

**RESOLUTION OF THE
RESOURCES AND DEVELOPMENT COMMITTEE
23rd Navajo Nation Council --- Third Year, 2017**

AN ACTION

**RELATING TO RESOURCES AND DEVELOPMENT COMMITTEE, APPROVING THE
PROPOSED AQUIFER PROTECTION REGULATIONS AS SUBMITTED BY THE
NAVAJO NATION ENVIRONMENTAL PROTECTION AGENCY TO BE PART OF THE
NAVAJO NATION PRIMARY DRINKING WATER REGULATIONS UNDER THE
NAVAJO NATION SAFE DRINKING WATER ACT 22 N.N.C. §§2501-2586 AND
THE NAVAJO NATION CLEAN WATER ACT 4 N.N.C. §§ 101-1394**

BE IT ENACTED:

SECTION ONE. AUTHORITY

The Resources and Development Committee has oversight over water on the Navajo Nation and the rules and regulations with respect to environmental protection. 2 N.N.C. §§ 500(C), 501(B) (1).

SECTION TWO. FINDINGS

A. The Resources and Development Committee in 2013 directed the Executive Director of the Navajo Nation Environmental Protection Agency, by resolution RDCF-07-13, to draft aquifer protection laws addressing such topics as the lining of sediment ponds, reclamation bonds, and independent studies of aquifers. See Exhibit "A" RDCF-07-13

B. The Navajo Nation Environmental Protection Agency has submitted revisions to the Primary Drinking Water Regulations in order to protect the aquifers of the Navajo Nation. See Exhibit "B".

C. The Resources and Development Committee finds it in the best interest of the Navajo Nation to approve the proposed aquifer protection regulations as submitted by the Navajo Nation Environmental Protection Agency to be part of the Navajo Nation Primary Drinking Water Regulations under the Navajo Nation Safe Drinking Water Act, 22 N.N.C. §§ 2501-2586 and the Navajo Nation Clean Water Act 4 N.N.C. §§ 101-1394. See Exhibit "B".

SECTION THREE. Approval

The Resources and Development Committee of the Navajo Nation Council hereby approves proposed aquifer protection regulations as submitted by the Navajo Nation Environmental Protection Agency to be part of the Navajo Nation Primary Drinking Water Regulations under the Navajo Nation Safe Drinking Water Act, 22 N.N.C. §§ 2501-2586 and the Navajo Nation Clean Water Act 4 N.N.C. §§ 101-1394. See Exhibit "B".

CERTIFICATION

I, hereby certify that the following resolution was duly considered by the Resources and Development Committee of the 23rd Navajo Nation Council at a duly called meeting at Navajo Nation Department of Transportation Conference Room, Tse Bonito (Navajo Nation) New Mexico, at which a quorum was present and that same was passed by a vote of 3 in favor, 0 opposed, 1 abstained on this 6th day of June, 2017.



Benjamin Bennett, Vice Chairperson
Resources and Development Committee
of the 23rd Navajo Nation Council

Motion: Honorable Leonard Pete
Second: Honorable Jonathan Perry



RESOLUTION OF THE
RESOURCES AND DEVELOPMENT COMMITTEE
OF THE NAVAJO NATION COUNCIL

22ND OF THE NAVAJO NATION COUNCIL - THIRD YEAR, 2013

AN ACTION
RELATING TO RESOURCES AND DEVELOPMENT; DIRECTING THE EXECUTIVE
DIRECTOR OF THE NAVAJO NATION ENVIRONMENTAL PROTECTION AGENCY TO
DRAFT AQUIFER PROTECTION LAWS ADDRESSING SUCH TOPICS AS THE
LINING OF SEDIMENT PONDS, RECLAMATION BONDING, AND INDEPENDENT
STUDIES OF AQUIFERS

BE IT ENACTED:

Section One. The Navajo Nation makes the following findings with respect to this resolution:

A. The Navajo Nation Clean Water Act states:

"It is the policy of the Navajo Nation Council to protect the health, safety, welfare and environment of the Navajo Nation and its residents; to prevent, reduce and eliminate pollution of the waters of the Navajo Nation; and to plan the development and use (including restoration, preservation, and enhancement) of land and water resources within the Nation..." 4 N.N.C. §1303(A)(2).

B. The Navajo Nation Clean Water Act further states: *"The Navajo Nation Council also finds and declares that degradation of the waters of the Navajo Nation shall be minimized and that economic growth should occur in a manner consistent with the preservation of existing clean Navajo Nation water resources." 4 N.N.C. §1301(A)(3).*

C. The Navajo Nation Environmental Protection Agency Water Quality Program developed an Aquifer Protection Planning document in 2001. It found that the "[r]eview of existing Navajo Nation water related statues, regulations, policies, and programs reveals that there is no current statute or regulation that explicitly states that the ground water quality of Navajo Nation aquifers is to be protected for specific designated used before it is removed from the aquifer." The study provided conclusions and recommendations for addressing the need for aquifer protection. Exhibit A.

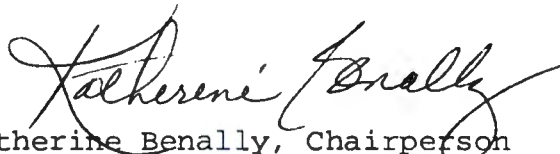
- D. Despite the Navajo Nation Council's desire to protect the Nation's water resources, there are currently no laws or regulations governing the lining of sediment ponds, reclamation bonds, and independent studies of aquifers on the Navajo Nation. The health of the Navajo people and the health of Navajo land would benefit from the promulgation of aquifer protection laws or regulations.
- E. It is in the best interest of the Navajo Nation that the Executive Director of the Navajo Nation Environmental Protection Agency commences the drafting of aquifer protection laws or regulations.

Section Two.

- A. The Navajo Nation hereby directs the Executive Director of the Navajo Environmental Protection Agency to draft Navajo Nation Aquifer Protection Laws addressing such topics as the lining of sediment ponds, reclamation bonds, and independent studies of aquifers.
- B. The Navajo Nation hereby directs the Director of the Navajo Nation Environmental Protection Agency to draft Navajo Nation Aquifer Protection Laws using Exhibit A, as a starting point and to complete the drafting of a proposed aquifer protection statute within six months from the certification of this resolution.

CERTIFICATION

I hereby certify that the foregoing resolution was duly considered by the Resources and Development Committee of the 22nd Navajo Nation Council at a duly called meeting held at Window Rock, Arizona at which a quorum was present and that the same was passed by a vote of 03 in favor, 00 opposed and 00 abstained, on this 26th day of **February, 2013.**



Katherine Benally, Chairperson
Resources and Development Committee

Motion: Leonard Pete
Second: Roscoe Smith

Navajo Nation Environmental Protection Agency
Water Quality Program



MEMORANDUM

Date: October 13, 2011

To: Stephen B. Etsitty, Director, NNEPA

Through: Patrick Antonio, Water Quality/NNPDES Program Manager

From: Eric Rich, Senior Hydrologist, Water Quality/NNPDES Program

CC: Elisa Arviso, Senior Hydrologist, Public Water Systems Supervision Program

RE: **Aquifer Protection Permitting**

The purpose of an aquifer protection permitting program is to protect aquifers from facilities that discharge pollutants to an aquifer. Pollutants can be discharged to an aquifer in a number of ways. An injection well may discharge pollutants directly into an aquifer. An unlined wastewater lagoon may discharge pollutants into an aquifer through infiltration into the aquifer. Arizona and Utah list the following facilities that typically require individual aquifer protection permits:

1. Surface impoundments, pits, ponds, and lagoons
2. Solid waste disposal facilities,
3. Injection wells,
4. Land treatment facilities,
5. Facilities adding pollutants to dry wells, caves, and mines,
6. Septic tank systems with a capacity greater than 2000 gallons per day,
7. Underground water storage facilities,
8. Waste storage pits and piles,
9. Feedlots,
10. Mining, milling, and metallurgical operations,
11. Sewage or wastewater treatment facilities,
12. Auto washing facilities, and
13. Ground water remediation facilities.

Facilities may be regulated for aquifer protection by other applicable environmental laws. For example, underground injection facilities are currently regulated by the Navajo Nation Underground Injection Control Program.

The ability of a pollutant to reach an aquifer through infiltration is controlled by a number of factors. These include:

1. Depth to ground water,
2. Biological, chemical, and physical properties of the pollutant, and
3. Biological, chemical and physical properties of the subsurface geology.

In order to protect the aquifers, aquifer water quality standards must be established. Usually these are based on the Safe Drinking Water Act Maximum Contaminant Levels (MCL's). The Navajo Nation has established MCL's.

In 2001, our program prepared a scoping document on Aquifer Protection Planning. It is attached to this memorandum as Attachment A and serves as a good starting point for discussion of this issue.

We are available to meet to discuss Aquifer Protection Permitting with you at your convenience.

GAP Grant Activities

Task 4. Aquifer Protection Planning

A. Introduction

The purpose of this task is to begin research into the feasibility of creating a program devoted to the protection of the ground water quality within the aquifers of the Navajo Nation. The objectives of this task were to obtain information about staffing requirements, funding, fee structure, ground water standard development, and technical program development from agencies with existing ground water protection programs. In order to fulfill these objectives ground water protection program information was gathered from the Navajo Nation, Arizona, New Mexico, and Utah through regulatory research and review, and through contacts with ground water program staff. The intent of this paper is to present the aquifer protection research findings.

B. Minimum Aquifer Protection Components

An aquifer protection program is developed to ensure that ground water quality is protected for the end use of that water. The most typical end use for ground water is as a domestic water supply. The federal Safe Drinking Water Act (SDWA 1996) assigns water quality standards by establishing maximum contaminant levels (MCLs) applicable to any surface or ground water used as a domestic water supply. The Navajo Nation Primary Drinking Water Regulations (as promulgated under the Navajo Nation Safer Drinking Water Act) also assigns MCLs to water used for drinking water purposes.

While both the Navajo Nation Primary Drinking Water Regulations (PDWR 1996) and federal SDWA assign water quality standards to water used as domestic water supply, these standards are only enforceable after the water has been treated. Ground water not meeting MCLs *prior* to treatment is deemed safe for human consumption if it meets the MCLs *after* treatment. Therefore the PDWR and SDWA only protect the ground water quality for the end drinking water use *after* it has been removed from the aquifer. The MCLs do not provide water quality protection for ground water *before* it is removed from the aquifer.

In order to protect ground water quality within the aquifer *before* it is removed from the aquifer the following three components, at a minimum, are required:

1. End uses for ground waters must be designated,
2. Aquifers must be delineated according to the end uses, and
3. Aquifer water quality standards required to meet the end uses must be set to protect the quality of the ground water *within* the aquifer.

These three minimum aquifer protection components are required for basic ground water quality regulatory protection. The development of an aquifer protection permitting program requires not only that these components are in place, but also requires the development of additional program elements such as determinations of regulated discharges, staffing needs, permitting process, and

funding sources.

Navajo Nation statutes, regulations, policies, and programs were researched to determine if any laws currently fulfill the above three minimum requirements needed to begin the aquifer protection process.

C. Navajo Nation Regulatory Overview

This section will focus on efforts to identify existing Navajo Nation water related statutes, regulations, policies, and programs and determine if they fulfill the three minimum aquifer protection components presented in Section B above.

C.1 Navajo Nation Water Code

Section 1104 of the Navajo Nation Water Code (WC 1984) defines Waters of the Navajo Nation as "all surface and groundwaters which are contained within the hydrologic systems located exclusively within the lands of the Navajo Nation;". The purpose of mentioning this definition is to demonstrate how it is different from the definition of Waters of the Navajo Nation found in Section C.3 of this document. This definition provides a basis for the protection of ground water.

There are several references in the WC to end water uses. Subchapter 6, and Sections 1702(F), 1703(E), and 1806(E) all require that the purposes for which the water will be used be described.. Section 1601 also recommends that existing uses be inventoried. Subchapter 12 provides definitions for domestic and municipal uses. Section 1501(D) provides a priority of uses when insufficient water supplies are present. While these WC sections do allow for an end use to be described, the Code does not specifically designate end uses for Navajo Nation aquifers.

C.2 Navajo Nation Safe Drinking Water Act/Corresponding Regulations & Programs

The Navajo Nation Safe Drinking Water Act (NNSDWA 1996) was drafted in order to protect the water resources of the Navajo Nation for drinking water end uses. The NNSDWA is the statute that provides the authority to establish the Navajo Nation Primary Drinking Water Regulations (PDWR 1996) and Navajo Nation Underground Injection Control Regulations (UICR 2001). In addition to these regulations the NNSDWA also allows for the development of a Wellhead Protection Program to protect drinking water wells from contaminants that may threaten public health.

NNSDWA Section 104 provides definitions for an underground source of drinking water and an exempted aquifer. An underground source of drinking water is broadly defined as an aquifer that supplies a public water system or has fewer than 10,000 milligrams per liter total dissolved solids. An exempted aquifer is an aquifer defined as an underground source of drinking water but may be exempted according to UICR regulations. The applicability of these definitions may be found in UICR Section 101.8 which provides for the identification of underground sources of drinking water and exempted aquifers. (Note: these definitions are not found in the PDWR). UICR Section 101.8 is also important because it states that: "Even if an aquifer has not been specifically identified by the Director, it is an underground source of drinking water if it meets the definition in Section 101.5...".

However the UICR does not set forth water quality standards to protect an aquifer for a drinking water use. It is the understanding of the Navajo Nation Environmental Protection Agency's (NNEPA) Water Quality Program (WQP) that the data set of individual aquifers identified as drinking water sources or as exempted aquifers is limited.

Additional definitions provided for by NNSDWA Section 104 are those for maximum contaminant level and primary drinking water regulations. Section 104 states: "Maximum Contaminant Level (MCLs) means the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.." and "Primary Drinking Water Regulations mean requirements that apply to 1) public water systems...". While MCLs may be used as aquifer water quality standards Section 104 applies them only to public water systems.

A regulatory inconsistency is evident from UICR Section 101.8 and NNSDWA Section 104. While UICR states that all Navajo Nation aquifers are underground sources of drinking water, the applicable drinking water quality standards allowed for in the NNSDWA (and promulgated in the PDWR) seem to only apply to public water systems at the entry points of the distribution system after treatment, and not to ground water within an aquifer.

Two programs currently being developed by the Navajo Nation Drinking Water Program are the Wellhead Protection Program and the Source Water Protection Program (Elisa Arviso, NNEPA, personal communication). These programs will assist in the protection of surface and ground water sources of drinking water. However, they will not meet the three required ground water protection components listed in Section B above.

C.3 Navajo Nation Clean Water Act/Corresponding Regulations

Section 102 of the Navajo Nation Clean Water Act (NNCWA 1999) defines Waters of the Navajo Nation as "...all surface waters..." It should be noted that the definition presented in the NNCWA is different from that in the WC. While WC explicitly includes ground water in its definition, the NNCWA does not.

The Navajo Nation Water Quality Standards (WQS 1999) were drafted according to the requirements of NNCWA Subchapter 2, Part A. WQS Parts I and II were developed to protect surface waters. The NNEPA Water Quality Program did not include a reserved section for ground water standards in the WQS due to pending "treatment as a state" approval from USEPA on its water quality standards and pollutant discharge regulations. Additionally, development of ground water standards would require that ground water be included as part of the definition of Waters of the Navajo Nation found in the NNCWA and WQS.

D. Aquifer Protection Permit Program Development

As mentioned in Section B, there are three minimum aquifer protection components required as a foundation upon which to base an aquifer protection permit program. For aquifer protection permit program development purposes additional minimum components are also required. These include the determination of the following:

1. Regulated discharges,
2. Staffing needs,
3. Permit process, and
4. Funding sources.

D1. Regulated Discharges

Once the three minimum aquifer protection components are in place, an assessment of the types of discharges that would violate the applicable ground water quality standard may be determined. Facilities that *have the potential* to discharge to a ground water aquifer and violate a ground water quality standard and/or have already violated a ground water quality standard would be required to obtain an individual aquifer protection permit. Arizona (ADEQ 2001) and Utah (UT 2001) list the following facilities that typically require individual aquifer protection permits:

1. Surface impoundments, pits, ponds, and lagoons
2. Solid waste disposal facilities,
3. Injection wells,
4. Land treatment facilities,
5. Facilities adding pollutants to dry wells, caves, and mines,
6. Septic tank systems with a capacity greater than 2000 gallons per day,
7. Underground water storage facilities,
8. Waste storage pits and piles,
9. Feedlots,
10. Mining, milling, and metallurgical operations,
11. Sewage or wastewater treatment facilities,
12. Auto washing facilities, and
13. Ground water remediation facilities.

Facilities regulated for aquifer protection by other applicable environmental laws or that do not have the potential to discharge to the aquifer may be exempted from individual permits and required to obtain a general permit. For example underground injection facilities are currently regulated by the Navajo Nation Underground Injection Control Program.

Research is required into the types of facilities within the Navajo Nation that would require aquifer protection permits. The number of potentially regulated facilities must also be determined to estimate fees, funding, and staffing. Additionally, regulations regarding the permitting of existing facilities must be developed.

D.2 Staffing Needs

Staffing structure in an aquifer protection permit program may vary. One possible staffing scenario involves a core of four staff. An engineer would review and approve construction design drawings for discharging facilities. A permit writer would write the aquifer protection permit. A geologist/hydrologist would review the permit to assure that facility would not violate ground water

quality standards at the point of compliance. Finally a compliance inspection officer would monitor the permitted facility to determine if permit conditions are being met.

After determining a staffing structure, the appropriate permit to staff ratio must be determined to estimate staffing levels. In New Mexico, for instance, there are 19 staff working on 850 Ground Water Protection Control Permits (Maura Hanning, New Mexico Environment Department (NMED), personal communication). Actual ratios of individual staff to permits may vary according to the complexity of the permit. For example staff issuing permits for mining operations may have fewer permits than staff issuing permits for dry wells.

In pursuing the development of an aquifer protection permit program, some type of preliminary staffing analyses is required to estimate both the staffing structure and the ratio of permits to staff. This analyses would be contingent upon understanding the types of facilities that would require permits within the Navajo Nation. Salary estimates and job classifications would also need to be determined.

D.3 Permit Process Development

This subsection outlines an example individual aquifer protection permitting process using the Arizona Department of Environmental Quality's (ADEQ) March 10, 1997 document entitled: "Aquifer Protection Permits, Application Guidance Manual" as a model.

In order to obtain an individual aquifer protection permit for a discharging facility, the applicant must make two primary demonstrations (ADEQ 1997):

1. The first demonstration is that the facility will be so designed, constructed and operated as to ensure the greatest degree of discharge reduction achievable through the application of the best available demonstrated control technology (BADCT), operating methods or other alternatives.
2. The second demonstration is that the discharge will not cause or contribute to a violation of an aquifer water quality standard at the applicable point of compliance or if an aquifer water quality standard is already exceeded at the point of compliance, that the discharge will not cause further degradation of the aquifer with respect to the parameter which exceeds the standard.

Additional demonstrations must be made, including financial and technical capability, and that the facility complies with land use requirements. These demonstrations are made in the aquifer protection permit application. Specific information requirements for a permit application include, but are not limited to, the following:

1. Facility Data - This information includes facility name, duration of operation, facility owner, facility operator, facility permit applicant, and location.
2. Existing Environmental Permits - Lists the numbers and the entity of issue of any other existing environmental permits issued to the applicant.
3. Hydrologic Study - This section is a detailed hydrologic study of the site and

- surrounding area and includes surficial/subsurface geology, surface and ground water hydrology, discharge impact area assessment, monitoring plan considerations, and post closure monitoring.
4. Contingency Plans - Demonstration of contingency plans to correct violation of a permit condition, violation of an aquifer water quality standard, exceeding an alert level, and/or an imminent and substantial endangerment to the public health or the environment.
 5. Remedial Action Plan - Identify process for possible remedial actions including identification of release source, procedures for removing, treating, containing or eliminating the release source, determining the extent of the release, and remediation alternatives.
 6. Closure Plan - A closure plan should give details for closing the various discharging activities when the facility ceases operation. The closure plan should include the expected facility lifetime, the final disposition of materials used at the facility, limitations on land use resulting from facility operations, cost of closure, closure implementation schedule, post closure care, post closure monitoring and inspection, and post closure operation and maintenance.
 7. Required Attachments - The attachments include location map, site plan, facility design plans, discharge characterization, BADCT demonstration, demonstration of compliance with standards, technical capability demonstration, financial capability demonstration, past performance in the area of environmental protection, and evidence of land use zoning.

Once a permit application is generated the actual permit review process may begin. Rather than describe each permit step developed by ADEQ, it is more useful to refer to Figure 1 as a possible model for the permit application review and approval process.

D.4 Funding Sources

Probably the most critical component in establishing an aquifer protection permit program is funding. Conversations with aquifer protection staff from surrounding states (ADEQ, NMED, and Utah Department of Environmental Quality, personal communications) revealed that funding in these states comes from the following three sources at varying percentages:

1. General funds (50 to 70%)
2. Fees (30 to 50%)
3. Federal grants (<5%)

While optimal aquifer protection funding should probably contain as high a percentage of fee funding as possible, the above information clearly indicates that the majority of funding comes from state general funds. A funding or fee study would most likely be required to estimate the level of funding required to create an aquifer protection permit program within the NNEPA.

E. Conclusions/Recommendations

Review of existing Navajo Nation water related statutes, regulations, policies, and programs reveals that there is no current statute or regulation that explicitly states that the ground water quality of Navajo Nation aquifers is to be protected for specific designated uses *before it is removed from the aquifer*. While language in UICR Section 101.8 states that an aquifer within the Navajo Nation is an underground source of drinking water, there are no specific ground water quality standards promulgated in the UICR to protect an aquifer for the drinking water end use. The three minimum aquifer protection components presented in Section B of this document have not been cohesively promulgated in current Navajo Nation environmental regulations.

The NNEPA Water Quality Program recommends that the minimum aquifer protection components be adopted and written into existing regulations. The WQP suggests that the NNCWA be amended to allow for the adoption of these minimum ground water quality protection requirements. With the NNCWA amended, ground water quality standards may be added to the existing Navajo Nation Water Quality Standards. In order to provide immediate water quality protection to the ground waters of the Navajo Nation, the WQP also makes the following recommendations:

1. Modify the NNCWA and WQS definitions of "Waters of the Navajo Nation" to be consistent with the definition found in the WC that states that "ground water" is included as a Water of the Navajo Nation.
2. Adopt language similar to UICR Section 101.8 stating that all aquifers within the Navajo Nation are underground sources of drinking water (with exceptions).
3. Adopt ground water quality standards to protect for drinking water end uses.

With these changes in place future determinations of other ground water end uses such as industrial, agricultural, and livestock watering may be made and appropriate standards adopted to protect for

these uses. Individual aquifers may also be delineated according to specific end uses. As previously mentioned the three minimum aquifer protection requirements must be in place before the development of an aquifer protection permit program may begin. Staff resources within the WQP are currently insufficient to conduct the further research required to develop an aquifer protection program. The WQP recommends that if the Navajo Nation is interested in having an aquifer protection permit program within the NNEPA that a consultant be hired to conduct a "scoping" study to determine:

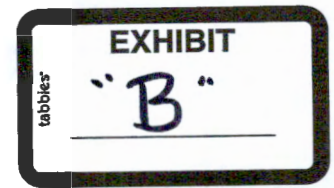
1. The number and types of facilities within the Navajo Nation that would be required to obtain an aquifer protection permit.
2. The permit program staffing needs including structure, number of staff, and salary requirements.
3. The type of aquifer protection permitting process to be developed.
4. The estimated funding structure including the amount of program funding supported by fees, general funds, and grants.

An scoping study bid proposal would be developed by the WQP. Before preparing a bid proposal it must be determined if the Navajo Nation is interested in pursuing the development of such a program. This may be accomplished through internal staff discussions within the NNEPA and through presentations to the Navajo Nation Resources Committee.

F. References

- Arizona Department of Environmental Quality. March 10, 1997. Aquifer Protection Permits, Application Guidance Manual.
- Arizona Department of Environmental Quality. January 31, 2001. Water Quality Division: Water Permits: Aquifer Protection Permits Website Factsheet.
- Navajo Nation Department of Water Resources. 1984. Title 22, Navajo Tribal Code, Chapter 7. Navajo Nation Water Code.
- Navajo Nation Environmental Protection Agency. July 23, 1999. Title 4, Navajo Nation Code Environmental Protection Chapter_ - Navajo Nation Clean Water Act.
- Navajo Nation Environmental Protection Agency Public Water Systems Supervision Program. March 21, 1996. Navajo Nation Primary Drinking Water Regulations.
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- Navajo Nation Environmental Protection Agency Underground Injection Control Program. June 23, 2001. Navajo Nation Underground Injection Control Regulations.
- Navajo Nation Environmental Protection Agency Water Quality Program. November 9, 1999. Navajo Nation Water Quality Standards.
- United States Government Printing Office. August 1, 1996. The Safe Drinking Water Act As Amended.
- Utah. August 1, 2001. Utah Administrative Code R317-6-6.

NAVAJO NATION
PRIMARY DRINKING WATER REGULATIONS
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Part XXVI

AQUIFER PROTECTION REGULATIONS

Part I. General Provisions

2601. Purpose and Scope

a. Purpose

These regulations are promulgated to implement an Aquifer Protection Program, which is intended to maintain and preserve the quality of aquifers located within the Navajo Nation, prevent and abate pollution and contamination of the Nation's aquifers, protect public health, and provide for management of the aquifers for their best uses. It is the intent of these regulations to protect the overall quality of the Nation's aquifers at the level established by standards contained in Part II of these regulations and to enhance and restore the quality of degraded groundwater where feasible and necessary to protect human health and the environment. The standards established in these regulations shall supersede all other standards for aquifer water quality within the Navajo Nation.

b. Scope

These regulations prescribe aspects of aquifer protection, including the classification of groundwater, antidegradation provisions, standards for groundwater quality, and various procedures for the management and protection of groundwater.

2602. Legal Authority and Administration

a. Authority

These regulations are promulgated pursuant to the Navajo Nation Safe Drinking Water Act ("NNSDWA"), 22 N.N.C. §§ 2501-2586, and the Navajo Nation Clean Water Act ("NNCWA"), 4 N.N.C. §§ 1301-1394. NNSDWA § 2538(A) requires NNEPA to "develop by regulation a program to protect wellhead areas within the Navajo Nation from contaminants that may have an adverse effect on public health" by determining wellhead protection areas and identifying sources of contaminants in those areas. NNCWA § 1371 authorizes NNEPA to "develop a program to protect surface and ground water from pollution on a watershed basis."

b. Program administration

The Public Water Systems Supervision Program ("PWS Program") is responsible for administering these Aquifer Protection Regulations.

c. Coordination with other authorities and entities

1. NNEPA is authorized by NNSDWA § 2538(A)(1) to specify the duties of other Navajo Nation entities and public water supply systems with respect to the development and implementation of a wellhead protection program.
2. These regulations are intended to complement existing statutory provisions and regulatory programs impacting groundwater quality, including but not limited to the Navajo Nation Safe Drinking Water Act, Navajo Nation Clean Water Act, Navajo Nation Solid Waste Act, Navajo Nation Storage Tank Act, Navajo Nation Water Code, Navajo Nation Solid Waste Regulations, Navajo Nation Pollutant Discharge Elimination System Program Regulations, Navajo Nation Underground Injection Control Regulations, Navajo Nation Surface Water Quality Standards, and Navajo Nation Primary Drinking Water Regulations.
3. The PWS Program may coordinate with the entities implementing the requirements listed in paragraph 2 and with other programs to the extent relevant and appropriate to protecting the Nation's aquifers.

2603. Definitions

- (1) "Aquifer" means a geologic unit that contains sufficient saturated permeable material to yield usable quantities of water to a well or spring.
- (2) "Background" means the levels of chemical, physical, biological, and radiological constituents or parameters prior to an activity or pollution event, as determined by methods acceptable to NNEPA.
- (3) "Best available technology" means the best available technology, process, operating method, or other alternative to achieve the greatest degree of discharge reduction for a facility, including but not limited to the use of synthetic and/or clay liners for sediment ponds, effluent pretreatment, and subsurface contaminant transport mechanisms.
- (4) "Contaminant" means any physical, chemical, biological or radiological substance or matter in water.
- (5) "Director" means the Executive Director of the Navajo Nation Environmental Protection Agency or his or her designee.
- (6) "Discharge" means the addition of a pollutant from a facility either directly to an aquifer or to the land surface or the vadose zone in such a manner that there is a reasonable probability that the pollutant will reach an aquifer.
- (7) "Drinking water protected use" means the protection and maintenance of aquifer water quality for human consumption.

- (8) “Facility” means any land, building, installation, structure, equipment, device, conveyance, area, source, activity or practice from which there is, or with reasonable probability may be, a discharge.
- (9) “Groundwater” means water below the land surface in a zone of saturation.
- (10) “Mg/l” means milligrams per liter.
- (11) “Millirem” means 1/1000 of a rem. A rem means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system.
- (12) “Navajo Nation” or “Nation” means:
- a. When referring to the body politic, except as the context may otherwise require, the same meaning as set forth in 1 N.N.C. § 552.
 - b. When referring to governmental territory, all lands and waters within the territorial boundaries of the Navajo Nation, including:
 - i. all lands and waters within the exterior boundaries of the Navajo Indian Reservation or of the Eastern Navajo Agency or within the boundaries of Navajo dependent Indian communities, including all lands within the boundaries of Navajo chapter governments, all without regard to the nature of title thereto;
 - ii. all lands and waters held in trust by the United States, restricted by the United States, or otherwise set apart under the superintendence of the United States for the use or benefit of the Navajo Nation, the Navajo Tribe, any Band of Navajo Indians, or any individual Navajo Indians as such; and
 - iii. all other lands and waters over which the Navajo Nation may exercise governmental jurisdiction in accordance with federal or international law.
- (13) “Non-drinking water protected use” means the protection and maintenance of aquifer water quality for a use other than for human consumption.
- (14) “NNEPA” means the Navajo Nation Environmental Protection Agency.
- (15) “pCi” means picocurie, or the quantity of radioactive material producing 2.22 nuclear transformations per minute.
- (16) “Person” means an individual, public or private corporation, company, partnership, firm, association or society of persons, the federal, state or local governments or any of their programs or agencies, any Indian tribe, including

the Navajo Nation, or any of its agencies, divisions, departments, programs, enterprises, companies, chapters or other political subdivisions.

- (17) “Pollutant” means a fluid, contaminant, toxic waste, toxic pollutant, dredged spoil, solid waste, substance or chemical, pesticide, herbicide, fertilizer or other agricultural chemical, incinerator residue, sewage, garbage, sewage sludge, munition, petroleum product chemical waste, biological material, radioactive material, heat, wrecked or discarded equipment, rock, sand, cellar dirt, mining waste, industrial waste, municipal or agricultural waste, or any other liquid, solid, gaseous or hazardous substance.
- (18) “Toxic Pollutant” means a substance that will cause significant adverse reactions if ingested. Significant adverse reactions are reactions that may indicate a tendency of a substance or mixture to cause long-lasting or irreversible damage to human health.
- (19) “Uniform Regulations” means the Navajo Nation Uniform Regulations for Permit Review, Administrative Enforcement Orders, Hearings, and Rulemakings under Navajo Nation Environmental Acts.
- (20) “Vadose zone” means the zone between the ground surface and any aquifer.
- (21) “Well” means a bored, drilled or driven shaft, pit or hole whose depth is greater than its largest surface dimension.

2604. Fees

a. Fee schedule

The following fees must accompany any associated submission to the Director:

1. Application for aquifer protection permit modification: \$1,500
2. Request for review of administrative permit modifications, including corrections of typographical errors, administrative information, and minor technical errors (such as errors in calculation, locational information, and citations of law): \$100
3. Request for all other permit modifications, including changes to monitoring or reporting requirements or discharge limitations: \$500
4. Contamination investigation and/or corrective action plan: \$1,000
5. Application for renewal of aquifer protection permit: \$1,000
6. Annual registration fee: \$500

b. Revisions to fee schedule

The Director shall revise this fee schedule periodically as he or she deems appropriate, pursuant to the provisions for rulemakings in NNSDWA § 2507(D) and Uniform Rules §§ 401-410.

Part II. Aquifer Identification, Classification and Water Quality Standards

2605. Aquifer Identification, Delineation and Studies

a. Special classes of aquifers

1. Underground sources of drinking water

The NNSDWA is intended to protect underground sources of drinking water (“USDWs”). See NNSDWA, 22 N.N.C. §§ 2501-2502. A USDW, as defined in § 101.5 of the Navajo Nation Underground Injection Control (“NNUIC”) Regulations, is:

An aquifer or portion of an aquifer:

1. which supplies any public water system; or
2. which contains a sufficient quantity of groundwater to supply a public water system; and
 - i. currently supplies drinking water for human consumption; or
 - ii. contains fewer than 10,000 mg/l total dissolved solids; and
3. which is not an exempted aquifer.

See also 40 C.F.R. § 144.3.

Aquifers on the Navajo Nation that are used as USDWs are listed in Section V of the NNUIC Program Description submitted with the Navajo Nation’s primacy application for a Class II UIC Program. For convenience, this list is duplicated in Appendix 1 to these regulations.

2. Exempted aquifers

Aquifers exempted from use as USDWs are defined in NNUIC Regulations § 103.1 as follows:

1. The exempted aquifer does not currently serve as a source of drinking water; and
2. It cannot now and will not in the future serve as a source of drinking water because:
 - a. It is mineral, hydrocarbon, or geothermal energy-producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that, considering their quantity and location, are expected to be commercially producible;
 - b. It is situated at a depth or location that makes recovery of water for drinking water purposes economically or technologically impractical;
 - c. It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or
 - d. It is located over a Class III well mining area subject to subsidence or catastrophic collapse.

Exempted aquifers on the Navajo Nation consist of those portions of aquifers defined by a ¼ mile radius of a Class II UIC well. The Class II UIC wells on the Navajo Nation in 2008, when the Class II UIC primacy application was approved, are listed in Appendix H to the NNUIC Program Description. See 40 C.F.R. § 147.3400. Those interested in the current list of Class II UIC wells may obtain a list from the NNEPA UIC Program.

b. Identification and delineation of aquifers

1. If the Navajo Nation contains aquifers that have not yet been identified or for which boundaries have not yet been delineated by any federal or tribal agency, those aquifers shall be identified and aquifer boundaries shall be delineated by the Navajo Nation Division of Natural Resources, Water Resources Department. Aquifer boundaries shall be identical to hydrologic basin and sub-basin boundaries, excluding hard rock areas which contain little or no water.
2. The Director may modify or add an aquifer boundary if the Director learns of new technical information or data which supports taking such an action.

c. Studies

Independent aquifer studies, including groundwater sampling and monitoring, shall be performed where appropriate to provide information for aquifer identification, boundary

delineation and reclassification. Such studies, sampling and monitoring may be performed by the PWS Program, the Water Resources Department, the NNEPA Underground Injection Control Program, or some combination of those entities.

2606. Narrative Aquifer Water Quality Standards

1. A discharge shall not cause a pollutant to be present in an aquifer classified for a drinking water protected use in a concentration which endangers human health.
2. A discharge shall not cause or contribute to a violation of an aquifer water quality standard or an exceedance of the background concentration of a pollutant, if the background concentration exceeds the aquifer water quality standard.
3. A discharge shall not cause a pollutant to be present in an aquifer which impairs existing or reasonably foreseeable uses of water in an aquifer.

2607. Numeric Aquifer Water Quality Standards

1. Except as provided in Section 204, the aquifer water quality standards in this Section apply to aquifers that are classified for drinking water protected use.
2. The following are the aquifer water quality standards for inorganic chemicals:

<u>Pollutant</u>	<u>mg/L</u>
<u>Antimony</u>	<u>0.006</u>
<u>Arsenic</u>	<u>0.010</u>
<u>Asbestos</u>	<u>7 million fibers/liter (longer than 10 mm)</u>
<u>Barium</u>	<u>2</u>
<u>Beryllium</u>	<u>0.004</u>
<u>Cadmium</u>	<u>0.005</u>
<u>Chromium</u>	<u>0.1</u>
<u>Cyanide (As Free Cyanide)</u>	<u>0.2</u>
<u>Fluoride</u>	<u>4.0</u>
<u>Lead</u>	<u>0.05</u>
<u>Mercury</u>	<u>0.002</u>
<u>Nickel</u>	<u>0.1</u>
<u>Nitrate (as N)</u>	<u>10</u>
<u>Nitrite (as N)</u>	<u>1</u>
<u>Nitrate and nitrite</u>	<u>10</u>

<u> </u> (as N)	
<u>Selenium</u>	<u>0.05</u>
<u>Thallium</u>	<u>0.002</u>

3. The following are the aquifer water quality standards for organic chemicals:

<u>Pollutant</u>	<u>mg/L</u>
<u>Benzene</u>	<u>0.005</u>
<u>Benzo (a) pyrene</u>	<u>0.0002</u>
<u>Carbon Tetrachloride</u>	<u>0.005</u>
<u>o-Dichlorobenzene</u>	<u>0.6</u>
<u>para-Dichlorobenzene</u>	<u>0.075</u>
<u>1,2-Dichloroethane</u>	<u>0.005</u>
<u>1,1-Dichloroethylene</u>	<u>0.007</u>
<u>cis-1,2-Dichloroethylene</u>	<u>0.07</u>
<u>trans-1,2-Dichloroethylene</u>	<u>0.1</u>
<u>1,2-Dichloropropane</u>	<u>0.005</u>
<u>Dichloromethane</u>	<u>0.005</u>
<u>Di (2-ethylhexyl) adipate</u>	<u>0.4</u>
<u>Di (2-ethylhexyl) pthalate</u>	<u>0.006</u>
<u>Ethylbenzene</u>	<u>0.7</u>
<u>Hexachlorobenzene</u>	<u>0.001</u>
<u>Hexachlorocyclopentadiene</u>	<u>0.05</u>
<u>Monochlorobenzene</u>	<u>0.1</u>
<u>Pentachlorophenol</u>	<u>0.001</u>
<u>Styrene</u>	<u>0.1</u>
<u>2,3,7,8-TCDD (Dioxin)</u>	<u>0.00000003</u>
<u>Tetrachloroethylene</u>	<u>0.005</u>
<u>Toluene</u>	<u>1</u>
<u>Trihalomethanes (Total)</u>	<u>0.08</u>
<u>1,2,4-Trichlorobenzene</u>	<u>0.07</u>
<u>1,1,1-Trichloroethane</u>	<u>0.20</u>
<u>1,1,2-Trichloroethane</u>	<u>0.005</u>
<u>Trichloroethylene</u>	<u>0.005</u>
<u>Vinyl Chloride</u>	<u>0.002</u>

<u>Xylenes (Total)</u>	<u>10</u>
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4. The following are the aquifer water quality standards for pesticides and polychlorinated biphenyls (PCBs):

<u>Pollutant</u>	<u>(mg/L)</u>
<u>Alachlor</u>	<u>0.002</u>
<u>Atrazine</u>	<u>0.003</u>
<u>Carbofuran</u>	<u>0.04</u>
<u>Chlordane</u>	<u>0.002</u>
<u>Dalapon</u>	<u>0.2</u>
<u>1,2-Dibromo-3-Chloropropane (DBCP)</u>	<u>0.0002</u>
<u>2,4,-Dichlorophenoxyacetic Acid(2,4-D)</u>	<u>0.07</u>
<u>Dinoseb</u>	<u>0.007</u>
<u>Diquat</u>	<u>0.02</u>
<u>Endothall</u>	<u>0.1</u>
<u>Endrin</u>	<u>0.002</u>
<u>Ethylene Dibromide (EDB)</u>	<u>0.00005</u>
<u>Glyphosate</u>	<u>0.7</u>
<u>Heptachlor</u>	<u>0.0004</u>
<u>Heptachlor Epoxide</u>	<u>0.0002</u>
<u>Lindane</u>	<u>0.0002</u>
<u>Methoxychlor</u>	<u>0.04</u>
<u>Oxamyl</u>	<u>0.2</u>
<u>Picloram</u>	<u>0.5</u>
<u>Polychlorinated Biphenols (PCBs)</u>	<u>0.0005</u>
<u>Simazine</u>	<u>0.004</u>
<u>Toxaphene</u>	<u>0.003</u>
<u>2,4,5-Trichlorophenoxypropionic Acid (2,4,5-TP or Silvex)</u>	<u>0.05</u>

5. The following are the aquifer water quality standards for radionuclides:

- a. The maximum concentration for gross alpha particle activity, including radium-226 but excluding radon and uranium, shall not exceed 15 pCi/l.
- b. The maximum concentration for combined radium-226 and radium-228 shall not exceed 5 pCi/l.

- c. The maximum concentration for uranium shall not exceed 30 micrograms per liter ($\mu\text{g/L}$).
- d. The average annual concentration of beta particle and photon radioactivity from man-made radionuclides shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year.
- e. Except for the radionuclides listed in this subsection, the concentration of man-made radionuclides causing 4 millirem total body or organ dose equivalents shall be calculated on the basis of a 2-liter-per-day drinking water intake using the 168-hour data listed in "Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure," National Bureau of Standards Handbook 69, National Bureau of Commerce, as amended August 1963 (and no future editions), incorporated herein by reference and on file with the Office of the Secretary of State and with the Department. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 millirem/year. The following average annual concentrations are assumed to produce a total body or organ dose of 4 millirem/year:

<u>Radionuclide</u>	<u>Critical Organ</u>	<u>pCi/l</u>
<u>Tritium</u>	<u>Total body</u>	<u>20,000</u>
<u>Strontium-90</u>	<u>Bone Marrow</u>	<u>8</u>

- 6. The aquifer water quality standard for microbiological contaminants is based upon the presence or absence of total coliforms in a 100-milliliter sample. If a sample is total coliform-positive, a 100-milliliter repeat sample shall be taken within two weeks of the time the sample results are reported. Any total coliform-positive repeat sample following a total coliform-positive sample constitutes a violation of the aquifer water quality standard for microbiological contaminants.
- 7. The following are the aquifer water quality standards for turbidity:
 - a. One nephelometric turbidity unit as determined by a monthly average except that five or fewer nephelometric turbidity units may be allowed if it can be determined that the higher turbidity does not interfere with disinfection, prevent maintenance of effective disinfectant agents in water supply distribution systems, or interfere with microbiological determinations.
 - b. Five nephelometric turbidity units based on an average of two consecutive days.

2608. Natural Background

Where the concentration of a pollutant exceeds an aquifer water quality standard and the exceedance is not caused by human activity but is due solely to naturally-occurring conditions, as demonstrated pursuant to Section 309, the exceedance shall not be considered a violation of the aquifer water quality standard.

2609. Aquifer Classification and Reclassification

1. All aquifers in the Navajo Nation are classified for drinking water protected use except for aquifers that are reclassified to non-drinking water protected use pursuant to subsection (3) of this Section.
2. Aquifer water quality standards in reclassified aquifers
 - a. Aquifer water quality standards for drinking water protected use apply to reclassified aquifers except as provided in Section 204 and where expressly superseded by aquifer water quality standards adopted by the Director pursuant to Subpart 4 of the Navajo Nation Uniform Regulations and subsection (3) of this Section.
 - b. The Director shall adopt aquifer water quality standards for reclassified aquifers only for pollutants that are specifically identified in a petition for reclassification.
 - c. Aquifer water quality standards for reclassified aquifers shall be sufficient to protect the use of the reclassified aquifer.
 - d. Aquifer water quality standards for reclassified aquifers shall be no less stringent than applicable federal groundwater protection standards.
 - i. An aquifer that is reclassified to non-drinking water protected use and issued an Underground Injection Control permit for the construction and operation of an injection well, pursuant to 40 CFR Parts 144 and 146, including a Class III injection well for uranium in-situ recovery activities, remains subject to regulations promulgated pursuant to the Uranium Mill Tailings Radiation Control Act, 42 U.S.C. § 7901 *et seq.*, including 40 CFR Part 192.
 - ii. The management of uranium byproduct materials during and following processing of uranium ores and restoration of disposal sites following any use of such sites shall conform to the standards of 40 CFR Part 192, Subpart D. In particular, surface impoundments associated with conventional uranium milling operations, heap leach operations, and in-situ recovery activities shall comply with the standards of 40 CFR § 192.32.
 - iii. The management of uranium byproduct materials prior to, during and following the processing of uranium ores utilizing uranium in-situ

recovery methods and the restoration of groundwater at such sites shall conform to the standards of 40 CFR Part 192, Subpart F. In particular, except for those wellfields currently in and remaining in restoration, stability monitoring or long-term monitoring at licensed facilities, all operating wellfields, new wellfields and expansions of wellfields shall comply with the groundwater protection standards of 40 CFR § 192.52(c).

iv. Pursuant to 40 CFR § 192.31, “uranium byproduct material” means the tailings or wastes produced by the extraction or concentration of uranium from any ore processed primarily for its source material content. Ore bodies depleted by uranium solution extraction operations and which remain underground do not constitute “byproduct material” for the purpose of 40 CFR Part 192, Subpart F.

3. Aquifer reclassification

a. Any person may petition the Director to reclassify an aquifer or part of an aquifer to a non-drinking water protected use. A written petition for reclassification shall include the following information:

i. A description of the aquifer or part of an aquifer proposed for reclassification.

ii. The proposed protected use for which the reclassification is being requested.

iii. The pollutant and aquifer water quality standards for which the reclassification is being requested.

iv. A hydrogeologic report which demonstrates that the aquifer or part of an aquifer proposed for reclassification is or will be so hydrologically isolated from other aquifers or other parts of the same aquifer that there is no reasonable probability that poorer quality water from the identified aquifer or part of an aquifer will cause or contribute to a violation of aquifer water quality standards in other aquifers or parts of the same aquifer. This report and demonstration of hydrologic isolation for the area containing such aquifer, and immediate adjacent geologic units, shall include at least the following:

A. Hydrogeologic area maps and cross sections.

B. An analysis of subsurface geology, including geologic and hydrologic separation.

C. Water level elevation or piezometric level contour maps.

- D. Analysis of hydrologic characteristics of the aquifer and the immediate adjacent geologic units.
 - E. Description of existing water quality and analysis of water chemistry.
 - F. Projected annual quantity of water to be withdrawn.
 - G. Identification of pumping centers, cones of depression and areas of recharge.
 - H. A water balance.
 - I. Existing flow direction and evaluation of the effects of seasonal and future pumping on flow.
 - J. An evaluation as to whether the reclassification will contribute to or cause a violation of aquifer water quality standards in other aquifers, or in parts of the aquifer not being proposed for reclassification.
- v. Documentation demonstrating that water from the aquifer or part of the aquifer for which reclassification is proposed is not being used as drinking water. This documentation shall include at least the following:
- A. A list of all wells or springs, including their location, ownership and use, within the aquifer or part of the aquifer being proposed for reclassification.
 - B. A comprehensive list of agencies, persons and other information sources consulted for aquifer use documentation.
- vi. A cost-benefit analysis demonstrating that the short-term and long-term benefits to the public that would result from the degradation of the quality of the water in the identified aquifer or part of an aquifer below established standards would significantly outweigh the short-term and long-term costs to the public of such degradation. Benefits and costs to be considered include economic, social and environmental. The cost-benefit analysis shall identify potential future uses of the aquifer being proposed for reclassification and other opportunity costs associated with reclassification and shall contain a description of the cost-benefit methodology used, including all assumptions, data, data sources and criteria considered and all supporting statistical analyses.
- b. Upon receipt of a petition for reclassification, the Director shall review the petition for compliance with the requirements of subsection (3)(a) of this Section.

If additional information is needed, the petitioner shall be notified of specific deficiencies in writing within 30 calendar days of receipt of the petition.

- c. Within 180 calendar days of receipt of a complete petition for reclassification, the Director shall:
 - i. Determine standards sufficient to protect the use proposed in subsection (3)(a)(ii) of this Section for the pollutants identified in subsection (3)(a)(iii) of this Section; and
 - ii. Provide public notice of the proposed reclassification, the proposed standards for the reclassified aquifer or part of an aquifer, and the public hearing required under subsection (3)(d) of this Section, pursuant to the procedures for public notice described in Section 402 of the Navajo Nation Uniform Regulations.
 - d. The Director shall hold at least one public hearing on the proposed reclassification and the proposed standards for the reclassified aquifer or part of an aquifer at a location as near as practicable to the aquifer proposed for reclassification. The Director shall follow the procedures for public hearings described in Section 404 of the Navajo Nation Uniform Regulations.
 - e. Any person may submit comments on the proposed reclassification or proposed standards for the reclassified aquifer or part of an aquifer during the public comment period or at the public hearing in accordance with Sections 403 and 404 of the Navajo Nation Uniform Regulations.
 - f. Within 180 calendar days after the public hearing required pursuant to subsection (3)(d) of this Section, the Director shall:
 - i. Grant or deny the petition;
 - ii. If the Director grants the petition, issue standards for pollutants identified in subsection (3)(a)(iii) of this Section that apply to the reclassified aquifer or part of an aquifer;
 - iii. Issue public notice of the decision and standards and a response to comments document in accordance with Sections 407 and 408 of the Navajo Nation Uniform Regulations; and
 - iv. Notify the petitioner of such decision and the reason for such determination in writing.
4. The Director may rescind an aquifer reclassification and return an aquifer to a drinking water protected use if the Director determines that any of the conditions under which the reclassification was granted are no longer valid.

2610. Petition for Adoption of a Numeric Aquifer Water Quality Standard

1. Any person may petition the Director to adopt, by rule, a numeric aquifer water quality standard for a pollutant for which no numeric aquifer water quality standard exists.
2. A petition for rule adoption to establish a numeric aquifer water quality standard shall include:
 - a. The name, current address and signature of the person submitting the petition.
 - b. A statement that the petition is for the adoption of a numeric aquifer water quality standard for a pollutant for which no numeric aquifer water quality standard exists.
 - c. Technical information that the pollutant is a toxic pollutant.
 - d. Technical information upon which the Director reasonably may base the establishment of a numeric aquifer water quality standard.
 - e. Evidence that the pollutant that is the subject of the petition is or may in the future be present in an aquifer or part of an aquifer that is classified for drinking water protected use. Evidence may include, but is not limited to, any of the following:
 - i. A laboratory analysis of a water sample which indicates the presence of the pollutant in an aquifer or part of an aquifer that is classified for drinking water protected use.
 - ii. A hydrogeological study which demonstrates that the pollutant that is the subject of the petition may be present in an aquifer in the future. The hydrogeological study shall include the following:
 - A. A description of the use that results in a discharge of the pollutant that is the subject of the petition.
 - B. A description of the mobility of the pollutant in the vadose zone and in the aquifer.
 - C. A description of the persistence of the pollutant in the vadose zone and in the aquifer.
3. Within 180 calendar days of the receipt of a complete petition for rule adoption to establish a numeric aquifer water quality standard, the Director shall make a written determination of whether the petition should be granted or denied. The Director shall give written notice by regular mail of the determination to the petitioner.

4. If the petition for rule adoption is granted, the Director shall initiate rulemaking proceedings to adopt a numeric aquifer water quality standard in accordance with the rulemaking procedures set forth in Subpart 4 of the Navajo Nation Uniform Regulations. The Director shall, within one year of the date that the petition for adoption of a numeric aquifer water quality standard is granted, either adopt a rule establishing a numeric aquifer water quality standard or publish a notice of termination of rulemaking.
5. If the petition for rule adoption is denied, the Director shall issue a denial letter to the petitioner that explains the reasons for the denial. The denial of a petition for rule adoption to establish a numeric aquifer water quality standard is not subject to judicial review.

Part III. Aquifer Permit Program

2611. Application for Aquifer Protection Permit

1. No person may construct, install, or operate any new facility or modify an existing facility, when such facility is not permitted by rule under Section 202, which discharges or is likely to result in a discharge of pollutants that may move directly or indirectly into an aquifer, without first having an aquifer protection permit from NNEPA. Such facilities include but are not limited to: land application of wastes; waste storage pits; waste storage piles; landfills and dumps; large feedlots; mining, milling and metallurgical operations, including heap leach facilities; and pits, ponds, and lagoons. An aquifer protection permit application shall be submitted at least 180 days before the permit is needed.
2. All persons who constructed, modified, or installed or who operate any facility of the type described in subsection (1) that was in existence prior to the effective date of these regulations must submit an application for an aquifer protection permit within one year after the effective date of these regulations.
3. The provisions of Subpart 2 of the Navajo Nation Uniform Regulations, including requirements for permit application, issuance, modification, revocation, and termination, public notice of permit actions, and public hearings, apply to all aquifer protection permits except aquifer protection permits by rule.
4. A person applying for an aquifer protection permit remains subject to all other relevant permitting requirements under federal and tribal laws, including permitting requirements applicable to the construction, modification, or operation of a facility.

2612. Aquifer Protection Permit by Rule

1. Except as provided in subsection (3) of this Section, the following facilities are considered to be permitted by rule and are not subject to aquifer protection permit requirements under Sections 301, 303-306, 309-312, or 314:

- a. Facilities with effluent or leachate for which it has been demonstrated to the satisfaction of NNEPA that such effluent or leachate will conform to and will not deviate from applicable aquifer water quality standards and does not contain any contaminant that may present a threat to human health, the environment or potential beneficial uses of the aquifer. NNEPA may require samples to be analyzed for the presence of contaminants before the effluent or leachate discharges directly or indirectly into an aquifer. If the discharge is by seepage through natural or altered natural materials, NNEPA may require samples of the solution to be analyzed for the presence of pollutants before or after seepage;
- b. The noncommercial use of consumer products generally available to and used by the public;
- c. Household gardening, lawn watering, lawn care, landscape maintenance, and related activities, except for the direct land application of wastewater;
- d. Application of agricultural chemicals, including fertilizers, herbicides and pesticides (including but not limited to insecticides, fungicides, rodenticides, and fumigants), when used in accordance with current scientifically based manufacturer recommendations for crops, soil and climate and in accordance with state and federal statutes, regulations, rules, permits, and orders adopted to avoid aquifer contamination;
- e. Water used for irrigated agriculture, except for the direct land application of wastewater from municipal, industrial or mining facilities;
- f. Ponds used for watering livestock and wildlife;
- g. Flood control systems, including detention basins, catch basins and wetland treatment facilities used for collecting or conveying storm water runoff;
- h. Natural groundwater seeping or flowing into conventional mine workings which re-enters the ground by natural gravity flow prior to pumping or transporting out of the mine and without being used in any mining or metallurgical process;
- i. Leachate which results entirely from the direct natural infiltration of precipitation through undisturbed materials;
- j. Wells and facilities regulated under the Navajo Nation Underground Injection Control Regulations;
- k. Land application of livestock wastes, within expected crop nitrogen uptake;
- l. Subsurface wastewater disposal systems approved by NNEPA;

- m. Produced water pits, reserve pits, and other oil field waste treatment, storage, and disposal facilities regulated by NNEPA;
- n. Facilities that treat, store, or dispose of hazardous waste and have been issued a permit under the Resource Conservation and Recovery Act, 42 U.S.C. §§ 6921-6939f;
- o. Solid waste landfills permitted under the Resource Conservation and Recovery Act or the Navajo Nation Solid Waste Act;
- p. Structures that are designed and constructed not to discharge and that are built on an impermeable barrier that can be visually inspected for leakage;
- q. Animal feeding operations that use liquid waste handling systems which are not located within 100 feet for wells in a confined aquifer, or within a 250-day time of travel for wells and springs in unconfined aquifers, and which meet either of the following criteria:
 - i. Operations constructed prior to the effective date of these regulations which incorporated liquid waste handling systems and which are either less than 4 million gallons capacity or serve fewer than 1000 animal units, or
 - ii. Operations with fewer than the following numbers of confined animals:
 - A. 1,500 slaughter and feeder cattle,
 - B. 1,050 mature dairy cattle, whether milked or dry cows,
 - C. 3,750 swine each weighing over 25 kilograms (approximately 55 pounds),
 - D. 18,750 swine each weighing 25 kilograms or less (approximately 55 pounds),
 - E. 750 horses,
 - F. 15,000 sheep or lambs,
 - G. 82,500 turkeys,
 - H. 150,000 laying hens or broilers that use continuous overflow watering but dry handle wastes,
 - I. 45,000 hens or broilers,

J. 7,500 ducks, or

K. 1,500 animal units;

- r. Animal feeding operations which do not utilize liquid waste handling systems;
 - s. Mining, processing or milling facilities handling less than 10 tons per day of metallic and/or nonmetallic ore and waste rock, not to exceed 2500 tons/year in aggregate, unless the processing or milling uses chemical leaching;
 - t. Pipelines and storage tanks installed or operated under the Navajo Nation Storage Tank Act;
 - u. Land application of municipal sewage sludge for beneficial use in compliance with the requirements of the Navajo Nation Clean Water Act;
 - v. Municipal wastewater treatment systems receiving no wastewater from a significant industrial discharger; and
 - w. Facilities and modifications thereto which NNEPA determines, after a review of the application, will have a de minimis actual or potential effect on groundwater quality.
2. No facility permitted by rule may cause an aquifer to exceed applicable aquifer water quality standards. If the background concentration of a contaminant exceeds the aquifer water quality standard, the facility may not cause an increase over background. This subsection does not apply to facilities undergoing corrective action.
3. The submission of an application for an aquifer protection permit may be required by the Director for any discharge permitted by rule if it is determined that the discharge may be causing or is likely to cause increases above applicable aquifer water quality standards or otherwise is interfering or may interfere with probable future beneficial use of the aquifer.

2613. Application Requirements for Aquifer Protection Permit

All applications for an aquifer protection permit shall comply with Section 202 of the Navajo Nation Uniform Regulations and shall be accompanied by the fee listed in Section 104 of these regulations. All applications for an aquifer protection permit must be performed under the direction, and bear the seal, of a professional engineer or professional geologist. Unless otherwise determined by NNEPA, the application for a permit to discharge wastes or pollutants to an aquifer shall include the following:

- 1. The name, address and telephone number of the applicant and of the facility owner, if different than the applicant. A corporate application must be signed by an officer of the corporation.

2. The location of the facility.
3. The facility name, facility type, and expected facility life.
4. A plat map showing all water wells, including the status and use of each well, topography, springs, water bodies, drainages, and man-made structures within a one-mile radius of the discharge. The plat map must also show the location and depth of existing and proposed aquifer water quality monitoring wells.
5. An independent hydrogeologic report containing geologic, hydrologic, and agricultural descriptions of the geographic area within a one-mile radius of the point of discharge, including soil types, groundwater flow direction, groundwater quality, aquifer material, and well logs.
6. The type, source, and chemical, physical, radiological, and toxic characteristics of the effluent or leachate to be discharged; the average and maximum daily amount of effluent or leachate discharged (gpd), the discharge rate (gpm), and the expected concentrations of any pollutant (mg/l) in each discharge or combination of discharges. If more than one discharge point is used, information for each point must be given separately.
7. Information which shows that the discharge can be controlled and will not migrate into or adversely affect the quality of any other groundwater or surface water located within the Navajo Nation; that the discharge is compatible with the receiving groundwater; and that the discharge will comply with applicable aquifer water quality standards.
8. For areas where the aquifer has not been classified by NNEPA, information on the quality of the receiving groundwater sufficient to determine the applicable protection levels.
9. A proposed groundwater sampling and monitoring plan detailing actions that will be undertaken by the applicant and information related to such actions, as follows:
 - a. Installation, use and maintenance of groundwater monitoring devices;
 - b. Groundwater monitoring to determine groundwater flow direction and gradient, background groundwater quality at the site, and the quality of groundwater at compliance monitoring points;
 - c. Delineation of a compliance monitoring area, as defined by compliance monitoring points;
 - d. A description of the hydrologic and geologic data used to determine the dimensions of the compliance monitoring area;
 - e. Monitoring of the vadose zone;

- f. Construction of monitoring wells and sampling of groundwater, which will conform to U.S. EPA's "Handbook of Suggested Practices for Design and Installation of Ground-Water Monitoring Wells" (EPA/600/4-89/034, March 1991), U.S. EPA's "Practical Guide for Groundwater Sampling" (EPA/600/S2-85/104, Feb. 1986), and the American Society for Testing and Materials' "Standard Practice for Design and Installation of Groundwater Monitoring Wells in Aquifers" (D5092), unless otherwise specified by NNEPA;
 - g. A description of and the justification for parameters to be monitored;
 - h. Use of quality assurance and control provisions for monitoring data; and
 - i. Measures that will be taken to prevent groundwater contamination after the cessation of facility operation, including post-operational monitoring.
- 10. Plans and specifications relating to the construction, modification, and operation of any discharge system.
 - 11. A description of the aquifer most likely to be affected by the discharge, including water quality information of the receiving aquifer prior to discharge, the depth to the groundwater, the saturated thickness, flow direction, porosity, hydraulic conductivity, and flow systems characteristics.
 - 12. A proposed compliance sampling and monitoring plan that includes provisions for effluent sampling and flow monitoring to determine the volume and chemistry of the discharge onto or below the surface of the ground and for sampling compliance monitoring points and nearby water wells. Proposed sampling and monitoring methods must conform to the most appropriate methods in the American Public Health Association et al.'s "Standard Methods for the Examination of Water and Wastewater," 22nd edition (2014), or the most recent version of this publication; U.S. EPA's "Methods for Chemical Analysis of Water and Wastes" (EPA-600/4-79-020, March 1983); U.S. Geological Survey's "Techniques of Water-Resource Investigations Report," Book 9; and U.S. Geological Survey's "National Handbook of Recommended Methods for Water-Data Acquisition," unless otherwise specified by NNEPA.
 - 13. A description of the flooding potential of the discharge site, including the 100-year flood plain, and any applicable flood protection measures.
 - 14. Methods and procedures for inspections of facility operations.
 - 15. A closure and post-closure management plan demonstrating measures to prevent groundwater contamination during the closure and post-closure phases of an operation.
 - 16. Evidence that the applicant is maintaining financial assurance of ability to pay for possible corrective action. Financial assurance may be established by evidence of

insurance, guarantee, surety bond, letter of credit, or any other method satisfactory to NNEPA depending on the totality of the circumstances. The type and amount of financial assurance shall reflect the probable difficulty of corrective action considering such factors as topography, geology of the site and hydrology and the financial stability of the applicant. NNEPA may require the applicant to increase the amount of financial assurance in accordance with this paragraph.

17. Any other information required by the Director.

2614. Issuance of Aquifer Protection Permit

1. Upon receipt of an application for an aquifer protection permit, the Director shall review the application for compliance with the requirements of Section 203. If additional information is necessary, the petitioner shall be notified of specific deficiencies in writing within 30 calendar days of receipt of the petition.
2. Following receipt of a complete application, the Director shall provide public notice of the application in accordance with Section 207 of the Navajo Nation Uniform Regulations.
3. If the Director receives a request for a hearing pursuant during the public comment period or finds significant public interest in a draft permit, the Director shall publish a notice of the public hearing in accordance with Section 207 of the Navajo Nation Uniform Regulations and shall hold a public hearing within thirty days after publication of the hearing notice in accordance with Section 208 of the Navajo Nation Uniform Regulations.
4. After the close of the public comment period and consideration of public comments received during the public comment period, NNEPA may issue an aquifer protection permit for a new facility if NNEPA determines, after reviewing the information provided under Section 203, that:
 - a. The applicant has demonstrated that applicable aquifer water quality standards will be met or, if the background concentration of a contaminant exceeds the aquifer water quality standard, the facility will not cause an increase over background;
 - b. The proposed groundwater sampling and monitoring plan and proposed compliance sampling and monitoring plan will provide adequate information for NNEPA to determine compliance with applicable requirements under these regulations;
 - c. The applicant will be using best available technology to minimize the discharge of any pollutant; and
 - d. There will be no impairment of present and future beneficial uses of the aquifer.

5. After the close of the public comment period and consideration of public comments received during the public comment period, NNEPA may issue an aquifer protection permit for an existing facility provided:
- a. The applicant has demonstrated that applicable aquifer water quality standards will be met or, if the background concentration of a contaminant exceeds the aquifer water quality standard, the facility will not cause an increase over background;
 - b. The proposed groundwater sampling and monitoring plan and proposed compliance sampling and monitoring plan will provide adequate information for NNEPA to determine compliance with applicable requirements under these regulations;
 - c. The applicant utilizes treatment and discharge minimization technology commensurate with plant process design capability and similar or equivalent to that utilized by facilities that produce similar products or services with similar production process technology; and
 - d. There is no current or anticipated impairment of present and future beneficial uses of the groundwater.

2615. Permit Term

- 1. The aquifer protection permit will be valid for 5 years from the date of issuance. Permits may be renewed for 5-year periods or extended for a period to be determined by NNEPA but not to exceed 5 years.
- 2. In the event that new aquifer water quality standards are adopted by NNEPA, permits may be reopened to revise and extend the terms of the permit, including to include pollutants covered by new standards.

2616. Aquifer Protection Permit Renewal

The permittee for a facility with an aquifer protection permit must apply for renewal or extension of an aquifer protection permit at least 180 days prior to the expiration of the existing permit. If a permit expires before an application for renewal or extension is acted upon by NNEPA, the permit will continue in effect until it is renewed, extended or denied. Permit renewal applications containing provisions that diverge significantly from the terms of the original permit must be performed under the direction, and bear the seal, of a professional engineer or professional geologist.

2617. Termination of Aquifer Protection Permit

An aquifer protection permit may be terminated or a renewal denied by NNEPA in accordance with Section 204 of the Navajo Nation Uniform Regulations if one of the following applies:

1. The permittee's failure to comply with any condition of the permit and to take appropriate remedial action in a timely manner;
2. The permittee's failure to disclose any significant relevant fact in the application or during the permit approval process;
3. A determination that the permitted facility endangers human health or the environment and can only be regulated to acceptable levels by plan modification or termination; or
4. The permittee requests termination of the permit.

2618. Permit Compliance Monitoring

1. In addition to provisions in an approved compliance sampling and monitoring plan, NNEPA may include in an aquifer protection permit additional requirements for groundwater monitoring and may specify additional compliance monitoring points where applicable aquifer water quality standards are to be met. NNEPA will determine the location of any additional compliance monitoring point based upon the hydrology, type of pollutants, and other factors that may affect groundwater quality.
2. The distance to any compliance monitoring point identified in an aquifer protection permit must be as close as practicable to the point of discharge. No compliance monitoring point shall be located beyond the property boundaries of the permitted facility without written agreement of the affected property owners and approval by NNEPA.
3. Results obtained pursuant to monitoring and the methods used to obtain these results shall be periodically reported to the Director according to a schedule specified in the aquifer protection permit.

2619. Background Water Quality Determination

1. Background contaminant concentrations shall be determined and specified in the aquifer protection permit. The determination of background concentration shall take into account any degradation.
2. Background contaminant concentrations may be determined from existing information or from data collected by the permit applicant. Existing information shall be used if the permit applicant demonstrates that the quality of the information and its means of collection are adequate to determine background water quality. If existing information is not adequate to determine background water quality, the applicant shall submit a plan to determine background water quality to NNEPA for approval prior to data collection.

One or more upgradient, lateral hydraulically equivalent point or other monitoring wells approved by NNEPA may be required for each potential discharge site.

3. After a permit has been issued, the permittee shall continue to monitor background water quality contaminant concentrations in order to determine natural fluctuations in concentrations. Applicable up-gradient and on-site groundwater monitoring data shall be included in compliance monitoring reports submitted to the Director pursuant to the schedule specified in the aquifer protection permit.

2620. Notice of Commencement and Discontinuation of Aquifer Discharge Operations

1. The permittee shall notify NNEPA immediately upon commencement of an aquifer discharge and submit a written notice within 30 days of commencing the discharge.
2. The permittee shall notify NNEPA of the date of and reason for any discontinuation of an aquifer discharge within 30 days of such discontinuation.

2621. Reporting of Mechanical Problems or Discharge System Failures

The permittee shall notify NNEPA within 24 hours of the discovery of any mechanical problems or discharge system failures that could affect the chemical characteristics or the volume of the discharge. A written statement confirming the oral report shall be submitted to NNEPA within five days of the failure.

2622. Out-of-Compliance Status

1. If the value of a single analysis of any compliance parameter in any compliance monitoring sample exceeds an applicable permit limit, the permittee shall:
 - a. Notify NNEPA in writing within 30 days of receipt of data;
 - b. Immediately initiate monthly sampling if the value exceeds both the background concentration of the pollutant and an applicable permit limit, unless NNEPA determines that other periodic sampling is appropriate, for a period of two months or until the compliance status of the facility can be determined.
2. Violation of Permit Limits. Out-of-compliance status exists when:
 - a. The value for two consecutive samples from a compliance monitoring point exceeds one or more permit limits; or
 - b. The concentration value of any pollutant in two or more consecutive samples is statistically significantly higher than the applicable permit limit. The statistical significance shall be determined using the methods described in U.S. EPA's "Statistical Methods for Evaluating Groundwater Monitoring Data from Hazardous Waste Facilities," (53 Fed. Reg. 39720, Oct. 11, 1988) and supplemental guidance in

U.S. EPA's "Guidance For Data Quality Assessment" (EPA/600/R-96/084, Jan. 1998).

3. Failure to Maintain Best Available Technology

- a. In the event the permittee fails to maintain best available technology, the permittee shall submit to the Director a notification and description of the failure according to Section 311. Notification shall be given orally within 24 hours of the permittee's discovery of the failure and shall be followed by written notification, including the information necessary for NNEPA to make a determination under subsection (3)(b) of this Section, within five days of the permittee's discovery of the failure.
 - b. The Director shall use the information provided in subsection (3)(a) of this Section and any additional information provided by the permittee to determine whether out-of-compliance status is warranted. The Director shall not find that out-of-compliance status is warranted if the Director determines that the permittee has an affirmative defense, as specified in subsection (3)(c) of this Section.
 - c. In the event the permittee is subject to out-of-compliance status for violating permit conditions relating to best available technology, the permittee may affirmatively defend against such classification by demonstrating:
 - i. The permittee submitted notification according to Section 311;
 - ii. The failure was not intentional or caused by the permittee's negligence, either in action or in failure to act;
 - iii. The permittee has taken adequate measures to meet permit conditions in a timely manner or has submitted to NNEPA, for NNEPA's approval, an adequate plan and schedule for meeting permit conditions; and
 - iv. The permittee has not discharged pollutants in violation of aquifer protection permit limits.
4. Where it is infeasible to reestablish best available technology, the permittee may propose alternative best available technology for approval by the Director.

2623. Corrective Action

1. Application of this Section

- a. This section shall apply to any person who spills or discharges any substance which may cause pollution of groundwater in violation of any applicable aquifer water quality standard or background concentration level and any permittee in out-of-compliance status.

- b. Corrective action shall include preparation of a contamination investigation and preparation and implementation of a corrective action plan.
- c. This section shall not apply to any facility where corrective or remedial action for aquifer contamination meeting or exceeding the standards of this section has been initiated under another tribal, state or federal program. Corrective or remedial action taken under the Navajo Nation Storage Tank Act, Navajo Nation CERCLA, Navajo Nation Solid Waste Act, or federal Resource Conservation and Recovery Act are presumed to meet the standards of this section unless otherwise determined by NNEPA.

2. Notification and Interim Action

- a. Any person who spills or discharges any substance which may cause pollution of an aquifer in violation of any applicable aquifer water quality standard, background concentration level, or aquifer protection permit term shall notify NNEPA within 24 hours of the spill or discharge. A written notification shall be submitted to NNEPA within five days after the spill or discharge.
- b. Such person is encouraged to take immediate, interim action without following the steps outlined in this section if such action is required to control a source of pollutants. Interim action is also encouraged if required to protect public safety, public health and welfare, or the environment or to prevent further contamination. Such interim actions should include source abatement and control, neutralization, and other actions as appropriate. A person that has taken these actions shall remain subject to this section after the interim actions are completed unless s/he demonstrates that:
 - i. No pollutants have been discharged into an aquifer in violation of an aquifer protection permit or, in the absence of an aquifer protection permit, in a manner that will endanger public health or the environment; and
 - ii. No wastes remain in a location where there is probable cause to believe such wastes will cause pollution of an aquifer in violation of an aquifer protection permit or, in the absence of an aquifer protection permit, in a manner that will endanger public health or the environment, unless there has been a diesel fuel or oil release over 25 gallons and the responsible person demonstrates that:
 - A. Contaminated soil has been removed to the extent possible and groundwater has been returned to established background levels, to 500 mg/kg total petroleum hydrocarbons for sensitive areas, or to 5000 mg/kg total petroleum hydrocarbons for non-sensitive areas;

- B. Soil samples have been collected at locations and depths sufficient to document that cleanup has been achieved;
- C. Contaminated soil has been treated or disposed of at a location approved by NNEPA; and
- D. An interim action report has been submitted.

3. Contamination Investigation and Corrective Action Plan – General

- a. NNEPA may require any person that is subject to this section to submit for approval a contamination investigation and corrective action plan and may require implementation of an approved corrective action plan. A person subject to this section who has been notified that NNEPA is exercising its authority to require submission of a contamination investigation and corrective action plan, shall, within 30 days of that notification, submit to NNEPA a proposed schedule for those submissions, which may include different deadlines for different elements of the contamination investigation and corrective action plan. NNEPA may accept, reject, or modify the proposed schedule.
- b. NNEPA may waive any or all contamination investigation and corrective action plan requirements if the person subject to this section demonstrates that information which would otherwise be required is not necessary to the Director's evaluation of the contamination investigation or corrective action plan. Requests for waiver may be submitted to NNEPA as part of the contamination investigation or corrective action plan or in advance of the submission of those documents.

4. Contamination Investigation and Corrective Action Plan – Requirements

- a. Contamination Investigation: The contamination investigation shall include a characterization of pollution, a characterization of the facility, a data report, and, if the corrective action plan proposes alternate corrective action concentration limits higher than applicable aquifer water quality standards or background concentrations, an endangerment assessment.
 - i. The characterization of pollution shall include a description of:
 - A. The amount, form, concentration, toxicity, environmental fate and transport, and other significant characteristics of substances present, for both groundwater contaminants and any contributing surficial contaminants;
 - B. The areal and vertical extent of the contaminant concentration, distribution and chemical makeup; and

- C. The extent to which contaminant substances have migrated and are expected to migrate.
 - ii. The characterization of the facility shall include descriptions of:
 - A. Contaminant substance mixtures present and media of occurrence;
 - B. Hydrogeologic conditions underlying and upgradient and downgradient of the facility;
 - C. Surface waters in the area of the facility;
 - D. Climatologic and meteorologic conditions in the area of the facility;
 - E. Type, location and description of possible sources of pollution at the facility; and
 - F. Groundwater withdrawals, pumpage rates, and usage within a 2-mile radius.
 - iii. The report of data used and data gaps shall include:
 - A. Data packages including quality assurance and quality control reports;
 - B. A description of the data used in the report; and
 - C. A description of any data gaps encountered, how those gaps affect the analysis, and any plans to fill those gaps.
 - iv. The endangerment assessment shall include descriptions of any risk evaluation necessary to support a proposal for a proposed corrective action concentration limit or an alternate corrective action concentration limit.
 - v. The contamination investigation shall include such other information as NNEPA requires.
- b. Proposed Corrective Action Plan: The proposed corrective action plan shall include an explanation of the construction and operation of the proposed Corrective Action, addressing the factors to be considered by NNEPA as specified in subsection (5) of this Section and shall include such other information as NNEPA requires. It shall also include a proposed schedule for completion. If the proposed corrective action plan provides that any potential sources of pollutants are to be controlled in place, any cap or other method of source control shall be designed so that the discharge

from the source following corrective action achieves groundwater quality standards or, if approved by NNEPA, alternate corrective action concentration limits.

- c. The contaminant investigation and corrective action plan must be performed under the direction, and bear the seal, of a professional engineer or professional geologist.

5. Approval of the Corrective Action Plan

After public notice in a newspaper in the affected area and a 30-day period for public review and comment, the Director shall issue an order approving, disapproving, or modifying the proposed Corrective Action Plan. NNEPA shall consider the following factors and criteria in making that decision:

- a. The completeness and accuracy of the Corrective Action Plan and of the information upon which it relies;
- b. Whether the Corrective Action is protective of the public health and the environment;
- c. Impacts as a result of any off-site activities (e.g., the transport and disposition of contaminated materials at an off-site facility);
- d. Whether the Corrective Action meets corrective action concentration limits or alternate corrective action concentration limits, as appropriate;
- e. Whether the Corrective Action will produce a permanent effect; and
- f. Whether additional measures should be included in the Plan to better assure that the criteria and factors specified in this subsection are met. Such measures may include:
 - i. Requiring long-term groundwater or other monitoring;
 - ii. Providing environmental hazard notices or other security measures;
 - iii. Capping sources of groundwater contamination to avoid infiltration of precipitation;
 - iv. Requiring long-term operation and maintenance of all portions of the corrective action; and
 - v. Periodic review to determine whether the corrective action is protective of public health and the environment.

6. Corrective Action Concentration Limits

- a. Corrective actions shall achieve applicable aquifer water quality standards or background concentrations.
- b. For contaminants for which no aquifer water quality standard has been established, the proposed corrective action plan shall include proposed corrective action concentration limits. These levels shall be approved, disapproved or modified by NNEPA after considering NNEPA maximum contaminant level goals, health advisories, and risk-based contaminant levels, standards established by other tribal, state and federal regulatory agencies, and other relevant information.

7. Alternate Corrective Action Concentration Limits

- a. Higher Alternate Corrective Action Concentration Limits: A person submitting a proposed corrective action plan may request approval by NNEPA of an alternate corrective action concentration limit higher than the corrective action concentration limit specified in subsection (6) of this Section. The proposed limit shall be protective of human health and the environment and shall utilize best available technology. The corrective action plan shall include the following information in support of this request:
 - i. The potential for release and migration of any contaminant that might remain after corrective action in concentrations higher than corrective action concentration limits;
 - ii. An evaluation of residual risks, in terms of amounts and concentrations of contaminants remaining after Corrective Action, including consideration of the persistence, toxicity, mobility, and propensity to bioaccumulate of such contaminants; and
 - iii. Any other information necessary to determine whether the conditions of this subsection have been met.
- b. Lower Alternate Corrective Action Concentration Limits: NNEPA may require use of an alternate corrective action concentration limit that is lower than the corrective action concentration limit specified in subsection (6) of this Section if necessary to protect human health or the environment. Any person requesting that NNEPA consider requiring a lower alternate corrective action concentration limit shall provide supporting information as described in subsection (7)(d) of this Section.
- c. The alternate corrective action concentration limit must be protective of human health and the environment. In making this determination, NNEPA may consider:
 - i. Information presented in the contamination investigation;

- ii. Other relevant cleanup or health standards, criteria, or guidance;
 - iii. Relevant and reasonably available scientific information;
 - iv. Any additional information relevant to the protectiveness of a corrective action; and
 - v. The impact of additional proposed measures, such as those described in subsection (5)(f) of this Section.
- d. An alternate corrective action concentration limit shall not be granted without good cause. In determining whether good cause exists, the Director may consider the factors specified in subsection (5) of this Section as well as whether the proposed remedy is cost-effective, considering such costs as:
- i. Capital costs;
 - ii. Operation and maintenance costs;
 - iii. Costs of periodic reviews, where required;
 - iv. Net present value of capital and operation and maintenance costs;
 - v. Potential future remedial action costs; and
 - vi. Loss of resource value.
- e. An alternate corrective action concentration limit that is higher than the corrective action concentration limits specified in subsection (6) of this Section must be conservative. NNEPA may consider the concentration level that can be achieved using best available technology if attainment of the corrective action concentration limit is not technologically achievable.
- f. NNEPA may consider the relationship between the corrective action concentration limits and background concentrations in considering whether an alternate corrective action concentration limit is appropriate. However, no alternate corrective action concentration limit higher than existing groundwater contamination levels or groundwater contamination levels projected to result from existing conditions will be granted.

2624. Aquifer Protection Permit Transfer

1. The permittee shall give written notice to the Director of any transfer of an aquifer protection permit within 30 days of the transfer.

2. The notice shall include a written agreement between the existing and new permittee establishing a specific date for transfer of permit responsibility, coverage and liability.

2625. Enforcement

Where the Director has reason to believe that a violation of any part of these regulations has occurred, the Director may enforce these regulations pursuant to the Navajo Nation Clean Water Act, 4 N.N.C. § 1382(C), or the Navajo Nation Safe Drinking Water Act, 22 N.N.C. § 2582, and Subpart 3 of the Navajo Nation Uniform Regulations, including through the issuance of a compliance order or an administrative penalty order. For violations that are of a continuing nature, each and every day that the violation exists shall constitute a separate and distinct violation.

Appendix I
List of USDWs on the Navajo Nation

Background

An underground source of drinking water (“USDW”), as defined in §101.5 of the Navajo Nation UIC Regulations, is:

an aquifer or portion of an aquifer:

1. which supplies any public water system; or
2. which contains a sufficient quantity of groundwater to supply a public water system; and
 - i. currently supplies drinking water for human consumption; or
 - ii. contains fewer than 10,000 mg/l total dissolved solids; and
3. which is not an exempted aquifer.

The Navajo Nation has a surface area of about 25,000 square miles or 16,000,000 acres. The entire Navajo Nation falls within the south-central portion of the Colorado Plateau physiographic province. Within this Colorado Plateau area, three distinct structural basins developed: 1) San Juan Basin, New Mexico; 2) Paradox Basin, Southeastern Utah; and 3) Black Mesa Basin, Northeastern Arizona. Igneous and metamorphic basement rocks of Precambrian age underlie the sedimentary rocks at depths ranging from 1,000 to 15,000 feet below the surface. Sedimentary rocks range in age from Cambrian to Tertiary, but Permian and younger rocks are exposed in 96% of the area. USDWs can be encountered at the surface outcrop but also occur below the surface, as long as the total dissolved solids of the aquifer are less than 10,000 mg/l and the aquifer otherwise conforms to the definition of a USDW at §101.5 of the NNUIC Regulations. The Director has identified the following USDWs within the Navajo Nation:

A. USDWs in the San Juan Basin, N.W. New Mexico

The San Juan Basin is the structural depression covering approximately 30,000 square miles of Northwest New Mexico and a small portion of Southwestern Colorado. Maximum structural relief was reported by Kelley (1950) as 10,000 feet in San Juan Basin. The maximum stratigraphic thickness encountered to date is 14,423 feet in a drill hole near the structural center of the basin. It is estimated that two million acre-feet of fresh (less than 1,000 mg/l total dissolved solids) to slightly saline (1,000 mg/l to 3,000 mg/l of total dissolved solids) water could be recovered from the confined aquifers of the San Juan Basin.

Below is a list of aquifers, the geologic age of the aquifers, and the depth to the aquifer.

Underground Sources of Drinking Water in the San Juan Basin, NW New Mexico

<u>AQUIFER (USDWs)</u>	<u>GEOLOGIC AGE</u>	<u>DEPTH TO AQUIFER</u>
<u>Valley Fill</u>	<u>Quaternary Age</u>	<u>Surface to 100 Feet</u>
<u>Chuska Sandstone</u>	<u>Eocene/Oligocene Age</u>	<u>Surface to 1,800 Feet</u>
<u>San Jose Formation</u>	<u>Eocene Age</u>	<u>Surface to 2,700 Feet</u>
<u>Nacimiento/Animas Fms.</u>	<u>Paleocene Age</u>	<u>Surface to 2,660 Feet</u>
<u>Ojo Alamo Sandstone</u>	<u>Paleocene Age</u>	<u>Surface to 3,645 Feet</u>
<u>Kirtland Shale/Fruitland Fm.</u>	<u>Cretaceous Age</u>	<u>Surface to 3,000 Feet</u>
<u>Pictured Cliffs Sandstone</u>	<u>Cretaceous Age</u>	<u>Surface to 4,130 Feet</u>
<u>Cliff House Sandstone</u>	<u>Cretaceous Age</u>	<u>Surface to 6,150 Feet</u>
<u>Menefee Formation</u>	<u>Cretaceous Age</u>	<u>Surface to 6,262 Feet</u>
<u>Point Lookout Sandstone</u>	<u>Cretaceous Age</u>	<u>Surface to 6,400 Feet</u>
<u>Crevasse Canyon Formation</u>	<u>Cretaceous Age</u>	<u>Surface to 3,200 Feet</u>
<u>Gallup Sandstone</u>	<u>Cretaceous Age</u>	<u>Surface to 4300 Feet</u>
<u>Dakota Sandstone</u>	<u>Cretaceous Age</u>	<u>Surface to 8500 Feet</u>
<u>Morrison Formation</u>	<u>Jurassic Age</u>	<u>Surface to 8900 Feet</u>
<u>Bluff-Cow Springs Sandstone</u>	<u>Jurassic Age</u>	<u>Surface to 9000 Feet</u>
<u>Entrada Sandstone</u>	<u>Jurassic Age</u>	<u>Surface to 9300 Feet</u>

References:

W.J. Stone, et al., 1983, Hydrogeologic and Water Resources of San Juan Basin, New Mexico, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6

M.E. Cooley, et al., 1969, Regional Hydrogeology of the Navajo and Hopi Indian Reservations, Arizona, New Mexico, and Utah, USGS Professional Paper 521-A

B. USDWs in the Paradox Basin, San Juan County, Utah

The Paradox Basin is located in Southeastern Utah in an area covering approximately 15,000 square miles. Maximum known thickness of the sedimentary section is about 10,000 feet. The Paradox Basin is an elongate, asymmetric, northwest-trending depositional trough, filled with Late Paleozoic and Early Mesozoic sedimentary rocks.

Underground Sources of Drinking Water in the Paradox Basin, San Juan County, Utah

<u>AQUIFER (USDWs)</u>	<u>GEOLOGIC AGE</u>	<u>DEPTH TO AQUIFER</u>
<u>D Aquifer Burro Canyon Fm., Dakota Sandstone</u>	<u>Cretaceous Age</u>	<u>Surface to 500 Feet</u>
<u>M Aquifer (Bluff Ss., Salt Wash, Recapture, and Westwater Canyon Members of the Morrison Fm.)</u>	<u>Jurassic Age</u>	<u>Surface to 1,000 Feet</u>
<u>N Aquifer (Wingate Ss., Kayenta Fm., Navajo Ss., Carmel Fm., and Entrada Ss.)</u>	<u>Jurassic Age</u>	<u>Surface to 2,500 Feet</u>
<u>C Aquifer (De Chelley Sandstone)</u>	<u>Permian Age</u>	<u>Surface to 3,000 Feet</u>
<u>P Aquifer (Cutler Formation)</u>	<u>Permian Age</u>	<u>Surface to 3,500 Feet</u>
<u>Redwall Aquifer (Leadville Molas Pinkerton Trail, and Honaker Trail Fms.)</u>	<u>Mississippian and Pennsylvanian Ages</u>	<u>Surface to 4,000 Feet</u>

References:

Mike Lowe, 1996, Ground-Water Resources of the San Juan Basin in Utah Geological Association Guidebook Geology and Resources of the Paradox Basin

R.W. Gloyn, et al, 1995, Mineral, Energy, and Ground-Water Resources of San Juan County, Utah, Utah Geological Survey Special Study 86

M.E. Cooley, et al, 1969, Regional Hydrogeology of the Navajo and Hopi Indian Reservations, Arizona, New Mexico, and Utah, USGS Professional Paper 521-A

C. USDWs in the Black Mesa Basin and Colorado Plateau area, Northeastern Arizona

Below is a list of aquifers in the Black Mesa Basin and Colorado Plateau area of Northeastern Arizona.

<u>AQUIFER</u>	<u>GEOLOGIC AGE</u>	<u>DEPTH TO AQUIFER</u>
<u>Mesaverde Aquifer</u>	<u>Upper Cretaceous</u>	<u>Surface to 800 Feet</u>
<u>Dakota-Glen Canyon Aquifer (Dakota Fm, Morrison Fm, Entrada Fm.)</u>	<u>Lower Cretaceous/ Upper Jurassic</u>	<u>Surface to 2,000 Feet</u>
<u>Coconino - De Chelly Aquifer</u>	<u>Early Permian</u>	<u>Surface to 5,000 Feet</u>

References:

Akers, J.P., and Harshbarger, J.W., 1958, Ground Water in Black Mesa Basin and Adjacent Areas in New Mexico Geological Society Guidebook Black Mesa Basin - Northeastern Arizona

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