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UNITED STATES DEPARTMENT OF THE
BUREAU OF LAND MANAGEMEME
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IN REPLY REFER TO:
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Instruction Memorandum No. 90-566
Expires: 09/30/91

To: All State Directors

From: Director

Subject: Cyanide Management Policy for Activities Authorized under
43 CFR 3802/3809

PROGRAM AREA: Mining Law Administration, Surface Management.

ISSUE: Development of the use of cyanide heap leach technology for low grade gold and silver ore has led to an increase in the number of operations using cyanide on public lands. Concerns have been raised about the adequacy and consistency of ELM enforcement of regulations covering environmental problems unique to this technology.

The policy presented in this Instruction Memorandum and others (see W.O. IM 90-56, W.O. IM 90-57, W.O. IM 90-58, and W.O. IM 90-59) is responsive to the increasing use of cyanide heap leaching on public lands and is designed to promote consistent management practices to ensure that operations which use cyanide or other lethal solutions do not cause unnecessary or undue degradation of Federal lands. This policy implements the December 1989 recommendation by the Mining Law Administration Task Force to develop a Bureau cyanide management policy.

POLICY: Effective immediately, the authorized officer shall ensure that operations which use cyanide or other solutions lethal to humans, wildlife, or livestock are conducted in a manner which ensures the safety and protection of the public and the public lands consistent with Attachment 1, Bureau of Land Management Policy for Surface Management of Operations Utilizing Cyanide or other Leaching Techniques.

TIMEFRAMES: The attached policy is effective upon receipt of this instruction. All new operations are subject to this policy. Existing operations are subject to this policy with the following exceptions, as determined by the authorized officer: (1) operations which have had no unauthorized discharges will not be subject to the specified design storm event for overflow containment unless existing facilities are determined to be

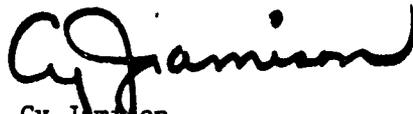
inadequate by the authorized officer; (2) operations which have not experienced avian mortalities will not be subject to the requirement for netting existing lethal solution containment structures; and (3) existing facilities, such as heaps, pads, and cyanide solution ponds, are exempt from criteria contained in this policy which would require reconstruction unless such facilities cause unnecessary or undue environmental degradation. As operating plans are modified for existing operations and new cyanide facilities are proposed, those proposed facilities will be subject to all aspects of this policy.

BUDGET IMPLICATIONS: This policy is part of the Director's Surface Management Initiative. The policy represents a significant increase in effort by the BLM and must be planned accordingly.

MANUAL/HANDBOOK SECTION: Affects Manual Section 3809. Future guidance in the form of a draft national level handbook will be forthcoming in FY 91.

COORDINATION: Usual contacts.

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Cy Jamison
Director

1 Attachment

- 1 - Bureau of Land Management Policy for Surface Management of Operations Utilizing Cyanide or Other Leaching Techniques (5 pp.)

Bureau of Land Management
Policy for Surface Management of Mining Operations
Utilizing Cyanide or other Leaching Techniques

This statement sets forth nationwide BLM policy for surface management of mining operations which use chemicals such as cyanide for mineral extraction on public lands. While chemicals are necessary to recover metals from their ore, it is the Bureau's policy to ensure that such operations are conducted safely and in accordance with applicable law and regulation.

Public lands are a vital source of the Nation's mineral resources. Mining operations which utilize cyanide or other chemical leaching methods for extractive purposes (henceforth referred to as "cyanide operations" in this document) play an important role in the metals industry. Such operations are subject to the provisions of the surface management requirements at 43 CFR 3802/3809 which are designed to prevent unnecessary or undue degradation.

This policy seeks to ensure nationwide consistency in the management of cyanide leach operations on public lands. In addition, the policy applies to mining operations which use other leaching techniques for extractive purposes. For simplification, the terms "cyanide" and "cyanide solution", as used in this document, are meant to encompass all other similar leaching techniques which use potentially toxic or lethal concentrations in solution as the leachate medium.

The following principles will guide BLM in managing mining and milling operations which utilize cyanide leaching techniques on public lands:

1. Surface management of operations which use cyanide and other leaching techniques is a responsibility of BLM in conjunction with other Federal and State agencies. The BLM shall maximize coordination with Federal and State regulatory agencies to avoid duplication and increase effectiveness in monitoring operations. The BLM State Offices shall develop Memoranda of Understanding with the appropriate Federal and State agencies, including the USFWS and MSHA, which address all applicable regulations and responsibilities. Supplemental MOUs may be developed at the District or Resource Area levels as appropriate.
2. The BLM shall supplement the minimum criteria contained in this policy through the development of State and, as appropriate, District or Resource Area Cyanide Management Plans in areas where cyanide or other leaching agents are used. The Plans will reflect local conditions and State regulations in order to ensure environmental protection, prevent wildlife mortalities, and mandate employee and public safety.

The Plans will provide guidance on BLM actions and responsibilities. The Plans will address the full spectrum of management, notice and plan of operation review, inspection, and reclamation, including State requirements and coordination, Federal requirements and coordination, coordination with the BLM hazardous materials program, Land

Use Plan objectives, adequacy of plan data, need and degree of NEPA documentation, standards, bonding, inspection and enforcement, protection of the public, wildlife and livestock, temporary and final closure, acceptable reclamation, fate and effect of cyanide after closure, contingency actions for spills, monitoring, reporting, and tracking. The Plans shall incorporate all aspects of the Bureau's cyanide management policy and all applicable MOUs. Draft State/District Plans shall be submitted to WO for review by April 1991.

3. The Bureau will continue to modify and refine, as appropriate, nationwide policy, guidance, and standards for management of cyanide leaching operations on public lands. This guidance will serve as the basis from which the Bureau will ensure consistent management of such operations. The guidance may be developed in concert with non-Bureau sources.
4. The BLM shall use the NEPA process to evaluate all impacts of a proposed plan-level cyanide operation at an appropriate level of analysis and develop stipulations which will prevent unnecessary or undue degradation.
5. The BLM will ensure adequate training for all its employees involved in the surface management of operations using cyanide or other leaching agents in the areas of safety and management practices. The 3000-48 inspection and enforcement course for locatable minerals will address inspections of such operations. Current surface management courses will be revised to address these operations.

The Bureau will ensure that adequate expertise is available in the field where needed. The expertise may be obtained from within the Bureau or other agencies, or through hiring and/or contracting. A core team of Bureau cyanide management experts will be established. This group of technical personnel will meet periodically to identify and address cyanide management issues, provide technical advice upon request within the Bureau, and brief management, which will act accordingly.

6. The BLM will encourage applied research on reclamation and environmental issues at individual mine sites, including the use of test plots to determine successful reclamation measures prior to closure.
7. The BLM will maximize information transfer and sharing of best management practices. The early Mining Law Surface Management Assistance Team efforts will focus on cyanide operations. Reports of the assistance team's visits will be prepared for dissemination to the field. Locatable minerals workshops will provide a forum for the sharing of cyanide management issues and their resolution within the Bureau.
8. The BLM shall require bonds for the full cost of reclamation, including heap and solution detoxification and neutralization to State and Federal standards, for all cyanide operations conducted on public lands under an approved plan of operations.

9. At a minimum, cyanide operations will be inspected by BLM surface management staff on a quarterly basis (i.e., four times per year). All inactive cyanide operations which are not reclaimed (i.e., seasonal or temporarily shut down operations) will be inspected by BLM personnel to ensure that cyanide is not inadvertently lost to the environment through inadequate maintenance or failure of facilities at the site.
10. The BLM shall ensure protection of the public, wildlife, and livestock. Cyanide operators will fence all active and disturbed unreclaimed areas associated with the cyanide leach operations to limit access. Closure of such areas to the public may, at the discretion of the authorized officer, be done through the Federal Register. Operators will not be required to fence access roads unless specifically required by BLM or other State/Federal agencies.
11. All operations using cyanide leaching techniques are to conduct such operations using the best practicable technology in order to ensure environmental protection through containment or neutralization of solutions lethal to humans or wildlife. The practices listed below apply, unless the practice or standard is specifically addressed by State law or regulation and is at least as effective. Such practices will include the following:
 - a. Cyanide facilities shall be designed to contain, at a minimum, the maximum operating water balance in addition to the 100-year, 24-hour storm event unless otherwise specifically authorized for such facilities under State or Federal law. Facilities shall include overflow ponds for cyanide solution containment structures and leach pads or, as an alternative to overflow ponds, ponds designed with excess capacity to contain the designated potential storm event in addition to the maximum operating water balance. Consideration will also be given to snowmelt events and expected drawdown from heaps during power outages.
 - b. Tanks containing lethal solution shall be bermed to contain the maximum tank contents in the event of catastrophic tank failure.
 - c. All facilities shall be constructed according to accepted engineering practices. Heaps, tailings impoundments or ponds, and solution holding facilities shall be constructed in the best practical manner to prevent escape of solution and environmental contamination.
 - d. Design of all solution containment facilities should reduce surface water exposure in order to minimize the potential for exposure to the public, wildlife, and livestock. Pads and heaps will be designed to minimize the hydrostatic head of solution on the liner in order to lower the zone of saturation within heaps and reduce both surface ponding of solution and potential for subsurface leakage from the liner. Construction practices should maximize the physical stability of heap and pad materials in order to avoid failure.

- e. Leakage detection and recovery systems must be designed for heaps and solution containment structures. Monitoring of ground and, when present, surface water through closure and final reclamation is required. The BLM will coordinate with States to ensure that adequate long term monitoring of ground water for toxic substances, including heavy metals, is performed for those tailings impoundments and other facilities with a potential for future environmental degradation. Any unauthorized spill or discharge of cyanide solution shall be reported immediately to the BLM and appropriate State agency.
 - f. Cyanide solution and heaps must be neutralized or detoxified. Cyanide solution shall be neutralized upon release to the environment, temporary closure (any cessation of operations exceeding thirty days), seasonal closure, or final closure. Any prolonged period of inactivity requires neutralization of solution. The authorized officer may, in cases of temporary or seasonal closure, waive the requirement for neutralization of cyanide solution, if the operator provides adequate maintenance, monitoring, security, and bonding.

Heaps shall be neutralized upon final completion of each heap. Final closure mandates neutralization of all heaps, ponds, and other facilities. Flushing or equally successful alternative methods may be used. Heap materials and/or discharges, if flushing is used, must achieve levels acceptable to the State and EPA upon closure.
 - g. Surface disturbance shall be minimized. The BLM encourages the use of reusable pads and vat leach facilities where appropriate to minimize surface disturbance. Reclamation of inactive portions of project areas should be concurrent with ongoing operations.
 - h. Engineering designs, maps, and cross-sections of the leaching facilities must be submitted for plans of operations. Ground water and soil mechanics information is required for review of designs. A detailed description of the quality control and quality assurance programs that will be used during construction of the cyanide facilities is necessary. The operator will provide engineering designs of all cyanide facilities, exclusive of the recovery and refining facility, for review and approval by the authorized officer prior to construction, startup, and the introduction of cyanide.
 - i. In the absence of any similar State requirement, the authorized officer may require an operator to provide independent verification by a registered, professional engineer that the facilities are constructed according to the approved design plan and specifications.
12. The BLM will require that operations utilizing cyanide and other leaching agents on public lands avoid wildlife mortality unless otherwise authorized by the USFWS and/or appropriate State regulatory agency.

Any operator who kills or takes a migratory bird without the appropriate USFWS permit is in violation of the Migratory Bird Treaty Act and, thus the provisions of the 43 CFR 3809 regulations. The BLM will require immediate appropriate remedial measures and/or take enforcement action pursuant to coordination and/or agreements with the USFWS and/or State wildlife agencies.

All areas with exposed cyanide solution, including heaps, will be fenced to prevent access by the public, wildlife, and livestock. Signs, in the appropriate language, must be posted near any perceived water sources which contain cyanide. In selected cases, neutralization may be used in lieu of fencing tailings impoundments, as long as sublethal concentrations of cyanide are maintained and frequent monitoring is implemented.

Solution containment and transfer structures, including ditches, ponds, and tailings impoundments, which contain levels of cyanide or other leaching agents lethal to humans, wildlife, or livestock, will be fenced and covered in a manner which will prohibit access. Operators are encouraged to design such structures to allow for effective and efficient netting and minimization of surface exposure of solution prior to submittal of a plan of operations. Alternative methods other than netting may be utilized if demonstrated to be as effective in the prevention of wildlife mortality.

Open cyanide solution containment and transfer structures which contain sublethal concentrations of cyanide are to be sampled weekly and analyzed for cyanide concentration by the operator. The authorized officer has the discretion to require independent sampling and analysis. Any willful misrepresentation of analysis by the operator will result in issuance of a notice of noncompliance and may lead to other prosecution as appropriate. Any levels of cyanide or other leaching agents in open solution containment and transfer structures which are lethal to humans, wildlife, or livestock shall be immediately reported by the operator to the BLM.

All cyanide solution containment facilities shall be inspected by the operator at least weekly, unless otherwise authorized, for mortalities and the results reported to the appropriate State regulatory agency and the BLM. Any mortalities discovered shall be reported to BLM within 24 hours or in accordance with any applicable State or Federal MOU.

13. The BLM will, within 30 days of a determination that a project is abandoned and in accordance with any State MOU's, collect the amount of the bond necessary and/or initiate prompt treatment and removal of process solutions or materials from possible discharge to the environment or contact with humans, wildlife, or livestock.