



[3411-15-P]

## **DEPARTMENT OF AGRICULTURE**

### **Forest Service**

**RIN 0596-AC51**

### **Proposed Directive on Groundwater Resource Management,**

### **Forest Service Manual 2560**

**AGENCY:** Forest Service, USDA.

**ACTION:** Notice of proposed directive; request for comment; announcement of national informational webinars.

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**SUMMARY:** The Forest Service proposes to amend its internal Agency directives for Watershed and Air Management to establish direction for management of groundwater resources on National Forest System (NFS) lands as an integral component of watershed management. Specifically, the proposed amendment would provide direction on the consideration of groundwater resources in agency activities, approvals, and authorizations; encourage source water protection and water conservation; establish procedures for reviewing new proposals for groundwater withdrawals on NFS lands; require the evaluation of potential impacts from groundwater withdrawals on NFS resources; and provide for measurement and reporting for some larger groundwater withdrawals. This proposed amendment would supplement existing special uses and minerals and geology directives to address issues of groundwater resource management and would help ensure consistent and adequate analyses for evaluating potential uses of NFS lands that could affect groundwater resources. Public comment is invited and will be considered in development of the final directive. This proposed groundwater directive

represents a change in the Forest Service's national policy on water management. The Forest Service wants to ensure that there is sufficient time for potentially affected parties, including States, to comment. Thus the Agency is providing an extended comment period for the proposed directive. In addition, the Forest Service will host a webinar on the proposed directive to present information and answer questions on the proposed policy and the comment process during the first half of the comment period. Additional meetings and/or webinars will be offered as needed. Specific information regarding the dates and times of the webinar will be announced by news release and at the following website: <http://www.fs.fed.us/geology/groundwater>. A recording of the webinar will also be posted on the website.

**DATES:** Comments must be received by [Insert date 90 days from date of publication in the **FEDERAL REGISTER**].

**ADDRESSES:** Send comments electronically by following the instructions at the Federal eRulemaking portal at <http://www.regulation.gov>. Comments may also be submitted by electronic mail to [fsm2500@fs.fed.us](mailto:fsm2500@fs.fed.us) or by mail to Groundwater Directive Comments, USDA Forest Service, Attn: Elizabeth Berger – WFWARP, 201 14th Street, SW, Washington, DC, 20250. If comments are sent electronically, the public is requested not to send duplicate comments by mail. Please confine comments to issues pertinent to the proposed directive; explain the reasons for any recommended changes; and, where possible, refer to the specific wording being addressed. All comments, including names and addresses when provided, will be placed in the record and will be available for public inspection and copying. The public may inspect the comments received on the proposed directive at the USDA Forest Service Headquarters, located in the Yates Federal Building

at 201 14<sup>th</sup> Street, SW, Washington, DC, on regular business days between 8:30 a.m. and 4:30 p.m. Those wishing to inspect the comments are encouraged to call ahead at (202) 205-0967 to facilitate entry into the building.

**FOR FURTHER INFORMATION CONTACT:** Joseph Gurrieri, Watershed, Fish, Wildlife, Air and Rare Plants Staff and Minerals and Geology Management Staff, (303) 275-5101. Individuals who use telecommunication devices for the deaf (TDD) may call the Federal Information Relay Service at (800) 877-8339 between 8:00 a.m. and 8:00 p.m. on regular business days.

## **SUPPLEMENTARY INFORMATION:**

### **Background and Need for the Proposed Directive**

Despite concerns regarding water availability and quality across the country for ecosystem viability and new and existing human uses, the Forest Service does not have any comprehensive direction for management of groundwater resources on NFS lands. Ongoing climate and land use changes in combination with increasing societal water uses are resulting in substantial effects on the spatial and temporal distribution of water resources, including those on NFS lands. The proposed directives better position the Forest Service to identify and manage the consequences of those changes for the groundwater resources on NFS lands.

The Forest Service manages 193 million acres of Federal lands, much of which is located in the headwaters and recharge areas of the nation's streams and aquifers. NFS lands provide sources of drinking water for people in 42 States and the Commonwealth of Puerto Rico. Thus, the Forest Service has a critical role in maintaining the integrity of the water resources associated with NFS lands and needs to take an active role, in

cooperation with the States, in comprehensive management of water resources on those lands. The Washington Office Watershed, Fish, Wildlife, Air and Rare Plants and the Minerals and Geology Management staffs propose Forest Service Manual (FSM) 2560 as a key component of this effort.

The Forest Service recognizes a need to establish a consistent approach for addressing both surface and groundwater issues that appropriately protects water resources, recognizes existing water uses, and responds to the growing societal need for high-quality water supplies. Establishing comprehensive direction for groundwater resource management would round out existing policy (FSM 2500) to include all relevant components of watershed resources.

The Forest Service currently provides some groundwater program direction in FSM 2880, entitled “Geologic Resources, Hazards, and Services,” which addresses agency inventory and monitoring activities for groundwater. FSM 2560 (formerly FSM 2543), entitled “Groundwater Resource Management,” would focus on Forest Service projects and authorizations potentially affecting groundwater resources. Proposed FSM 2560 is being published for public notice and comment because it establishes new policies and procedures for both water resources management and special use authorizations that involve access to or utilization of groundwater resources on NFS lands. Many of these policies and procedures, although new to the Forest Service nationally, are consistent with management and regulatory approaches in many States and localities across the country.

Pursuant to statutory direction from Congress, NFS lands were set aside or acquired at least in part for the protection and management of water resources, and the

Forest Service recognizes the need to address water in a comprehensive manner. Since groundwater is an integral component of the hydrological cycle in all watersheds, it is appropriate to include groundwater on NFS lands within an integrated water resources management program. The Forest Service recognizes that States and tribes also have responsibilities for water resources within their boundaries and that management of groundwater needs to be conducted cooperatively with the States and tribes to be successful.

This proposed directive addresses components of some other Federal initiatives involving water, including Executive Order (E.O.) 13423, dated January 24, 2007, E.O. 13514, dated October 5, 2009, and the National Science and Technology Council (NSTC) Strategy for Federal Science and Technology to Support Water Availability and Quality, dated September 2007 ([http://www.ostp.gov/cs/nstc/documents\\_reports](http://www.ostp.gov/cs/nstc/documents_reports)). The proposed directive directly addresses portions of sections 1, 2(c), 3(a)(iii), 3(b)(iii), and 3(f) of E.O. 13423 and section 2(d) of E.O. 13514 concerning water use and conservation in activities conducted by the Forest Service and its authorization holders and would help bring the Forest Service into compliance with the relevant portions of the E.O. The proposed directive responds to the 2012 Planning Rule for National Forest System land management planning (36 CFR Part 219) specifying that forest plans must include components to maintain or restore water resources including groundwater. The proposed directive also would respond to recommendations in the National Science & Technology Council's water strategy calling for Federal agencies to inventory existing water resources and uses.

## Summary of Proposed Changes

Under the proposed directives:

- Management efforts would be focused on portions of the groundwater system that if depleted or contaminated would adversely affect surface resources, such as groundwater-dependent ecosystems and present or future uses of water.
- Ground and surface water would be assumed to be hydraulically connected, unless demonstrated otherwise using site-specific information.
- Implementation of appropriate water conservation measures would be required for Forest Service uses and special uses involving groundwater resources.
- The Forest Service and holders of special use authorizations involving large groundwater withdrawals and injections would be required to measure and report the volume of water pumped. Obtaining information about the nature, extent, and ongoing uses of groundwater resources on NFS lands would allow the Forest Service to manage those resources appropriately and sustainably.
- Consideration of the effects on the groundwater resources on NFS lands of all proposed and authorized groundwater uses would be required prior to authorization or reauthorization.
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A framework would be established for evaluating effects of existing and proposed uses of NFS lands on the associated groundwater resources, based upon a framework established in 2001 in a Forest Service Southwestern Region supplement to FSM 2540.

- Monitoring and mitigation would be required for major groundwater withdrawals and injections.
- In recognition of the uncertainty inherent in evaluation of impacts from uses on groundwater resources and the changing availability and distribution of those resources due to climate change, terms and conditions of special use authorizations involving groundwater withdrawals or injections would be modified, as appropriate, based upon the results from project monitoring.

### **Section-by-Section Analysis**

#### **2560.01 – Authorities**

This proposed section enumerates the authority in statutes, regulations, executive orders, and directives for groundwater resource management on NFS lands.

#### **2560.02 – Objectives**

This proposed section would establish the objectives for groundwater resource management on NFS lands. Paragraph 1 would establish the objective of cooperatively managing groundwater with States to promote long-term maintenance or restoration of groundwater systems and the groundwater-dependent ecosystems they support.

Paragraph 2 would establish the objective of collecting and distributing groundwater-related information for use in planning and decisionmaking.

Paragraph 3 would establish the objective of evaluating all activities on and proposed uses of NFS lands for effects on groundwater resources and avoiding, minimizing, or mitigating adverse effects.

Paragraph 4 would establish the objective of authorizing development and use of groundwater on NFS lands only when those uses adequately protect resources on those lands.

### **2560.03 – Policy**

This proposed section would address the policies for groundwater management on NFS lands. Paragraph 1 would provide for focusing Forest Service groundwater resource management on those portions of the groundwater system that, if depleted or contaminated, would have an adverse effect on surface resources or present or future uses of groundwater.

Paragraph 2 would provide for evaluation and management of surface and groundwater as a single hydraulically interconnected resource, unless it can be demonstrated that they are not, using site-specific information.

Paragraph 3 would provide for evaluation and management of the combined surface and groundwater hydrological system on an appropriate spatial scale, taking into account surface water and groundwater watersheds, which may not be identical, and relevant aquifer systems.

Paragraph 4 would provide for consideration of effects of proposed activities on groundwater resources. Specifically, paragraph 4a would provide for consideration of the effects of proposed actions upon groundwater quantity, quality, and timing prior to approval of a proposed use or implementation of a Forest Service activity. Paragraph 4b



would require use of appropriate science, technology, models, information, and expertise to address groundwater resources when revising or amending applicable land management plans and evaluating project alternatives. Paragraph 4c would provide that the Forest Service receive all groundwater monitoring data and information required by other permitting authorities and would require that the Forest Service appropriately utilize that information when evaluating effect from the project on groundwater resources. Paragraph 4d would provide for conducting, evaluating, and reporting of monitoring and mitigation appropriate to the scale and nature of potential effects when approving or authorizing a proposed use or Forest Service activity that has a significant potential to adversely affect groundwater resources on NFS lands.

Paragraph 5 would provide that adverse impacts from Forest Service actions on groundwater resources and groundwater-dependent ecosystems located on NFS lands must be prevented, minimized, or mitigated to the extent practical, unless otherwise required by law.

Paragraph 6 would address work with other entities and organizations on groundwater. Paragraph 6a would provide for management of groundwater quantity and quality on NFS lands in cooperation with appropriate State agencies, and, if applicable, the United States Environmental Protection Agency (EPA).

Paragraph 6b would provide for collaboration with other Federal agencies, such as experts from the U.S. Geological Survey, State, tribal and local agencies, State geological surveys, universities, and industry and other appropriate organizations when locating, investigating, or assessing the hydrogeology and groundwater resources of NFS lands.

Paragraph 6c would provide for submission of comments regarding proposed activities either on or off of NFS lands that may adversely affect groundwater resources on NFS lands to project proponents and to responsible local, State, tribal, or other Federal entities with the authority to regulate those activities.

Paragraph 6d would provide for management of wellhead protection areas, source water protection areas, and critical aquifer protection areas that are formally designated pursuant to the provisions of the Safe Drinking Water Act (SDWA) or State equivalent in accordance with the procedures in regulations and directives governing municipal supply watersheds.

Paragraph 6e would require water rights to be obtained under applicable State procedures for groundwater and groundwater-dependent surface water needed by the Forest Service; and would require authorization holders operating on NFS lands to obtain water rights under applicable State procedures.

Paragraph 6f would provide for evaluation of all applications to States for water rights on NFS lands and those applications on adjacent lands that could adversely affect NFS groundwater resources and for identification of any potential injury to those resources or to Forest Service water rights under applicable State procedures.

Paragraph 7 would address use of groundwater. Specifically, and consistent with the provisions of E.O. 13423 and E.O. 13514, paragraph 7a would provide for efficient use of groundwater needed to meet NFS purposes, especially in water-scarce areas or during periods of drought.

Paragraph 7b would provide for favoring development of suitable and available groundwater sources rather than surface water sources for drinking water at Forest Service administrative and recreational sites, due to the generally more stable water quality and quantity of groundwater sources.

Consistent with existing special uses requirements, Paragraph 7c would encourage the use of water sources located off NFS lands when the water use is largely or entirely off NFS lands, unless the applicant is a public water supplier and the proposed source is located within a designated municipal supply watershed for that supplier.

In accordance with the provisions of E.O. 13423 and E.O. 13514, paragraph 7d would require implementation of water conservation strategies in Forest Service administrative and recreational uses and incorporation of these strategies in operating plans for new and reissued special use authorizations involving groundwater withdrawals from high-capacity wells and for public drinking water systems at the time of issuance or reissuance of the authorization.

Paragraph 8 would address measurement of groundwater withdrawals and injections on NFS lands, which is a key component of E.O. 13423 and the NSTC water strategy. Specifically, paragraph 8a would require measurement and reporting to the Forest Service of the quantity of water utilized for all public drinking water systems that withdraw water from NFS lands and that are classified as community water systems under the SDWA in applicable authorizations. For those affected public drinking water systems, this requirement would be added at the time of authorization, reauthorization, or modification. This requirement would be added to an existing authorization, if the

authorization allows for amendment to incorporate new terms required by a directive at the discretion of the authorized officer or if the holder consents.

Paragraph 8b would require measurement and reporting of the quantity of water utilized for all groundwater withdrawals from high-capacity wells located on NFS lands (including those sourced from springs) in applicable authorizations. Withdrawals would not have to be measured or reported from wells equipped only with a hand or windmill pump. For those affected wells, this requirement would be added at the time of authorization, reauthorization, or modification. This requirement would be added to an existing authorization, if the authorization allows for amendment to incorporate new terms required by a directive at the discretion of the authorized officer or if the holder consents.

Paragraph 8c would require measurement and reporting of flows for all large water-injection wells located on NFS lands that open into a geologic formation containing fresh water (involving less than 1000 parts per million total dissolved solids) in applicable authorizations. For those affected wells, this requirement would be added at the time of authorization, reauthorization, or modification. This requirement would be added to an existing authorization, if the authorization allows for amendment to incorporate new terms required by a directive at the discretion of the authorized officer or if the holder consents.

Paragraph 9 would address compliance with groundwater requirements. In particular, paragraph 9a would provide for prevention of groundwater contamination by following applicable Federal, State, and local requirements and the applicable provisions of the Forest Service's Health and Safety Code Handbook and applying best management

practices for all Forest Service activities involving transporting, storing, mixing, and applying pesticides and other potentially toxic or hazardous materials; cleaning, repairing and fueling equipment; and disposing of fuels, lubricants, pesticides, or other potentially toxic or hazardous materials.

Paragraph 9b would require all Forest Service uses and activities that are authorized or to be authorized and that involve water wells (including monitoring wells) to be in compliance with applicable Federal, State, or local standards or, as applicable, American Society for Testing and Materials (ASTM), American Water Works Association (AWWA), National Ground Water Association (NGWA), or other water well industry standards for the design, construction, and abandonment of wells. This requirement would be added to existing and new authorizations for affected water wells.

Paragraph 9c would require that wells that are no longer needed or maintained to be abandoned in compliance with applicable Federal, State, or local standards or, as applicable, ASTM, AWWA, NGWA, or other water well industry standards for decommissioning wells. This requirement would be added to existing and new authorizations for affected water wells.

Paragraph 9d would require all Forest Service uses and activities that are authorized or to be authorized and that involve on-site wastewater systems, including septic systems and holding tanks, to be in compliance with applicable Federal, State, or local standards for the design, construction, operation, and maintenance of wastewater systems. This requirement would be added to existing and new authorizations for affected on-site wastewater systems.

In accordance with E.O. 13423 and E.O. 13514, paragraph 9e would require installation of appropriate water conservation equipment and utilization of suitable water conservation practices at all federally owned facilities.

Paragraph 9f would require Forest Service-operated drinking water systems that use groundwater to comply with EPA's National Primary Drinking Water Regulations, including the National Primary Drinking Water Standards. Paragraph 9f also would provide for holders that operate public drinking water systems using water wells located on NFS lands to comply with the National Primary Drinking Water Standards and to submit the results of any required monitoring to the Forest Service.

Paragraph 9g would require compliance with applicable State and EPA SDWA regulations in evaluating whether a groundwater source of drinking water is under the direct influence of surface water.

Paragraph 9h would require compliance with applicable Federal, State, tribal, and local requirements for wellhead and critical aquifer protection and underground injection control, including septic systems. Paragraph 9h also would require all underground injection wells (Classes I through V under the SDWA) on NFS lands to be inventoried with the appropriate State agency or EPA.

Paragraph 9i would require management of groundwater resources in municipal supply watersheds per applicable regulations and directives.

Paragraph 10 would address cleanup of contaminated groundwater. Specifically, paragraph 10a would require use of the procedures in FSM 2160 to conduct the appropriate response to contaminated groundwater or a potential threat of contamination of groundwater and to notify the National Response Center, as appropriate.

Paragraph 10b would require the use of the Forest Service's authority under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to ensure clean up of contaminated groundwater or otherwise respond to a potential threat of contamination resulting from a release or threat of a release of a hazardous substance, pollutant, or contaminant that presents an imminent and substantial danger to the public health or welfare.

In circumstances where exercise of Forest Service CERCLA authority may not be appropriate, paragraph 10c would require working with EPA or other Federal agencies under other applicable authorities, such as the Resource Conservation and Recovery Act, Surface Mining Control and Reclamation Act, or Clean Water Act, or working with States under applicable State authority to clean up contaminated groundwater or otherwise respond to a potential threat of contamination resulting from a release or threat of a release of a hazardous substance, pollutant, contaminant, or petroleum or petroleum product.

Paragraph 11 would address land valuation and groundwater. This proposed section would require that an appropriate assessment of potential groundwater availability be conducted by qualified groundwater personnel as part of the appraisal process when water availability may be of significance on NFS lands proposed for a land exchange.

#### **2560.04 – Responsibility**

This proposed section delineates the duties of the specified Forest Service officials for implementation of the proposed groundwater policy.

#### **2560.05 – Definitions**

This proposed section includes definitions of technical terms used in the proposed directive. There are a substantial number of definitions, and most are straightforward or standard in the field of groundwater science. The other material definitions follow.

Groundwater-dependent ecosystems would be defined to be communities of plants, animals, and other organisms that depend on access to or discharge of groundwater, such as springs, fens, seeps, areas of shallow groundwater, cave and karst systems, hyporheic and hypolentic zones, and groundwater-fed lakes, streams, and wetlands.

A high-capacity well would be defined as a well, a set of wells located within a limited area and accessing the same aquifer or spring system, or a spring development that is or is capable of withdrawing water at a continuous rate of 35 gallons per minute (equivalent to 50,400 gallons per day; 6,737 cubic feet per day; or 0.15 acre-feet per day) or greater based upon a capacity test, pumping test, or measured or estimated daily water usage. Non-artesian wells accessed only using a hand or windmill pump would be excluded from the definition of high-capacity wells. This definition would be consistent with the approach taken by most States that have defined non-irrigation high-capacity wells for water management purposes, and the flow rate in the definition is within the range of values established by those States. This flow rate is larger than that generally necessary to supply water to a single household and many small recreational enterprises.

A large water injection well would be defined to be an injection well utilized for water or wastewater that has a casing with an inside diameter of 4 inches or more. This casing size would be larger than that of most on-site wastewater disposal systems.



A publicly accessible water supply would be defined to be a water supply that is used to provide drinking water or water of potable or near-potable quality to a business, organization, or unit thereof; to a water distribution system that services more than one property, facility, or lease; or to a governmental facility, and that is not to be confused with a “public water system” defined in Forest Service policy and the SDWA.

A written authorization would be defined to be a grazing permit, plan of operations, special use authorization, or other type of written instrument issued by the Forest Service that authorizes the use and occupancy of NFS lands and resources subject to certain terms and conditions set forth in the instrument.

#### **2560.08 – References**

This proposed section would reference the Forest Service Technical Guide to Managing Ground Water Resources, FS-881, May 2007 (Technical Guide).

#### **2561 – Consideration of Groundwater Resources in Agency Projects, Approvals, and Authorizations**

This proposed section would establish procedures for addressing consideration of the effects on groundwater resources on NFS lands during decisionmaking for agency projects, approvals, and authorizations. This proposed section would address the potential effects on groundwater resources from the conjunctive use of groundwater and surface water, minerals development, and tunneling operations and the potential effects on groundwater quality from other authorized uses.

In particular, paragraph 1 would require the Forest Service to assume that groundwater and surface water are hydrologically connected, unless demonstrated otherwise using site-specific data. This assumption is consistent with scientific

understanding of the role and importance of groundwater in the planet's hydrological cycle.

Paragraph 2 would require the Forest Service to assess the potential for proposed projects, approvals, and authorizations to affect groundwater resources on NFS lands prior to implementation or approval. In addition, if there is a high probability of substantial impact on groundwater resources on NFS lands, an evaluation of those potential impacts must be conducted in a manner appropriate to the scope and scale of the proposal.

Paragraph 3 would require the Forest Service to include in new and reissued written authorizations, terms that require the holder to provide the Forest Service all groundwater monitoring data and information collected in compliance with applicable local, State, and other Federal requirements.

#### **2561.1 – Conjunctive Uses of Groundwater and Surface Water**

For proposed actions involving the conjunctive use of groundwater and surface water, paragraph 1 would require the Forest Service to consider the effects of the actions upon water resources, including but not limited to the effect on quantity, quality, timing, and spatial distribution. In addition, paragraph 2 would require the Forest Service to evaluate effects on water resources from proposed conjunctive uses through a hydrological assessment of the project area. Conjunctive use of groundwater and surface water for water supply needs can maximize the productive use of limited supplies of water. However, depending on the specifics of the system and its hydrological setting, the potential exists for substantial impacts on aquifer water quality and on the viability of

linked groundwater-dependent ecosystems. These provisions would help ensure that these concerns are adequately addressed in Forest Service decisionmaking.

### **2561.2 – Minerals and Energy Development**

This proposed section would apply to Forest Service actions involving locatable and leasable mineral mining; mineral materials development; oil, gas, and coal-bed methane development; and geothermal development. In addition, this proposed section would require the Forest Service for mining purposes to work with the appropriate entity under the SDWA to make sure that written authorizations for minerals or energy development appropriately address compliance with the Underground Injection Control Program. If not conducted appropriately, minerals and energy development activities have the potential to adversely affect groundwater resources on NFS lands. These provisions would help ensure that such concerns are adequately addressed in Forest Service decisionmaking.

### **2561.21 – Locatable Mineral Mining**

This proposed section would require that groundwater resources be addressed appropriately at both existing and proposed locatable mineral mines. The section would clarify that allowing use of groundwater for mining is a discretionary action to be addressed through authorization in the mining Plan of Operations. Facilities at existing mines would be evaluated as potential sources of groundwater contamination and would be monitored appropriately. Prior to approval, plans of operation for proposed mines would have to include provisions for appropriate operating procedures, facility designs, bonding, and groundwater monitoring. In reviewing a plan of operations for a proposed

mine, the Forest Service would have to evaluate the mine's potential to adversely affect groundwater resources.

#### **2561.22 – Leasable Mineral Mining**

This proposed section would require the Forest Service to consider the potential for proposed leasable mineral mines to adversely affect groundwater resources and to recommend to the leasing and permitting agencies appropriate lease terms, design modifications, and approval conditions, as applicable, to protect groundwater resources on NFS lands.

#### **2561.23 – Mineral Materials Development**

This proposed section would require the Forest Service to consider the effects on groundwater resources of proposed mineral materials development, such as sand and gravel operations and landscaping stone quarries, prior to approval. Additionally, the Forest Service would be required to include appropriate terms to protect groundwater resources in any new contracts or authorizations for mineral materials development.

#### **2561.24 – Oil, Gas, and Coal-Bed Natural Gas Operations**

This proposed section would require the Forest Service to work with the Bureau of Land Management (BLM) to gather relevant information regarding oil, gas, and coal-bed natural gas operations. Evaluation of the potential effects of oil, gas, and coal-bed natural gas exploration and development on groundwater resources would be required prior to consenting to lease NFS lands and prior to approving surface use plans of operations for those purposes. A specific geological and hydrogeological assessment would be required for leasing or development of non-traditional shallow natural gas, such as coal-bed methane. The Forest Service would be required to work with BLM and the

appropriate Clean Water Act and SDWA agencies to develop terms for leases and surface use plans of operations, when necessary, for monitoring and protecting water resources on NFS lands during oil, gas, and coal-bed natural gas exploration and development. Additionally, the Forest Service would be required to work with BLM and the appropriate SDWA agency to evaluate the capability of local geological formations to accept injected production waters from oil, gas, and coal-bed natural gas development operations.

#### **2561.25 – Geothermal Resource Operations**

This proposed section would require the Forest Service to work with BLM to gather relevant information regarding geothermal operations. Evaluation of the potential effects of geothermal exploration and development on groundwater resources would be required prior to consenting to lease NFS lands and prior to approving surface use plans of operations for that purpose. The Forest Service would be required to provide to BLM appropriate terms for geothermal leases and recommendations for geothermal authorizations to protect groundwater resources. Additionally, the Forest Service would be required to work with BLM and the appropriate SDWA agency to evaluate the capability of local geological formations to accept injected production waters from geothermal development operations.

#### **2561.3 – Tunneling Operations**

This proposed section would require the Forest Service to evaluate proposed tunneling operations beneath NFS lands that are not approved as part of an authorized minerals or energy development for their potential to affect water resources on NFS lands. The Forest Service would be required to conduct environmental analyses that

include evaluation of groundwater resources, as appropriate to the proposal and its setting. In addition, the Forest Service would be required to utilize appropriate expertise to address potential issues associated with tunneling projects. If not conducted appropriately, tunneling activities have the potential to adversely affect groundwater resources on NFS lands. These provisions would help ensure that these concerns are adequately addressed in Forest Service decisionmaking.

#### **2561.4 – Effects of Authorized and Administrative Uses on Groundwater Quality**

This proposed section would provide that before authorizing uses that are not approved as part of an authorized minerals or energy development or conducting activities with a significant potential to adversely affect groundwater quality, the Forest Service must perform appropriate analyses, understand the range of potential impacts, and develop appropriate monitoring and mitigation measures. In addition, this section would require the Forest Service to encourage these activities to be sited on non-NFS lands. If not conducted appropriately, many uses of NFS lands have the potential to adversely affect the quality of groundwater on NFS lands. These provisions would help ensure that such concerns are adequately addressed in Forest Service decisionmaking.

#### **2562 – Source Water Protection and Water Supplies**

This proposed section would require the Forest Service to work with EPA, State and local governments, tribes, drinking water providers, and holders of special use authorizations to protect drinking water systems located entirely or partially on NFS lands through delineation and appropriate management of source water protection areas under the SWDA and applicable State law.

In addition, this proposed section would clarify that NFS lands designated as source water protection areas under the SWDA or applicable State law should be managed in accordance with regulations and directives governing management of municipal supply watersheds. This proposed section would encourage treatment of degraded water in lieu of siting new water supplies on NFS lands.

Source water management and protection are necessary for the sustainability of NFS lands. The provisions of this section would reinforce their significance in Forest Service decisionmaking.

#### **2562.1 – Authorizations for Water Supply Facilities**

This proposed section would clarify the existing requirement that public water suppliers and other proponents and applicants for authorizations involving water supply facilities on NFS lands provide an evaluation of all other reasonable alternatives to the Forest Service before authorizing access to new water sources or increased capacity at existing water sources on NFS lands, unless the proposed use is entirely on NFS lands or the proponent or applicant is a public water supplier and the proposed water source is located in a designated municipal watershed. In addition, this proposed section would require all Forest Service uses and activities that are authorized or to be authorized and that involve a water supply to have water conservation strategies for limiting total water withdrawals from NFS lands, as deemed appropriate by the authorized officer depending on the type of use; existing administrative and other authorized uses in the area; the physical characteristics of the setting; and other relevant factors. For those affected water supply uses authorized or to be authorized under a special use authorization, this requirement would be added at the time of issuance or reissuance of the authorization or

approval of modification of the authorized use. This requirement would be added to an existing authorization, if the holder consents.

## **2562.11 – Siting of Water Supply Facilities in Response to Water Supply**

### **Emergencies**

This proposed section would require that local public water suppliers develop safeguards, contingencies, and, when possible, plans that can serve as an acceptable permanent solution when proposing to develop new or expanded water supply facilities on NFS lands in response to emergency water supply shortages.

## **2563 – Authorizations Involving Water Wells or Water Pipelines**

This proposed section would apply only to water wells or water pipelines that are authorized under special use authorities. This proposed section would not apply to water wells and water pipelines authorized under other statutes, such as minerals and energy laws. Water wells and spring developments, both on and adjacent to NFS lands, have the potential to substantially affect ground and surface waters and the ecosystems they support well beyond the area in proximity of the water withdrawal. These provisions would help ensure that such concerns are adequately addressed in Forest Service decisionmaking.

The Technical Guide contains some case studies of water well proposals in the Forest Service Southwestern Region and includes a flow chart (fig. 1 of the Technical Guide) illustrating the decisionmaking process from proposal to authorization of a use. Note that FSM 2560 is referred to as FSM 2543 in the Technical Guide.



### **2563.1 – General Requirements for Authorizing Water Wells and Water Pipelines**

This proposed section would clarify that existing policy regarding special uses of NFS lands applies to proposed uses of water resources.

### **2563.2 – Pre-Proposal Meetings for Proponents of New Water Wells or Water Pipelines**

This proposed section would establish procedures for evaluating special use proposals for water wells or water pipelines to minimize the resources expended by both proponents and the Forest Service. In addition, this proposed section would provide that the Forest Service must require proponents of new water wells or water pipelines to submit copies of other water-related permits, approvals, and compliance documentation required for the proposed project.

### **2563.3 – Requirements for Proposals Involving New Water Wells or Water Pipelines**

This proposed section would reinforce that proposed uses of water resources are subject to existing policy regarding denying approval of special uses when they could be conducted on non-NFS lands and NFS lands are proposed merely because they afford a lower cost or less restrictive location. In addition, this proposed section would clarify the information needed to complete second-level screening of proposals for water wells or water pipelines. These clarifications would help both the Forest Service and proponents better understand expectations for proposals for use of groundwater resources, respond consistently, and better plan for and minimize costs.

Specifically, paragraph 2a would require the Forest Service to ensure that proposals identify current and anticipated quantities of water involved and, for water withdrawals, the beneficial uses of the water. If a proponent seeks to inject water into a

geological formation containing fresh water, the Forest Service would have to ensure that the proposal identify the quantity, sources, and quality of both the proposed source of the injection and the receiving waters and the likely effects on NFS resources. In addition, the Forest Service would have to ensure that proponents of all community water systems, high-capacity wells, and injection wells that open into geological formations containing fresh water propose to equip the water systems and wells with flow metering devices and to maintain the devices in good working order.

Paragraph 2b would require the Forest Service to ensure that any proposal to withdraw groundwater underlying NFS lands using a well or set of wells within a limited area or from springs on NFS lands include the use of appropriate water conservation measures.

Paragraph 2c would require the Forest Service to ensure that proposals for water wells or water pipelines include sufficient information, including a description of the geological and hydrological setting and the drilling methods to be employed, to demonstrate that there is a reasonable likelihood of successfully completing any water wells proposed to be located on NFS lands and adequately mitigating any associated resource damage from drilling activities.

Paragraph 2d would require the Forest Service to ensure that proposals for water wells or water pipelines identify anticipated associated facilities, such as roads, power lines, pipelines, water storage tanks, runoff control basins, and pumping stations, that are expected to be needed to produce, inject, or convey water on or across NFS lands.

Paragraph 2e would require the Forest Service to ensure that proposals for water wells or water pipelines identify key resources and existing water withdrawals in the

vicinity of the proposed project to allow for evaluation of its potential to adversely affect NFS resources and facilities and neighboring non-NFS water supplies.

#### **2563.4 – Requirements for All Applications Involving Water Wells or Water Pipelines**

This proposed section would clarify procedures for applicants for proposed uses of NFS lands involving water wells or water pipelines. In particular, paragraphs 1 and 2 would clarify that applicants for water wells and water pipelines are responsible for informing the Forest Service of any State and local water permits that are necessary for the proposed activity and that issuance of an authorization by the Forest Service is contingent upon the applicant receiving all necessary State and local water-related approvals.

Paragraphs 3 and 4 would require applicants to evaluate potential impacts upon groundwater and surface water resources from new water wells and injection wells that would be drilled on NFS lands and new pipelines that would transport water across NFS lands.

Paragraph 5 would clarify existing policy that Forest Service CERCLA response actions are not subject to NEPA procedures. Paragraph 6 would clarify that any application that would compromise groundwater resources on NFS lands would be denied.

#### **2563.5 – Additional Requirements for Applications for Certain Water Supplies**

This section would require the Forest Service to ensure that applicants for new or reissued authorizations for publicly accessible water supplies that utilize high-capacity wells submit a water supply development and operation plan that would be subject to the

approval of the authorized officer. This provision would help both the Forest Service and the holder understand the nature of the water sources involved and would enhance the Forest Service's ability to manage them appropriately. The water supply development and operation plan would have to:

a. Address development and implementation of source water protection plans for water supply wells and well fields used for drinking water in accordance with applicable State and local procedures.

b. Characterize the groundwater systems from which the water is sourced and connections to surface water at a scale and resolution appropriate to the water withdrawal.

c. Provide for periodic water quality monitoring at each water source and, as appropriate, at nearby potential contaminant sources, including any CERCLA or equivalent State removal or remediation sites.

d. Provide for regular reporting to the Forest Service in an electronic format acceptable to the agency of the results of all monitoring and testing, including monitoring and testing required by local, State, or other Federal agencies.

e. Include a copy of all water-related permits or approvals required by local, State, or other Federal agencies or, if pending, the applications for those permits or approvals.

f. Include a contingency plan addressing safeguarding of facilities, provision of alternate water supplies, and response to potential contamination.

### **2563.6 – Additional Analyses for Applications Involving Water Wells or Water Pipelines**

This proposed section would establish additional procedures for testing and analysis that would apply case by case when evaluating applications for new uses that include high-capacity water wells, water wells with the potential to adversely affect important groundwater-dependent ecosystems, or pipelines crossing NFS lands or when evaluating applications involving modifications to existing uses involving these water wells or pipelines. This proposed section would establish consistent procedures for evaluation of complex applications involving the use of groundwater resources on NFS lands. This proposed section is based upon existing procedures established in the Forest Service Southwestern Region supplement to FSM 2540.

### **2563.7 – Terms and Conditions in Special Use Authorizations for Water Wells and Water Pipelines**

This section would require inclusion of a provision in new or reissued special use authorizations involving water wells and water pipelines that allows modification of their terms and conditions at the discretion of the authorized officer if:

1. Deemed necessary to comply with applicable laws or regulations, the applicable land management plan, or project decisions implementing a land management plan pursuant to 36 CFR part 215; or
2. Deemed necessary, based on a written analysis conducted by qualified groundwater personnel, an aquatic biologist, or another similarly trained professional of the results of monitoring, to prevent the authorized groundwater withdrawals or injections

from significantly reducing the quantity or unacceptably modifying the quality of surface or groundwater resources on NFS lands.

The provisions of this section are crucial to the Forest Service's ability to manage NFS lands using the principles of adaptive management; no one can foresee all exigencies—especially those related to climate change. The Forest Service believes that the scope of these provisions is appropriately limited to protect holders and their investments from unnecessary and unreasonable modifications to the terms of new and reissued authorizations for water wells and water pipelines.

#### **2563.8 – Monitoring and Mitigation for Water Wells and Water Pipelines**

This proposed section would provide guidance to the Forest Service and authorization holders regarding consistent application and use of monitoring and mitigation to evaluate and protect groundwater resources on NFS lands. The Forest Service believes that this approach to monitoring and mitigation is reasonable and consistent with approaches used by other governmental agencies with responsibilities to protect and manage water resources.

Paragraph 1 would provide that all new or reissued authorizations involving water wells or water pipelines that have a substantial potential to adversely affect groundwater resources on NFS lands be monitored in a manner appropriate to the scale and nature of the potential effects. Paragraph 2 would provide that mitigation measures be incorporated where appropriate to protect NFS resources and that those measures be monitored and evaluated. Paragraph 3 would require holders of authorizations that involve monitoring or mitigation to address implementation of mitigation measures and monitoring of those measures in their operating plan.

Paragraph 4 would require that if monitoring detects insufficiency of mitigation measures or additional or unforeseen adverse impacts on NFS resources from groundwater withdrawals or injections, the Forest Service notify the holder and work with the holder to identify alternative mitigation measures that adequately protect NFS resources. In addition, paragraph 4 would provide for adding monitoring or mitigation measures, changing or limiting the activities authorized, modifying the holder's operations, or otherwise modifying the terms and conditions of the authorization if deemed necessary, based on an analysis conducted by qualified groundwater personnel, an aquatic biologist, or another similarly trained professional of the results of monitoring, to prevent the authorized groundwater withdrawals or injections from significantly reducing the quantity or unacceptably modifying the quality of surface or groundwater resources on NFS lands.

Paragraph 5 would provide that if monitoring or mitigation is not conducted as required by the authorization, the Forest Service would provide notice and an opportunity to correct the deficiencies and take appropriate action in accordance with applicable regulations and the special use authorization.

#### **2564 – Measuring and Reporting Volume of Extracted or Injected Water**

This proposed section would require holders of new and reissued special use authorizations involving water uses to:

1. Measure in gallons per day or liters per day, on a continuous basis, the volume of groundwater extracted for all public water systems classified as community water systems and for all Forest Service and other authorized uses that involve a high-capacity

well. Measurement of withdrawals from wells equipped only with a hand or windmill pump would not be required.

2. Measure in gallons per day or liters per day, on a continuous basis, the volume of water injected into the ground from wells on NFS lands that have a casing with an inside diameter of 4 inches or more.

3. Report measured groundwater withdrawals and injections quarterly, or more frequently if appropriate, in an electronic format acceptable to the Forest Service.

4. Report to the Forest Service on the same timetable in an electronic format acceptable to the Forest Service any groundwater withdrawal, injection, or use that is reported to State or local authorities.

5. Holders of existing authorizations would be required to measure and report groundwater withdrawals and injections at the time of reissuance of the authorization or approval of modification of the authorized use. This requirement would be added to an existing authorization, if the holder consents.

Withdrawal from the groundwater and injection into the groundwater have the potential to substantially affect ground and surface waters and the ecosystems they support well beyond the area in proximity to the withdrawal or injection. To understand and appropriately manage groundwater use on NFS lands under future constraints of climate and land use changes and increasing societal needs for water, the Forest Service needs to know the current State of the resource and the extent of its use. These proposed provisions would help ensure that appropriate information is available for Forest Service decisionmaking. The Forest Service recognizes that limiting measurement and reporting to those wells or sets of wells that meet the definition of a high-capacity well will result



in the loss of some information on groundwater uses on NFS lands. Following implementation and the development of better information on groundwater use on NFS lands, the Forest Service will evaluate whether wells that do not meet the definition of a high-capacity well should also be required to measure and report. Items 1 through 3 above would not apply to authorized minerals or energy development on NFS lands.

#### **2565 – Cleanup of Contaminated Groundwater**

This proposed section would clarify Forest Service responsibilities to address cleanup of contaminated groundwater on NFS lands under existing authorities.

#### **2566 – Information and Data Management for Groundwater**

This proposed section would clarify Forest Service responsibilities to collect and manage groundwater data using servicewide data standards and systems.

#### **2567 – Legal Considerations in Managing Groundwater Resources**

This proposed section would emphasize the need to work cooperatively with States and other appropriate entities to manage groundwater resources on NFS lands and to ensure that applicable Federal statutes are appropriately implemented.

Paragraph 1 would provide for working cooperatively with State agencies to ensure that applicable State and Federal water-related laws and regulations are implemented on NFS lands so as to allow the Forest Service to provide for multiple uses such as outdoor recreation, authorized special uses and livestock grazing, and fish and wildlife management. Paragraph 1 also would provide for negotiation and collaboration with appropriate State agencies whenever possible, including establishing a process for mutual consultation on groundwater-related issues on NFS lands.

Paragraph 2 would require compliance with the rules promulgated under the SDWA, including those governing underground injection control, and other applicable Federal laws and regulations to protect groundwater resources on NFS lands.

Paragraph 3 would require the Forest Service to comply with applicable direction and applicable State law when filing groundwater use claims during State water rights adjudications and administrative proceedings. Paragraph 3 also would require application of the Reservation or Winters Doctrine to groundwater, as well as surface water, consistent with the purposes of the Organic Administration Act, the Wild and Scenic Rivers Act, and the Wilderness Act.

Paragraph 4 would require the Forest Service to work cooperatively with the Department of the Interior and affected tribes during tribal water settlement negotiations involving NFS groundwater resources.

Paragraph 5 would require consultation with the Office of the General Counsel whenever specific questions arise regarding groundwater laws and regulations and would reference a source for additional guidance and information on laws, rules, regulations, and case law related to groundwater in the 43 States and territories containing NFS lands.

#### **2568 – Strategies for Sustaining Groundwater Resources**

This proposed section would provide guidance on sustainable management of groundwater resources on NFS lands. In particular, this proposed section would provide for:

1. Collaboration with State, local, and other Federal agencies and Tribes to sustain the availability and usability of groundwater over the long term through the use of conventional and innovative approaches.

2. Consideration of conjunctive use of surface and groundwater, artificial recharge of water, and appropriate use of recycled and reclaimed water where those approaches also protect the quality of the receiving water and affected water-dependent ecosystems.

3. Protection of local groundwater resources through utilization of one or more of the following conventional strategies where impacts on surface and groundwater resources are deemed acceptable:

a. Modification of rates or spatial patterns of groundwater withdrawal.

b. Use of water sources other than local groundwater or importation of surface or groundwater from outside the basin where laws, water quality, and channel conditions allow.

## **Regulatory Certifications**

### *Environmental Impact*

This proposed directive would establish direction for management of groundwater resources on NFS lands as a component of watersheds. Section 31.1b of Forest Service Handbook 1909.15 (57 FR 43180, September 18, 1992) excludes from documentation in an environmental assessment or environmental impact statement rules, regulations, or policies to establish Service-wide administrative procedures, program processes, or instructions. The Agency's assessment is that this proposed directive falls within this category of actions and that no extraordinary circumstances exist which would require preparation of an environmental assessment or environmental impact statement.

### *Regulatory Impact*

This proposed directive has been reviewed under USDA procedures and E.O. 12866 on regulatory planning and review. It has been determined that this is not a significant directive. This directive would not have an annual effect of \$100 million or more on the economy, nor would it adversely affect productivity, competition, jobs, the environment, public health or safety, or State or local governments. This proposed directive would not interfere with an action taken or planned by another agency, nor would it raise new legal or policy issues. Finally, this proposed directive would not alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of beneficiaries of those programs. Accordingly, this proposed directive is not subject to review by the Office of Management and Budget under E.O. 12866.

This proposed directive has been considered in light of the Regulatory Flexibility Act (5 U.S.C. 602 *et seq.*). This proposed directive would have the potential to have economic impacts on small entities. Therefore, a preliminary regulatory flexibility analysis was conducted using available information on existing special use authorizations and small business receipts. Based on (1) the relatively low number of special use authorizations potentially affected, (2) the relatively low percentage of annual costs as a percentage of annual receipts for small businesses, and (3) the uncertainty and conservative assumptions associated with estimates of costs and small entity populations, the results suggest that impacts on small entities from the proposed directive would not be significant or substantial. Any additional data the Agency is able to obtain about ranges of costs, as well as populations of small entities associated with special use authorizations affected by the proposed directive, should help confirm these observations

and provide information to guide any necessary additional mitigation of potential impacts under the final directive. Based upon the preliminary regulatory flexibility analysis and any additional analyses that may be conducted prior to publication of the final directive, the Forest Service believes that it will be able to certify that the final directive will not have a significant economic impact on a substantial number of small entities.

#### *Federalism and Consultation and Coordination with Indian Tribal Governments*

The Forest Service has considered this proposed directive under the requirements of E.O. 13132 on federalism. The Agency has determined that the proposed directive conforms with the federalism principles set out in this E.O.; would not impose any compliance costs on the States; and would not have substantial direct effects on the States, on the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, the Agency has determined that no further determination of federalism implications is necessary at this time.

The Forest Service has initiated tribal consultation per E.O. 13175, Consultation and Coordination with Indian Tribal Governments. The consultation period is anticipated to extend through the duration of the public comment period, for at least 120 days.

#### *No Takings Implications*

This proposed directive has been analyzed in accordance with the principles and criteria in E.O. 12630. It has been determined that this proposed directive does not pose the risk of a taking of private property.

### *Civil Justice Reform*

This proposed directive has been reviewed under E.O. 12988 on civil justice reform. After adoption of this proposed directive, (1) all State and local laws and regulations that conflict with this proposed directive or that impedes its full implementation would be preempted; (2) no retroactive effect would be given to this proposed directive; and (3) it would not require administrative proceedings before parties may file suit in court challenging its provisions.

### *Unfunded Mandates*

Pursuant to Title II of the Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531-1538), the agency has assessed the effects of this proposed directive on State, local, and tribal governments and the private sector. This proposed directive would not compel the expenditure of \$100 million or more by any State, local, or tribal government or anyone in the private sector. Therefore, a statement under section 202 of the Act is not required.

### *Energy Effects*

This proposed directive has been reviewed under E.O. 13211 of May 18, 2001, Actions Concerning Regulations That Significantly Affect Energy Supply. The Agency has determined that this proposed directive does not constitute a significant energy action as defined in the E.O.

### *Controlling Paperwork Burdens on the Public*

This proposed directive may contain recordkeeping or reporting requirements or other information collection requirements as defined in 5 CFR part 1320 that are not already required by law or already approved for use. Accordingly, the review provisions

of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*) and its implementing regulations at 5 CFR part 1320 may apply. The Forest Service has identified three existing approved information collections that may be affected by this proposed directive: 0596-0022, Locatable Minerals; 0596-0081, Disposal of Mineral Materials; and 0596-0082, Special Use Administration. Any change in the approved information collection and increases in burden under the final directive will be addressed at the time of regularly scheduled renewal of or through an amendment to the approved information collection.

*Text of the Proposed Directive*

Reviewers may obtain a copy of the proposed directive from the Forest Service Minerals and Geology Management Staff website,

<http://www.fs.fed.us/geology/groundwater>, or from the Regulations.gov website,

<http://www.regulations.gov>

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Dated: April 30, 2014.

Robert Bonnie,  
Under Secretary, NRE.

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