NOTICES OF FINAL RULEMAKING

The Administrative Procedure Act requires the publication of the final rules of the state's agencies. Final rules are those which have appeared in the *Register* first as proposed rules and have been through the formal rulemaking process including approval by the Governor's Regulatory Review Council or the Attorney General. The Secretary of State shall publish the notice along with the Preamble and the full text in the next available issue of the *Register* after the final rules have been submitted for filing and publication.

NOTICE OF FINAL RULEMAKING

TITLE 4. PROFESSIONS AND OCCUPATIONS

CHAPTER 46. BOARD OF APPRAISAL

[R06-208]

PREAMBLE

1. Sections Affected **Rulemaking Action**

R4-46-401 Amend

2. The statutory authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):

Authorizing statute: A.R.S. § 32-3605(A)

Implementing statute: A.R.S. §§ 32-3605(B)(1) and 32-3635(A)

3. The effective date of the rules:

July 1, 2006

The Board is requesting an immediate effective date for this rule of July 1, 2006, pursuant to A.R.S. § 41-1032(A)(2), to avoid violation of federal law (Title XI of the Congressional Financial Institution Reform, Recovery, and Enforcement Act of 1989), which requires that each state's appraiser licensing and certification regulatory program recognize and enforce the *Uniform Standards of Professional Appraisal Practice* (USPAP) prescribed by Title XI. Because the 2006 edition of the *Uniform Standards of Professional Appraisal Practice* (USPAP) is effective on July 1, 2006, the rule must be effective immediately (July 1, 2006) to ensure the Board remain in compliance.

4. A list of all previous notices appearing in the *Register* addressing the final rule:

Notice of Rulemaking Docket Opening: 12 A.A.R. 695, March 3, 2006

Notice of Proposed Rulemaking: 12 A.A.R. 633, March 3, 2006

5. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:

Name: Deborah G. Pearson, Executive Director

Address: 1400 W. Washington, Suite 360
Phoenix, AZ 85007

Telephone: (602) 542-1593

Fax: (602) 542-1598

E-mail: deborah.pearson@appraisal.state.az.us

6. An explanation of the rule, including the agency's reason for initiating the rule:

The rule is written to comply with the provisions of Title XI of the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (Title XI), and state statutes applicable to real estate appraisers. The change in the existing rule is to comply with Title XI, which requires state appraiser licensing boards to recognize and enforce the *Uniform Standards of Professional Appraisal Practice* (USPAP) for federally-related transactions; and A.R.S. § 32-3605(B)(1), which requires the Board to adopt standards for professional appraisal practice that are at least equal to the USPAP. The amended rule incorporates by reference the 2006 edition of USPAP.

7. A reference to any study relevant to the rule that the agency reviewed and either relied on in its evaluation of or justification for the rule or did not rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:

The Board did not review any study relevant to the rule.

8. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:

Not applicable

9. The summary of the economic, small business, and consumer impact:

The rule is being amended to adopt the latest standards of practice in the profession, as required by federal and state law. The primary groups that will be affected are the Board, licensed or certified appraisers, and the public. The Board annually adopts the latest standards for professional appraisal practice and there should be no appreciable changes in the economic impact. The key changes in USPAP 2006 are that the Departure Rule and associated defined terms (Complete Appraisal, Limited Appraisal, Binding Requirement, and Specific Requirement) throughout the document were removed. Statement No. 7, Permitted Departure from Specific Requirements in Real Property and Personal Property Appraisal Assignments, and Advisory Opinion 15, Using the Departure Rule in Developing a Limited Appraisal, were retired. A Scope of Work Rule was added. Standard 9 and Standard 10 were modified to improve clarity and consistency. Advisory Opinion 2 was expanded to apply to both real and personal property. Advisory Opinion 28 was added to illustrate requirements of the Scope of Work Rule. Advisory Opinion 29 was added to offer advice regarding the Scope of Work Rule. The cost for the new edition is $30. The cost is a deductible business expense.

10. A description of the changes between the proposed rules, including supplemental notices, and the final rules (if applicable):

None

11. A summary of the comments made regarding the rule and the agency response to them:

An e-mail in support of the rule amendment was received on March 8, 2006, from the Phoenix Chapter of the Appraisal Institute. The Board read the comment into the record at its public hearing on the rule amendment held on April 12, 2006, and at that time voted to close the record, adopt the proposed rule change to become effective July 1, 2006, and proceed with the Notice of Final Rulemaking.

12. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:

Not applicable

13. Incorporations by reference and their location in the rules:

The *Uniform Standards of Professional Appraisal Practice* (USPAP), 2006 Edition, published by The Appraisal Foundation, 1155 15th St., NW, Suite 1111, Washington, DC 20005, telephone (202) 347-7722, fax (202) 347-7727, or web site www.appraisalfoundation.org. The location in the rules is R4-46-401.

14. Was this rule previously made as an emergency rule?

No.

15. The full text of the rules follows:

TITLE 4. PROFESSIONS AND OCCUPATIONS

CHAPTER 46. BOARD OF APPRAISAL

ARTICLE 4. STANDARDS OF PRACTICE

Section
R4-46-401. Standards of Appraisal Practice

ARTICLE 4. STANDARDS OF PRACTICE

R4-46-401. Standards of Appraisal Practice
Every appraiser, in performing the acts and services of an appraiser, shall comply with the Uniform Standards of Professional Appraisal Practice (USPAP), ~~2005~~ 2006 edition, published by The Appraisal Foundation, which is incorporated by reference and on file with the Board. This incorporation by reference contains no future editions or amendments. A copy of the USPAP ~~2005~~ 2006 edition may be obtained from The Appraisal Foundation, ~~1029 Vermont Avenue, N.W., Suite 900,~~ 1155 15th St., NW, Suite 1111, Washington, D.C. 20005; ~~toll free 1-800-805-7857;~~ (202) 347-7722; fax (202) 347-7727; or web site www.appraisalfoundation.org.

NOTICE OF FINAL RULEMAKING

TITLE 9. HEALTH SERVICES

CHAPTER 22. ARIZONA HEALTH CARE COST CONTAINMENT SYSTEM ADMINISTRATION

[R06-211]

PREAMBLE

1. Sections Affected | **Rulemaking Action**

R9-22-701	Amend
R9-22-712.07	New Section

2. The statutory authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):

Authorizing statute: A.R.S. § 36-2903.01(F)

Implementing statute: A.R.S. § 36-2905.02

3. The effective date of the rules:

June 6, 2006

The AHCCCS Administration requests that this rule become effective immediately upon filing with the Secretary of State pursuant to A.R.S. § 41-1032(A)(4). This rule provides the method by which AHCCCS will allocate funds appropriated by the legislature under A.R.S. § 36-2905.02 as additional funding for rural hospitals. The additional funding is an effort to assist these unique entities to manage the higher levels of cost incurred in comparison to urban hospitals. The legislation was enacted to address concerns that rural hospitals may not be able to operate effectively and provide necessary care to AHCCCS members if rural hospitals continue to incur higher costs without the appropriate reimbursement. The funds appropriated under A.R.S. § 36-2905.02 must be paid no later than State Fiscal Year ending June 30, 2006, and therefore, an immediate effective date for this rule is imperative. The rule provides a benefit to the public by helping rural hospitals to provide better care to patients, and a penalty is not associated with a violation of the rule.

4. A list of all previous notices appearing in the *Register* addressing the final rule:

Notice of Rulemaking Docket Opening: 12 A.A.R. 696, March 3, 2006

Notice of Proposed Rulemaking: 12 A.A.R. 737, March 10, 2006

5. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:

Name: Mariaelena Ugarte

Address: AHCCCS
Office of Legal Assistance
701 E. Jefferson, Mail Drop 6200
Phoenix, AZ 85034

Telephone: (602) 417-4693

Fax: (602) 253-9115

E-mail: AHCCCSRules@azahcccs.gov

6. An explanation of the rule, including the agency's reason for initiating the rule:

As authorized in A.R.S. § 36-2905.02, promulgation of this rule is necessary to describe how the supplemental payment for rural hospitals will be administered. Additionally, AHCCCS Administration is making further amendments to this Chapter, making it more clear, concise, and understandable.

7. A reference to any study relevant to the rule that the agency reviewed and either relied on in its evaluation of or justification for the rule or did not rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:

On March 11, 2004, Milliman USA completed an update of a cost study entitled "Evaluation of the AHCCCS Inpatient Hospital Reimbursement System" prepared by Milliman USA for AHCCCS in 2002 and reported to the Joint Legislative Committee on the Implementation of Proposition 204 on November 15, 2002.

The March 11, 2004 study was used to arrive at equitable costs for rural hospitals. Both studies are on file and available for review at the Arizona Health Care Cost Containment Administration office at 701 E. Jefferson, Phoenix, AZ 85034.

8. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:

Not applicable

9. The summary of the economic, small business, and consumer impact:

A Rural Hospital fund of $12 million has been allocated during FY 2006 for disbursement to rural hospitals, which includes Critical Access hospitals. The funding source for the Rural Hospital fund includes a combination of general fund and federal matching Medicaid monies. The additional funding was approved during the 2005 legislative session. AHCCCS does not anticipate that this additional funding would cause any impacts besides the benefits accruing to the hospitals as a result of the distribution of the Fund.

10. A description of the changes between the proposed rules, including supplemental notices, and final rules (if applicable):

The Administration made minor changes to the proposed rules to make them more clear, concise, and understandable by making grammatical, verb tense, punctuation, and structural changes throughout the rules.

11. A summary of the comments made regarding the rule and the agency response to them:

None received

12. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:

None

13. Incorporations by reference and their location in the rules:

None

14. Was this rule previously made as an emergency rule?

No.

15. The full text of the rules follows:

TITLE 9. HEALTH SERVICES

CHAPTER 22. ARIZONA HEALTH CARE COST CONTAINMENT SYSTEM ADMINISTRATION

ARTICLE 7. STANDARDS FOR PAYMENTS

Section
R9-22-701. Standard for Payments Related Definitions
R9-22-712.07. ~~Reserved~~ Rural Hospital Inpatient Fund Allocation

ARTICLE 7. STANDARDS FOR PAYMENTS

R9-22-701. Standard for Payments Related Definitions

In addition to definitions contained in A.R.S. § 36-2901, the words and phrases in this Article have the following meanings unless the context explicitly requires another meaning:

"Accommodation" means room and board services provided to a patient during an inpatient hospital stay and includes all staffing, supplies, and equipment. The accommodation is semi-private except when the member must be isolated for medical reasons. ~~Other types~~ Types of accommodation include hospital routine medical/surgical units, intensive care units, and any other specialty care unit in which room and board are provided.

"Aggregate" means the combined amount of hospital payments for covered services provided within and outside the ~~ser-~~

~~vice area~~ GSA.

"AHCCCS inpatient hospital day or days of care" means each day of an inpatient stay for a member~~,~~ beginning with the day of admission~~,~~ and including the day of death, if applicable, but excluding the day of discharge, provided that all eligibility, medical necessity, and medical review requirements are met.

~~"Ancillary department" means the department of a hospital that provides outpatient services and ancillary services, as described in the Medicare Provider Reimbursement Manual.~~

"Ancillary service" mean all hospital services for patient care other than room and board and nursing services, including but not limited to, laboratory, radiology, drugs, delivery room (including maternity labor room), operating room (including postanesthesia and postoperative recovery rooms), and therapy services (physical, speech, and occupational).

"APC" means the Ambulatory Payment Classification system under 42 CFR Part ~~419~~ 419.31 used by Medicare for grouping clinically and ~~resource similar~~ resource-similar procedures and services.

"Billed charges" means charges for services provided to a member that a hospital includes on a claim consistent with the rates and charges filed by the hospital with Arizona Department of Health Services (ADHS).

~~"Capital costs" means capital-related costs such as building and fixtures, and movable equipment as described in the Medicare Provider Reimbursement Manual.~~

"Capital costs" means costs as reported by the hospital to CMS as required by 42 CFR 413.20.

"Cost-To-Charge Ratio" (CCR) means a hospital's costs for providing covered services divided by the hospital's charges for the same services. The CCR is the percentage derived from the cost and charge data for each revenue code provided to AHCCCS by each hospital.

"Covered charges" means billed charges that represent medically necessary, reasonable, and customary items of expense for ~~AHCCCS~~ covered services that meet medical review criteria of AHCCCS or a contractor.

~~"Critical Access Hospital" is a hospital certified by Medicare under 42 CFR 485 Subpart F and 42 CFR 440.170(g).~~

"CPT" means Current Procedural Terminology, published and updated by the American Medical Association~~,~~ ~~which~~ CPT is a ~~nationally accepted~~ nationally-accepted listing of descriptive terms and identifying codes for reporting medical services and procedures performed by physicians ~~and~~ that provides a uniform language to accurately designate medical, surgical, and diagnostic services.

"Critical Access Hospital" is a hospital certified by Medicare under 42 CFR 485 Subpart F and 42 CFR 440.170(g).

"Date of eligibility posting" means the date a member's eligibility information is entered into the AHCCCS Pre-paid Medical Management Information System (PMMIS).

"DRI inflation factor" means Global Insights Prospective Hospital Market Basket.

"Encounter" means a record of a ~~medically related~~ medically-related service rendered by an ~~AHCCCS registered~~ AHCCCS-registered provider to ~~an AHCCCS~~ a member enrolled with a ~~capitated Contractor~~ contractor on the date of service.

"Existing outpatient ~~services~~ service" means a service provided by ~~the~~ a hospital ~~prior to~~ before the hospital ~~filing~~ files an increase in its charge master as defined in R9-22-712(G), regardless of whether the service was explicitly described in the hospital charge master before filing the increase~~,~~ or how the service was described in the charge master before filing the increase.

"Free Standing Children Hospital" means a separately standing hospital with at least 120 pediatric beds that is dedicated to provide the majority of the hospital's services to children ~~with at least 120 pediatric beds~~.

"Global Insights Prospective Hospital Market Basket" means the Global Insights CMS Hospital price index for prospective hospital reimbursement, ~~which is~~ published by Global Insights.

~~"ICU" means the intensive care unit of a hospital.~~

"HCPCS" means the Health Care Procedure Coding System, published and updated by Center for Medicare and Medicaid Services (CMS)~~,~~ ~~which~~ HCPCS is a listing of codes and descriptive terminology used for reporting the provision of physician services, other health care services, ~~other~~ and substances, equipment, supplies or other items used in health care services.

"HIPAA" means the Health Insurance Portability and Accountability Act of 1996, as ~~defined~~ specified under 45 CFR Part 162, ~~which~~ that establishes standards and requirements for the electronic transmission of certain health information by defining codes sets used for encoding data elements, such as tables of terms, medical concepts, medical diagnostic codes, or medical procedure codes.

"ICU" means the intensive care unit of a hospital.

~~"Level I Trauma Center" means any acute care hospital that is defined under R9-22-2101(F).~~

"Medical education costs" means direct hospital costs for intern and resident salaries, fringe benefits, program costs, nurs-

ing school education, and paramedical education, as described in the Medicare Provider Reimbursement Manual.

"Medical review" means a clinical evaluation of documentation conducted by AHCCCS or a contractor for purposes of prior authorization, concurrent review, ~~post-payment~~ post-payment review, or determining medical necessity. The criteria for medical review are established by AHCCCS or a contractor based on medical practice standards that are updated periodically to reflect changes in medical care.

"National Standard code sets" means codes that are accepted nationally in accordance with federal requirements under 45 CFR 160 and 45 CFR 164.

"New hospital" means a hospital for which Medicare Cost Report claim and encounter data are not available for the fiscal year used for initial ratesetting or rebasing.

"NICU" means the neonatal intensive care unit of a hospital that is classified as a Level II or Level III perinatal center by the Arizona Perinatal Trust.

"Non-IHS Acute Hospital" means a hospital that is not run by Indian Health Services ~~and~~, is not a ~~free standing psych~~ free-standing psychiatric hospital, such as an IMD, ~~that~~ and is paid ~~via~~ under ADHS rates.

"Operating costs" means ~~an AHCCCS allowable~~ AHCCCS-allowable accommodation costs and ancillary department hospital costs excluding capital and medical education costs.

"Outlier" means a hospital claim or encounter in which the operating costs per day for an AHCCCS inpatient hospital stay meet the criteria described under ~~Article 7 of this Chapter~~ this Article and A.R.S. § 36-2903.01(H)

"Outpatient hospital service" means a service provided in an outpatient hospital setting that does not result in an admission.

"Ownership change" means a change in a hospital's owner, lessor, or operator under 42 CFR 489.18(~~A~~a).

"Peer group" means hospitals that share a common, stable, and independently definable characteristic or feature that significantly influences the cost of providing hospital services, including specialty hospitals that limit the provision of services to specific patient populations, such as rehabilitative patients or children.

"PPS bed" means Medicare-approved Prospective Payment beds for inpatient services as reported in the Medicare cost reports for the most recent fiscal year for which the Administration has a complete set of Medicare cost reports for every rural hospital as determined as of the first of February of each year.

"Procedure ~~Code~~ code" means the numeric or alphanumeric code listed in the CPT or HCPCS manual by which a procedure or service is identified.

"Prospective rates" means inpatient or outpatient hospital rates ~~defined~~ set by AHCCCS in advance of a payment period and representing full payment for covered services excluding any quick-pay discounts, slow-pay penalties, and first-and third-party payments regardless of billed charges or individual hospital costs.

"Public ~~Hospital~~ hospital" means a hospital that is owned and operated by county, state, or hospital health care district.

"Rebase" means the process by which the most currently available and complete ~~year~~ Medicare Cost Report data for a year and AHCCCS claim and encounter data ~~of the corresponding~~ for the same year~~,~~ are collected and analyzed to reset the Inpatient Hospital Tiered ~~Per Diem~~ per diem rates, or the Outpatient Hospital Capped ~~Fee For Service~~ Fee-For-Service Schedule.

"Reinsurance" means a risk-sharing program provided by AHCCCS to contractors for the reimbursement of ~~certain~~ specified contract service costs incurred by a member beyond a certain monetary threshold.

"Remittance advice" means an electronic or paper document submitted to an ~~AHCCCS registered~~ AHCCCS-registered provider by AHCCCS to explain the disposition of a claim.

"Revenue Code" means a numeric code, ~~which~~ that identifies a specific accommodation, ancillary service, or billing calculation, as defined by the National Uniform Billing committee for UB-92 forms.

~~"National Standard code sets" means codes that are accepted nationally in accordance with federal requirements under 45 CFR 160 and 45 CFR 164.~~

"Specialty facility" means a facility where the service provided is limited to a specific population, such as rehabilitative services for children.

"Tier" means a grouping of inpatient hospital services into levels of care based on diagnosis, procedure, or revenue codes, peer group, ~~or~~ NICU classification level, or any combination of these items.

"Tiered per diem" means an AHCCCS capped fee schedule in which payment is made on a per-day basis depending upon the tier (or tiers) into which an AHCCCS inpatient hospital day of care is assigned.

R9-22-712.07. ~~Reserved~~ Rural Hospital Inpatient Fund Allocation

A. For purposes of this Section, the following words and phrases have the following meanings unless the context specifically requires another meaning:

1. "Calculated inpatient costs" means the sum of inpatient covered charges multiplied by the Milliman study's implied cost-to-charge ratio of .8959.
2. "Claims paid amount" means the sum of all claims paid by the Administration and contractors, as reported by the contractor to the Administration, to a rural hospital for covered inpatient services rendered during the previous state fiscal year.
3. "Fund" means any state funds appropriated by the Legislature for the purposes set forth in A.R.S. § 36-2905.02 and any federal funds that are available for matching the state funds.
4. "Inpatient covered charges" means the sum of all covered charges billed by a hospital to the Administration or contractors, as reported by the contractors to the Administration, for inpatient services rendered during the previous state fiscal year.
5. "Milliman study" means the report issued by Milliman USA on March 11, 2004, to the Arizona Hospital and Healthcare Association that updated a portion of a cost study entitled "Evaluation of the AHCCCS Inpatient Hospital Reimbursement System" prepared by Milliman USA for AHCCCS on November 15, 2002. A copy of each report is on file with the Administration.
6. "Rural hospital" means a health care institution that is licensed as a hospital by the Arizona Department of Health Services for the previous state fiscal year and is not a hospital operated by IHS or a special hospital that limits the care provided to rehabilitation service and:
   a. Has 100 or fewer beds and is located in a county with a population of less than 500,000 persons, or
   b. Is designated as a critical access hospital for the majority of the previous state fiscal year.
7. "Total inpatient payments" means the sum of:
   a. The claims paid amount,
   b. Any disproportionate share hospital payments for the previous fiscal year, and
   c. The inpatient component of any Critical Access Hospital payments made to the hospital for the previous state fiscal year.

B. Each February, the Administration shall allocate the Fund to the following three pools for the fiscal year:
1. Rural hospitals with fewer than 26 PPS beds and all Critical Access Hospitals, regardless of the number of beds in the Critical Access Hospital;
2. Rural hospitals other than Critical Access Hospitals with 26 to 75 PPS beds; and
3. Rural hospitals other than Critical Access Hospitals with 76 to 100 PPS beds.

C. The Administration shall allocate the Fund to each pool according to the ratio of total inpatient payments to all hospitals assigned to the pool to total inpatient payments to all rural hospitals.

D. The Administration shall determine each hospital's claims paid amount and allocate the funds in each pool to each hospital in the pool based on the ratio of each hospital's claims paid amount to the sum of the claims paid amount for all hospitals assigned to the pool.

E. The Administration shall not make a Fund payment to a hospital that will result in the hospital's total inpatient payments plus that hospital's Fund payment being greater than that hospital's calculated inpatient costs.
1. If a hospital's total inpatient payments plus the hospital's Fund payment would be greater than the hospital's calculated inpatient costs, the Administration shall make a Fund payment to the hospital equal to the difference between the hospital's calculated inpatient costs and the hospital's total inpatient payments.
2. The Administration shall reallocate any portion of a hospital's Fund allocation that is not paid to the hospital due to the reason in subsection (E)(1) to the other eligible hospitals in the pool based upon the ratio of the claims paid amount for each hospital remaining in the pool to the sum of the claims paid amount for each hospital remaining in the pool.

F. If funds remain in a pool after allocations to each hospital in the pool under subsections (D) and (E), the Administration shall reallocate the remaining funds to the other pools based upon the ratio of each pool's original allocation of the Fund as determined under subsection (C) to the sum of the remaining pools' original Fund allocations under subsection (C). The Administration shall allocate remaining funds to the hospitals in the remaining pools under subsection (D) and (E). See Exhibit 1 for an example.

Exhibit 1. Pool Example

Pool A receives $2,000,000. Pool B receives $7,000,000. Pool C receives $3,000,000.

If all of the funds in Pool B are paid to eligible hospitals and there is $1,000,000 remaining, the remaining funds would be allocated to Pool A and Pool C based on the ratio of each pool's original allocation (original allocations of $2,000,000 and $3,000,000) to the total of their original allocation

($2,000,000 + $3,000,000 = $5,000,000).

Pool A would receive 2/5 of the remaining funds ($400,000) and Pool C would receive 3/5 of the remaining funds ($600,000).

G. Subject to CMS approval of the method and distribution of the Fund, the administration or its contractors will distribute the Fund as a lump sum allocation to the rural hospitals in either one or two installments by the end of each state fiscal year.

NOTICE OF FINAL RULEMAKING

TITLE 12. NATURAL RESOURCES

CHAPTER 15. DEPARTMENT OF WATER RESOURCES

[R06-214]

PREAMBLE

1. Sections Affected — **Rulemaking Action**

Article 13	New Article
R12-15-1301	New Section
R12-15-1302	New Section
R12-15-1303	New Section
R12-15-1304	New Section
R12-15-1305	New Section
R12-15-1306	New Section
R12-15-1307	New Section
R12-15-1308	New Section

2. The statutory authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):

Authorizing statutes for R12-15-1301 through R12-15-1307: A.R.S. §§ 45-105(B)(1); 45-598(A); 45-834.01(B)(1).

Implementing statutes for R12-15-1301 through R12-15-1307: A.R.S. §§ 45-544(D), 45-559, 45-598, 45-599, 45-834.01, 45-1041(A)(4), 45-1052(4)

Authorizing statute for R12-15-1308: A.R.S. § 45-597(A)

Implementing statutes for R12-15-1308: A.R.S. §§ 45-544(C) and (D), 45-596, 45-597(A)

3. The effective date of the rules:

August 7, 2006

4. A list of all previous notices appearing in the *Register* addressing the final rule:

Notice of Rulemaking Docket Opening: 12 A.A.R. 357, February 3, 2006

Notice of Proposed Rulemaking: 12 A.A.R. 248, February 3, 2006

5. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:

Name: Scott Miller
Phoenix Active Management Area

Address: Arizona Department of Water Resources
3550 N. Central Ave.
Phoenix, AZ 85012

Telephone: (602) 771-8585

Fax: (602) 771-8688

E-mail: jsmiller@azwater.gov

6. An explanation of the rule, including the agency's reason for initiating the rule:

Background

In 1980, the Arizona Legislature enacted the Groundwater Code, A.R.S. § 45-401, et seq., "to provide a framework for the comprehensive management and regulation of the withdrawal, transportation, use, conservation and conveyance of rights to use the groundwater in this state." A.R.S. § 45-401(B). The main focus of the Groundwater Code is on the five areas of the state designated as active management areas ("AMA"), where the withdrawal and use of groundwater is extensively regulated. In AMAs, a person may withdraw groundwater from a non-exempt well (generally, a non-irrigation well having a pump with a maximum pump capacity of more than 35 gallons per minute or an irrigation well of any capacity) only if the person has a grandfathered groundwater right, a service area right or a

groundwater withdrawal permit. Before constructing a new well or a replacement well in a new location in an AMA for the purpose of withdrawing groundwater pursuant to a grandfathered groundwater right, a service area right or a general industrial use permit, a person must apply for and obtain a well permit from the Arizona Department of Water Resources ("ADWR") pursuant to A.R.S. § 45-599.

The director of ADWR is required to "adopt rules governing the location of new wells and replacement wells in new locations in active management areas to prevent unreasonably increasing damage to surrounding land or other water users from the concentration of wells." A.R.S. § 45-598(A) (the rules are referred to herein as "well spacing rules"). One of the requirements for obtaining a well permit under A.R.S. § 45-599 is that the proposed well must comply with the well spacing rules adopted by the director pursuant to A.R.S. § 45-598(A). A.R.S. § 45-599(C).

The director is also required to adopt a rule defining what constitutes a replacement well, including the distance from the original well site that is deemed to be the same location for a replacement well. A.R.S. § 45-597(A). A person proposing to construct a replacement well in approximately the same location must file a notice of intent to drill with ADWR pursuant to A.R.S. § 45-596, but is not required to obtain a well permit or comply with the well spacing rules. *See* A.R.S. § 45-597(B).

To allow persons to obtain well permits prior to the adoption of final well spacing rules, the Legislature included a provision in the Groundwater Code that authorizes the director to "adopt temporary rules to allow a person to construct, replace or deepen a well prior to the adoption of final rules pursuant to this article." A.R.S. § 45-592(B). On March 11, 1983, the director adopted two temporary rules pursuant to this authority: R12-15-830, which contains criteria for determining whether a proposed well will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells; and R12-15-840, which establishes criteria that must be met in order for a proposed well to qualify as a replacement well in the approximately the same location. The temporary rules remain in effect today, as ADWR has not yet adopted final rules pursuant to A.R.S. §§ 45-597(A) and 45-598(A). The temporary rules are not codified in the Arizona Administrative Code, but are available for review at ADWR's web site, www.azwater.gov (click on Laws and Rules).

The purpose of this rulemaking proceeding is to adopt permanent well spacing rules pursuant to A.R.S. § 45-598(A) and a permanent rule defining what constitutes a replacement well in approximately the same location pursuant to A.R.S. § 45-597(A) (the rules adopted in this rulemaking proceeding are referred to as "permanent rules" to distinguish the rules from the temporary rules). The rules will replace the temporary rules adopted in 1983. As explained above, the rules will apply to applications for permits to drill new wells and replacement wells in new locations in AMAs under A.R.S. § 45-599. A person will not be allowed to construct a well for which a well permit is required unless the well complies with the well spacing rules.

In addition to applications for well permits under A.R.S. § 45-599, the well spacing rules will also apply to several categories of applications and well uses not mentioned in the temporary rules. These applications and well uses were made subject to the well spacing rules as a result of amendments to the Groundwater Code after the temporary rules were adopted. The additional applications and well uses are the following:

1. An application for a recovery well permit under A.R.S. § 45-834.01 that is filed for a new well as defined in A.R.S. § 45-591 (generally, a non-exempt well drilled on or after June 12, 1980) or, except as provided in A.R.S. § 45-834.01(B)(2) or (3), for an existing well as defined in A.R.S. § 45-591 (generally, a non-exempt well drilled before June 12, 1980).
2. An application filed under A.R.S. § 45-559 for approval to use a well drilled after September 21, 1991, to withdraw groundwater for transportation to an AMA pursuant to Title 45, Chapter 2, Article 8.1, Arizona Revised Statutes ("A.R.S.").
3. An application for a water exchange permit under A.R.S. § 45-1041 filed by a person other than a city, town, private water company or irrigation district if there will be any new or increased pumping by the applicant from a well or wells in an AMA.
4. The use of a well to withdraw groundwater in the Little Colorado river plateau groundwater basin for transportation away from the basin pursuant to A.R.S. § 45-544(B)(1), unless the well was constructed on or before September 21, 1991, or the well is a replacement well in approximately the same location as the original well.
5. The use of a well by a participant in a water exchange for which a notice of water exchange is filed under A.R.S. § 45-1051, except a city, town, private water company or irrigation district, if there will be any new or increased pumping by the participant from a well or wells in an AMA.

It is important to note that the permanent well spacing rules do not apply to the construction or use of the following types of groundwater wells within AMAs: (1) exempt wells (generally, non-irrigation wells with a maximum pumping capacity of 35 gallons per minute ("gpm") or less; and (2) wells drilled pursuant to a groundwater withdrawal permit other than a general industrial use permit (e.g., mineral extraction and metallurgical processing permits, drainage and dewatering permits and poor quality groundwater permits)

It is also important to note that the rules do not apply to the construction or use of a well to the extent that the well will pump surface water subflow. This is because the statutes requiring the director to adopt well spacing rules limit the applicability of the rules to withdrawals of groundwater or the recovery of stored water. *See* A.R.S. §§ 45-598 and 45-834.01(B)(1). Consequently, if a person proposes to construct a well that will pump only surface water subflow,

and no groundwater or stored water, compliance with the well spacing rules will not be required in order to construct the well. However, the person's withdrawals of surface water subflow will be subject to the state's surface water laws, which generally require a decreed or appropriative surface water right.

In developing the permanent well spacing rules, ADWR was guided by the statutory mandate that the rules be designed to prevent unreasonably increasing damage to surrounding land and other water users from the concentration of wells. The words "unreasonably increasing damage" indicates that the Legislature did not intend that the rules prevent *all* increasing damage that may result from a new well, only increasing damage that is considered to be *unreasonable*. In addition, ADWR was guided by the mandate in A.R.S. § 45-603 that in developing the rules, the director shall consider cones of depression, land subsidence and water quality. The permanent well spacing rules are designed to prevent unreasonably increasing damage caused by these factors.

Finally, ADWR took into account the need for municipal water providers, agricultural water users and industrial water users to drill new wells to provide a sufficient supply of groundwater and/or recovered water to meet their water demands. ADWR believes that the permanent well spacing rules strike a proper balance between the needs of water users to drill new wells and the need to protect surrounding land and other water users from unreasonably increasing damage from the concentration of wells.

Description of Temporary Rules

As mentioned above, in 1983, the director of ADWR adopted a temporary well rule containing well spacing criteria for applications for well permits under A.R.S. § 45-599 and a temporary rule defining what constitutes a replacement well in approximately the same location. The rules remain in effect today, but will be replaced by the permanent rules adopted in this rulemaking proceeding. The following is a brief description of the temporary rules.

R12-15-830. Well Spacing and Well Impact

This rule sets forth the criteria the director must follow in determining whether an application for a well permit should be denied on the ground that the proposed well will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells. There are three categories of unreasonably increasing damage addressed in the rule: additional drawdown of water levels at neighboring wells of record; additional regional land subsidence; and migration of poor quality water. The rule requires an applicant for a permit to drill multiple wells or a well with a proposed design pumping capacity in excess of 500 gallons per minute to submit a hydrological study demonstrating the additional drawdown in surrounding water levels that will be caused by the well. The director is authorized to require any applicant to submit such a study.

R12-15-840. Replacement Wells in the Same Location

This rule defines what constitutes a replacement well in approximately the same location. Such a well is not subject to the well spacing rule. Under this rule, a proposed well is considered to be a replacement well in approximately the same location if both of the following apply: (1) the proposed well will be located no greater than 660 feet from the original well it is replacing, and (2) the proposed well will not reasonably be expected to annually withdraw an amount of groundwater in excess of the historical withdrawals from the original well.

Rule Development Process

During its last five-year review of rules, ADWR committed to the Governor's Regulatory Review Council ("G.R.R.C.") that it would commence a rulemaking proceeding to adopt permanent rules to replace the temporary rules. ADWR invited water providers and other interested persons to participate in a stakeholders' group to assist ADWR in developing the rules. The first meeting of the stakeholders' group was on October 27, 2004. Meetings were held every three weeks for over a year. Persons representing a variety of interests attended the meetings, including representatives of water providers, agricultural water users, industrial water users and landowners. The stakeholders' group assisted ADWR in the evaluating the temporary rules, identifying topics to be discussed, resolving issues related to the identified topics, and developing rule language.

During the stakeholders' group meetings, it became apparent that only a few substantive changes would be made to the temporary rules. As mentioned above, one change was required by statute – expanding the scope of the rules to include applications and well uses that were made subject to the well spacing rules by statutory amendments after the temporary rules were adopted. Conceptually, however, the well spacing criteria in the permanent rules remain essentially the same as the criteria in the temporary rules. There are at least two reasons for few substantial changes. First, over the last 23 years, no one has challenged the temporary rules on the ground that they do not adequately prevent unreasonably increasing damage to surrounding land or other water users from the concentration of wells. Second, the majority of the stakeholders indicated that they believe the rules should not be substantially changed. Water users have been operating under the temporary rules for a long time and have not experienced major problems with them.

During the stakeholders' group meetings, multiple topics were discussed. Some topics discussed were not implemented into the rules. One issue involved wells that pump appropriable surface water subflow and the damages that may result to riparian areas and other surface water users from such pumping. As explained earlier, the relevant statutes do not allow the well spacing rules to be applied to the pumping of appropriable surface water subflow. However, ADWR will address this issue outside of the well spacing rules. One way in which ADWR will address this issue is by including a permit condition in each well permit issued pursuant to A.R.S. § 45-599 explaining that the

permit authorizes the permittee to construct a well for the withdrawal of groundwater pursuant to the permittee's groundwater right or permit and does not authorize the permittee to withdraw surface water from the well. The condition will state that if the permittee withdraws surface water from the well in any year, the permittee shall do so only pursuant to a decreed or appropriative surface water right and shall separately report in the annual report filed pursuant to A.R.S. § 45-632 the amount of groundwater and surface water withdrawn from the well.

ADWR will also establish a process for giving public notice of all applications for well permits filed under A.R.S. § 45-599. ADWR is not required by statute or rule to give public notice of such applications, and historically it has not done so. However, ADWR will begin posting notices of pending applications for well permits on its web site. The notice will be for information purposes only.

Meeting minutes from the stakeholders' group meetings are available from:

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Explanation of Permanent Rules

The permanent rules are located in a new article (Article 13) within Title 12, Chapter 15 of the Arizona Administrative Code. The rules are numbered R12-15-1302 through R12-15-1307. The rule defining what constitutes a replacement well in approximately the same location is numbered R12-15-1308. Definitions of terms used in the rules are set forth in R12-15-1301.

As previously mentioned, there are few substantive differences between the well spacing criteria in the temporary rules and the well spacing criteria in the permanent rules. The following is an explanation of each permanent rule. Differences between the permanent rules and the temporary rules are noted.

R12-15-1301. Definitions

R12-15-1301 contains definitions of words and phrases used in Rules R12-15-1302 through R12-15-1308. The definitions in this rule differ from the definitions in the temporary rules in two respects. First, R12-15-1301 contains a number of definitions not included in the temporary rules. New definitions were added because of the addition of rules relating to applications and water uses not included in the temporary rules (i.e., recovery wells, wells used to transport groundwater and wells used in water exchanges). New definitions were also added to provide greater clarity in the permanent rules.

The second major difference between the definitions in the permanent rule and the definitions in the temporary rules involves the definition of "well of record." Under the well spacing criteria in both rules, only "wells of record" are considered when determining whether a proposed well will cause unreasonably increasing damage to other wells. "Well of record" is defined in temporary rules as any well or proposed well not owned by the applicant for which a well registration or notice of intent to drill has been filed and has not expired or for which an application for a groundwater withdrawal permit or well permit has been received by ADWR, except any application which has been rejected or for which the permit has expired. ADWR determined this definition is too broad because it includes wells that, because of the purpose for which they are used, would not be unreasonably impacted by an additional drawdown of water levels or the migration of contaminated water (e.g., wells drilled for dewatering purposes or temporary emergency electrical energy generation).

The definition of "well of record" in the permanent rule excludes wells that would not be unreasonably damaged by an additional drawdown of water levels at the well either because the well does not withdraw water for a beneficial use or because the well is of a temporary duration. Wells excluded are wells drilled for the following purposes: cathodic protection; use as a sump pump or heat pump; air sparging; injection of liquids or gasses into the aquifer or vadose zone; monitoring water levels or water quality; obtaining geophysical, mineralogical or geotechnical data; grounding; soil vapor extraction; dewatering; drainage; temporary electrical energy generation; and hydrologic testing.

R12-15-1302. Well Spacing Requirements – Applications to Construct New Wells or Replacement Wells in New Locations Under A.R.S. § 45-599

Rule R12-15-1302 contains well spacing criteria for applications for well permits under A.R.S. § 45-599. A well permit under A.R.S. § 45-599 is required to construct a new well or a replacement well in a new location within an AMA pursuant to a grandfathered groundwater right, a service area right or a general industrial use permit.

Well spacing criteria

R12-15-1302(B) provides that the director shall deny an application for a well permit if the director determines that the proposed well will cause unreasonably increasing damage to surrounding land and other water users from the concentration of wells due to one of the following factors: additional drawdown of water levels at neighboring wells; additional regional land subsidence; or the migration of contaminated groundwater to a well of record. These three categories of unreasonably increasing damage are the same as the three categories addressed in the temporary well spacing rule. The following is an explanation of how each category is addressed in the permanent rule, including an explanation of how it compares to the temporary rule.

Additional drawdown at neighboring wells of record

Under both the permanent rule and the temporary rule, if the probable impact of the withdrawals from a proposed well on a well of record is an additional drawdown of 10 feet or less after the first five years of operation of the proposed well, the impact on the well of record is not considered to be an unreasonable impact. ADWR included the 10-foot, five-year criterion in the temporary rule because ADWR's hydrologists determined at that time that an additional drawdown of 10 feet or less over a five-year period was normal, and not an unreasonable impact. However, an additional drawdown in excess of 10 feet over a five-year period was above normal, and therefore constituted unreasonably increasing damage.

ADWR's decision to retain the 10-foot, five-year criterion in the permanent rule is based on a study conducted by ADWR Hydrologists Frank Corkhill and Carol Norton dated March 30, 2005, entitled "Summary of Water Level Change Data in the Phoenix Active Management Area (1982/83 to 2002/03)." That study reviewed water level change data over the period from 1982 to 2003 and concluded that it is still appropriate to consider an additional drawdown of 10 feet or less over a five-year period to be normal and not unreasonable, and to consider an additional drawdown in excess of 10 feet over a five-year period to be above normal and therefore unreasonable.

Under the permanent rule, with certain exceptions, if the director determines that the probable impact of the withdrawals from a proposed well on a well of record will exceed 10 feet of additional drawdown after the first five years of operation of the proposed well, the additional drawdown will be considered an unreasonable impact and the application for a permit to drill the well will be denied. R12-15-1302(B)(1). The rule includes an exception to this provision. R12-15-1302(D) provides that if the director determines that the probable impact of the withdrawals from a proposed well on a well of record will exceed 10 feet of additional drawdown over five years, the director shall notify the applicant of the name and address of the owner of the impacted well as shown in ADWR's well records. The director shall not determine that the withdrawals from the proposed well will cause unreasonably increasing damage to the well of record on the basis of additional drawdown if, within 60 days from the date of the notice, or such longer period as allowed by the director, the applicant submits one of the following: (1) a signed consent form from the owner of the well of record consenting to the withdrawals; or (2) satisfactory evidence that the address of the owner of the well of record as shown in ADWR's well records is inaccurate, and that the applicant made a reasonable attempt to locate the owner of the well of record, but was unable to do so.

The permanent rule is different than the temporary rule in several respects. Under the temporary rule, if the director determines that the probable impact of the withdrawals from a proposed well on a well of record will be greater than 25 feet of additional drawdown over the first five years of operation of the well, the additional drawdown is considered an unreasonable impact and the application to drill the well will be denied unless the applicant submits a consent form signed by the owner of the well of record consenting to the withdrawals. No exception is provided in cases where the owner of the well of record cannot be located. If the director determines that the probable impact of the withdrawals on a well of record will be between 10 and 25 feet of additional drawdown over five years, the director may consider nine specified factors in determining whether the withdrawals from the proposed well will cause unreasonably increasing damage to the well of record. If the director determines that the withdrawals will cause unreasonably increasing damage, the well may be drilled only if the applicant submits a signed consent form from the owner of the well of record.

The permanent rule does not include the provision authorizing the director to consider nine factors in determining whether the withdrawals from a proposed well will have an unreasonable impact on a well of record if the probable impact is an additional drawdown of between 10 and 25 feet over a five-year period. ADWR has found that the nine factors listed in the temporary rule are either too vague or impractical to use in determining whether withdrawals from a proposed well will cause unreasonably increasing damage to a well of record. For that reason, the permanent rule simply provides that the director shall deny the application if the probable impact of the withdrawals from the proposed well on a well of record will exceed 10 feet of additional drawdown after the first five years of operation of the proposed well, unless the owner of the well of record consents to the withdrawals or cannot be located. R12-15-1302(B)(1). There was consensus among the stakeholders to take this approach in the permanent rule.

Another difference between the permanent rule and the temporary rule involves the submission of a hydrological study by the applicant. Under the temporary rule, if the proposed well has a design pumping capacity in excess of 500 gpm or if the applicant proposes the drilling of multiple wells, the applicant must submit with the application a hydrological study delineating those areas surrounding the proposed well or wells in which the projected impacts on water levels would exceed 10 feet and 25 feet of additional drawdown after the first five years of operation of the proposed

well or wells. The temporary rule also provides that the director may require any applicant to submit such a hydrological study.

In most cases, the permanent rule does not require an applicant for a well permit to submit a hydrological study with the application, regardless of the pumping capacity of the well or the number of proposed wells included in the application. This is because ADWR prepares its own hydrological study for each application and, in most cases, does not need a study from the applicant. However, R12-15-1302(B)(1) provides that the director may require an applicant to submit a hydrological study delineating those areas surrounding the proposed well in which the projected impacts on water levels would exceed 10 feet of additional drawdown after the first five years of operation of the proposed well if the director determines that the study will assist the director in making a determination as to whether the proposed well complies with the additional drawdown criteria in the subsection The rule also provides that an applicant may voluntarily submit such a study to the director. Id.

Additionally, if the well is a replacement well in a new location and the applicant requests the director to consider the collective effects of reducing or terminating withdrawals from the well being replaced combined with the proposed withdrawals from the replacement well, the applicant must submit a hydrological study demonstrating those collective effects to the satisfaction of the director. *See* discussion of replacement wells in new locations below.

Additional regional land subsidence

The temporary rule provides that if the proposed well is located in an area of known land subsidence, the director shall deny the application for a well permit if the director determines that withdrawals from the proposed well "would cause an unreasonable and adverse impact from additional regional land subsidence." The permanent rule is similar, but states that if the proposed well is in an area of known land subsidence, the director shall deny the application if the director determines that withdrawals from the well "will likely cause unreasonably increasing damage from additional regional land subsidence." R12-15-1302(B)(2). The word "likely" was added to the permanent rule because it may be impossible for ADWR to ever determine with absolute certainty that withdrawals from a proposed well would cause damage from additional land subsidence. The words "unreasonably increasing damage" are used in the permanent rule instead of "an unreasonable and adverse impact" because the relevant statutory language requires the director to adopt rules to prevent unreasonably increasing damage from the concentration of wells.

Under both the temporary and permanent rules, if the proposed well is located within an area of known land subsidence, the director may require the applicant to submit a hydrological study demonstrating the impact of the proposed well on additional regional land subsidence. The permanent rule also provides that the applicant may voluntarily submit such a study to the director. R12-15-1302(B)(2).

"Subsidence" is defined in the Groundwater Code as "the settling or lowering of the surface of land which results from the withdrawal of groundwater." A.R.S. § 45-402(36). ADWR has historically considered an area to be an "area of known land subsidence" if ADWR is aware that the area has experienced subsidence through visual observations or through a review of maps, studies, GPS survey data collected by ADWR or survey data from other sources, vertical extensometer data or remote sensing data. ADWR works closely with the Arizona Geological Survey, the United States Geological Survey, the National Geodetic Survey, NASA and other governmental and private entities in the study of subsidence in Arizona. ADWR intends to continue this practice when implementing the permanent rule.

Whether withdrawals from a proposed well located in an area of known land subsidence will likely cause unreasonably increasing damage from additional regional land subsidence will be determined by ADWR on a case-by-case basis. This is necessary because the questions of whether withdrawals from a well will likely cause additional regional land subsidence and, if so, whether the additional subsidence will likely cause unreasonably increasing damage, depend on the annual volume of the withdrawals from the proposed well and such site-specific factors as the hydrological and geographical conditions in the area and the presence of any structures in the area. ADWR has never denied an application on the basis that the proposed well will cause unreasonably increasing damage from additional regional land subsidence and will do so only in cases where it is clear that the proposed well will likely have such an effect.

Migration of contaminated groundwater

Under the temporary rule, the director is required to deny the application for a well permit if the director determines that the proposed well would cause an unreasonable and adverse impact from the migration of poor quality water. ADWR has historically interpreted this provision to mean that the director shall deny an application for a well permit if the director determines that the proposed well would cause the migration of contaminated water from a remedial action site to a well of record, resulting in a degradation of the water withdrawn from the well of record to such an extent that it will no longer be usable for the purpose to which it is currently being used without additional treatment. ADWR has always consulted with the Arizona Department of Environmental Quality ("ADEQ") in making a determination under this provision.

This approach is carried forward in the permanent rule and made clearer. R12-15-1302(B)(3) provides that, with certain exceptions, the director shall deny an application for a well permit if the director determines, after consulting with ADEQ, that withdrawals from the proposed well will likely cause the migration of contaminated groundwater from a remedial action site to a well of record resulting in a degradation of the quality of water withdrawn from the well of record so that the water will no longer be usable for the purpose for which it is currently being used without

additional treatment. "Remedial action site" is defined in R12-15-1301 as any of the following: (1) a CERCLA site regulated under 42 U.S.C. 9601, et seq.; (2) a DOD site regulated under 10 U.S.C. 2701, et seq.; (3) a RCRA site regulated under 42 U.S.C. 6901, et seq.; (4) a water quality assurance revolving fund ("WQARF") site regulated under A.R.S. Title 49, Chapter 2, Article 5; (5) a leaking underground storage tank ("LUST") site regulated under A.R.S. Title 49, Chapter 6; or (6) a voluntary remediation action site regulated under A.R.S. Title 49, Chapter 1, Article 5. "Contaminated groundwater" is defined as groundwater that has been contaminated by a release of a hazardous substance, as defined in A.R.S. § 49-201, or a pollutant, as defined in A.R.S. § 49-201.

The permanent rule contains several exceptions that will allow a proposed well to be drilled even if the director determines that withdrawals from the well will likely cause the migration of contaminated groundwater to a well of record as described above. First, in order to deny an application for a well permit on this basis, the director must determine that the damage to the owner of the well of record will not be prevented or adequately mitigated through the implementation of a program regulated under A.R.S. Title 49, or by the United States Environmental Protection Agency or the United States Department of Defense. R12-15-1302(B)(3). This means that an application for a well permit will not be denied in a case where the proposed well will likely cause the migration of contaminated groundwater to a well of record, but the owner of the well of record will not be damaged because of the implementation of a remediation program or other program under state or federal environmental laws. The temporary rule does not contain such a provision.

An additional exception was added to the permanent rule at the request of several stakeholders. This exception provides that the director shall not determine that the withdrawals from a proposed well will cause unreasonably increasing damage to a well of record even though the withdrawals from the proposed well will impact a well of record in the manner described above if the applicant submits either a signed consent form from the owner of the well of record consenting to the withdrawals from the proposed well, or satisfactory evidence that the address of the owner of the well of record as shown in ADWR's well records is inaccurate and the applicant made a reasonable effort to locate the owner of the well but was unable to do so. R12-15-1302(E). The temporary rule does not contain such an exception.

The temporary rule provides that in appropriate cases, the director may require an applicant to submit a hydrological study addressing the effects of withdrawals from the proposed well on the migration of poor quality water. The permanent rule provides that the director may require a hydrological study demonstrating whether withdrawals from the proposed well will have the effect described in the subsection if the director determines that the study will assist the director in making a determination under the subsection. The rule also provides that an applicant may voluntarily submit such a hydrological study. R12-15-1302(B)(3).

In implementing the temporary rule, ADWR has never denied an application for a well permit on the basis that the withdrawals from the proposed well would cause the migration of contaminated water to a well of record resulting in an unreasonable impact to the owner of the well of record. If ADWR has reason to believe that withdrawals from a proposed well would have such an impact, ADWR, in cooperation with ADEQ, works with the applicant to make changes to the location or construction of the well to avoid the unreasonable impact so that a well permit may be issued for the well. ADWR intends to continue this approach under the permanent rule. However, if it is clear that the withdrawals from a proposed well will likely have the impact described in R12-15-1302(B)(3), and the applicant cannot or will not change the location or construction of the well to avoid the impact, the director will deny the application.

Replacement wells in new locations

A "replacement well in a new location" is a replacement well that does not qualify as a "replacement well in approximately the same location" under rule R12-15-1308. A replacement well in a new location must comply with the well spacing criteria in R12-15-1302(B). The temporary rule contains a provision stating that an application to drill a replacement well in a new location shall not be rejected on the ground that it will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells if both of the following apply: (1) the operation of the replacement well will not significantly impact any well of record not historically impacted by the original well; and (2) the replacement well's projected impact on neighboring wells will not exceed the historical impacts from the original well. ADWR has not implemented this provision of the temporary rule because of the difficulty in determining an original well's historical impacts on neighboring wells. For that reason, ADWR did not include this provision in the permanent rule.

ADWR recognizes, however, that there may be cases in which a person proposing to drill a replacement well in a new location can demonstrate that the impact of the withdrawals from the proposed well on surrounding land or other water users will be offset by the termination or reduction of withdrawals from the original well. R12-15-1302(C) therefore provides that when determining whether a proposed replacement well in a new location complies with the well spacing criteria in subsection (B), the director shall consider the collective effects of reducing or terminating withdrawals from the well being replaced combined with the proposed withdrawals from the replacement well if the applicant submits a hydrological study demonstrating those collective effects to the satisfaction of the director. Under this provision, if an applicant proposes to drill a replacement well in a new location and the withdrawals from the well, when considered alone, would be found to cause unreasonable increasing damage due to impacts on a well of record or additional regional land subsidence, the applicant may qualify for a well permit by demonstrating that the impact will be offset by the termination or reduction of withdrawals from the well being replaced.

Changes to the construction or operation of the proposed well to lessen the degree of impact

The temporary rule provides that an applicant may, at any time prior to a final determination, amend the application to change the location or pumping requirements of the proposed well to lessen the degree of impact on neighboring wells of record. This provision is carried forward in R12-15-1302(F) and expanded. Subsection (F) provides that prior to a final determination, the applicant may amend the application to change the location or pumping requirements of the proposed well to lessen the degree of impact on wells of record or additional regional land subsidence. Subsection (F) also provides that the applicant may agree to construct or operate the proposed well in a manner that lessens the degree of impact on wells of record or regional land subsidence without filing a new application. Any such agreement must be included as a condition in the well permit.

Under subsection (F), if a proposed well is initially determined to cause unreasonably increasing damage because of its impact on a well of record (either additional drawdown or migration of contaminated groundwater) or because of additional regional land subsidence, the applicant may change the location, construction or operation of the proposed well to lessen those impacts and avoid the unreasonable damage without withdrawing the application and submitting a new application. This provides a benefit to applicants because if a new application is filed, the director must consider any impacts the proposed well may have on neighboring wells of record that came into existence between the date the original application was filed and the date the new application was filed.

R12-15-1303. Well Spacing Requirements – Applications for Recovery Well Permits Under A.R.S. § 45-834.01

A.R.S. § 45-834.01(B) provides that before recovering stored water from a well, a person must apply for and receive a recovery well permit from the director. Under A.R.S. § 45-834.01(B)(1), with certain exceptions, the director may issue a recovery well permit to an applicant only if the director determines that the proposed recovery of stored water will not unreasonably increase damage to surrounding land or other water users from the concentration of wells under rules adopted by the director. This requirement does not apply if the applicant is a city, town, private water company or irrigation district in an AMA and the application is for an existing well (generally, a well constructed before June 12, 1980) within the applicant's service area, or if the applicant is a multi-county water conservation district and the application is for an existing well within the district and within the groundwater basin or sub-basin in which the stored water is located. A.R.S. § 45-834.01(B)(2) and (3).

Rule R12-15-1303 contains well spacing criteria for those applications for recovery well permits that must comply with well spacing requirements pursuant to A.R.S. § 45-834.01(B)(1). The well spacing criteria are identical to the well spacing criteria contained in Rule R12-15-1302 for applications for well permits under A.R.S. § 45-599, with the following exceptions:

1. R12-15-1303(B)(1) provides that an applicant for a recovery well permit shall submit with the application a hydrological study delineating those areas surrounding the proposed well in which the projected impacts on water levels from recovery of the stored water will exceed 10 feet of additional drawdown after the first five years of the recovery of water from the well. Rule R12-15-1302(B) does not contain such a requirement for persons applying for well permits under A.R.S. § 45-599, although the rule provides that the director may require an applicant to submit such a hydrological study if the director determines that such a study will assist the director in making determination under the subsection.
   ADWR decided to require all persons applying for recovery well permits that are subject to the well spacing criteria to submit a hydrological study with the application for two reasons. First, the determination of the probable impacts of a proposed recovery well on surrounding water levels is often more complex than a determination of the probable impacts of a groundwater well on surrounding water levels, particularly if the proposed recovery well will be located in the area of impact of the stored water. ADWR has found that in most cases, the hydrological study submitted by an applicant for a recovery well permit assists ADWR in determining the probable impacts of the proposed recovery well on surrounding water levels.
   Second, ADWR is required to give public notice of an application for a recovery well permit after it is determined to be complete and correct, and any person may file an objection to the application. A.R.S. § 45-871.01(F). The grounds for objection are limited to whether the application meets the criteria for issuing a recovery well permit under A.R.S. § 45-834.01(B), which, for those application subject to well spacing requirements, includes the well spacing criteria adopted by the director. Id. ADWR believes that it is appropriate to require an applicant for a recovery well permit to submit a hydrological study demonstrating the probable impact of the proposed well on surrounding water levels so that the information will be available to members of the public when they review the application to determine whether to object to the application.
2. Rule R12-15-1303 provides that in making a determination as to whether a proposed recovery well complies with the well spacing criteria, if the proposed recovery well will be located within the area of impact of an underground storage facility, the director shall take into account the effects of water storage at the facility on the proposed recovery of stored water from the recovery well if: (1) the applicant will account for all of the water recovered from the well as water stored at the facility; and (2) the applicant submits a hydrological study demonstrating those effects to the satisfaction of the director. Under this provision, an applicant may demonstrate that the recovery of stored water from a proposed recovery well will not cause unreasonably increasing damage from

impacts on surrounding wells of record or from additional regional land subsidence because the impacts of recovering water from the well will be offset by the storage of water at a nearby underground storage facility. ADWR currently allows applicants for recovery well permits to make such a demonstration. The inclusion of this provision is therefore consistent with ADWR's current practice.

R12-15-1304 Well Spacing Requirements – Wells Withdrawing Groundwater from the Little Colorado River Plateau Groundwater Basin for Transportation to Another Groundwater Basin Under A.R.S. § 45-544(B)(1)

In areas outside of AMAs, a person may not transport groundwater away from a groundwater basin unless the transportation is allowed under A.R.S. § 45-544(B). A.R.S. § 45-544(B)(1) provides that a person who at any time during the twelve months before January 1, 1991 was transporting groundwater away from the Little Colorado river plateau groundwater basin has the right to transport groundwater legally withdrawn from a well in that basin to another groundwater basin. A.R.S. § 45-544(D) provides that groundwater may be withdrawn from a well drilled in the Little Colorado river plateau groundwater basin after January 1, 1991 for transportation away from the basin pursuant to A.R.S. § 45-544(B)(1) only if the location of the well complies with the rules adopted pursuant to A.R.S. § 45-598(A) to prevent unreasonably increasing damage to surrounding land or other water users from the concentration of wells. This does not apply to a replacement well in approximately the same location or a well drilled after January 1, 1991 pursuant to a notice of intent to drill filed on or before that date.

Rule R12-15-1304 contains well spacing criteria for any well drilled in the Little Colorado river plateau groundwater basin after January 1, 1991 that must comply with well spacing requirements pursuant to A.R.S. § 45-544(D). The well spacing criteria are identical to the well spacing criteria contained in Rule R12-15-1302 for applications for well permits under A.R.S. § 45-599.

R12-15-1305 Well Spacing Requirements – Applications to Use a Well to Withdraw Groundwater for Transportation to an Active Management Area Under A.R.S. § 45-559

A.R.S. § 45-559 provides that a person may not use a well constructed after September 21, 1991 to withdraw groundwater for transportation to an AMA pursuant to A.R.S. Title 45, Chapter 2, Article 8.1, unless the person applies to the director for approval and the director approves the application. The statute provides that the director shall approve an application if the director determines that the withdrawals will not unreasonably increase damage to surrounding land or other water users from the concentration of wells. The statute further provides that in making this determination, the director shall follow the criteria in the rules adopted pursuant to A.R.S. § 45-598(A).

Rule R12-15-1305 contains well spacing criteria for applications to use a well constructed after September 21, 1991 for the withdrawal of groundwater for transportation to an AMA pursuant to A.R.S. § 45-559. The well spacing criteria are identical to the well spacing criteria contained in Rule R12-15-1302 for applications for well permits under A.R.S. § 45-599.

R12-15-1306 Well Spacing Requirements – Applications for Water Exchange Permits Under A.R.S. § 45-1041

A.R.S. § 45-1041(A) provides that, with certain exceptions, a person who seeks to give surface water, other than Colorado river water, in a water exchange shall apply to the director for a water exchange permit. The statute provides that the director shall issue a water exchange permit if the applicant demonstrates that certain conditions are met. One of the conditions is that if the applicant is not a city, town, private water company or irrigation district, any new or increased pumping by the applicant from a well within an AMA pursuant to the water exchange shall not unreasonably increase damage to surrounding land or other water users. A.R.S. § 45-1041(A)(4).

Rule R12-15-1306 contains well spacing criteria for those applications for water exchange permits that are required to comply with well spacing requirements pursuant to A.R.S. § 45-1041(A)(4). The well spacing criteria are identical to the well spacing criteria contained in Rule R12-15-1302 for applications for well permits under A.R.S. § 45-599.

R12-15-1307. Well Spacing Requirements – Notices of Water Exchange under A.R.S. § 45-1051

A.R.S. § 45-1051(A) provides that, with certain exceptions, a person who seeks to engage in a water exchange for which a water exchange permit is not required must file a notice of water exchange with the director. A.R.S. § 45-1052 provides that after filing a notice of water exchange as required by A.R.S. § 45-1051(A), the exchange may be initiated if it satisfies certain conditions. One of the conditions is that for each participant that is not a city, town, private water company or irrigation district, any new or increased pumping by that person from a well within an AMA pursuant to the water exchange will not unreasonably increase damage to surrounding land or other water users. A.R.S. § 45-1052(4).

Rule R12-15-1307 contains well spacing criteria for those notices of water exchange that are required to comply with well spacing requirements pursuant to A.R.S. § 45-1052(4). The well spacing criteria are identical to the well spacing criteria contained in Rule R12-15-1302 for applications for well permits under A.R.S. § 45-599.

R12-15-1308. Replacement Wells in Approximately the Same Location

A.R.S. § 45-597 provides that a person entitled to withdraw groundwater in an AMA or a person entitled to recover stored water pursuant to A.R.S. § 45-834.01 may construct a replacement well in approximately the same location.

A.R.S. § 45-544(D) provides that groundwater may be withdrawn from a well drilled in the Little Colorado river plateau groundwater basin after January 1, 1991 for transportation away from the basin pursuant to A.R.S. § 45-544(B)(1) if the well is a replacement well in approximately the same location. A person proposing to drill a replacement well in approximately the same location must file a notice of intent to drill pursuant to A.R.S. § 45-596 prior to drilling the well, but is not required to comply with well spacing criteria. Because the replacement well will be located in close proximity to the original well, it is deemed not to cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells.

The director is required by A.R.S. § 45-597(A) to adopt a rule defining what constitutes a replacement well, including the distance from the original well site that is deemed to be the same location for a replacement well. Rule R12-15-1308 sets forth the criteria that a proposed well must meet to qualify as a replacement well in approximately the same location. The criteria fall within three basic categories: the maximum distance the proposed replacement well may be from the original well; the maximum annual volume of water the proposed replacement well may withdraw; and the date by which a notice of intent to drill the replacement well must be filed if the well to be replaced has been abandoned. Each category is discussed below.

Maximum distance between proposed replacement well and original well

R12-15-1308(A)(1) restricts the location of a replacement well in approximately the same location to no greater than 660 feet from the original well. The rule requires that the location of the original well be capable of being determined at the time the notice of intent to drill the replacement well is filed. "Original well" is defined in R12-15-1301as the well being replaced by the replacement well, or, if the replacement well is the latest in a succession of two or more replacement wells in approximately the same location, the well replaced by the first replacement well. Defining "original well" in this manner will prevent a person from drilling a succession of replacement wells in approximately the same location, each of which is within 660 feet of the well it replaces, but with the second or subsequent well being drilled more than 660 feet from the first well that was replaced. Without restricting all of the replacement wells to within 660 feet of the first well that was replaced, successive replacement wells could ultimately be drilled several miles from the first well that was replaced without complying with the well spacing criteria.

The permanent rule and the temporary rule are similar in that they both restrict a replacement well in approximately the same location to within 660 feet of the original well. However, the temporary rule does not define "original well" and does not require that the location of the original well be capable of being determined at the time the notice of intent to drill the replacement well is filed.

The 660-foot restriction in both the temporary rule and the permanent rule has a simple explanation and reasonable justification. ADWR's well registry database records a well's location using the cadastral system that is a standard coordinate system in common usage throughout the United States. The cadastral system is essentially equivalent to a legal description that specifies a well's location down to the ¼, ¼, ¼, section (this defines a 10 acre square-shaped area that measures 660 feet in length and width). This is a reasonable, common sense approach to defining a replacement well in approximately the same location. ADWR is not aware of any occasions in which the 660-foot restriction has led to an unreasonable result during the approximately 23 years in which the temporary rule has been in effect.

Maximum annual volume of water that may be withdrawn

R12-15-1308(A)(2) through (A)(4) establish the maximum annual volume of water that may be withdrawn from a replacement well in approximately the same location. The purpose of these provisions is to ensure that a replacement well in approximately the same location does not withdraw more water than could have been withdrawn from the original well, so that the replacement well does not have a greater impact on surrounding land and other water users than the original well could have had.

Subsection (A)(2) applies in cases where the proposed well is replacing an original well that was not subject to either a well permit under A.R.S. § 45-599 or a recovery well permit issued under A.R.S. § 45-834.01 that contained an annual volume limit. In these cases, the amount of water that could have been withdrawn from the original well was limited only by the maximum capacity of the original well, and not by a maximum annual volume established in a well permit or recovery well permit. Accordingly, subsection (A)(2) restricts the annual volume of water that may be withdrawn from the replacement well in approximately the same location to the maximum annual capacity of the original well. The subsection provides that the director shall determine the maximum annual capacity of the original well by multiplying the maximum pump capacity of the well in gallons per minute by the number of minutes in a year (525,600), and then converting the result into acre-feet by dividing the result by 325,851 gallons. The result is the amount of water that would have been pumped from the original well if it were operated at maximum capacity without interruption for an entire year.

Subsection (A)(2) provides that the director shall presume that the maximum pump capacity of the original well is the maximum pump capacity of the well in gallons per minute as shown in ADWR's well registration records. However, if the director has reason to believe that the maximum pump capacity as shown in ADWR's records is inaccurate, or if the applicant submits evidence demonstrating that the maximum pump capacity as shown in ADWR's records is inaccurate, the director shall determine the maximum pump capacity by considering all available evidence, including the depth and diameter of the original well and any evidence submitted by the applicant. If ADWR's well registration records do not show the maximum pump capacity of the original well, the director shall not approve the proposed

well as a replacement well in approximately the same location unless the applicant demonstrates the maximum pump capacity of the original well to the director's satisfaction.

Subsection (A)(3) applies in cases where the proposed well will replace an original well for which a well permit was issued under A.R.S. § 45-599. Because the original well could not annually withdraw an amount of groundwater in excess of the maximum annual volume set forth in well permit, which was based in part on an assessment of impacts on surrounding land and other water users, subsection (A)(3) provides that the replacement well in approximately the same location may not annually withdraw an amount of groundwater in excess of the maximum annual volume set forth in the well permit.

Subsection (A)(4) applies in cases where the proposed well will replace a well for which a recovery well permit was issued under A.R.S. § 45-834.01 and the permit sets forth a maximum annual volume of stored water that may be recovered from the well. Because the well to be replaced could not annually recover an amount of stored water in excess of the maximum annual volume set forth in the recovery well permit, subsection (A)(4) provides that the replacement well in approximately the same location may not annually recover an amount of stored water in excess of the maximum volume set forth in the recovery well permit.

The maximum annual volume limitations set forth in subsections (A)(2), (A)(3) and (A)(4) are different than the maximum annual volume limitation in the temporary rule. The temporary rule provides that a proposed replacement well in approximately the same location may not annually withdraw an amount of groundwater in excess of the historical withdrawals from the original well. R12-15-840(1). In implementing the temporary rule, ADWR has calculated the annual amount of water historically withdrawn from an original well as the volume of water that would have been withdrawn from the well during a year if it had been operated at one-half of its maximum capacity during that year (i.e., a 50 per cent duty cycle), unless the applicant demonstrates that a larger volume was pumped in any year.

When developing the permanent rule, ADWR decided not to limit the volume of water that may be withdrawn from a replacement well in approximately the same location to the volume historically withdrawn from the original well. There were two reasons for this decision. First, it is difficult for many applicants to demonstrate the amount of water that was historically withdrawn from the original well. Although ADWR assumes that the original well was operated under a 50 per cent duty cycle if the applicant does not demonstrate that a larger volume was pumped in a year, such an assumption may not be realistic in all cases.

Second, by limiting the volume of water to the historical withdrawals from the original well, in many cases the replacement well will not be allowed to withdraw as much water as allowed by the original well. For example, under the temporary rule, if a well permit allowed the original well to withdraw 100 acre-feet per year, but the largest volume of water withdrawn from the well during a year was 70 acre-feet, the maximum volume of water that could be withdrawn from the replacement well would be 70 acre-feet per year (assuming that this was equal to or greater than the amount that would have been withdrawn from the well under a 50 per cent duty cycle). In this example, ADWR believes the replacement well should be allowed to withdraw 100 acre-feet per year because the original well was authorized to annually withdraw that volume and ADWR determined that such withdrawals would not cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells.

The permanent rule allows the replacement well to annually withdraw as much water as authorized by the original well. The stakeholders' group strongly supported this approach.

Date by which notice of intent to drill replacement well must be filed

Subsection (A)(5) of the rule provides that if the well to be replaced has been physically abandoned, a notice of intent to drill the proposed replacement well in approximately the same location must be filed no later than 90 days after the well to be replaced was physically abandoned. The temporary rule does not contain such a provision. However, in implementing the temporary rule, ADWR has historically required an applicant to file a notice of intent to drill a replacement well in approximately the same location prior to physically abandoning the original well. ADWR based this policy on the principle that a proposed well cannot be considered a replacement well for a well no longer exists.

In developing the permanent rule, ADWR considered including a provision requiring that a person proposing to drill a replacement well in approximately the same location file a notice of intent to drill the replacement well before physically abandoning the well to be replaced. However, ADWR concluded that such a requirement is not appropriate in all cases, including cases where the original well must be abandoned in an expedited manner before the owner can file a notice of intent to drill the replacement well. ADWR therefore decided to allow a person to file a notice of intent to drill a replacement well in approximately the same location within 90 days after the well to be replaced has been physically abandoned.

This issue was discussed with the stakeholders' group and a majority of the stakeholders agreed that 90 days is a sufficient period of time after a well is abandoned to file a notice of intent to drill a replacement well in approximately the same location. The majority of the stakeholders agreed to a 90-day limit to ensure that a well that has been abandoned for a long period of time cannot be replaced with a well that could potentially create an impact that has not been experienced in the area for many years. Allowing a replacement well in approximately the same location to be drilled long after the original well was abandoned would create a hardship on wells drilled in the area between the time the original well was abandoned and the replacement well was drilled.

Other provisions of the rule

R12-15-1308(A)(6) provides that if the proposed replacement well in approximately the same location will be used to withdraw groundwater from the Little Colorado river plateau groundwater basin for transportation away from the basin pursuant to A.R.S. § 45-544(B)(1), one of the following must apply: (1) the original well must have been drilled on or before January 1, 1991, or after that date pursuant to a notice of intent to drill that was on file with ADWR on that date; or (2) the director must have previously determined that the withdrawal of groundwater from the original well for transportation away from the Little Colorado river plateau groundwater basin complies with the well spacing requirements in R12-15-1304. The purpose of this provision is to ensure that a proposed well in the Little Colorado river plateau groundwater basin does not qualify as a replacement well in approximately the same location for purposes of withdrawing groundwater for transportation away from the basin unless the well it is replacing had the right to withdraw groundwater for that purpose.

R12-15-1308(B) provides that after a replacement well in approximately the same location is drilled, the replacement well may be operated in conjunction with the original well and any other wells that replaced the original well if the total amount of water withdrawn from all such wells does not exceed the maximum annual volume limitation set forth in subsection (A)(2), (A)(3) or (A)(4) of the rule. This provision applies in cases where the person proposing to drill a replacement well in approximately the same location desires to continue using the original well in addition to the replacement well or wells. This may occur if the original well is still operable, but cannot produce a sufficient amount of water by itself to meet the well owner's water needs. In these cases, the person may operate the original well in conjunction with the replacement wells in approximately the same location as long as the total annual withdrawals from all of the wells does not exceed the maximum annual volume limitations established for the replacement wells in subsection (A) of the rule. The temporary rule contains a similar provision.

R12-15-1308(C) provides that a well may be drilled as a replacement well in approximately the same location for more than one original well if the criteria for a replacement well in approximately the same location are met with respect to each original well and if the total annual withdrawals from the proposed replacement well will not exceed the combined maximum annual amounts allowed for each original well under subsection (A)(2), (A)(3) or (A)(4) of the rule. This provision was included at the suggestion of several stakeholders to allow a person to replace more than one original well with a single replacement well in approximately the same location. This could occur only in cases where the original wells are in close proximity to each other, because the replacement well must be located within 660 feet of each original well. The temporary rule does not contain such a provision.

R12-15-1308(D) provides that the director may include conditions in the approval of a notice of intent to drill a replacement well in approximately the same location to ensure that the drilling and operation of the replacement well meets the requirements of the rule. This will allow the director to include conditions in the approval of a notice of intent to drill a replacement well in approximately the same location to ensure that well is drilled within 660 feet of the original well and that the person operating the well complies with the maximum annual volume limitations established in the rule. The temporary rule contains a similar provision.

7. A reference to any study relevant to the rule that the agency reviewed and either relied on in its evaluation of or justification for the rule or did not rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:

ADWR relied on the following study in deciding to include the 10-foot, five-year additional drawdown criterion in Rules R12-15-1302 through R12-15-1307: Study dated March 30, 2005 by ADWR Hydrologists Frank Corkhill and Carol Norton entitled "Summary of Water Level Change Data in the Phoenix Active Management Area (1982/83 to 2002/03)." Any member of the public may obtain a copy of this summary and the data underlying the study by contacting:

Name:	Kathleen Donoghue Docket Supervisor
Address:	Arizona Department of Water Resources 3550 N. Central Ave. Phoenix, AZ 85012
Telephone:	(602) 771-8472
Fax:	(602) 771-8683

8. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:

Not applicable

9. The summary of the economic, small business, and consumer impact:

1. An Identification of the Proposed Rulemaking

In this rulemaking proceeding, ADWR is replacing two temporary rules, rule R12-15-830 and rule R12-15-840, in effect since 1983, with permanent rules R12-15-1301 through R12-15-1308. Both the temporary and permanent rules address statutory mandates requiring the director to adopt rules to prevent unreasonably increasing damage to sur-

rounding land or other water users from a concentration of wells, referred to as "well spacing rules," and a rule defining what constitutes a replacement well in approximately the same location. The permanent rules can be categorized under five subheadings: definitions of terms used in the rules (R12-15-1301); rules relating to proposed new wells and replacement wells in new locations within AMAs for which a well permit is required under A.R.S. § 45-599 (R12-15-1302); rules relating to proposed recovery wells (R12-15-1303); rules relating to certain wells used for groundwater transportation and water exchanges (R12-15-1304 through R12-15-1307); and a rule relating to replacement wells in approximately the same location (R12-15-1308).

The temporary rules contain well spacing criteria for proposed new wells and replacement wells in new locations within AMAs for which a well permit is required under A.R.S. § 45-599. The temporary rules also define what constitutes a replacement well in approximately the same location. The temporary rules do not address proposed recovery wells, wells used for groundwater transportation or wells used for water exchanges. When the temporary rules were adopted in 1983, the statutory provisions requiring these wells to comply with well spacing criteria did not exist. These wells are now addressed in rules R12-15-1303 through 1307.

Overall, ADWR believes the permanent rules are very similar to the temporary rules they replace. The permanent rules add clarity and certainty, remove sources of confusion and uncertain interpretation, codify some existing ADWR policies and slightly modify certain provisions in the temporary rules. The director will continue to deny authority to construct a well if the director determines it will cause unreasonably increasing damage to surrounding land or other water users from a concentration of wells.

The temporary rules and the permanent rules recognize three categories of unreasonably increasing damage: additional drawdown of water levels at neighboring wells of record; additional regional land subsidence; and migration of contaminated groundwater. The provision in the permanent rules regarding additional regional land subsidence is nearly identical to the provision in the temporary rules. The provision in the permanent rules regarding migration of contaminated groundwater is similar to the provision in the temporary rules, but provides greater clarity on when an application will be denied on this basis. The language is consistent with current ADWR policy. The provision in the permanent rules regarding additional drawdown of water levels at neighboring wells of record is also similar to the provision in the temporary rules, with one exception. Under the temporary rules, if the probable additional drawdown is between 10 and 25 feet during the first five years of operation of the proposed well, ADWR will consider nine specified factors in determining whether to grant the application. The permanent rules eliminate the nine factors and simply require ADWR to deny the application unless an exception applies.

The temporary rules provide that the director shall issue a well permit to an applicant even though the probable impact of the withdrawals from the proposed well on one or more wells of record will exceed the maximum allowable additional drawdown established in the rule if the applicant submits a signed consent form from the owner of each impacted well of record consenting to the withdrawals from the proposed well. The permanent rules retain this provision and extend its application to cases where withdrawals from the proposed well will likely cause unreasonably increasing damage to a well of record from the migration of contaminated groundwater. The permanent rules also allow an applicant to obtain a well permit despite unreasonable impacts on a well of record if the applicant submits sufficient evidence that the address of the owner of the well of record as shown in ADWR's well records is inaccurate, and that the applicant made a reasonable attempt to locate the owner of the well of record, but was unable to do so.

The provision in the temporary rules requiring an applicant for a well permit to submit a hydrological study if the proposed pumping capacity exceeds 500 gmp or if the application is for multiple wells has been removed for most applicants, thereby relieving them from the economic burden of submitting such a study unless required by the director. For replacement wells in new locations, allowance is newly given in the permanent rule for the director to consider the collective effects of the reduction of pumping from the original well and the new withdrawals from proposed well if the applicant demonstrates those effects.

Regarding replacement wells in approximately the same location, both the permanent rules and the temporary rules limit the location of such wells to within 660 feet of the original well. The primary difference between the rules is that the permanent rules allow a replacement well in approximately the same location to withdraw up to the maximum capacity of the original well or, if a well permit or recovery well permit was issued for the original well, up to the permitted annual volume of the original well, while the temporary rules limit withdrawals to the historical withdrawals from the original well. This change will allow more water to be withdrawn from a replacement well in approximately the same location in most cases, yet will prevent such a well from withdrawing more water than could have been withdrawn from the original well.

2. A Brief Summary of the Information Included in the Economic, Consumer, and Small Business Impact Statement

Rules R12-15-1301 through 1308 will directly affect persons seeking to construct most non-exempt wells in AMAs, as well as certain recovery wells statewide. Persons owning certain wells in the Little Colorado river plateau groundwater basin, certain wells used to transport groundwater into an AMA and certain wells used to withdraw groundwater in AMAs for water exchanges may also be affected. The rules do not apply to persons drilling exempt wells in AMAs (generally, non-irrigation wells with a maximum pumping capacity of 35 gpm or less); persons drilling wells pursuant to groundwater withdrawal permits within AMAs, except general industrial user permits; or cities, towns,

private water companies or irrigation districts applying for recovery well permits for wells within their service areas drilled before June 12, 1980. The rules also do not apply to wells that will withdraw only surface water.

Examples of persons who will be subject to the rules, depending on the type of well to be constructed or used by the person, include private individuals, groups of individuals, partnerships, or associations; industries, including manufacturing, power plants, mines, golf courses, cattle feedlots, dairies, sand and gravel operations, and other industrial water users; businesses large and small, including farms, resorts, private water companies and home builders; political subdivisions including the state, cities, municipalities, towns, and irrigation districts; and Federal and state agencies.

Between 1983 and 2005, inclusive, ADWR estimates that approximately 1,156 wells were drilled under temporary rule R12-15-830, including both new wells and replacement wells in new locations. Between 1983 and 2005, inclusive, ADWR estimates that approximately 286 replacement wells in approximately the same location were drilled under temporary rule R12-15-840. Between 1983 and 2005, inclusive, ADWR estimates that approximately 212 recovery wells were drilled under recovery well authorities not existing in 1983. A recovery well may be also be permitted to withdraw groundwater, so that there is overlap between the number of recovery wells, new wells, and replacement wells.

3. Cost – Benefit Analysis

Throughout this analysis, ADWR treats the temporary rules as existing rules and bases economic impact from the permanent rules on changes from the existing rules.

ADWR estimates that economic impacts are minimal, and that any small direct incremental benefits – associated, for example, with added clarity, new maximum annual volume limits for replacement wells in approximately the same location, the ability of applicants for replacement wells in new locations to demonstrate the collective effects of the reduction of pumping from the well to be replaced and the new withdrawals from the proposed well, and the ability to obtain a well permit if the owner of an impacted well cannot be located – will generally outweigh even smaller incremental costs, if any.

Agencies

Agencies will benefit from clearer and more uniform and consistent definitions. Clearer detail is provided as to when the director "shall not approve" if a well of record is unreasonably impacted from the migration of contaminated groundwater. For new wells or replacement wells in new locations, confusion is reduced by eliminating a list of nine seldom used factors to be considered in determining whether an impact between 10 and 25 feet of additional drawdown is an unreasonable impact. ADWR estimates that it will incur no new appreciable direct costs or realize any benefits from the transition from the temporary rules to the permanent rules. Agencies that drill wells, e.g., ADOT, will incur the same costs and benefits as other well owners.

Political Subdivisions

Just as under the temporary rules, political subdivisions that own wells or land benefit from permanent rules R12-15-1302 though 1308 in the same manner as other well owners: they are protected from unreasonably increasing damage to their wells and land from the concentration of wells. Without the rules, political subdivisions that own wells or land could be unreasonably damaged as a result of drawdown of groundwater levels, land subsidence, or migration of contaminated water to their wells. These potential negative impacts can lead to physical damage to structures, lowered property values or future treatment costs. In most cases, political subdivisions applying to construct new wells or replacement wells in new locations will no longer be required to submit a hydrological study for wells with a pumping capacity of 500 gmp or greater or for multiple wells. Under the proposed new rules, a hydrological study is required only for applications to drill certain recovery wells, although the director may require any applicant to submit such a study if the director determines that the study will assist the director in determining the impacts of the proposed withdrawals from the well.

Political subdivisions will likely incur costs to comply with Rules R12-15-1302 through 1307, but the costs are predicted to be reasonable and no different than the costs under temporary rule R12-15-830. Applicants for well permits who are required to conduct a hydrological study pay costs ranging between $2,000 and $5,000, in most cases.

Rule R12-15-1308 defines a "replacement well in approximately the same location" as a well drilled no greater than 660 feet from an original well being replaced and that will not annually withdraw an amount of water in excess of the amount that could have been withdrawn from the original well. A hydrological study is not required. The rule provides a benefit when compared to the temporary rule in that the maximum annual amount of water that may be withdrawn from a replacement well in approximately the same location is greater under the permanent rule in most cases.

Business, Including Small Business

Just as under the temporary rules, businesses that own wells or land benefit from permanent rules R12-15-1302 though 1308 in the same manner as other well owners: they are protected from unreasonably increasing damage to their wells and land from the concentration of wells. Without the rules, businesses that own wells or land could be unreasonably damaged as a result of drawdown of groundwater levels, land subsidence, or migration of contaminated water to their wells. Businesses applying to construct new wells or replacement wells in new locations are no longer required to prepare a hydrological study for wells with a maximum capacity of 500 gpm or greater or for multiple

wells, unless the proposed well is a recovery well. However, the director may require any applicant to submit a hydrological study.

Under both the temporary and permanent rules, a business with a proposed well qualifying as a "replacement well at approximately the same location" under R12-15-1308 avoids most costs associated with filing permit applications. Applicants for replacement wells in approximately the same location are required only to file a notice of intent to drill and pay a $150 fee. A hydrological study is not required.

Small businesses are impacted by the temporary and permanent rules to the same extent as large business, political subdivisions, agencies, and other persons seeking to drill non-exempt wells. Small businesses, whether owning or seeking to drill wells, need to be protected from, or prevented from causing, unreasonably increasing damage to the same extent as other entities. It would not be legally permissible or fair to exempt small business applicants from these requirements.

Employment

Private hydrologic consultants often prepare the hydrological studies required by the temporary rules. Under the permanent rules, an applicant is not required to submit a hydrological study for any proposed well unless the proposed well is a recovery well or the director requires the applicant to submit a study. However, even if an applicant is not required to submit a hydrological study, the applicant may still choose to submit a study. Eliminating the requirement for most applicants to submit a hydrological study may have a small effect on the employment of private hydrologic consultants. Otherwise, as a result of the adoption of Rules R12-15-1301 through 1308, ADWR anticipates no discernable new employment effects, whether private or public.

State Revenues

No difference between the permanent rules and the temporary rules.

Alternative Methods of Achieving the Proposed Rulemaking

ADWR engaged in a long public dialogue with the regulated community while preparing Rules R12-15-1301 through R12-15-1308. Many alternatives were considered, some less intrusive or costly, some more. The permanent rules emerged from the public participation process, in preference to other alternatives.

10. A description of the changes between the proposed rules, including supplemental notices, and final rules (if applicable):

There are no substantial changes between the proposed rules and the final rules.

ADWR made two minor clarification changes to the definition of "well of record" in Rule R12-15-1301(16). First, in response to two written comments, ADWR added language to the definition clarifying that "well of record" does not include wells used exclusively for the following purposes: drainage pursuant to a drainage water withdrawal permit issued pursuant to A.R.S. § 45-519; dewatering pursuant to a dewatering permit issued under A.R.S. § 45-513 or a temporary dewatering permit issued under A.R.S. § 45-518; electrical energy generation pursuant to a temporary permit for electrical energy generation issued under A.R.S. § 45-517; or hydrological testing pursuant to a hydrologic testing permit issued under A.R.S. § 45-519.01.

This is not a substantial change. There was a general consensus among the stakeholders and ADWR that wells used pursuant to one or more of the permits listed above should not be considered "wells of record" because it is not necessary to protect such wells from additional drawdown or the migration of contaminated groundwater because the wells either will not withdraw water for a beneficial use or will be used for a short period of time. Although the definition of "well of record" in the proposed rules did not expressly exclude wells used pursuant to these permits, ADWR believes that such wells were excluded because they were not mentioned in the portion of the definition that lists the types of groundwater withdrawal permits that are included as wells of record (A.A.C. R12-15-1301(16)(e)). However, because two water providers submitted comments requesting that the definition expressly exclude these wells, ADWR decided to add the wells in the list of wells excluded from the definition so that it is clear that the wells are excluded. This is a clarifying change that does not change the effect of the rules.

The second change made to the definition of "well of record" was a minor wording change to improve clarity. The phrase "registration filing" in R12-15-1301(16)(a) and (b) was changed to "current well information on file with the Department."

In addition to the two changes described above, a number of minor grammatical and formatting changes were made at the request of G.R.R.C. staff.

11. A summary of the comments made regarding the rule and the agency response to them:

The following is a summary of the comments received by ADWR during the public comment period and ADWR's responses to the comments. The comments and responses are grouped according to the subject matter to which they relate. The name of a person making a comment is shown in parenthesis after the comment. In some cases, several persons made a similar comment, in which case the names of all persons making the comment are shown after the comment.

WELLS THAT PUMP APPROPRIABLE SURFACE WATER

Comment:

SRP agrees with ADWR's statement in the preamble of the Notice of Proposed Rulemaking that "[i]f a person applies for a well permit under A.R.S. § 45-599 … but the proximity of the proposed well to a stream raises a question as to whether the well will pump groundwater, ADWR will require the applicant to submit a hydrological study demonstrating that the well will pump groundwater." That statement should be expressly included in the final rules. (SRP).

Response:

ADWR disagrees with this comment. There are several criteria that must be met to obtain a well permit under A.R.S. § 45-599, including the following: (1) the proposed well must withdraw groundwater; (2) the applicant must have the appropriate groundwater right or permit to withdraw the groundwater; (3) the applicant must demonstrate that the well will be constructed in compliance with ADWR's well construction rules; (4) the well must comply with the well spacing rules adopted by the director under A.R.S. § 45-598(A); and (5) if the proposed well is in the Santa Cruz AMA, the location of the proposed well must be consistent with the management plan for the AMA. *See* A.R.S. §§ 45-598(B), (C) and (D) and 45-599(A), (B) and (C).

These rules address only one of the criteria for obtaining a well permit under A.R.S. § 45-599 – compliance with well spacing requirements. Whether an applicant for a well permit satisfies the other criteria, including the requirement that the proposed well withdraw groundwater, is beyond the scope of these rules. In the Notice of Proposed Rulemaking, ADWR included language in Section 5 of the preamble describing the process ADWR intended to use to determine whether a proposed well will withdraw groundwater if the location of the proposed well raises a question as to whether the well will withdraw groundwater. ADWR included that language in the preamble, not because it believed that the language was a necessary component of the rules, but because it wanted to inform the stakeholders of how ADWR intended to handle the issue. However, ADWR made it clear in the preamble that this issue would be dealt with "outside of the well spacing rules."

Because the scope of these rules is limited to the adoption of well spacing requirements, and does not address the other criteria for obtaining a well permit under A.R.S. § 45-599, ADWR did not include in the rules the language requested in this comment. Furthermore, as explained in ADWR's response to the next comment, ADWR has removed the language from Section 6 of the preamble in the Notice of Final Rulemaking.

Comments:

ADWR states in the preamble of the Notice of Proposed Rulemaking that if there is a question as to whether a well will pump groundwater or surface water, ADWR will require the applicant to submit a hydrological study and then will make a determination as to whether the well will pump any groundwater. ADWR has no authority to determine whether a well will pump subflow until the adjudication court establishes subflow zones. (Joe Sparks on behalf of the San Carlos Apache Tribe, the Tonto Apache Tribe, the Yavapai-Apache Nation and the Pascua Yaqui Tribe; Margaret Gallogly on behalf of 10,000 West L.L.C., Stardust Development, Inc., Douglas Ranch El Dorado, L.L.C. and Meritage Homes of Arizona, Inc.; and Bill Staudenmaier on behalf of Roosevelt Water Conservation District, Phelps Dodge Corporation and Arizona Public Service Company).

The statement in the preamble of the Notice of Proposed Rulemaking that ADWR will require an applicant to submit a hydrological study demonstrating that the proposed well will withdraw groundwater if there is a question as to whether the well will pump groundwater creates an extremely broad standard because "a question" could be raised about any well. (Margaret Gallogly on behalf of 10,000 West L.L.C., Stardust Development, Inc., Douglas Ranch El Dorado, L.L.C. and Meritage Homes of Arizona, Inc.).

ADWR should revise the preamble to delete the language stating that if there is a question as to whether a proposed well will withdraw any groundwater, ADWR will require the applicant to submit a hydrological study demonstrating that the proposed well will withdraw groundwater. (Bill Staudenmaier on behalf of Roosevelt Water Conservation District, Phelps Dodge Corporation and Arizona Public Service Company; and Margaret Gallogly on behalf of 10,000 West L.L.C., Stardust Development, Inc., Douglas Ranch El Dorado, L.L.C. and Meritage Homes of Arizona, Inc.).

Response:

As explained in the response to the previous comment, ADWR included the language in question in the preamble of the Notice of Proposed Rulemaking to inform persons of the process ADWR intended to follow outside of the well spacing rules to determine whether a proposed well will withdraw groundwater if there is a question as to whether the well will withdraw any groundwater. Because this process is outside the scope of the well spacing rules, ADWR agrees that the language can be removed from the preamble. ADWR has removed the language from item #6 of the preamble in the Notice of Final Rulemaking.

Comments:

The relevant statutory provisions require that the rules prevent unreasonably increasing damage to surrounding land and *other water users* from the concentration of wells. A.R.S. §§ 45-598(A) and 45-834.01(B)(1). Persons diverting surface water from streams and persons who pump surface water subflow from wells are "other water users." The

rules therefore should provide that if an applicant's well will pump appropriable surface water, ADWR will deny the application unless the applicant demonstrates that it has the right to withdraw the water under the state's surface water laws (i.e., that the applicant has a decreed or appropriative surface water right or has submitted an appropriate filing for its alleged water right). (Robert Glennon, on behalf of Pima County and the Pima County Regional Flood Control District; Salt River Project Agricultural Improvement and Power District and the Salt River Valley Water Users' Association (referred to herein as "SRP"); and the City of Phoenix).

The rules should incorporate the standards adopted by the adjudication court for determining whether a well will pump appropriable surface water. (Robert Glennon on behalf of Pima County and the Pima County Regional Flood Control District; and SRP).

ADWR should reject an application to drill a well if the well will pump appropriable surface water subflow as determined by the adjudication court. (Joe P. Sparks on behalf of the San Carlos Apache Tribe, the Tonto Apache Tribe, the Yavapai-Apache Nation and the Pascua Yaqui Tribe).

Response:

ADWR does not agree with these comments. ADWR closely examined the statutory provisions requiring ADWR to adopt well spacing rules to determine whether they authorize ADWR to apply the rules in the manner requested. ADWR determined that those statutory provisions do not authorize ADWR to apply the well spacing rules to withdrawals of appropriable surface water subflow. ADWR reached this conclusion after reviewing the language in A.R.S. §§ 45-598 and 45-834.01.

A.R.S. § 45-598(A) requires ADWR to adopt well spacing rules for new wells and replacement wells in new locations in AMAs to "prevent unreasonably increasing damage to surrounding land or other water users from the concentration of wells." The commentors state that this language requires that the rules prohibit the drilling of a new well that will pump appropriable surface water subflow unless the applicant has a valid surface water right because: (1) the withdrawal of appropriable surface water without a valid right would result in unreasonably increasing damage to existing surface water users; and (2) existing surface water users are "other water users" for purposes of the statutory language. However, other subsections in A.R.S. § 45-598 make it clear that the Legislature intended that the rules protect surrounding land and other water users only from withdrawals of groundwater, and not from withdrawals of appropriable surface water subflow.

Subsections (B), (C), and (D) of Section 45-598 identify the persons who are subject to the well spacing rules adopted under subsection (A) of the Section. Subsection (B) states that "[a] person entitled to withdraw *groundwater* in an active management area pursuant to articles 5 or 6 of this chapter may construct a new well or a replacement well in a new location if the location of the new well or replacement well complies with the rules adopted by the director pursuant to subsection A of this section …." (Emphasis added). Subsection (C) provides that an applicant for a general industrial use permit (which is a permit to withdraw *groundwater* for a general industrial use, *see* A.R.S. § 45-515(A)) who proposes to construct a new well or a replacement well in a new location shall apply for a well permit pursuant to Section 45-599 (which requires compliance with the well spacing rules adopted pursuant to Section 45-598(A), *see* A.R.S. § 45-599(C)).

Subsection (D) provides that "[a] person who is entitled to withdraw *groundwater* in an active management area under article 5 or 6 of this chapter may withdraw *groundwater* under article 5 or 6 of this chapter from a well drilled to withdraw groundwater pursuant to a groundwater withdrawal permit issued under article 7 of this chapter if the location of the well complies with the rules adopted by the director under subsection A of this section …." (Emphasis added). Subsection (D) also provides that "[a] person entitled to withdraw *groundwater* in an active management area under a general industrial use permit issued under section 45-515 may withdraw *groundwater* under section 45-515 from a well used to withdraw groundwater pursuant to another category of groundwater withdrawal permit issued under article 7 of this chapter if the location of the well complies with the rules adopted by the director under subsection A of this section …." (Emphasis added).

A.R.S. § 45-598 contains no language indicating the Legislature intended to require persons withdrawing appropriable surface water subflow from a well to comply with the rules adopted by the director under subsection (A) of the Section. On the contrary, by listing the persons required to comply with the rules and including only persons entitled to withdraw groundwater, the Legislature obviously intended that the rules apply only to withdrawals of groundwater. For that reason, ADWR has no authority to include in the rules adopted pursuant to A.R.S. § 45-598(A) provisions governing withdrawals of appropriable surface water subflow, including a provision that would require ADWR to deny an application for a well permit if the well will withdraw appropriable surface water subflow and the applicant does not have a valid surface water right.

A.R.S. § 45-834.01(B)(1) sets forth criteria for obtaining a recovery well permit (a recovery well is a well used to recover water that has been stored or saved underground pursuant to a water storage permit). With certain exceptions, if an application for a recovery well permit is for a new well (a well drilled after June 12, 1980), the director is required to issue the recovery well permit if the director determines, pursuant to rules adopted by the director, that "the proposed *recovery of stored water* will not unreasonably increase damage to surrounding land or other water users from the concentration of wells." A.R.S. § 45-834.01(B)(1) (emphasis added). This language clearly limits the scope of the rules adopted pursuant to A.R.S. § 45-834.01(B)(1) to the recovery of *stored water*, and not withdrawals of appropriable surface water subflow.

Contrary to the statements made by the commentors, ADWR has no authority under A.R.S. §§ 45-598(A) and 45-834.01(B)(1) to apply the well spacing rules to withdrawals of appropriable surface water subflow. For that reason, no changes have been made to the rules in response to these comments.

Comment:

A.R.S. § 45-451(B) provides: "This chapter [i.e., the Groundwater Code] shall not be construed to affect decreed or appropriative water rights." Adoption of the proposed rules, which fail to protect appropriative surface right holders from the effects of new wells, would violate A.R.S. § 45-451(A) because it would negatively affect decreed and appropriative water rights. In permitting wells that have a direct and appreciable effect on appropriable water, ADWR has allowed such well owners to pump in derogation of established senior water rights. (SRP).

Response:

ADWR does not agree with this comment. The language quoted from A.R.S. § 45-451(B) clarifies the Legislature's intent regarding the scope of the regulatory provisions in the Groundwater Code. The language makes it clear that the Legislature intended that the regulatory provisions in the Groundwater Code should not affect decreed or appropriative surface water rights. The proposed well spacing rules do not affect decreed or appropriative surface water rights because they do not apply to withdrawals of surface water.

To the extent that this comment suggests that the language in A.R.S. 45-451(B) imposes an affirmative duty on the director to apply the rules adopted pursuant to A.R.S. § 45-598 to withdrawals of surface water, and to include a provision in the rules prohibiting persons from withdrawing surface water without a valid surface water right, ADWR disagrees. Such an interpretation of the language in A.R.S. § 45-451(B) stretches the language far beyond its actual wording. If the Legislature had intended to require the director to apply the rules adopted pursuant to A.R.S. § 45-598 to withdrawals of surface water, it surely would have made this clear in that statute, instead of implying the requirement in a statutory provision that simply provides that the Groundwater Code shall not be construed in a manner that affects decreed or appropriative surface water rights.

For the reasons given above, no changes have been made to the rules in response to this comment.

Comment:

ADWR's interpretation of A.R.S. § 45-598 as applying only to wells that pump groundwater conflicts with ADWR's position that other statutes governing wells in the state apply to wells pumping any type of water (e.g., A.R.S. §§ 45-592, 45-593, 45-594, 45-595 and 45-596). (SRP).

Response:

ADWR disagrees with this comment. As previously explained, the well spacing rules adopted under A.R.S. § 45-598(A) apply only to withdrawals of groundwater because A.R.S. § 45-598(B), (C) and (D) list the persons required to comply with the rules, and those subsections mention only persons withdrawing groundwater. A.R.S. §§ 45-592, -593, -594, -595 and -596, on the other hand, contain requirements applicable to "wells," without any language limiting their applicability to wells that withdraw groundwater. For example, A.R.S. § 45-594 requires the director to adopt rules establishing construction standards for new *wells* and replacement *wells* and the deepening and abandonment of *wells*, and requires that all *well* construction, replacement, deepening and abandonment operations comply with the rules. A.R.S. § 45-594(A) and (B). A.R.S. § 45-596 requires the filing of a notice of intent to drill before drilling a *well* for which a well permit is not required. A.R.S. § 45-596(A) and (B).

"Well" is defined in the Groundwater Code as "a man-made opening in the earth through which *water* may be withdrawn or obtained from beneath the surface of the earth except as provided in section 45-591.01." A.R.S. § 45-402(43) (emphasis added). When the term "water" is used in the Groundwater Code, it refers to water from all sources, not just groundwater. *Arizona Water Co. v. Arizona Dept. of Water Res.*, 208 Ariz. 147, 157, 91 P.3d 990, 1001 (2004). Therefore, when the term "well" is used in the Code, unless the statutory language refers to a well that withdraws a specific source of water, the term applies to wells that withdraw any type of water, not just groundwater.

ADWR's interpretation of A.R.S. § 45-598 as applying only to withdrawals of groundwater is not inconsistent with its position that A.R.S. §§ 45-592, -593, -594, -595 and -596 apply to all wells, regardless of the type of water withdrawn from the wells. Each of the statutes must be interpreted according to its own terms. A.R.S. § 45-598 refers specifically to withdrawals of groundwater, while A.R.S. §§ 45-592, -593, -594, -595 and -596 refer only to "wells."

WELLS THAT PUMP GROUNDWATER

Comment:

There remains a question as to whether ADWR has the authority to regulate well spacing based upon impact on other wells, even when all water pumped is groundwater. The trial court in the Gila River General Stream Adjudication ruled that it could not order ADWR to cease issuing well drilling permits for over-drafted groundwater. ADWR also indicated that it lacks the authority to do so. (Joe Sparks on behalf of the San Carlos Apache Tribe, the Tonto Apache Tribe, the Yavapai-Apache Nation and the Pascua Yaqui Tribe).

Response:

Neither ADWR nor the trial court in the Gila River General Stream Adjudication ever questioned ADWR's authority to deny a well permit for a proposed well that will withdraw groundwater if the applicant fails to satisfy all of the statutory criteria for obtaining a well permit, including, when applicable, compliance with the well spacing rules adopted by the director. ADWR clearly has authority under A.R.S. § 45-598 to adopt well spacing rules for proposed wells that will pump groundwater within AMAs, and to require applicants for well permits under A.R.S. § 45-599 to comply with those rules. Since March 11, 1983, ADWR has exercised that authority under temporary rules adopted pursuant to A.R.S. § 45-592(B). Therefore, ADWR disagrees with this comment and has made no changes to the rules in response to the comment.

DEFINITION OF "WELL OF RECORD"

Comment:

The definition of "well of record" does not exclude wells used exclusively for drainage, dewatering, emergency electrical energy generation or hydrological testing, as was agreed to during the stakeholders' group process. (Tucson Water; and Metro Water District).

Response:

The well spacing rules provide that, with certain exceptions, the director shall determine that a proposed well will cause unreasonably increasing damage to surrounding land or other water users if the proposed well will cause an additional drawdown of more than 10 feet over five years at a "well of record" or will cause the migration of contaminated groundwater to a "well of record." During the stakeholders' group process, there was a general consensus that wells used pursuant to groundwater withdrawal permits issued for drainage, dewatering, emergency electrical energy generation and hydrological testing should not be included in the definition of "well of record" because those wells do not need protection from additional drawdown or the migration of contaminated groundwater because they either do not withdraw water for a beneficial use or are used for only a limited period of time.

Although the definition of "well of record" in the proposed rules did not expressly exclude wells used pursuant to the well permits listed above, ADWR believes that such wells were excluded from the definition because they were not mentioned in the portion of the definition that lists the types of groundwater withdrawal permits that are included as wells of record (A.A.C. R12-15-1301(16)(e)). However, ADWR has decided to add the wells to the list of wells expressly excluded from the definition so that it is clear that the wells are excluded. This is a clarifying change that does not change the effect of the rules.

SUBSIDENCE PROVISION

Comment:

It is unclear what is meant by the phrase "area of known land subsidence" in the land subsidence provision. The rules should define geographically areas of known land subsidence so that persons seeking well permits and the public can determine where the risk from additional land subsidence is likely. (Tucson Water; Arizona-American Water Company; Metro Water District; and Pima Association of Governments).

Response:

ADWR does not agree that the rules should define geographically areas of known land subsidence. Subsidence is defined in A.R.S. 45-402(36), as: "the settling or lowering of the surface of the land which results from the withdrawal of groundwater." As mentioned in Section 6 of the preamble, ADWR considers an area of known land subsidence to be an area that has experienced known subsidence as determined through visual observations or through a review of maps, studies, GPS data collected by ADWR or survey data from other sources, vertical extensometer data or remote sensing data. Sources of such data include the Arizona Geological Survey, the United States Geological Survey, the National Geodetic Survey, NASA, ADWR and other government and private entities that study subsidence in Arizona. ADWR has been and will continue to be a source and reference for subsidence information and data.

While theoretically it might be convenient to include a listing of areas of known land subsidence in the rules, the need to include such a listing in the rules is questionable because most areas that have experienced significant historical subsidence are already well known to most water providers and water users through published reports, maps, remote sensing data and photographic images. If a well owner has a question as to whether ADWR considers an area to be an area of known land subsidence, the well owner can contact ADWR. Additionally, maintaining a current listing of such areas in the rules could be problematic because it would require amendments to the rules as new data on subsidence becomes available.

Comment:

It is unclear what is meant by "likely cause unreasonable increasing damage." It is unclear what methodology or criteria ADWR would use to determine whether a well will "likely cause unreasonable increasing damage." It is unclear

how ADWR will ascertain how much additional land subsidence is acceptable or excessive. Section 6 of the preamble states that ADWR will apply this provision on a case-by-case basis, but such broad regulatory discretion is too open-ended and creates too much uncertainty. (Tucson Water; Arizona-American Water Company; Metro Water District; and Pima Association of Governments).

Response:

ADWR does not agree with this comment. In the context of the land subsidence provision, the phrase "will likely cause unreasonable increasing damage" means unreasonably increasing damage to surrounding land or water users that seems likely to occur based on a scientific evaluation of the potential subsidence that will be caused by the operation of a proposed well. The likelihood that a well would cause unreasonably increasing damage from land subsidence must be evaluated on a case-by-case basis because the potential damage that would occur would be dependant upon both the amount of additional subsidence that the well would theoretically cause and the types of things that would likely be damaged.

The need to analyze unreasonably increasing damage on a case-by-case basis is demonstrated through some local examples of past subsidence damage in the Phoenix AMA. A 1995 USGS study in the Luke Air Force Base area found that land subsidence caused by significant historical agricultural pumping in areas adjacent to the base ranged from about 5 feet up to a maximum of about 18 feet over a period of about 36 years (1.7 in./yr to 6 in./yr) from 1957 to 1993 (USGS, 1995). By 1992, subsidence in the vicinity of the base had been sufficient to significantly alter the drainage capacity of the Dysart Drain, a major flood control structure operated by the Maricopa County Flood Control District. In the summer of 1992 a major summer monsoon storm occurred in the vicinity of the base dumping several inches of rain in a short period of time. Unfortunately, the runoff from the storm overtopped the subsidence-damaged drain and flooded the base causing approximately three million dollars worth of damage. Since that time the drain has been rebuilt at an estimated cost of approximately 16 million dollars.

In other areas of the Phoenix AMA, much less total subsidence has caused major problems for sewer and water conveyance systems. For example, by the early 1980's, groundwater pumping had caused up to about 5 feet of land subsidence to occur over a broad portion of the southern Paradise Valley area. One consequence of the subsidence was a problematic reduction in gradient in much of the City of Phoenix's sewer system in that area. More recently, land subsidence in the northeast Scottsdale area has caused approximately 1.75 feet of freeboard loss to the CAP canal (Geotrans, 2006). Unfortunately, major subsidence along the canal was not anticipated in that area, and the CAP recently spent over $500,000 to add freeboard to the canal to address the immediate problem.

Keeping these examples in mind, it should be clear that significantly differing amounts of subsidence have caused various types of damage in several parts of the Phoenix AMA. Yet, in other parts of the Phoenix and Pinal AMAs, several feet of subsidence has also occurred, but little or no damage has been noted because the land was largely undeveloped or used for agriculture. Based on past history, it seems unlikely that any single standard could be assigned to designate rates or amounts of permissible and impermissible subsidence. Again, it will be necessary to evaluate the potential for unreasonable increasing damage on a case-by-case basis because such determinations must be based on both an assessment of likely future subsidence, and on an assessment of the things that would likely be damaged in the vicinity of the well.

Comment:

The rules should define the modeling tools to be used as the acceptable method of predicting future subsidence impacts. There is little agreement within the scientific community as to the accuracy of available land subsidence modeling tools. (Arizona-American Water Company).

Response:

ADWR does not agree with this comment. Although there is some disagreement concerning the *accuracy* of modeling tools, the physical processes that cause subsidence are well understood by the scientific community and mathematical models have been developed to simulate past subsidence and to forecast future subsidence. Because of this, multiple analytical tools that have substantial credibility in the scientific community are available to analyze and forecast future subsidence. Tools available include analytical equations and methods proposed by Terzaghi and Peck (1948), Poland and Davis (1969), Bouwer (1978) and the references cited therein. Over the last 10 to 15 years, numerical groundwater flow models, such as the widely used and accepted USGS Modflow groundwater flow model, have been enhanced to simulate land subsidence (Hoffmann, Leake and others 2003). Any of the models listed could potentially be used to forecast future subsidence if the necessary model inputs were available. Identifying a specific list of acceptable tools in the rules is not necessary and would likely require multiple revisions to the rules as new tools become available.

Comment:

The rules are unclear as to what type of hydrological study will be required by the director because there are no guidelines or standards for subsidence determinations. (Metro Water District).

Response:

ADWR does not believe it is necessary to provide specific requirements for the study in the rules. Because the likelihood that a well will cause unreasonably increasing damage from additional regional land subsidence is dependant on

both the amount of potential subsidence and the types of things that would be damaged, the study must include an assessment of those factors on a case-by-case basis. Because the basic question to be answered by a hydrologic study is, "Will the well likely cause unreasonable *increasing* damage from land subsidence?", the study must also assess the historical and/or ongoing rates of subsidence in the area to be able to assess the potential *increase* in damage, again on a case-by-case basis. If ADWR requires an applicant to submit a hydrological study under the subsidence provision, it will inform the applicant that the study must include an assessment of these factors, including any specific issues that should be addressed in the study (e.g., an evaluation of whether the well will likely cause damage to the CAP canal if the well is near the canal).

For the reasons given above, no changes have been made to the rules in response to this comment.

Comment:

It is often impossible to pinpoint a single well as resulting in or causing land subsidence. ADWR should not include a subsidence provision in the rules at this time, at least until criteria for identifying contributing sources of land subsidence can be more fully defined. (Shilpa Hunter-Patel on behalf of Robson Communities, Inc.).

Response:

ADWR disagrees. The acquisition of hard evidence about the impacts of individual well pumping on regional land subsidence has been a fundamental objective of ADWR since the mid-1990s. The numerous subsidence monitoring agreements signed by well permit applicants and the survey monuments that have been installed by well owners in lieu of submitting a hydrologic study are intended to provide such data.

Additionally, analysis of some of the recently acquired INSAR (Interferometric Synthetic Aperture Radar) images in both the East and West Salt River Valley sub-basins show small subsidence "hot-spots" that are local areas where subsidence rates are substantially greater than the surrounding areas. Preliminary results indicate that the magnitude of observed subsidence in some of these areas may vary in a manner that may be related to the rate of local pumping in the area, and that it may be possible to identify subsidence impacts that have been caused by just a few wells.

While thus far the available data and analyses have been insufficient to support a decision to deny a well permit on the basis that the proposed well would likely cause unreasonable increasing damage from additional regional land subsidence, this may not always be the case. Although our knowledge and understanding about the impacts of individual wells on land subsidence is still developing, ADWR believes that the impacts of land subsidence can be so potentially damaging that it must have the authority to deny a permit application should a clear case of likely unreasonable increasing damage from additional regional land subsidence ever arise.

Comment:

Subsidence in an area may be the result of pumping that occurred decades ago. It may not be appropriate to deny an application to drill a well in an area of known land subsidence because water levels are stable or rising in the area. (Arizona-American Water Company).

Response:

ADWR agrees that rising water levels is a factor that should be considered when determining whether a well proposed to be drilled in an area of known land subsidence will likely cause additional regional land subsidence. No change is necessary in response to this comment.

Comment:

A well located in an area distant from an area of known subsidence may contribute to subsidence within the area of known land subsidence if the two areas are hydrologically connected. It is questionable equity to deny an application to drill a well in an area of known land subsidence, but not a well outside the area that will contribute to land subsidence within the area. (Arizona-American Water Company).

Response:

It is unlikely that a distant well would have nearly the same hydrologic impact as a local well within the area of known subsidence. ADWR believes it is appropriate at this time to limit the scope of the subsidence provision to wells that are proposed to be drilled within areas of known land subsidence. For that reason, no changes have been made to the rules in response to this comment.

Comment:

The standards of what constitutes unreasonably increasing damage may vary from area to area. Two or three feet of subsidence may cause unreasonably increasing damage in one area, but not in another area. (Arizona-American Water Company).

Response:

ADWR agrees with this comment. This point was discussed previously and again indicates that the assessment of whether a proposed well will likely cause unreasonably increasing damage from additional regional land subsidence must be conducted on a case-by-case basis. For that reason, no changes are necessary in response to this comment.

Comment:

Replacement wells in new locations should be exempt from the subsidence provision because replacement wells do not add to regional groundwater declines and therefore should not impact regional subsidence. (Arizona-American Water Company).

Response:

ADWR disagrees with this comment. There is no limit on the distance between a replacement well in a new location and the well it is replacing. Because it is possible that a replacement well in a new location could be moved to a new area, including an area where additional structures are located, it is appropriate to include replacement wells in new locations in the subsidence provision. For that reason, no changes have been made to the rules in response to this comment.

It should be noted that the rules contain a provision that will allow an applicant for a replacement well in a new location to obtain a well permit if the replacement well will have no greater impact on regional land subsidence than the well it is replacing. The rules provide that in making a determination under the land subsidence provision, if the proposed well is a replacement well in a new location, the director shall take into account the collective effects of reducing or terminating withdrawals from the well being replaced combined with the proposed withdrawals from the replacement well if the applicant submits a hydrological study demonstrating those collective effects to the satisfaction of the director. *See* R12-15-1302(C) and R12-15-1303(C)(a).

Comment:

The issue of subsidence should be removed from this rule package. A new stakeholders' group process should be initiated to discuss subsidence, and it could be made a part of a new rulemaking package. (Tucson Water; and Metro Water District).

Response:

ADWR disagrees. If a specific case arises in which ADWR determines that a proposed well would likely cause unreasonably increasing damage to surrounding land or other water users from additional regional land subsidence, ADWR must have the authority in the rules to deny the application. ADWR clearly has authority to include such a provision in the rules. A.R.S. § 45-603 provides that in developing the rules, the director shall consider, among other things, land subsidence.

WATER QUALITY PROVISION

Comment:

The provision allowing the director to determine that a proposed well will cause unreasonably increasing damage to surrounding land or other water users if the well will likely cause the migration of contaminated groundwater to a well of record should be deleted or revised because it penalizes water providers for the contamination caused by others. The provision penalizes groundwater users by denying proposed wells due to existing groundwater contamination caused by others. The provision protects parties responsible for groundwater contamination and the regulatory agencies responsible for plume management and contaminant remediation. (Tucson Water; City of Phoenix; Metro Water District; Pima Association of Governments; and SRP).

Response:

ADWR disagrees with this comment. A.R.S. § 45-598(A) requires the director to adopt rules to prevent unreasonably increasing damage to surrounding land and other water users from the concentration of wells. A.R.S. § 45-603 provides that in developing the rules, the director shall consider water quality. These statutory provisions require ADWR to provide existing well owners protection from unreasonable damage that could result from the permitting of new wells. The water quality provision in the rules complies with these statutory provisions by prohibiting the drilling of a proposed well if the well's pumping would likely cause the migration of contaminated groundwater from a remedial action site to a well of record, preventing the owner of the well of record from continuing to use water from the well for the purpose it is being used without additional treatment.

As stated in item #6 of the preamble, in implementing the water quality provision in the temporary well spacing rules, if ADWR believes that withdrawals from a proposed well would have an unreasonable impact on a well of record by causing the migration of poor quality groundwater to the well of record, ADWR, in cooperation with ADEQ, works with the applicant to make changes to the location or construction of the well to avoid the unreasonable impact so that a well permit may be issued for the proposed well. ADWR will continue this approach under the permanent well spacing rules.

Comment:

The water quality provision removes any incentive for an agency or potentially responsible party to clean up the aquifer. The rules therefore shift the economic burden of cleaning up groundwater from government agencies and pollut-

ers to water providers. (Tucson Water; City of Phoenix; Metro Water District; and Pima Association of Governments).

The economic impact statement does not address or quantify the issue of shifting the economic burden of cleaning up contaminated groundwater sites to water providers under the agency and political sub-division sections. (Metro Water District).

Response:

ADWR does not agree that the water quality provision removes any incentive for governmental agencies and potentially responsible parties to clean up the aquifer. Responsible parties and regulatory agencies receive absolutely no protection or exemption from their legal liabilities and responsibilities to clean up the aquifer under the water quality provision of the rules.

There is no shift in economic burden. Water providers seeking to drill new wells are not required to clean up any portion of the aquifer because of this provision. Additionally, as mentioned in Section 6 of the preamble, ADWR would not deny an application for a well permit for water quality reasons if it is determined that the projected damage to the well of record will be prevented or adequately mitigated through a program regulated under Title 49, A.R.S., or by the United States Environmental Protection Agency or the United States Department of Defense. For these reasons, no changes are necessary in response to this comment.

Comment:

If a new or existing well becomes contaminated, the well owner may bring claims against the polluter. If ADWR denies a water provider access to the groundwater, the water provider likely has no claim against the polluter under Arizona law. (SRP).

Response:

It is not clear to ADWR that a water provider that is denied a well permit under the water quality provision in the rule would not have legal recourse against a responsible party or regulatory agency under other existing statutes and rules. Even if the water provider would not have legal recourse against those entities, this is not a valid reason to allow the water provider to drill the well and cause unreasonable damage to an existing well of record. For those reasons, no changes are necessary in response to this comment.

Comment:

ADWR has no authority to protect water users from groundwater contamination. Protecting water quality is ADEQ's mandate, not ADWR's. At a minimum, the water quality provisions should be revised so that they are inapplicable to groundwater subject to an ADEQ or EPA program. (SRP).

Response:

ADWR does not agree with this comment. As previously stated, A.R.S. § 45-598(A) requires the director to adopt rules to prevent unreasonably increasing damage to surrounding land and other water users from the concentration of wells. A.R.S. § 45-603 provides that in developing the rules, the director shall consider water quality. These statutory provisions give clear direction and authority to ADWR to adopt rules to prevent unreasonable increasing damage to water users from detrimental water quality impacts that would be caused by the permitting of new non-exempt wells.

It is important to reiterate that the rules provide that ADWR shall not deny an application for a well permit on the basis that the well will likely cause the migration of contaminated groundwater from a remedial action site to a well of record if ADWR determines that the damage to the well of record will be prevented or adequately mitigated through a program regulated under Title 49, A.R.S., or by the United States Environmental Protection Agency or the United States Department of Defense. It is also important to note that the rules require ADWR to consult with ADEQ before determining that a proposed well will cause unreasonably increasing damage due to the migration of contaminated groundwater to a well of record.

For the reasons given above, no changes have been made to the rules in response to this comment.

Comment:

The government agencies responsible for cleaning up groundwater sites should be responsible for submitting any required hydrological study required by ADWR, not the applicant for a well permit if the applicant is not the originator of the pollution or the responsible regulatory agency. (Metro Water District).

Response:

ADWR does not agree with this comment. ADWR has no authority under Arizona law to require an entity other than the applicant to submit such a study.

Comment:

If ADWR denies an application due to a determination that withdrawals from the proposed well will likely cause the migration of contaminated groundwater from a remedial action site to a well of record, the applicant should be able to maintain the priority of the application in the event that the contamination is reduced or eliminated by mitigation

techniques or natural attenuation. After contamination is no longer a threat, the applicant should be able to re-activate the original application with its original priority date. (City of Phoenix).

Response:

ADWR does not agree with this comment for two reasons. First, there is no basis in statute for allowing an application for a well permit to retain its priority date after the application is denied. Second, if ADWR were to allow a denied well permit application to retain its priority date, it could lead to inequitable results. For example, if ADWR denied an application for a well permit under the water quality provision and the applicant re-filed the application several years later with the original priority date, ADWR could not consider any impacts that the proposed well would have on neighboring wells drilled between the date the application was denied and the date it was re-filed. This would not provide appropriate protection to the owners of those wells, who drilled their wells without knowledge that the applicant could someday drill a well in the area and cause unreasonably increasing damage to their wells. For these reasons, no changes have been made to the rules in response to this comment.

Comment:

The proposed rules provide that the director shall deny an application to drill a new well if the director determines that withdrawals from the well will likely cause the migration of contaminated groundwater from a remedial action site to a well of record resulting in a degradation of the quality of the water withdrawn from the well so that the water will no longer be usable *for the purpose for which it is currently being used* without additional treatment. The rules should only assure that the water quality at an existing well is not degraded beyond acceptable water quality standards. The rules should not protect the existing well owner's ability to continue to use water for possibly unique and special purposes. (Shilpa Hunter-Patel on behalf of Robson Communities, Inc.).

Response:

ADWR does not agree with this comment. ADWR believes that the statutory mandate to protect other water users from unreasonably increasing damage includes water users that have a need for water that surpasses existing state water quality standards. For example, there may be cases in which a well owner's industrial operation requires high quality water that exceeds the state water quality standards and the well owner located its industrial operation at its current site because the groundwater at that location meets the industrial operation's special water quality needs. ADWR believes that the rules should protect such a well owner from a proposed well that would cause a degradation of the water quality at the well site to such an extent that water from the well could no longer be used by the industrial operation without additional treatment, even though the water meets state water quality standards. For that reason, no changes have been made to the rules in response to this comment.

Comment:

The rules should protect remediation projects from the impacts of new pumping. (North Indian Bend Wash Participating Companies – Motorola, Siemens and GlaxoSmithKline; and Freescale Semiconductor, Inc.).

Remediation projects are often very targeted in nature, focusing on specific portions of the aquifer. If a new well is installed by another party that adversely impacts a remediation project's ability to address the contaminated portion of the aquifer, the remediator may have little recourse other than to increase pumping to overcome the effects of the new well. This increased pumping may not even be effective and would just increase the demands on an already limited resource. (Freescale Semiconductor, Inc.).

Response:

ADWR heard significant comments and concerns from stakeholders about this issue during the stakeholders' group meetings. The majority of stakeholders that expressed a position on this issue were opposed to protecting groundwater remediation projects from impacts caused by new wells. ADEQ stated that it did not believe that the rules should protect groundwater remediation projects from new well pumping because it believes the issue should be addressed under existing environmental laws. For those reasons, ADWR decided not to include in the rules a provision that would protect groundwater remediation projects from the potential impacts of pumping from new non-exempt wells. No changes have been made to the rules in response to this comment.

CONSENT PROVISION

Comment:

An impacted well owner should not be allowed to consent to the drilling of a well that would otherwise be prohibited under the well spacing rules due to an additional drawdown of more than 10 feet over five years. An unreasonable impact on groundwater is an unreasonable impact, regardless of whether a neighboring "impacted" well owner consents to the impact. If consent is permitted by the rules, groundwater use which would cause unreasonable impacts would be turned into a commodity which could be bought and sold for the right price, with no regard for the actual state of the resource itself. (Joe Sparks on behalf of the San Carlos Apache Tribe, the Tonto Apache Tribe, the Yavapai-Apache Nation and the Pascua Yaqui Tribe).

Response:

ADWR does not agree with this comment. The provision in the rules requiring the director to deny an application for a well permit if the proposed well would likely impact a well of record by causing an additional drawdown of more than 10 feet over five years is not intended to prevent an unreasonable impact on groundwater levels in general, but an unreasonable impact on existing wells of record. If the director determines that a proposed well would likely have an unreasonable impact on a well of record due to additional drawdown, but the owner of the well of record consents to the impact in writing (for whatever reason), it is not appropriate to deny the application to drill the proposed well on the basis that the well will have an unreasonable impact on the well of record. For that reason, ADWR has made no changes to the rules in response to this comment.

It should be noted that the temporary well spacing rules, which have been in effect since March 11, 1983, contain a consent provision similar to the consent provision in these rules. ADWR is not aware of any problems created by the provision. The stakeholders' group strongly supported retaining the consent provision in these rules

RECOVERY WELLS

Comment:

R12-15-1303(B)(1) is missing the provision that the director may require the applicant to submit a hydrological study if the director determines that the study will assist the director in making a determination under this subsection. ADWR has had a long history and costs regarding the types of hydrologic studies on well impacts and spacing. (Metro Water District).

Response:

Although not entirely clear, it appears that this comment is questioning why there is a requirement in R12-15-1303(B)(1) for an applicant for a recovery well permit to submit a hydrological study with the application, when the rule governing applications for permits to drill wells for the withdrawal of groundwater (R12-15-1302(B)(1)) provides that the applicant *may* submit such a study, but is not required to do so unless the director determines that such a study is necessary. As explained in Section 6 of the preamble, there are two reasons why ADWR decided to require all persons applying for a recovery well permit that is subject to the well spacing rules to submit a hydrological study with the application.

First, the determination of the probable impacts of a proposed recovery well on surrounding water levels is often more complex than a determination of the probable impacts of a groundwater well on surrounding water levels, particularly if the proposed recovery well will be located in the area of impact of the stored water. In most cases, the hydrological study submitted by an applicant for a recovery well permit assists the director in making a determination regarding the impacts of the proposed well on neighboring wells.

Second, ADWR is required to give public notice of an application for a recovery well permit after it is determined to be complete and correct, and any person may file an objection to the application. A.R.S. § 45-871.01(F). ADWR believes that it is appropriate to require an applicant for a recovery well permit to submit a hydrological study demonstrating the probable impact of the proposed well on surrounding water levels so that the information will be available to members of the public when they review the application to determine whether to object to the application.

For the reasons given above, ADWR has made no changes to the rules in response to this comment.

REPLACEMENT WELLS IN NEW LOCATIONS

Comment:

The rules provide that if a proposed well is a replacement well in a new location, the director shall take into account the collective effects of reducing or terminating withdrawals from the well being replaced combined with the proposed withdrawals from the replacement well if the applicant submits a hydrological study demonstrating those collective effects to the satisfaction of the director. ADWR needs to clarify how it intends to quantify the benefit of "reducing or terminating withdrawals from the well being replaced." ADWR's method of quantifying the reduction based on historical use is confusing and inequitable. (Agri-Business Council of Arizona; Arizona Farm Bureau Federation; Central Arizona Irrigation and Drainage District; Maricopa-Stanfield Irrigation District; Irrigation and Electrical Districts of Arizona; and Maricopa County Farm Bureau).

Response:

ADWR does not agree with this comment. ADWR identified an acceptable method for quantifying the benefit of reducing or terminating withdrawals from the original well in a document that was distributed to the stakeholders during the stakeholders' group process (document entitled "ADWR Well Rules Concept Paper: 5/27/05, Prepared by ADWR Hydrology Division, Subject: Concepts and considerations related to the interpretation and implementation of rules for replacement wells in new locations."). The method identified in that document quantifies the "benefit" of reducing or terminating withdrawals from the original well by using either analytical equations or numerical models

to estimate the historic drawdown that would have occurred by pumping the original well at its actual or best-estimated historic withdrawal schedule. The "benefit" will then be determined by calculating the theoretical recovery that would occur due to the reduction or termination of pumping from the original well after the proposed replacement well in a new location is put into service.

Subtracting the actual "benefit" of reducing or terminating the withdrawals of the original well from the theoretical impacts that would occur due to the proposed future pumping of the replacement well properly assesses the collective hydrologic impact of both activities. Using this methodology, a replacement well in a new location will be permitted, regardless of location, as long as the collective impacts of reducing or terminating withdrawals from the original well, when combined with the impacts caused by the pumping of the replacement well, will not exceed the unreasonable increasing damage criterion of 10 feet of additional drawdown over five years. ADWR believes the method is fair to both the applicant and to any existing well owners that may be potentially impacted by the proposed replacement well in a new location because it bases the calculated "benefit" on an assessment of historic impacts that actually occurred, rather than on impacts that could have theoretically occurred.

ADWR acknowledges that there may be some difficulty in acquiring historic withdrawal data for non-exempt wells prior to 1984, the time when well owners were first required to report their annual well-specific groundwater withdrawal volumes to ADWR. However, ADWR has indicated to stakeholders that reasonable methods for estimating historic pumpage prior to 1984 would be acceptable in the absence of other data. Data that could be submitted for evaluation include power consumption records for wells. For agricultural wells, historic evidence of cropped areas served by a well, such as crop records or aerial photos, may be submitted for review. For non-agricultural wells, business records and estimates of annual water demand for the historic uses of a well may be submitted for evaluation.

For the reasons given above, no changes are necessary in response to this comment.

Comment:

The rules should provide that when determining the effect of reducing or terminating withdrawals from the well being replaced, the director shall assume that the well operated at its maximum pumping capacity, and not at its actual historic pumping levels. (Agri-Business Council of Arizona; Arizona Farm Bureau Federation; Central Arizona Irrigation and Drainage District; Maricopa-Stanfield Irrigation District; Irrigation and Electrical Districts of Arizona; and Maricopa County Farm Bureau).

Response:

ADWR disagrees. The purpose of the well spacing rules is to prevent new wells and replacement wells in new locations from causing unreasonably increasing damage to surrounding land and other water users from the concentration of wells. It would be inconsistent with this purpose to base the benefit of reducing or terminating historical pumping on the original well's maximum pumping capacity, rather than the actual historical withdrawal rate. If the calculation of "benefits" was based on the maximum pumping capacity of the original well, but the original well was not pumped at that rate, then the actual "benefit" would be greatly over-estimated and neighboring well owners could be impacted by much more than the allowable 10 feet of additional drawdown over five years. For that reason, no changes have been made to the rules in response to this comment.

REPLACEMENT WELLS IN APPROXIMATELY THE SAME LOCATION

Comment:

Proposed rule R12-15-840(A) contains criteria that must be met for a proposed well to qualify as a replacement well in approximately the same location (a replacement well in approximately the same location does not need to comply with well spacing criteria). Among other things, the rule provides that if the well to be replaced has been physically abandoned, a notice of intent to drill the replacement well must be filed no later than 90 days after the abandonment. The 90-day period is excessive, and should be shortened to 30 days. (Metro Water District).

Response:

This issue was discussed during the stakeholders' group process. There was general agreement among the stakeholders that a person who abandons a well should have a period of time after the well is abandoned to file a notice of intent to drill a replacement well in approximately the same location. There was general consensus that the period of time should be long enough to allow a person to adequately plan the location of the replacement well. There was also a general consensus that the period of time should not be too long, because the longer the period of time between the abandonment of the original well and the filing of the notice of intent to drill the replacement well, the greater the chance that one or more new wells will be drilled in the area that could be impacted by the replacement well. A number of different time-frames were discussed, and in the end, there was general agreement that 90 days was a reasonable period of time.

ADWR continues to believe that the 90-day time-frame is reasonable. For that reason, no changes have been made to the rules in response to this comment.

Comments:

Under proposed rule R12-15-1308(A)(1), a replacement well in approximately the same location must be located within 660 feet of the original well. A replacement well in approximately the same location should be allowed at a distance greater than 660 from the original well if there are reasonable circumstances to indicate that there would be no unreasonable increasing damage to other wells (e.g., if the well to be replaced and the replacement well are on a large tract of land under a single ownership or in the same irrigation district). (Maricopa Farm Bureau).

The rule should be revised to give the director discretion to allow a replacement well in approximately the same location to be drilled more than 660 feet, but not more than 2,650 feet, from the original well. The revised rule should not include any limitation on the director's ability to exercise his or her discretion, nor contain a list of possible exceptions to the 660 feet limitation, because there are many unforeseen circumstances when the exercise of the director's discretion is appropriate. (Agri-Business Council of Arizona; Arizona Farm Bureau Federation; Central Arizona Irrigation and Drainage District; Maricopa-Stanfield Irrigation District; Irrigation and Electrical Districts of Arizona; and Maricopa County Farm Bureau).

Response:

ADWR disagrees. ADWR is required by A.R.S. § 45-597(A) to define by rule what constitutes a replacement well, including the distance from the original well site that is deemed to be the same location for a replacement well. A person proposing to drill a replacement well in approximately the same location does not need to comply with the well spacing rules because it is presumed that the replacement well will have no greater impact on surrounding land and other water users than the original well it is replacing. This presumption is valid only if the replacement well is drilled in close proximity to the original well. The farther the replacement well is drilled from the original well, the more likely that the replacement well will have additional impacts on surrounding land and other water users.

The existing temporary well spacing rules provide that a replacement well must be within 660 feet of the original well to qualify as a replacement well in approximately the same location. As explained in Section 6 of the preamble, the 660-foot limit was based on the physical limitations of defining a well location using the cadastral coordinate system, the legal coordinate system that is commonly used to define a well's physical location. ADWR decided to retain the 660-foot limit in the permanent rules for the following reasons: (1) the regulatory community is accustomed to the 660-foot limit; (2) ADWR is not aware of any occasions in which the 660-foot limitation has led to an unreasonable result during the approximately 23 years in which the temporary rules have been in effect; (3) the majority of the stakeholders had no objection to retaining the 660-foot limit; and (4) ADWR is statutorily required to "draw the line" between a replacement well in the same location and a replacement well in a new location, and it is not manifestly unreasonable to draw that line 660 feet from the original well.

The commentors apparently have no objection to retaining the 660-foot limit as a general restriction, but they request that the rules be revised to give the director discretion to allow a person to drill a replacement well in approximately the same location if the well will be drilled between 660 feet and 2,650 feet from the original well. The commentors do not want the rules to contain a list of specific exceptions to the 660-foot limit, but instead want the director to have unlimited discretion to exercise his or her authority in deciding whether to grant an exception. ADWR does not agree with these comments for two reasons.

First, ADWR does not believe it would be appropriate to give the director unlimited discretion to decide whether a replacement well located between 660 feet and 2,650 feet from the original well qualifies as a replacement well in the same location. Giving the director unlimited discretion to make such a determination does not comply with the statutory requirement that the director define by rule what constitutes a replacement well in the same location. Instead of containing such a definition, the rules would allow the director to make the determination without any set criteria.

Second, ADWR does not believe it is appropriate to allow an exception to the 660-foot limit under any circumstances. The commentators give three examples of cases where they believe it would be appropriate for the director to allow a replacement well to qualify as a replacement well in the same location if it is located between 660 feet and 2,650 feet from the original well. In two of those examples, the commentors justify granting the exception based on the applicant's special circumstances. In one example, the applicant relinquished its CAP allocation to facilitate an Indian Water Rights Settlement. In the other example, the original well was condemned by a governmental entity and the applicant could not find a suitable location to drill a replacement well within 660 feet of the original well. In neither of these examples is any consideration given to the new impacts that could be caused by locating the replacement well up to 2,650 feet away from the original well.

As previously mentioned, a replacement well in approximately the same location may be drilled without complying with the well spacing rules because there is a presumption that the well will have the same impact on surrounding land and other water users as the original well. Under the commentors' proposal, a replacement well located approximately one-half mile from the original well could qualify as a replacement well in the same location. While there may be cases where a replacement well located one-half mile from the original well will not cause additional impacts to neighboring wells due to the absence of other wells in the area, in many cases, the replacement well will impact wells that were not impacted by the original well. ADWR does not believe it is appropriate to presume that a replacement well drilled 2,650 feet from the original well will not cause additional impacts on surrounding land and other water users.

In cases where a replacement well and the original well are more than 660 feet apart and both wells are located in the middle of a large tract of property under the same ownership or in the middle of an irrigation district where no other wells are located, the applicant will normally have no difficulty in obtaining a permit to drill the replacement well as a replacement well in a *new* location. In these cases, it is very likely that the replacement well will comply with the well spacing criteria in the rules. Although the applicant will be required to apply for a well permit rather than simply filing a notice of intent to drill, in most cases this will not result in any additional expense. Under the permanent rules, an applicant for a well permit is not required to submit a hydrological study with the application except in rare cases where the director determines that such a study is necessary to assist the director in determining whether the well complies with the well spacing rules.

For the reasons given above, no changes have been made to the rules in response to these comments.

Comment:

The 660-foot limitation has no rational scientific basis. ADWR chose the 660-foot limitation because its well registry database records a well's location using the cadastral system, which can be used to locate a well in a square shaped area that measures 660 feet in length and width. ADWR states that the 660-foot limitation ensures that the replacement well is in the area generally encompassed within the original well's cadastral location. However, the 660-foot limitation does very little to ensure that the replacement well will be in the same cadastral location as the original well. At best, it assures that the replacement well will be located within one of the eight neighboring cadastral squares. Furthermore, two wells in the same cadastral square may be more than 660 feet apart. (Agri-Business Council of Arizona; Arizona Farm Bureau Federation; Central Arizona Irrigation and Drainage District; Maricopa-Stanfield Irrigation District; Irrigation and Electrical Districts of Arizona; and Maricopa County Farm Bureau).

Response:

As discussed in Section 6 of the preamble, the 660-foot limitation in the temporary rules was based on the physical limitations of defining a well location using the cadastral coordinate system which was, and still is, the legal coordinate system that is commonly used to define a well's physical location. The point is made in this comment that the 660-foot limitation will not necessarily restrict a replacement well's location to the same ¼, ¼, ¼ section location as an original well. This is true. However, in most cases, the replacement well will likely be located within the same 10-acre area as the original well.

As previously explained, ADWR believes that 660 feet is the appropriate maximum distance between an original well and a replacement well in approximately the same location. Therefore, no changes are necessary in response to this comment.

CUMULATIVE IMPACT OF MULTIPLE WELLS

Comment:

The proposed rules do not protect surrounding land and other water users from the concentration of wells, as required by statute. Under the proposed rules, a well may be drilled if the well will not cause an additional drawdown of more than 10 feet over five years at any existing well of record. This is true if the well is the first well drilled in the area after adoption of the Groundwater Management Act, or the 5,000th such well. The cumulative impact of all new wells is never evaluated under the proposed rules. However, to suggest that the reasonableness of a proposed well can be determined solely by looking at the impact of that well over a 5-year period is repugnant to the clear language of the statute, which requires the rules to protect surrounding land and other water users from the concentration of wells. (Cortaro-Marana Irrigation District and its agent, Cortaro Water Users' Association).

Response:

ADWR acknowledges that the current temporary rules and the proposed permanent rules do not evaluate the cumulative impacts from multiple wells. During the stakeholders' group meetings, ADWR raised the issue on several occasions to determine stakeholder concern and interest regarding the issue. In each occasion, the stakeholders expressed no support for including a consideration of cumulative impacts in the new rules. ADWR agrees that the ultimate effectiveness of the rules is limited without providing for a consideration of the cumulative impacts of all wells within a given area. However, the technical aspects of performing cumulative impact analyses can be complex and the results of such assessments might close off many portions of the AMAs to any further well drilling.

The technical challenges associated with cumulative well impact analyses lie, in part, in deciding which wells should be included in the analysis. Should a cumulative impact analysis only pertain to wells previously drilled by the applicant, or only include wells that were drilled after a certain date? Should a cumulative impact analysis only include non-exempt wells that have been permitted since the adoption of the temporary well spacing rules in 1983, or should the analysis include all wells, regardless of their drill date or their exempt/non-exempt status? For practical purposes, it would be necessary to develop some maximum distance criteria to apply to existing wells to determine whether they should be included in a cumulative analysis. Otherwise it would probably be necessary to include all wells located within the groundwater sub-basin where the proposed well will be located.

Regardless of the selection criteria used to determine which wells should be included in the analysis, cumulative well impact studies would generally require more sophisticated modeling methods than are customarily used today. For example, an analysis that included simulation of the historic withdrawals from several wells would probably require the use of numerical models that are generally more complex, time-consuming and expensive to develop than the analytical models that are commonly used today. In most areas, ADWR's existing regional groundwater models could provide a framework for smaller local models. However, in most locations the regional model grid size is too coarse to use for site-specific well impact analysis purposes and the existing model grids would have to be refined in areas of interest.

In summary, ADWR decided not to include a provision in the rules to account for cumulative impacts from multiple wells because the necessary technical data and analysis were not available and there was no support from the stakeholders' group to include such a provision in the rules. Therefore, no changes have been made to the rules in response to this comment.

PUBLIC NOTICE OF APPLICATIONS AND OBJECTIONS

Comment:

The rules should expressly provide that notice of all well applications must be maintained on ADWR's website. The rules should permit any owner of surrounding land and water users to submit to ADWR comments or evidence regarding whether they will be unreasonably damaged by the proposed well. (Cortaro-Marana Irrigation District and its agent, Cortaro Water Users' Association).

Response:

ADWR assumes that this comment is directed to applications for well permits under A.R.S. § 45-599. ADWR has not historically provided public notice of such applications, nor has it allowed persons to file objections to such applications, because A.R.S. § 45-599 does not include a public notice and objection process for well permit applications. Although there is no statutory requirement to provide public notice of applications for well permits, ADWR will post notice of all such applications on its web site for informational purposes only. No changes are necessary in response to this comment.

Comment:

The rules should provide an opportunity for a hearing on the issue of whether damage to surrounding lands and water users is unreasonable where the director determines, in his or her discretion, that a hearing should be conducted. If the director determines that a hearing should be held, the rules should require the director to provide notice of the hearing to the owners of surrounding land or water users and permit them to participate in the hearing as parties. (Cortaro-Marana Irrigation District and its agent, Cortaro Water Users' Association).

Response:

It is unnecessary to include a provision in the rules giving the director discretion to hold an administrative hearing on an application for a well permit because A.R.S. § 45-599(E) authorizes the director to hold an administrative hearing on an application if the director determines that a hearing should be held before approving or rejecting the application. A.R.S. § 45-599(E) further provides that if the director schedules a hearing on an application for a well permit, the director shall give notice of the hearing to the applicant. There is no requirement for the director to give notice of the hearing to owners of surrounding land or water users. For these reasons, no changes are necessary in response to this comment.

Comment:

If a hearing is held, the criteria set forth in the rules should only create a presumption that may be overcome by a preponderance of the evidence. This will allow the director to evaluate the specifics of individual cases. (Cortaro-Marana Irrigation District and its agent, Cortaro Water Users' Association).

Response:

ADWR does not agree with this comment. ADWR believes that the additional drawdown criteria in the rules should be as definitive as possible so that groundwater users will have as much certainty as possible when planning for the acquisition of new well sites and the drilling of new wells. Because ADWR believes that the additional drawdown criteria in the rules are appropriate, ADWR does not believe that compliance with the criteria should create only a rebuttable presumption that no unreasonably increasing damage will occur from additional drawdown if the criteria are satisfied. Therefore, no changes are necessary in response to this comment.

MISCELLANEOUS

Comment:

The director should have greater flexibility in determining whether or not a proposed well will cause unreasonably increasing damage. The language should be changed to provide that the director may determine that a proposed well will cause unreasonably increasing damage to land or surrounding water users from the concentration of wells if the director determines that the well will likely cause one of the three impacts described in the rules. There may be situations that call for quick action, such as a water system emergency where wells must be drilled as soon as possible. The director needs this ability when responding to an emergency or other extraordinary situations. (City of Phoenix).

Response:

ADWR disagrees. ADWR believes that the standards for determining when a proposed well will cause unreasonably increasing damage should be more specific than requested in this comment. Therefore, no changes have been made in response to this comment.

Comment:

The permit approval process should be worded in the positive format (i.e., "the director shall approve an application if …" instead of "the director shall not approve an application if …" (Metro Water District).

Response:

ADWR disagrees. Compliance with the well spacing rules is one of several criteria that an applicant for a well permit must satisfy in order to obtain a well permit. Other criteria that must be satisfied include well construction requirements, requirements specific to the Santa Cruz AMA and specific requirements for recovery wells. *See* A.R.S. §§ 45-599 and 45-834.01(A)(2)(b).

Because compliance with the well spacing rules is only one of several criteria that must be satisfied to obtain a well permit, it would not be appropriate to change the wording of the rules to provide that the director shall grant an application for a well permit if the applicant complies with the rules. For that reason, no changes have been made to the rules in response to this comment.

12. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:

None

13. Incorporations by reference and their location in the rules:

None

14. Was this rule previously made as an emergency rule?

No.

15. The full text of the rules follows:

TITLE 12. NATURAL RESOURCES

CHAPTER 15. DEPARTMENT OF WATER RESOURCES

ARTICLE 13. WELL SPACING REQUIREMENTS; REPLACEMENT WELLS IN APPROXIMATELY THE SAME LOCATION

Section

ARTICLE 13. WELL SPACING REQUIREMENTS; REPLACEMENT WELLS IN APPROXIMATELY THE SAME LOCATION

R12-15-1301. Definitions

In addition to the definitions in A.R.S. §§ 45-101, 45-402, and 45-591, the following words and phrases in this Article shall have the following meanings, unless the context otherwise requires:

1. "Abandoned well" means a well for which a well abandonment completion report has been filed pursuant to R12-15-816(E) or for which a notification of abandonment has been filed pursuant to R12-15-816(K).
2. "Additional drawdown" means a lowering in the water levels surrounding a well that is the result of the operation of the well and that is not attributable to existing regional rates of decline or existing impacts from other wells.
3. "Applicant" means any of the following:
   a. A person who has filed an application for a permit to construct a new well or a replacement well in a new location under A.R.S. § 45-599;
   b. A person who has filed an application for a recovery well permit under A.R.S. § 45-834.01 for a new well as defined in A.R.S. § 45-591 or, except as provided in A.R.S. § 45-834.01(B)(2) or (3), an existing well as defined in A.R.S. § 45-591;
   c. A person who has filed an application for approval to use a well to withdraw groundwater for transportation to an active management area under A.R.S. § 45-559; or
   d. A person, other than a city, town, private water company, or irrigation district, who has filed an application for a water exchange permit under A.R.S. § 45-1041.
4. "ADEQ" means the Arizona Department of Environmental Quality.
5. "Contaminated groundwater" means groundwater that has been contaminated by a release of a hazardous substance, as defined in A.R.S. § 49-201, or a pollutant, as defined in A.R.S. § 49-201.
6. "DOD" means the United States Department of Defense.
7. "EPA" means the United States Environmental Protection Agency.
8. "LCR plateau groundwater transporter" means a person transporting groundwater from the Little Colorado River plateau groundwater basin to another groundwater basin pursuant to A.R.S. § 45-544(B)(1).
9. "Notice of water exchange participant" means a person, other than a city, town, private water company, or irrigation district, named as a participant in a water exchange in a notice of water exchange filed under A.R.S. § 45-1051.
10. "Original well" means the well replaced by a replacement well in approximately the same location, except that if the replacement well is the latest in a succession of two or more wells drilled as replacement wells in approximately the same location under R12-15-1308 or temporary rule R12-15-840 adopted by the director on March 11, 1983, "original well" means the well replaced by the first replacement well in approximately the same location.
11. "Remedial action site" means any of the following:
    a. The site of a remedial action undertaken pursuant to the comprehensive environmental response, compensation, and liability act ("CERCLA") of 1980, as amended, 42 U.S.C. 9601, et seq., commonly known as a "superfund" site;
    b. The site of a corrective action undertaken pursuant to A.R.S. Title 49, Chapter 6, commonly known as a leaking underground storage tank ("LUST") site;
    c. The site of a voluntary remediation action undertaken pursuant to A.R.S. Title 49, Chapter 1, Article 5;
    d. The site of a remedial action undertaken pursuant to A.R.S. Title 49, Chapter 2, Article 5, commonly known as a water quality assurance revolving fund ("WQARF") site;
    e. The site of a remedial action undertaken pursuant to the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. 6901, et seq.; or
    f. The site of remedial action undertaken pursuant to the Department of Defense Environmental Restoration Program, 10 U.S.C. 2701, et seq., commonly known as a "Department of Defense site" or a "DOD site."
12. "Replacement well" means a well drilled for the purpose of replacing another well.
13. "Replacement well in a new location" means a replacement well that does not qualify as a replacement well in approximately the same location under R12-15-1308.
14. "Replacement well in approximately the same location" means a replacement well that qualifies as a replacement well in approximately the same location under R12-15-1308.
15. "Well" has the meaning prescribed in A.R.S. § 45-402. An abandoned well is not a well.
16. "Well of record" means, with respect to an applicant, an LCR plateau groundwater transporter, or a notice of water exchange participant, any well or proposed well not owned by the applicant, LCR plateau groundwater transporter, or notice of water exchange participant, or proposed to be drilled by the applicant, LCR plateau groundwater transporter, or notice of water exchange participant, to which any of the following apply:
    a. The well is an existing well as defined in A.R.S. § 45-591 and the owner or operator has registered the well with the Department, unless the current well information on file with the Department identifies the sole purpose or purposes of the well as one or more of the following:
       i. Cathodic protection;

ii. Use as a sump pump or heat pump;
iii. Air sparging;
iv. Injection of liquids or gasses into the aquifer or vadose zone, including injection wells that are part of an underground storage facility permitted under A.R.S. Title 45, Chapter 3.1;
v. Monitoring water levels or water quality, including a piezometer well;
vi. Obtaining geophysical, mineralogical, or geotechnical data;
vii. Grounding;
viii. Soil vapor extraction;
ix. Electrical energy generation pursuant to a temporary permit for electrical energy generation issued under A.R.S. § 45-517;
x. Dewatering pursuant to a dewatering permit issued under A.R.S. § 45-513 or a temporary dewatering permit issued under A.R.S. § 45-518;
xi. Drainage pursuant to a drainage water withdrawal permit issued under A.R.S. § 45-519; or
xii. Hydrologic testing pursuant to a hydrologic testing permit issued under A.R.S. § 45-519.01.

b. The well is a new well as defined in A.R.S. § 45-591 for which a notice of intention to drill was not filed pursuant to A.R.S. § 45-596 and for which a permit was not issued pursuant to A.R.S. §§ 45-599 or 45-834.01, and the owner or operator has registered the well with the Department, unless the current well information on file with the Department identifies the sole purpose or purposes of the well as one or more of the purposes in subsection (16)(a)(i) through (xii) of this Section;

c. A filing has been made for the well pursuant to A.R.S. § 45-596(A) or (B), unless any of the following apply:
i. The filing has expired pursuant to A.R.S. § 45-596(E);
ii. The filing identifies the sole purpose or purposes of the well as one or more of the purposes in subsection (16)(a)(i) through (xii) of this Section; or
iii. The well is an exempt well and the director is prohibited by A.R.S. § 45-454(D)(4) from considering impacts on the well when determining whether to approve or reject a permit application filed under A.R.S. § 45-599.

d. An application for a permit to drill the well has been received by the Department pursuant to A.R.S. § 45-599, unless the application has been rejected after exhaustion of all administrative and judicial appeals or the permit issued pursuant to the application has been revoked or has expired according to its terms or for failure to complete the well in a timely manner pursuant to A.R.S. § 45-599(G);

e. An application for a permit pursuant to A.R.S. §§ 45-514 or 45-516 has been received by the Department pursuant to A.R.S. § 45-521, unless the application has been rejected after exhaustion of all administrative and judicial appeals or the permit issued pursuant to the application has been revoked or has expired according to its terms or for failure to complete the well before expiration of the drilling authority; or

f. An application for a permit to drill a recovery well has been received by the Department pursuant to A.R.S. § 45-834.01, unless the application has been rejected after exhaustion of all administrative and judicial appeals or the permit issued pursuant to the application has been revoked or has expired according to its terms or for failure to complete the well in a timely manner pursuant to A.R.S. § 45-834.01(F).

R12-15-1302. Well Spacing Requirements - Applications to Construct New Wells or Replacement Wells in New Locations Under A.R.S. § 45-599

A. The director shall not approve an application for a permit to construct a new well or a replacement well in a new location under A.R.S. § 45-599 if the director determines that the withdrawals from the proposed well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B) of this Section.

B. The director shall determine that the withdrawals from the proposed well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells if any of the following apply:

1. Except as provided in subsection (D) of this Section, the director determines that the probable impact of the withdrawals from the proposed well or wells on any well of record in existence as of the date of receipt of the application will exceed 10 feet of additional drawdown after the first five years of operation of the proposed well or wells. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study delineating those areas surrounding the proposed well or wells in which the projected impacts on water levels will exceed 10 feet of additional drawdown after the first five years of operation of the proposed well or wells. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection;
2. The director determines that the proposed well or wells will be located in an area of known land subsidence and the withdrawals from the proposed well or wells will likely cause unreasonably increasing damage from additional regional land subsidence. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study, which may include a geophysical evaluation, demonstrating the impact of the withdrawals from the proposed well or wells on regional land subsidence. The director may require the applicant to submit

such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection; or

3. Except as provided in subsection (E) of this Section, the director determines, after consulting with ADEQ, that withdrawals from the proposed well or wells will likely cause the migration of contaminated groundwater from a remedial action site to a well of record in existence as of the date of the receipt of the application, resulting in a degradation of the quality of the water withdrawn from the well of record so that the water will no longer be usable for the purpose for which it is currently being used without additional treatment, and that the damage to the owner of the well of record will not be prevented or adequately mitigated through the implementation of a program regulated under Title 49 of the Arizona Revised Statutes, or a program regulated by EPA or DOD. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study demonstrating whether the withdrawals from the proposed well or wells will have the effect described in this subsection. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection.

C. In making a determination under subsection (B)(1), (B)(2), or (B)(3) of this Section, if the proposed well is a replacement well in a new location, the director shall take into account the collective effects of reducing or terminating withdrawals from the well being replaced combined with the proposed withdrawals from the replacement well if the applicant submits a hydrological study demonstrating those collective effects to the satisfaction of the director.

D. If the director determines under subsection (B)(1) of this Section that the probable impact of the withdrawals from the proposed well or wells on one or more wells of record in existence as of the date of receipt of the application will exceed 10 feet of additional drawdown after the first five years of operation of the proposed well or wells, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the withdrawals from the proposed well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(1) of this Section if within 60 days after the date on the notice, or a longer time period approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the withdrawals from the proposed well or wells. The applicant shall use the consent form furnished by the director; or
2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

E. If the director determines that withdrawals from the proposed well or wells will have the effect described in subsection (B)(3) of this Section on one or more wells of record in existence as of the date of receipt of the application, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the withdrawals from the proposed well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(3) of this Section if within 60 days after the date on the notice, or a longer time period approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the withdrawals from the proposed well or wells. The applicant shall use the consent form furnished by the director; or
2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

F. At any time before a final determination under this Section, the applicant may:

1. Amend the application to change the location of the proposed well or wells or the amount of groundwater to be withdrawn from the proposed well or wells to lessen the degree of impact on wells of record or regional land subsidence; or
2. Agree to construct or operate the proposed well or wells in a manner that lessens the degree of impact on wells of record or regional land subsidence. The director shall indicate in the well permit that compliance with the agreement is a condition of the well permit.

R12-15-1303. Well Spacing Requirements - Applications for Recovery Well Permits Under A.R.S. § 45-834.01

A. The director shall not approve an application for a recovery well permit under A.R.S. § 45-834.01 that is filed for a new well as defined in A.R.S. § 45-591 or, except as provided in A.R.S. § 45-834.01(B)(2) or (3), for an existing well as defined in A.R.S. § 45-591, if the director determines that the recovery of stored water from the proposed well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B) of this Section.

B. The director shall determine that the recovery of stored water from the proposed well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells if any of the following apply:

1. Except as provided in subsection (D) of this Section, the director determines that the probable impact of the recovery of stored water from the proposed well or wells on any well of record in existence as of the date of receipt of the

application will exceed 10 feet of additional drawdown after the first five years of the recovery of stored water from the proposed well or wells. To assist the director in making a determination under this subsection, the applicant shall submit with the application a hydrological study delineating those areas surrounding the proposed well or wells in which the projected impacts on water levels will exceed 10 feet of additional drawdown after the first five years of the recovery of stored water from the proposed well or wells;

2. The director determines that the proposed recovery well or wells will be located in an area of known land subsidence and the recovery of stored water from the proposed well or wells will likely cause unreasonably increasing damage from additional regional land subsidence. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study, which may include a geophysical evaluation, demonstrating the impact of the recovery of stored water from the proposed recovery well or wells on regional land subsidence. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection; or
3. Except as provided in subsection (E) of this Section, the director determines, after consulting with ADEQ, that the recovery of stored water from the proposed well or wells will likely cause the migration of contaminated groundwater from a remedial action site to a well of record in existence as of the date of receipt of the application, resulting in a degradation of the quality of the water withdrawn from the well of record so that the water will no longer be usable for the purpose for which it is currently being used without additional treatment, and that the damage to the owner of the well of record will not be prevented or adequately mitigated through the implementation of a program regulated under Title 49 of the Arizona Revised Statutes, or a program regulated by EPA or DOD. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study demonstrating whether the recovery of stored water from the proposed well or wells will have the effect described in this subsection. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection.

C. In making a determination under subsection (B)(1), (B)(2), or (B)(3) of this Section:

1. If the proposed recovery well is a replacement well in a new location, the director shall take into account the collective effects of reducing or terminating withdrawals from the well being replaced combined with the proposed recovery of stored water from the replacement well if the applicant submits a hydrological study demonstrating those collective effects to the satisfaction of the director.
2. If the proposed recovery well will be located within the area of impact, as defined in A.R.S. § 45-802.01, of an underground storage facility and the applicant will account for all of the water recovered from the well as water stored at the facility, the director shall take into account the effects of water storage at the facility on the proposed recovery of stored water from the recovery well if the applicant submits a hydrological study demonstrating those effects to the satisfaction of the director.

D. If the director determines under subsection (B)(1) of this Section that the probable impact of the recovery of stored water from the proposed recovery well or wells on any well of record in existence as of the date of receipt of the application will exceed 10 feet of additional drawdown after the first five years of operation of the proposed well or wells, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the recovery of stored water from the proposed recovery well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(1) of this Section if within 60 days after the date on the notice, or a longer time period approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the recovery of stored water from the proposed recovery well or wells. The applicant shall use the consent form furnished by the director; or
2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

E. If the director determines that the recovery of stored water from the proposed recovery well or wells will have the effect described in subsection (B)(3) of this Section on one or more wells of record in existence as of the date of receipt of the application, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the recovery of stored water from the proposed recovery well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(3) of this Section if within 60 days after the date on the notice, or a longer time period approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the recovery of stored water from the proposed recovery well or wells. The applicant shall use the consent form furnished by the director; or
2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the

well of record but was unable to do so.

F. At any time before a final determination under this Section, the applicant may:

1. Amend the application to change the location of the proposed recovery well or wells or the amount of stored water to be recovered from the proposed recovery well or wells to lessen the degree of impact on wells of record or regional land subsidence; or
2. Agree to construct or operate the proposed recovery well or wells in a manner that lessens the degree of impact on wells of record or regional land subsidence. The director shall indicate in the recovery well permit that compliance with the agreement is a condition of the recovery well permit.

R12-15-1304. Well Spacing Requirements - Wells Withdrawing Groundwater From the Little Colorado River Plateau Groundwater Basin for Transportation to Another Groundwater Basin Under A.R.S. § 45-544(B)(1)

A. An LCR plateau groundwater transporter may not withdraw groundwater from a well or wells drilled in the Little Colorado river plateau groundwater basin after January 1, 1991, except a replacement well in approximately the same location or a well drilled after that date pursuant to a notice of intention to drill filed on or before that date, for transportation away from the basin pursuant to A.R.S. § 45-544(B)(1) if the director determines that the withdrawals for that purpose will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B) of this Section.

B. The director shall determine that the withdrawals of groundwater from the well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells if any of the following apply:

1. Except as provided in subsection (D) of this Section, the director determines that the probable impact of the withdrawals of groundwater from the well or wells on any well of record in existence when the withdrawals commenced or are proposed to commence will exceed 10 feet of additional drawdown after the first five years of the withdrawals. To assist the director in making a determination under this subsection, the LCR plateau groundwater transporter may submit to the director a hydrological study delineating those areas surrounding the LCR plateau groundwater transporter's well or wells in which the projected impacts on water levels will exceed 10 feet of additional drawdown after the first five years of the withdrawals. The director may require the LCR plateau groundwater transporter to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection;
2. The director determines that the well or wells from which the groundwater is withdrawn are located in an area of known land subsidence and the withdrawals of groundwater will likely cause unreasonably increasing damage from additional regional land subsidence. To assist the director in making a determination under this subsection, the LCR plateau groundwater transporter may submit to the director a hydrological study, which may include a geophysical evaluation, demonstrating the impact of the withdrawals on regional land subsidence. The director may require the LCR plateau groundwater transporter to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection; or
3. Except as provided in subsection (E) of this Section, the director determines, after consulting with ADEQ, that the withdrawals of groundwater from the well or wells will likely cause the migration of contaminated groundwater from a remedial action site to a well of record in existence when the groundwater withdrawals commenced or are proposed to commence, resulting in a degradation of the quality of the water withdrawn from the well of record so that the water will no longer be usable for the purpose for which it is currently being used without additional treatment, and that the damage to the owner of the well of record will not be prevented or adequately mitigated through the implementation of a program regulated under Title 49 of the Arizona Revised Statutes, or a program regulated by EPA or DOD. To assist the director in making a determination under this subsection, the LCR plateau groundwater transporter may submit to the director a hydrological study demonstrating whether the withdrawals of groundwater will have the effect described in this subsection. The director may require the LCR plateau groundwater transporter to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection.

C. In making a determination under subsection (B)(1), (B)(2), or (B)(3) of this Section, if a well from which the groundwater is withdrawn is a replacement well in a new location, the director shall take into account the collective effects of reducing or terminating withdrawals from the well being replaced combined with the withdrawals from the replacement well if the LCR plateau groundwater transporter submits a hydrological study demonstrating those collective effects to the satisfaction of the director.

D. If the director determines under subsection (B)(1) of this Section that the probable impact of the withdrawals of groundwater from the well or wells on any well of record in existence when the withdrawals commenced or are proposed to commence will exceed 10 feet of additional drawdown after the first five years of the withdrawals, the director shall notify the LCR plateau groundwater transporter in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the withdrawals will

cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(1) of this Section if within 60 days after the date on the notice, or a longer time period approved by the director, the LCR plateau groundwater transporter submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the withdrawals. The LCR plateau groundwater transporter shall use the consent form furnished by the director; or
2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the LCR plateau groundwater transporter made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

E. If the director determines that the withdrawals of groundwater from the well or wells will have the effect described in subsection (B)(3) of this Section on one or more wells of record in existence when the groundwater withdrawals commenced or are proposed to commence, the director shall notify the LCR plateau groundwater transporter in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the withdrawals will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(3) of this Section if within 60 days after the date on the notice, or a longer time period approved by the director, the LCR plateau groundwater transporter submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the withdrawals. The LCR plateau groundwater transporter shall use the consent form furnished by the director; or
2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the LCR plateau groundwater transporter made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

F. At any time before a final determination under this Section, the LCR plateau groundwater transporter may agree to construct or operate the well or wells in a manner that lessens the degree of impact on wells of record or regional land subsidence. Compliance with the agreement is a condition for the use of the well or wells to withdraw groundwater for transportation away from the basin pursuant to A.R.S. § 45-544(B)(1).

R12-15-1305. Well Spacing Requirements - Applications to Use a Well to Withdraw Groundwater for Transportation to an Active Management Area Under A.R.S. § 45-559

A. The director shall not approve an application to use a well or wells constructed after September 21, 1991, to withdraw groundwater for transportation to an active management area under A.R.S. § 45-559 if the director determines that the withdrawals for that purpose will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B) of this Section.

B. The director shall determine that the withdrawals of groundwater will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells if any of the following apply:

1. Except as provided in subsection (C) of this Section, the director determines that the probable impact of the groundwater withdrawals on any well of record in existence as of the date of receipt of the application will exceed 10 feet of additional drawdown after the first five years of the withdrawals. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study delineating those areas surrounding the proposed well or wells in which the projected impacts of the groundwater withdrawals on water levels will exceed 10 feet of additional drawdown after the first five years of the withdrawals. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection;
2. The director determines that the proposed well or wells will be located in an area of known land subsidence and the groundwater withdrawals will likely cause unreasonably increasing damage from additional regional land subsidence. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study, which may include a geophysical evaluation, demonstrating the impact of the groundwater withdrawals on regional land subsidence. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection; or
3. Except as provided in subsection (D) of this Section, the director determines, after consulting with ADEQ, that the groundwater withdrawals will likely cause the migration of contaminated groundwater from a remedial action site to a well of record in existence as of the date of receipt of the application, resulting in a degradation of the quality of the water withdrawn from the well of record so that the water will no longer be usable for the purpose for which it is currently being used without additional treatment, and that the damage to the owner of the well of record will not be prevented or adequately mitigated through the implementation of a program regulated under Title 49 of the Arizona Revised Statutes, or a program regulated by EPA or DOD. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study demonstrating whether the groundwater withdrawals will have the effect described in this subsection. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection.

C. If the director determines under subsection (B)(1) of this Section that the probable impact of the groundwater withdrawals

on any well of record in existence as of the date of receipt of the application will exceed 10 feet of additional drawdown after the first five years of the withdrawals, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the groundwater withdrawals will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(1) of this Section if within 60 days after the date on the notice, or a longer time period approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the withdrawals. The applicant shall use the consent form furnished by the director; or
2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

D. If the director determines that the groundwater withdrawals will have the effect described in subsection (B)(3) of this Section on one or more wells of record in existence as of the date of receipt of the application, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the groundwater withdrawals will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(3) of this Section if within 60 days after the date on the notice, or a longer time period approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the withdrawals. The applicant shall use the consent form furnished by the director; or
2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

E. At any time before a final determination under this Section, the applicant may:

1. Amend the application to change the location of the proposed well or wells or the amount of groundwater to be withdrawn from the proposed well or wells to lessen the degree of impact on wells of record or regional land subsidence; or
2. Agree to construct or operate the proposed well or wells in a manner that lessens the degree of impact on wells of record or regional land subsidence. The director shall indicate in the permit that compliance with the agreement is a condition of the permit to use the well or wells to withdraw groundwater for transportation to an active management area under A.R.S. § 45-559.

R12-15-1306. Well Spacing Requirements - Applications for Water Exchange Permits Under A.R.S. § 45-1041

A. The director shall not approve an application for a water exchange permit filed under A.R.S. § 45-1041 by a person other than a city, town, private water company or irrigation district if the director determines that any new or increased pumping by the applicant from a well or wells within an active management area pursuant to the water exchange will cause unreasonably increasing damage to surrounding land or other water users under subsection (B) of this Section.

B. The director shall determine that new or increased pumping by the applicant from a well or wells within an active management area will cause unreasonably increasing damage to surrounding land or other water users if any of the following apply:

1. Except as provided in subsection (C) of this Section, the director determines that the probable impact of the new or increased pumping on any well of record in existence as of the date of receipt of the application will exceed 10 feet of additional drawdown after the first five years of the pumping. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study delineating those areas surrounding the proposed well or wells in which the projected impacts of the new or increased pumping on water levels will exceed 10 feet of additional drawdown after the first five years of the pumping. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection;
2. The director determines that the new or increased pumping will occur in an area of known land subsidence and the pumping will likely cause unreasonably increasing damage from additional regional land subsidence. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study, which may include a geophysical evaluation, demonstrating the impact of the new or increased pumping on regional land subsidence. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection; or
3. Except as provided in subsection (D) of this Section, the director determines, after consulting with ADEQ, that the new or increased pumping will likely cause the migration of contaminated groundwater from a remedial action site to a well of record in existence as of the date of receipt of the application, resulting in a degradation of the quality of the water withdrawn from the well of record so that the water will no longer be usable for the purpose for which it is currently being used without additional treatment, and that the damage to the owner of the well of record will not be pre-

vented or adequately mitigated through the implementation of a program regulated under Title 49 of the Arizona Revised Statutes, or a program regulated by EPA or DOD. To assist the director in making a determination under this subsection, the applicant may submit with the application a hydrological study demonstrating whether the new or increased pumping will have the effect described in this subsection. If the applicant does not submit such a hydrological study with the application, the director may require the applicant to submit the study if the director determines that the study will assist the director in making a determination under this subsection.

C. If the director determines under subsection (B)(1) of this Section that the probable impact of the new or increased pumping on any well of record in existence as of the date of receipt of the application will exceed 10 feet of additional drawdown after the first five years of the pumping, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the new or increased pumping will cause unreasonably increasing damage to surrounding land or other water users under subsection (B)(1) of this Section if within 60 days after the date on the notice, or a longer time period approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the new or increased pumping. The applicant shall use the consent form furnished by the director; or
2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

D. If the director determines that the new or increased pumping will have the effect described in subsection (B)(3) of this Section on one or more wells of record in existence as of the date of receipt of the application, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the new or increased pumping will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(3) of this Section if within 60 days after the date on the notice, or a longer time period approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the new or increased pumping. The applicant shall use the consent form furnished by the director; or
2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

E. At any time before a final determination under this Section, the applicant may:

1. Amend the application to change the location of the proposed well or wells or the amount of the new or increase pumping to lessen the degree of impact on wells of record or regional land subsidence; or
2. Agree to construct or operate the proposed well or wells in a manner that lessens the degree of impact on wells of record or regional land subsidence. The director shall indicate in the water exchange permit that compliance with the agreement is a condition of the water exchange permit.

R12-15-1307. Well Spacing Requirements - Notices of Water Exchange Under A.R.S. § 45-1051

A. A notice of water exchange participant may not participate in a water exchange for which a notice is filed under A.R.S. § 45-1051 if the director determines that any new or increased pumping by the person from a well or wells within an active management area pursuant to the water exchange will cause unreasonably increasing damage to surrounding land or other water users under subsection (B) of this Section.

B. The director shall determine that new or increased pumping from the well or wells in an active management area will cause unreasonably increasing damage to surrounding land or other water users if any of the following apply:

1. Except as provided in subsection (C) of this Section, the director determines that the probable impact of the new or increased pumping on any well of record in existence when the pumping commenced or is proposed to commence will exceed 10 feet of additional drawdown after the first five years of the pumping. To assist the director in making a determination under this subsection, the notice of water exchange participant may submit to the director a hydrological study delineating those areas surrounding the notice of water exchange participant's well or wells in which the projected impacts of the new or increased pumping on water levels will exceed 10 feet of additional drawdown after the first five years of the pumping. The director may require the notice of water exchange participant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection;
2. The director determines that the new or increased pumping is in an area of known land subsidence and the pumping will likely cause unreasonably increasing damage from additional regional land subsidence. To assist the director in making a determination under this subsection, the notice of water exchange participant may submit to the director a hydrological study, which may include a geophysical evaluation, demonstrating the impact of the pumping on regional land subsidence. The director may require the notice of water exchange participant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection; or

3. Except as provided in subsection (D) of this Section, the director determines, after consulting with ADEQ, that the new or increased pumping will likely cause the migration of contaminated groundwater from a remedial action site to a well of record in existence when the pumping commenced or is proposed to commence, resulting in a degradation of the quality of the water withdrawn from the well of record so that the water will no longer be usable for the purpose for which it is currently being used without additional treatment, and that the damage to the owner of the well of record will not be prevented or adequately mitigated through the implementation of a program regulated under Title 49 of the Arizona Revised Statutes, or a program regulated by EPA or DOD. To assist the director in making a determination under this subsection, the notice of water exchange participant may submit to the director a hydrological study demonstrating whether the new or increased pumping will have the effect described in this subsection. The director may require the notice of water exchange participant to submit such a study if the director determines that the study will assist the director in making a determination under this subsection.

C. If the director determines under subsection (B)(1) of this Section that the probable impact of the new or increased pumping on any well of record in existence when the pumping commenced or is proposed to commence will exceed 10 feet of additional drawdown after the first five years of the pumping, the director shall notify the notice of water exchange participant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the new or increased pumping will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(1) of this Section if within 60 days after the date on the notice, or a longer time period approved by the director, the notice of water exchange participant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the new or increased pumping. The notice of water exchange participant shall use the consent form furnished by the director; or
2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the notice of water exchange participant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

D. If the director determines that the new or increased pumping will have the effect described in subsection (B)(3) of this Section on one or more wells of record in existence when the pumping commenced or is proposed to commence, the director shall notify the notice of water exchange participant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the new or increased pumping will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(3) of this Section if within 60 days after the date on the notice, or a longer time period approved by the director, the notice of water exchange participant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the new or increased pumping. The notice of water exchange participant shall use the consent form furnished by the director; or
2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the notice of water exchange participant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

E. At any time before a final determination under this Section, the notice of water exchange participant may agree to construct or operate the well or wells in a manner that lessens the degree of impact on wells of record or regional land subsidence. Compliance with the agreement is a condition for the use of the well to pump water for the water exchange.

R12-15-1308. Replacement Wells in Approximately the Same Location

A. For purposes of A.R.S. §§ 45-544, 45-596, and 45-597, a replacement well in approximately the same location is a proposed well to which all of the following apply:

1. The proposed well will be located no greater than 660 feet from the original well, and the location of the original well can be determined at the time the notice of intention to drill the proposed well is filed;
2. Except as provided in subsections (A)(3) and (A)(4) of this Section, the proposed well will not annually withdraw an amount of water in excess of the maximum annual capacity of the original well. The director shall determine the maximum annual capacity of the original well by multiplying the maximum pump capacity of the original well in gallons per minute by 525,600, and then converting the result into acre-feet by dividing the result by 325,851 gallons. The director shall presume that the maximum pump capacity of the original well is the maximum pump capacity of the well in gallons per minute as shown in the Department's well registry records, except that:
   a. If the director has reason to believe that the maximum pump capacity as shown in the Department's well registry records is inaccurate, or if the applicant submits evidence demonstrating that the maximum pump capacity as shown in the Department's well registry records is inaccurate, the director shall determine the maximum pump capacity by considering all available evidence, including the depth and diameter of the well and any evidence submitted by the applicant; or
   b. If the Department's well registry records do not show the maximum pump capacity of the original well, the director shall not approve the proposed well as a replacement well in approximately the same location unless the applicant demonstrates to the director's satisfaction the maximum pump capacity of the original well;

3. If a well permit was issued for the original well under A.R.S. § 45-599, the proposed well will not annually withdraw an amount of groundwater in excess of the maximum annual volume set forth in the well permit;
4. If a recovery well permit was issued for the well to be replaced pursuant to A.R.S. § 45-834.01(B) and the permit sets forth a maximum annual volume of stored water that may be recovered from the well, the proposed well will not annually recover an amount of stored water in excess of the maximum annual volume set forth in the recovery well permit;
5. If the well to be replaced has been physically abandoned in accordance with R12-15-816, a notice of intention to drill the proposed well is filed no later than 90 days after the well to be replaced was physically abandoned; and
6. If the proposed well will be used to withdraw groundwater from the Little Colorado river plateau groundwater basin for transportation away from the basin pursuant to A.R.S. § 45-544(B)(1), one of the following applies:
   a. The original well was drilled on or before January 1, 1991, or was drilled after that date pursuant to a notice of intention to drill that was on file with the Department on that date; or
   b. The director previously determined that the withdrawal of groundwater from the original well for transportation away from the Little Colorado river plateau groundwater basin complies with R12-15-1304.

B. After a replacement well in approximately the same location is drilled, the replacement well may be operated in conjunction with the original well and any other wells that replaced the original well if the total annual withdrawals from all wells do not exceed the maximum amount allowed under subsection (A)(2), (A)(3), or (A)(4) of this Section, whichever applies.

C. A proposed well may be drilled as a replacement well in approximately the same location for more than one original well if the criteria in subsections (A)(1), (A)(5), and (A)(6) of this Section are met with respect to each original well and if the total annual withdrawals from the proposed well will not exceed the combined maximum annual amounts allowed for each original well under subsections (A)(2), (A)(3), or (A)(4) of this Section, whichever apply.

D. The director may include conditions in the approval of the notice of intention to drill the replacement well to ensure that the drilling and operation of the replacement well meets the requirements of this Section.