.

The Diving Officer from Scripps Institution of Oceanography of the University of California, San Diego (Ex. 5: 142 pp. 2-3) remarked:

The scientific community has developed and been in conformance with safety standards based on the practical experiences of the divers themselves long before OSHA. Exemption from OSHA does not mean that the Community will be without safety standards, for the scientific community will continue a long established practice which has resulted in a nearly perfect safety record.

A research diver from the University of California (Ex. 5: 148 p.2) noted:

This question is biased and difficult to answer because, as far as I am concerned, OSHA has tried to develop an alternative standard which I find much less satisfactory than the safety codes which already exist for all U.S. scientific divers.

Finally, the President of the American Academy of Underwater Sciences (Ex. 5: 153 p. 3) stated:

We consider the issue of whether OSHA should exempt scientific diving when it complies with an "alternative standard" to be moot. From the abundance of evidence submitted over the past years, it should be clear that there was a highly developed standard of practice in existence. There is no shred of evidence to indicate that the SDC [scientific diving community] has been irresponsible in any way toward the health and safety of its members.

OSHA believes that the steps necessary for a scientific diving program to be exempt from Subpart T are sufficiently stringent as to render an alternative OSHA standard unnecessary. The conditions placed on scientific diving programs in the final rule will assure the continued adherence to, and the integrity of, the scientific diving community's effective consensual program. Further, OSHA believes that the final rule will provide greater flexibility for the scientific diving community in planning and executing its scientific diving research programs, while maintaining the practices and procedures that have resulted in its exemplary safety record.

After a careful evaluation of all of the information contained in the record, OSHA has concluded that the same justifications for exemption of scientific diving performed by educational institutions are also valid for exemption of all segments of the scientific diving community; that there are significant differences between scientific diving and commercial diving; that utilization of the variance mechanism would be an unnecessary burden and would not provide relief as expeditiously as the rulemaking process; that the scientific diving community has for many years been implementing the safeguards first developed by the Scripps Institution and is effectively self-regulated; and that the purpose of the Occupational Safety and Health Act will be served by the community's continued adherence to its system of self-regulation. Therefore, OSHA has determined that scientific diving programs should be exempted from Subpart T if they meet the conditions set forth in the final rule.

The commercial diving standard was originally issued after consultation with the Construction Advisory Committee under section 107 of the Construction Safety Act (40 U.S.C. 333). Because the exemption of scientific diving is not expected to affect the diving standard as applied to construction under 29 CFR 1926.605(e), this final rule is not being referred to that committee for review.

### III. Regulatory Assessment

In accordance with Executive Order No. 12291 (46 FR 13193) OSHA assessed the potential economic impact of the proposal. OSHA concluded that the subject matter of the proposal was not a "major" action and did not necessitate further economic impact evaluation or the preparation of a Regulatory Analysis. The rulemaking would not have an annual effect on the economy of \$100 million or more, cause major increases in costs or prices, or have any other significant adverse effects.

The proposal was to grant an exemption from 29 CFR Part 1910, Subpart T, Commercial Diving Operations, to educational institutions performing diving for marine scientific research and development purposes. This exemption has now been broadened to include all scientific diving under the direction and control of a diving program containing specified conditions.

The overwhelming majority of comments on the proposal favored the exemption of all scientific diving and emphasized voluntary safety programs that have resulted in a significant risk reduction for divers engaged in scientific endeavors. There were no comments that took issue with OSHA's determination that the proposed exemption would not result in a major economic impact.

Information submitted to the record by representatives of institutions involved in scientific diving indicate that safety programs similar to those required for exemption from the standard for commercial diving operations are already in place. Because the exemption of scientific diving from coverage under Subpart T does not impose any additional costs and in fact eliminates costs that have placed economic burdens on the educational and scientific diving community, OSHA has determined that no additional analysis is necessary for the final regulatory assessment.

In addition, pursuant to the Regulatory Flexibility Act of 1980 (Pub. L. 96-353, 94 Stat. 1164 (5 U.S.C. 601 et seq.)), OSHA assessed the impact of the proposed rulemaking on small entities and concluded that it would not have a significant economic impact on a substantial number of small entities. No comments submitted took issue with this determination. After a careful review of the rulemaking record, OSHA therefore certifies that this action will have no significant impacts on the total economy, on any one industry, or on small entities.

**IV. List of Subjects in 29 CFR Part 1910**

Occupational safety and health,  
Safety.

**V. Effective Date**

Pursuant to 5 U.S.C. 553(d)(1), a substantive rule can be made immediately effective upon publication if it provides an exemption or relieves a regulatory burden. Therefore, OSHA is making the exemption for scientific diving effective as of today's date.

Should the issuance of this exemption be stayed, judicially or administratively, or should this exemption not sustain legal challenge under section 6(f) of the Occupational Safety and Health Act, the current standards in §§ 1910.401-1910.440 will remain in effect for scientific diving.

**VI. Authority**

This document was prepared under the direction of Thorne G. Auchter, Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, D.C. 20210.

Accordingly, pursuant to sections 6(b) and 8(c) of the Occupational Safety and Health Act of 1970 (84 Stat. 1593, 1599; 29 U.S.C. 655, 657), Section 41 of the Longshoreman's and Harbor Workers' Compensation Act (44 Stat. 1444 as amended; 33 U.S.C. 941), Secretary of Labor's Order No. 8-76 (41 FR 25059), and 29 CFR Part 1911, Part 1910 of Title 29 of the Code of Federal Regulations, is amended as set forth below.

**PART 1910—[AMENDED]**

1. Section 1910.401 is amended by adding a new paragraph (a)(2)(iv) to read as follows:

**§ 1910.401 Scope and application.**

(a) \* \* \*

(2) \* \* \*

(iv) Defined as scientific diving and which is under the direction and control of a diving program containing at least the following elements:

(A) Diving safety manual which includes at a minimum: procedures covering all diving operations specific to the program; procedures for emergency care, including recompression and evacuation; and criteria for diver training and certification.

(B) Diving control (safety) board, with the majority of its members being active divers, which shall at a minimum have the authority to: Approve and monitor diving projects; review and revise the diving safety manual; assure compliance with the manual; certify the depths to which a diver has been trained; take disciplinary action for unsafe practices;

and, assure adherence to the buddy system (a diver is accompanied by and is in continuous contact with another diver in the water) for SCUBA diving.

2. Section 1910.402 is amended by adding a new definition, "scientific diving," between definitions for "Psi(g)" and "SCUBA diving," to read as follows:

**§ 1910.402 Definitions.**

"Scientific diving" means diving performed solely as a necessary part of a scientific, research, or educational activity by employees whose sole purpose for diving is to perform scientific research tasks. Scientific diving does not include performing any tasks usually associated with commercial diving such as: placing or removing heavy objects underwater; inspection of pipelines and similar objects; construction; demolition; cutting or welding; or the use of explosives.

(Sec. 6, 8, 84 Stat. 1593, 1598 (29 U.S.C. 655, 657); Sec. 41, 44 Stat. 1444 (33 U.S.C. 941); 29 CFR Part 1911, Secretary of Labor's Order No. 8-76 (41 FR 25059))

Signed at Washington, D.C. this 19th day of November, 1982.

Thorne G. Auchter,

Assistant Secretary of Labor.

[FR Doc. 82-32335 Filed 11-24-82; 8:45 am]

BILLING CODE 4510-26-M

**DEPARTMENT OF THE INTERIOR****Minerals Management Service****30 CFR Part 211****Coal Exploration and Mining Operations**

**AGENCY:** Minerals Management Service, Interior.

**ACTION:** Corrections to final rule.

**SUMMARY:** This document corrects clerical/typographical errors and minor omissions in the July 30, 1982, final rulemaking for 30 CFR Part 211, Coal Exploration and Mining Operations (47 FR 33154). These corrections are being made to clarify portions of the rule that appear to be ambiguous.

**EFFECTIVE DATE:** November 26, 1982.

**FOR FURTHER INFORMATION CONTACT:** Mr. Thomas V. Leshendok, (703) 860-7506, (FTS) 928-7506, or Mr. Harold W. Moritz, (703) 860-7136, (FTS) 928-7136.

**SUPPLEMENTARY INFORMATION:** In the July 30, 1982, *Federal Register*, the Minerals Management Service (MMS) published final rulemaking for 30 CFR Part 211, Coal Exploration and Mining

Operations. Review by the principal authors of that rulemaking has revealed potential ambiguities due to clerical/typographical errors and minor omissions of phrases. This correction to that final rulemaking is intended to remove the potential ambiguities.

In addition, one comment received on the December 16, 1981, proposed rulemaking for 30 CFR Part 211 (46 FR 61424) requested that "soil samples (taken) for reclamation purposes" should be included in the definition of exploration. In the preamble to the July 30, 1982, final rulemaking for 30 CFR Part 211 (47 FR 33158), MMS concurred with the comment and added the word "soil" to the definition of "exploration" (47 FR 33181). Further review of this addition has revealed that the inclusion of the word "soil" could be misconstrued to mean that an exploration plan would have to be approved by MMS if *only* soil sampling were to be conducted. This was not the intent of MMS when it concurred with the comment.

The MMS has determined that soil sampling in and of itself does not constitute exploration. Therefore, the word "soil" has been deleted from the definition of "exploration."

The corrections to the final rulemaking document are as follows:

**General Correction**

1. Throughout the entire "SUPPLEMENTARY INFORMATION," "43 CFR Part 3400" is corrected to read "43 CFR Group 3400"; "30 CFR 211" is corrected to read "30 CFR Part 211"; and, "10 CFR 378" is corrected to read "10 CFR Part 378".

**Specific Corrections—Preamble**

2. On page 33154, line 10 of the "SUMMARY" in the first column is corrected to read "continued operation, advance royalty,".

3. On page 33154, line 16 of the second paragraph of "Responsibilities under MLA" in the second column is corrected to read "requirements of FCLAA for exploration,".

4. On page 33154, the last line of the paragraph entitled "Relation to OSM's Federal Lands Program" in the third column is corrected to read "involve Federal coal."

5. On page 33154, the first paragraph under "General Comments" in the third column is corrected by adding "until the first lease readjustment after August 4, 1976." to the end of the last sentence.

6. On page 33155, columns 2 and 3 of the chart in column 3 are corrected by inserting a new line following the line that reads "Commercial Quantities"