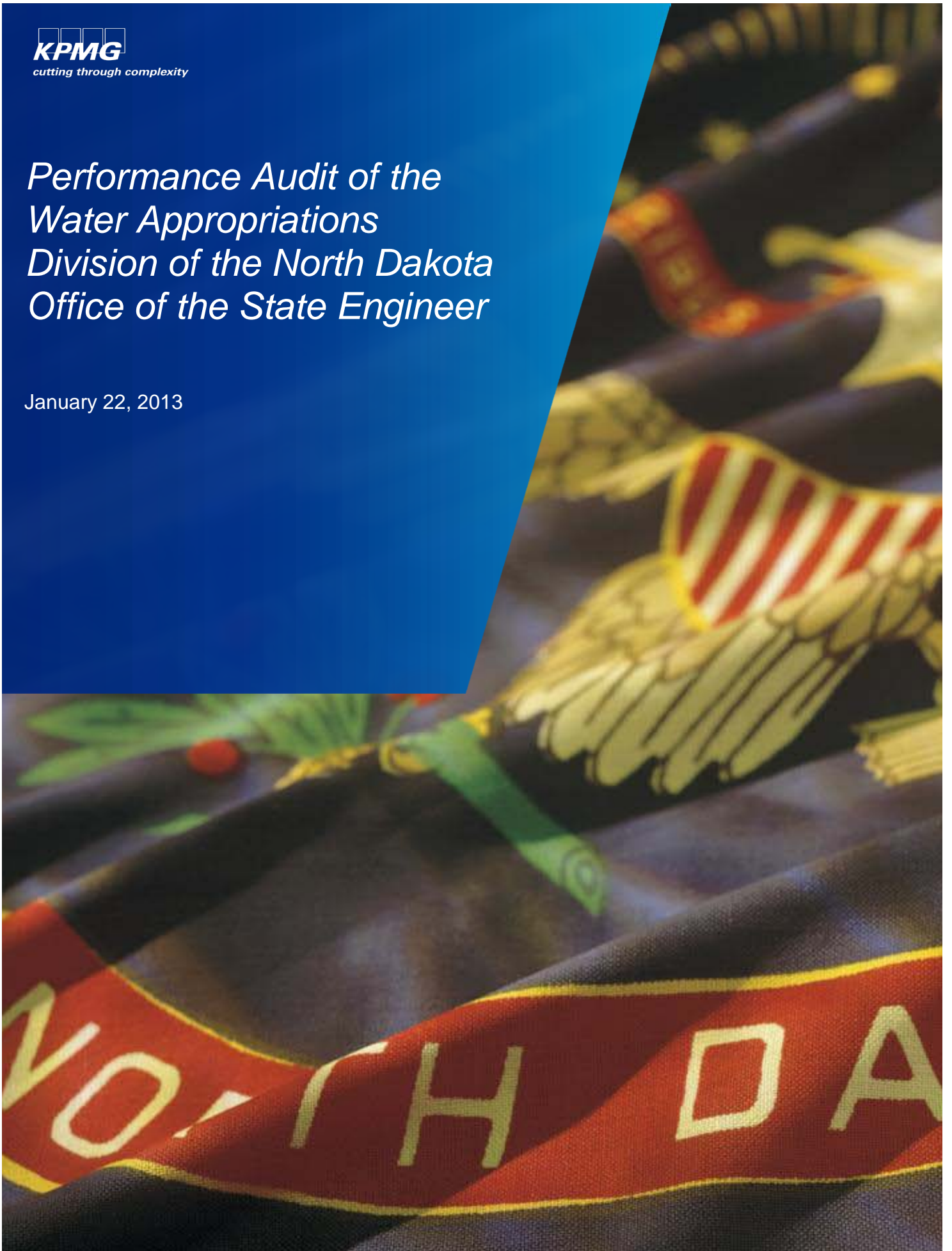




cutting through complexity

*Performance Audit of the
Water Appropriations
Division of the North Dakota
Office of the State Engineer*

January 22, 2013



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Executive Summary

KPMG LLP (KPMG) was engaged by the State of North Dakota (State) Office of the State Auditor (State Auditor) and the State Water Commission (SWC) to conduct a performance audit of the Water Appropriations Division of the Office of the State Engineer (State Engineer). The performance audit was intended to provide an assessment of the industrial water use monitoring and reporting policies and procedures employed by the Water Appropriations Division. With the recent oil boom in northwestern North Dakota, the demand for water for industrial purposes has increased significantly, causing increased awareness as to whether current monitoring and reporting practices are sufficient to manage the water resources of the state.

Objective and Scope

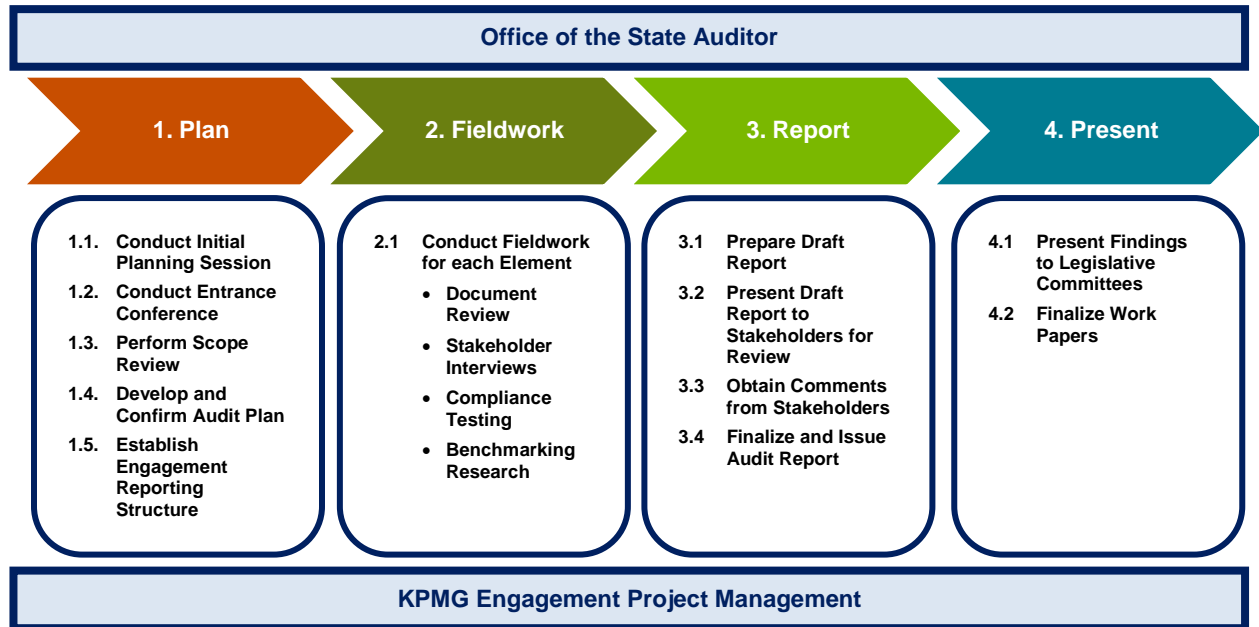
The objective of this engagement was to conduct a performance audit of the industrial water use monitoring and reporting policies and procedures of the Water Appropriations Division for the calendar years of 2010, 2011 and January – June of 2012; and to provide recommendations to help address any identified performance gaps.

The scope of this engagement included six (6) elements defined by the State Auditor. The elements are summarized in the following table.

Element	Element Summary
Element 1	Evaluate policies and procedures to assess compliance with applicable laws, rules, and regulations.
Element 2	Assess industrial water use and well monitoring processes to assess compliance with laws, rules, regulations, policies and procedures, including adherence to permit conditions.
Element 3	Evaluate monitoring policies and procedures utilized to manage temporary industrial water use permits issued in lieu of irrigation to assess compliance with laws, rules, regulations, policies and procedures.
Element 4	Analyze monitoring policies and procedures utilized to manage temporary industrial water use permits issued for surface water resources to assess compliance with laws, rules, regulations, policies and procedures.
Element 5	Review procedures used to enforce rules, regulations and policies, including the establishment, imposition and collection of penalties to assess effectiveness and to verify consistent application.
Element 6	Evaluate monitoring and reporting processes to assess effectiveness.

Approach and Methodology

The engagement was structured in four (4) phases and was performed between October 11, 2012 and December 19, 2012 and our results are as of January 18, 2013. The approach is illustrated below.



This review was conducted under Government Accountability Office (GAO) Performance Audit Standards with oversight from the State Auditor. Those standards require we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The approach included developing an understanding of the pertinent laws, rules, regulations, policies and procedures associated with the appropriation of water in the state and an understanding of the water appropriation, monitoring and reporting processes used by the Water Appropriations Division through document and system reviews, stakeholder interviews, and process observation. Testing of data related to the various monitoring and reporting controls was conducted. In addition, benchmarking research of the monitoring and reporting practices of the Water Appropriations Division was performed with three (3) comparable states. The information gained from the field work was analyzed to help formulate responses to the defined elements, identify potential findings and develop related recommendations.

Conclusion

The Water Appropriations Division executes reporting and monitoring practices to adhere to laws, regulations and policies; however, these practices do not appear to be formally documented and are primarily manual in nature, which may result in inconsistent application of policies and procedures. This may pose the risk that the Water Appropriations Division may not identify and/or address potential use violations in a timely and consistent manner.

The following provides an overview of each finding and recommendation with additional details located in Section 4 on the report.

FINDING SYNOPSIS		RECOMMENDATION
1.1	Monitoring and reporting processes do not appear to be formally/adequately documented	<ul style="list-style-type: none"> • Develop standard operating procedures (SOPs) • Establish protocols to disseminate SOPs
1.2	Timeliness of Annual Use Form (AUF) submission does not appear to be consistent with NDCC submission requirement (i.e., February 1)	<ul style="list-style-type: none"> • Comply with NDCC • Request amendment to NDCC • Develop and implement an online reporting tool
2.1	Water Use Program is primarily reliant on self-reporting by the permit holder	<ul style="list-style-type: none"> • Implement remote terminal metering devices • Develop SOPs and guidelines for field inspection activities
2.2	Reporting processes (e.g., annual, monthly) are manual in nature	<ul style="list-style-type: none"> • Develop and Implement an online reporting tool
2.3	Reporting practices allow permit holders to report use allocation data for multiple permits on a single AUF	<ul style="list-style-type: none"> • Ensure enforcement of current policies relative to permit use reporting • Conduct customer outreach to educate permit holders
2.4	Inconsistency within the document management system and across file types	<ul style="list-style-type: none"> • Develop SOPs for document management activities • Explore technology/database enhancements
2.5	Use reports (i.e., AUFs) vary in both quantity and quality of use information	<ul style="list-style-type: none"> • Ensure enforcement of established policies relative to information requirements • Conduct customer outreach to educate permit holders • Explore technology enhancements, including an online reporting tool
2.6	Well run processes (e.g., measuring, data entry) are manual in nature	<ul style="list-style-type: none"> • Explore the use of electronic recording devices
2.7	Element #2 Testing Results	<ul style="list-style-type: none"> • Verify protocols are in place to help ensure compliance with established policies
3.1	Element #3 Testing Results	<ul style="list-style-type: none"> • Verify protocols are in place to help ensure compliance with established policies

FINDING SYNOPSIS		RECOMMENDATION
4.1	Inconsistency in the application of reporting conditions placed on temporary permits	<ul style="list-style-type: none"> Define and document criteria used to determine use reporting requirements
4.2	Variations in the consistency of use data and timeliness of reporting	<ul style="list-style-type: none"> Ensure enforcement of policies regarding reporting deadlines Conduct customer outreach to educate permit holders
4.3	Inconsistency with regards to field inspection practices	<ul style="list-style-type: none"> Develop SOPs and guidelines for field inspection activities
4.4	Element #4 Testing Results	<ul style="list-style-type: none"> Verify protocols are in place to help ensure compliance with established policies
5.1	Violation enforcement policies and procedures do not appear to be formally documented	<ul style="list-style-type: none"> Develop SOPs regarding the identification, imposition and collection of penalties Reallocate violation responsibilities to the Hydrologist responsible for the area in which the violation occurred
5.2	Penalties assessed from 2010 - 2012	<ul style="list-style-type: none"> This finding is for informational purposes
6.1	Identification of use violation	<ul style="list-style-type: none"> Explore increase utilization of technology Standardize and document procedures

Water Appropriations Division Management and Staff Involvement

The Water Appropriations Division management and staff were engaged during the review to facilitate our understanding of the in-scope processes, provide requested documentation required for testing activities and conduct follow-up as necessary. Active engagement cooperation of Water Appropriations Division staff was critical to the successful completion of the performance audit.

Section 1: Water Appropriations Division Profile

Division Overview

The Water Appropriations Division is a component of the North Dakota Office of the State Engineer (State Engineer) with the following designated responsibilities:

- Administering and Processing Water Rights
- Adjudicating and Evaluating Water Rights
- Monitoring Water Resources
- Disseminating Water Resource Information
- Developing Community Water Supplies
- Conducting Water Resource Research
- Identifying and Evaluating Potential Water Supplies for Economic Development

The objective of this performance audit included activities related to the monitoring of water resources, specifically the monitoring of water being diverted for industrial use. Other core responsibilities of the Water Appropriations Division were not included in the scope of this review.

Department Structure

As of October 2012, the Water Appropriations Division employed twenty-three (23) staff members across six (6) functional areas. The table illustrates functional areas and associated Full Time Equivalents (FTEs).

Functional Area		Basic Service Description	FTE
1	Division Management	Management of the Division	1.0
2	Water Permit Administration	Administration of permit application process	3.0
3	Ground Water Management	Exploring, monitoring and managing the ground water resources of the State	10.0
4	Surface Water Management	Exploring, monitoring and managing the surface water resources of the State	2.0
5	Hydrologic Data	Collecting and analyzing hydrologic information related to both water resources and water permits	6.0
6	Special Investigations	Conducting and coordinating investigations	1.0
Total			23.0

Water Use and Hydrologic Monitoring Programs

The Water Appropriations Division manages Water Use and Hydrologic Monitoring Programs. These programs serve to help manage and communicate the state's water usage and data relative to its water resources to the State Engineer and public. The scope of this review was monitoring and reporting related to industrial water use, which the associated permit type and processes are summarized below.

Monitoring Operation		Volume	Scope
Water Use Monitoring			
1	Conditional / Perfected Permits (Irrigation) ⁽¹⁾	≈ 2,200	Out of Scope
2	Conditional / Perfected Permits (Industrial) ⁽¹⁾	≈ 420	In Scope
3	Conditional / Perfected Permits (Municipal and Rural) ⁽¹⁾	≈ 380	Out of Scope
4	Active Water Depots ⁽¹⁾	≈ 75	In Scope
5	Temporary In Lieu of Irrigation Permits ⁽²⁾	≈ 75	In Scope
6	Temporary Industrial Use Permits ⁽³⁾	≈ 400	In Scope
Hydrologic Monitoring			
7	Observation Wells (Ground Water) ⁽⁴⁾	≈ 3,750	In Scope
8	Surface Water Gauges ⁽⁴⁾	≈ 150	Out of Scope
9	Surface Water Sampling ⁽⁴⁾	≈ 200	Out of Scope

Notes

- (1) *Conditional/Perfected/Water Depots*: Volumes represent active permits as identified by the Water Appropriations Division.
- (2) *Temporary In Lieu of Irrigation Permits*: Volume represents permits issued in calendar years 2010 – 2012 as identified by the Water Appropriations Division.
- (3) *Temporary Industrial Use Permits*: Volume represents permits issued in calendar years 2010 – 2012 as identified by the Water Appropriations Division.
- (4) *Hydrologic Monitoring*: Volumes represent active operations as identified by the Water Appropriations Division.

Section 2: Process Overviews

This section provides an overview of permitting, monitoring, reporting and enforcement processes relevant to conducting the performance audit. An understanding of these processes was gained through interviews with Water Appropriations Division resources, review of applicable documentation, observation and testing procedures. Any findings related to these processes are further discussed in *Section 4 – Finding and Recommendations* of this report.

Water Appropriation System Overview

North Dakota Century Code (NDCC) Section 61-01-01 states that the “waters of the state belong to the public and are subject to appropriation for beneficial use.” The state authorizes the State Engineer to manage the appropriation process through the issuance of water rights/permits. Per NDCC Section 61-04-02, the system requires a water permit be obtained for any surface or ground water withdrawal, except when the amount to be withdrawn is less than 12.5 acre-feet per year and the purpose of use is designated as domestic, livestock, fish, wildlife or recreation. All applications requesting water for other beneficial uses, including industrial, are required to submit an application and obtain a permit prior to withdrawing water.

Permitting Process Overview (Out of Scope)

The permitting process was not part of this review; however, an understanding of the permitting process was necessary to meet the in-scope objectives.

The permitting process is a primary water allocation tool used by Water Appropriations Division to manage the water resources of the state. During the permitting process, individuals/entities submit a water permit application to the Water Appropriations Division requesting the right to utilize a specific amount of water from a designated source for a specific beneficial use. There are two (2) primary types of permits issued by Water Appropriations Division: 1) Conditional Water Permit and 2) Temporary Water Permit.

- **Conditional Water Permits:** Individuals/Entities can apply for a Conditional Water Permit providing access to specified amount water to be used for a defined beneficial use. Once the permit application is approved by the Water Appropriations Division and a Conditional Water Permit is issued, the individual/entity has one (1) to three (3) years to bring the water to beneficial use and meet the conditions of the permit, including those related to any infrastructure necessary to extract the water from the source.

Per NDCC, Section 61-04-09, once the individual/entity has brought the water to its intended beneficial use, the Water Appropriations Division will perform an inspection of the permit to verify that all required conditions have been met. If all conditions are met, the permit will be converted to a Perfected Water Permit providing the individual/entity a perpetual right to the water allocated related to the permit.

- **Temporary Water Permits:** Individuals/Entities can apply for a Temporary Water Permit providing the permit holder a temporary right to use water diverted from a designated source for a defined

period of time. For industrial water use, there are two (2) primary types of temporary permits issued: 1) a Temporary In Lieu of Irrigation Permit and 2) a Temporary Industrial Use Permit.

- [Temporary In Lieu of Irrigation Permits](#): Individuals/Entities with an established water right for which the defined beneficial use is irrigation can apply for a Temporary In Lieu of Irrigation Permit. A Temporary In Lieu of Irrigation Permit allows permit holders to divert water designated for irrigation and use it for industrial purposes. The amount to be diverted is based on an average usage over the life of the permit or, if no usage data is available, the usage of other permits in the surrounding area. Temporary In Lieu of Irrigation Permits are only issued for a specified period of time, no more than twelve (12) months, and does not permanently change the designated beneficial use purpose of the permit.
- [Temporary Industrial Water Use Permits](#): The Temporary Industrial Water Use Permit provides individuals/entities with a temporary right to a specified amount of water to be used for a defined beneficial use. The majority of Temporary Industrial Water Use Permits are issued for Surface Water resources. Unlike a Conditional Water Permit, the Temporary Industrial Water Use Permit is only granted for a specified period of time, no more than twelve (12) months, and does not establish a permanent water right. Use limitations, pumping rates, and other restrictions are also established for each permit.

Regardless of the permit type requested, an individual/entity must submit an application and all necessary supporting documentation to the Water Appropriations Division. Once all administrative requirements have been met, the application will be reviewed by a Project Hydrologist responsible for the area/county from which the water is being diverted to assess the impact of the permit on the water resource, other appropriators, etc. Based on the analysis, the Project Hydrologist will render a recommended decision that is reviewed by the State Engineer. If approved, the permit will be issued allowing the permit holder to initiate development of the permit.

[Monitoring and Reporting Process Overviews](#)

The monitoring and reporting requirements established for various permits are driven primarily by the type of permit issued. Supplemental policies have been established to help enhance monitoring activities for water depots, which are individuals/entities that primarily sell their permitted allocation of water to the oil industry, primarily for hydraulic fracturing purposes. Additional information relating to the monitoring and reporting requirements for each permit type identified during the course of the performance audit is provided below and referenced later as applicable.

- [Conditional/Perfected Industrial Water Use Permits](#): All Conditional/Perfected Industrial Water Use Permits are required to have an in-line measuring device installed prior to the withdrawal of water from the identified source. The meter serves as the primary tool for both the permit holder and the Office of the State Engineer to record water pumped related to each permit. The Office of the State Engineer also dictates that a permit may be associated with one or more meters; however, a meter cannot be associated with more than one permit.

Per ND Century Code Section 61-04-27, all individuals/entities holding a Conditional/Perfected Industrial Water Use Permit are required to submit an Annual Use Form (AUF) to the Water Appropriations Division by February 1st of each year. ND Administrative Code Section 89-03-01-12

specifically requires the permit holder to include water use information, pumping rate and other information deemed necessary by the Office of the State Engineer.

The Office of the State Engineer issues the AUF to all permit holders via mail with a memorandum requesting completion and submission by a defined date. Permit holders are required to complete and submit the AUF within the established timeframe to the Water Appropriations Division. Upon receipt, the Water Appropriations Division will review the AUF to validate the information provided is complete and verify that the reported information does not breach any of the terms of the permit.

To supplement the annual self-reporting process, and to address concerns related to the sale of water for industrial use, specifically water to be used by the oil industry, the Office of the State Engineer has enacted additional monitoring and reporting policies to manage water depot sites that include monthly self-reporting and periodic field inspections. These supplemental monitoring and reporting policies were implemented in January 2012.

- **Monthly Reporting:** The monthly self-reporting process requires that Water Depot sites provide monthly meter readings to the Water Appropriations Division on forms provided by the Division. Each Water Depot is responsible for submission of the monthly form to Water Appropriations Division within ten (10) days of the meter reading being obtained. The final reading from the previous year serves as the initial reading for the following year.
- **Field Inspections:** State personnel conduct field inspections on active Water Depot sites periodically throughout the year. Division policy requires that an inspection be performed at least once annually on all Water Depot sites to verify that the monitoring equipment is operational and that the usage is consistent with that reported to Water Appropriations Division.

The Office of the State Engineer is also exploring the feasibility of utilizing remote terminal water metering devices that would allow the Water Appropriations Division to access meter information remotely. The pilot program is ongoing and the results are still pending. At the time of this review, telemetry was being piloted at three (3) Water Depot sites.

The Office of the State Engineer also relies on the general public to help manage water use across the state. The State Water Commission has made a concerted effort to inform communities about water use and has solicited assistance in identifying potential violations, both related to overuse and use without a permit.

All reported and collected usage data for Conditional/Perfected Permits is manually tabulated and entered into the appropriate Water Appropriations Division database for ongoing monitoring and analysis. Submitted forms are also scanned and maintained in the database; while hard copies are retained in permit or depot files.

- **Temporary In Lieu of Irrigation Water Permit:** All issued Temporary In Lieu of Irrigation Permits are required to have an in-line measuring device installed, and must submit an AUF to Water Appropriations Division consistent with standard permit monitoring and reporting requirements. In addition, Temporary In Lieu of Irrigation Water Permit holders are required, per a 2012 Water Appropriation Division policy, to submit monthly usage forms. The Water Appropriations Division indicated that irrigation permit tracts are required to have meter readings conducted during the course of normal field activities, i.e. well runs. To supplement the self-reporting and inspection activities, the Water Appropriations Division may utilize satellite imagery to validate that the water being temporary diverted for industrial purposes is not being used to irrigate. Satellite imagery is not

utilized to measure actual water usage/consumption but utilized as a tool to help identify if an area is being irrigated.

All reported and collected usage data for Temporary In Lieu of Irrigation Water Permits is entered into a Water Appropriations Division database for ongoing monitoring and analysis. Submitted forms are also scanned and maintained in the database.

- **Monitoring Temporary Industrial Use Water Permits:** Per ND Century Code 61-04-02.1, Temporary Industrial Use Water Permits are authorized to be issued by the Office of the State Engineer. Per the regulations, temporary permits may only be issued for a twelve (12) month period; however, individuals/entities can reapply for another permit the following year. As is the case with conditional/perfected permits, the ND Century Code allows the State Engineer to establish conditions on temporary permits, which may include various monitoring and reporting requirements. The conditions placed on the permit with regards to use reporting are dependent upon the terms of the permit, specifically the volume of water allocated. The current threshold that dictates the reporting requirements of a Temporary Industrial Use Water Permit is established at 15 acre-feet. Summaries of the various monitoring and reporting controls are:
 - **≤15 Acre-Feet:** If the allocated volume of the permit is ≤15 acre-feet, the Temporary Industrial Use Water Permit holder is not required to install an in-line measuring device. The Water Appropriations Division requires that permit holders submit an AUF at the conclusion of the authorization period. In 2012 the submittal of an AUF was universally required and enforced for temporary permit holders, as prior to 2012 a temporary permit may not have included an annual reporting condition. Various factors, including water source, hydrologist discretion, etc. may have influenced whether a reporting condition was placed on a temporary permit prior to 2012; however, the Water Appropriations Division now requires that all temporary permits include an annual reporting condition.

During testing follow-up, the Water Appropriations Division indicated that weekly reporting for Temporary Industrial Use Water Permits with an allocation of ≤15 acre-feet was now in effect; however, due to this monitoring and reporting control being disclosed after testing was complete, no testing procedures were performed to determine the effectiveness of the control.

- **>15 Acre-Feet:** If the allocated volume of the permit is >15 acre-feet, the individual/entity holding the Temporary Industrial Use Water Permit is required to install an in-line measuring device, and is subject to annual and monthly reporting requirements. Prior to 2012 the temporary permit may not have included an annual reporting condition. Various factors, including water source, hydrologist discretion, etc. may have influenced whether a reporting condition was placed on a temporary permit prior to 2012; however, the Water Appropriations Division now requires that all temporary permits include an annual reporting condition.

The Water Appropriations Division also enacted a new policy in January 2012 requiring that field inspections be performed at least once during the authorization period by state personnel to verify that the monitoring equipment is operational and that the usage is consistent with that reported to Water Appropriations Division.

All reported and collected usage data for Temporary Industrial Use Water Permits with an allocation of >15 acre-feet is entered into a Water Appropriations Division database for ongoing monitoring and analysis. Submitted forms are also scanned and maintained in the database; and hard copies

are retained in permit or depot files. Prior to 2012, use data for Temporary Industrial Use Water Permits with an allocation of ≤ 15 acre-feet was not recorded in the database.

Regulation Enforcement Process Overview

Per ND Century Code Sections 61-04-29 and 61-04-30, the Office of the State Engineer has the authority to enact penalties against individuals/entities that violate laws, rules, and/or policies, including the terms of their water permit(s).

- **Establishment, Imposition and Collection of Penalties:** Through the monitoring and reporting practices outlined above, the Water Appropriations Division is able to identify potential violations of permit terms. The Water Appropriations Division currently has 1.0 FTE dedicated to this function. In addition to the self-reporting monitoring and reporting requirements, the Water Appropriations Division performs field inspections of certain permit types to obtain meter information, and utilizes satellite imagery to detect potential violations. To further supplement the current monitoring and reporting system, the Water Appropriations Division encourages the general public to report potential violations.

Once a violation has been identified, the Division Director is notified of the potential issue. The Water Appropriations Division will research the issue to confirm the violation and obtain additional information. The Water Appropriations Division will then notify the violator, and an Administrative Order is prepared. The Administrative Order outlines known facts, and includes the terms of any cease and desist order.

Water Appropriations Division will collaborate with the violator to help develop a Consent Agreement. The terms of continued use will be included in the Consent Agreement if the violator has an active water right. This may include a reduction in available usage in the following year equal to the amount of overage incurred in the present year. Additionally, any monetary settlements agreed upon will be outlined in the Consent Agreement.

If an agreement cannot be reached or the terms of the Consent Agreement are violated, Water Appropriations Division has can proceed with civil action. Civil penalties include fines of up to \$5,000 per day and/or the revocation of the water right. Water Appropriations Division can request criminal action against the violator if problems persist; however, pursuit of criminal action is ultimately the decision of the county in which the violation occurred.

Seven (7) violations requiring an Administrative Order were identified by the Water Appropriations Division during the audit period. Five (5) violations were a result of permit term violations. Two (2) were a result of individuals/entities pumping water without a valid permit. There may be instances of overuse violations resolved by the Water Appropriations Division through the reduction in allocated volume for the permit holders following year. This approach may not result in an Administrative Order. We were unable to specifically identify the number of violations resolved by this approach as our testing included a sample of activity; however, exceptions were noted in *Section 4: Findings and Recommendations* of this report.

Aquifer Monitoring Process Overview

As part of its monitoring efforts, the Water Appropriations Division observes ground and surface water resources throughout the state. Ground water is managed primarily through a network of 3,741 observation wells, whereas surface water is assessed through periodic inspection and twenty-eight (28) staff gauges. The Scope of Work for the performance audit included an assessment of how the Water Appropriations Division monitors aquifers; as such the current process is outlined below.

- Monitoring Aquifer Levels:** Water Appropriations Division monitors ground water sources through a network of observation wells. The Division operates a well drilling program that results in approximately 120 new test holes or observation wells each year for aquifer specific evaluations. In addition, a state-wide observation well program is employed by the Water Appropriations Division annually. A schedule is developed by Water Appropriations Division that indicates the frequency of measurements to be obtained for that year. Field Technicians conduct well runs based on that schedule throughout the field season (May – November) and collect well data, including depth. Water Appropriations Division also contracts with individuals who monitor specific wells and report the well data to Water Appropriations Division. It is policy for Water Appropriations Division to inspect wells monitored by contractors periodically to verify data.

The depth monitoring process for the majority of wells is manual-intensive, requiring the use of steel or electronic measuring tape. The data is then manually transcribed in a field book. Water Appropriations Division does utilize electronic measuring equipment or Water Level Loggers on sixty-nine (69) of its observation wells. The Water Level Loggers collect well data hourly or as set. The data from the Water Level Loggers is retrieved by Water Appropriations Division personnel during the well run process.

All data collected from the observation wells is entered into the Water Appropriations Division Well Database by the Field Technicians, typically within a week of the well run being completed.

Allocation, Monitoring and Reporting Tools

The table below highlights the key allocation, monitoring and reporting tools used by the Water Appropriations Division to manage water use across the state. The table includes the tool, a brief description, the permit types subject to the tool and the governing regulation or policy, including NDCC 61-04 and NDAC 89-03.

Tool	Brief Description	Impacted Permit Types	Governing Code/Policy
Permit	A permit provides an individual/entity with a permanent or temporary right to withdrawal water, and is the primary tool used by the State Engineer to allocate water.	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> NDCC 61-01-01

Tool	Brief Description	Impacted Permit Types	Governing Code/Policy
Meter Installation	A Meter measures the volume of water usage and is the primary monitoring tool used by the State Engineer and the permit holder to gauge the amount of water use.	<ul style="list-style-type: none"> • Conditional/Perfectured • Temporary In Lieu of Irrigation • Temporary Industrial Use (>15 AF) 	<ul style="list-style-type: none"> • State Engineer Policy
Annual Use Form (AUF)	An AUF includes water use data, pumping rate and other information deemed necessary by the State Engineer. Information is self-reported by the permit holder.	<ul style="list-style-type: none"> • Conditional/Perfectured • Temporary In Lieu of Irrigation • Temporary Industrial Use (All) 	<ul style="list-style-type: none"> • NDCC 61-04-27 • NDAC 89-03-01-13
Monthly Meter Reports	A Monthly Meter Report includes monthly meter readings. Information is self-reported by the permit holder.	<ul style="list-style-type: none"> • Water Depots • Temporary In Lieu of Irrigation • Temporary Industrial Use (>15 AF) 	<ul style="list-style-type: none"> • State Engineer Policy
Weekly Use Reporting	Weekly usage reporting includes use information; however, since no meter is required for this permit type, the unit of measurement can vary across permits.	<ul style="list-style-type: none"> • Temporary Industrial Use (\leq15 AF) 	<ul style="list-style-type: none"> • State Engineer Policy
Field Inspections	Field Inspections are conducted at least once annually during the authorization period to validate meter information. Meter information is obtained by state personnel.	<ul style="list-style-type: none"> • Water Depots • Temporary In Lieu of Irrigation • Temporary Industrial Use (>15 AF) 	<ul style="list-style-type: none"> • State Engineer Policy
Satellite Imagery	Satellite imagery is accessed to determine whether plots of land have been irrigated by permit holders that have converted their irrigation right for industrial purpose. Information is obtained by state personnel.	<ul style="list-style-type: none"> • Temporary In Lieu of Irrigation 	<ul style="list-style-type: none"> • State Engineer Policy

Tool	Brief Description	Impacted Permit Types	Governing Code/Policy
Telemetry	Telemetry provides remote access to meter information; however, the technology has not been widely implemented and is therefore used on only a limited basis by the Water Appropriations Division. The information is obtained by state personnel directly from the meter.	<ul style="list-style-type: none"> • Not Applicable 	<ul style="list-style-type: none"> • Not Applicable
General Public	Information provided by the general public can be used to alert the Water Appropriations Division of potential violations.	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • Not Applicable
Well Runs	Well data is gathered across a network of observation wells. Policy dictates that each observation well be measured at least once annually. Measurements are obtained by state personnel, contractors or the U.S. Geological Survey.	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • State Engineer Policy

Notes

A permit is not required when the amount to be withdrawn is less than 12.5 acre-feet per year and the purpose of use is designated as domestic, livestock, fish, wildlife or recreation.

Section 3: Auditing Process

Elements

The performance audit objectives were defined by the following elements. Testing was conducted across the various elements, as appropriate, to confirm that the execution of monitoring and reporting practices was compliant with established regulations, policies and procedures.

Element		Testing Component	Testing Universe	Testing Sample
1	Review of Laws, Rules, Regulations, Policies, Procedures and Processes	Gap Analysis of established policies and procedures with laws, rules and regulations	N/A	N/A
2	Monitoring Water Usage Limitations and Levels Relating to Industrial Water Use and Aquifer Levels	<u>Monitoring of Conditional/Perfected Permits</u> <ul style="list-style-type: none"> AUF Filed for 2010 and 2011 (NDCC 61-04-27) Monthly Meter Report Filed by Water Depots (2012 Policy) Site Inspection Conducted for Water Depots (2012 Policy) Usage vs. Allocation (NDCC 61-04-06.2) 	420	60
		<u>Monitoring of Aquifer Levels</u> <ul style="list-style-type: none"> Observation Wells Measured in 2010, 2011 and 2012 (Policy) Wells Monitored According to Schedule for 2010, 2011, and 2012 (Policy) 	3,750	218
3	Temporary Authorizations for Holders of Existing Irrigation Water Permits to Use Water for Industrial Uses and Extension of Temporary Authorizations	<u>Monitoring of Temporary: In Lieu of Irrigation Permits</u> <ul style="list-style-type: none"> Permit Approval Period (NDCC 61-04-06) AUF Filed for Authorized Period (NDCC 61-04-27) Monthly Meter Report Filed (2012 Policy) Site Inspection Conducted (2012 Policy) Usage vs. Allocation (NDCC 61-04-06.2) 	75	25

Element		Testing Component	Testing Universe	Testing Sample
4	Temporary Surface Water Permits for Industrial Use	<u>Temporary: Industrial Use Permits</u> <ul style="list-style-type: none"> Permit Approval Period (NDCC 61-04-06) AUF Filed for Authorized Period (NDCC 61-04-27) Monthly Meter Report Filed for Permits of >15 Acre-Feet (2012 Policy) Site Inspection Conducted for Permits of >15 Acre-Feet in (2012 Policy) Usage vs. Allocation (NDCC 61-04-06.2) 	400	50
5	Establishment, Imposition and Collection of Penalties	<u>Establishment, Imposition and Collection of Penalties</u> <ul style="list-style-type: none"> Consistent Application of Policies 	7	7
6	Enforcement of SWC's Metering and Reporting Policies	<u>Enforcement of Metering and Reporting Policies</u> <ul style="list-style-type: none"> Testing Components Included in Elements #2 – #4 	N/A	N/A

Approach

The approach included reviewing applicable regulatory and process documentation, interviewing internal stakeholders, observing processes, interviewing representatives from comparable state agencies and the U.S., Geological Survey and conducting the testing activities outlined above.

The following interviews follow-up meetings were conducted as part of field work activities.

MEETING	ATTENDEES (DIVISION/MEETING PURPOSE)
Engagement Kick-Off	Office of State Auditor, Office of the State Engineer
Office of State Engineer Interview	Introductory Meeting
Office of State Engineer Interview	Overview/Planning Meeting
Office of State Engineer Interview	Water Permitting Section
Office of State Engineer Interview	Ground Water Management Section
Office of State Engineer Interview	Hydrologic Data Section
Office of State Engineer Interview	Surface Water Management Section
Office of State Engineer Interview	Water Management and Metering Strategies

MEETING	ATTENDEES (DIVISION/MEETING PURPOSE)
Office of State Engineer Interview	Water Use Collection Program
Office of State Engineer Interview	Special Investigations Program
Office of State Engineer Interview	Database System
Office of State Engineer Interview	Imposition and Collection of Penalties
Office of State Engineer Interview	Data Collection
Office of State Engineer Observations	Field Inspections and Well Runs
External Interview	South Dakota Department of Environment and Natural Resources
External Interview	Montana Department of Natural Resources and Conservation
External Interview	Wyoming State Engineer's Office
External Interview	U.S. Geological Survey

Testing Activities

Testing was performed to assess the monitoring and reporting practices utilized by the Water Appropriations Division for the processes defined in the scope of work to help determine compliance with laws, regulations, policies and procedures. The testing activities included identifying sample populations relevant to each element, reviewing available permit, use and monitoring records, and accessing the following database resources: Water Permit Records Database, Water Depots Database, Temporary Water Permits Database and the Well Database.

The sample populations were selected on a judgmental basis, taking in account criteria such as, type of monitoring/reporting activity, geographic location, etc. A statistical sampling method was not utilized; therefore, the results were not extrapolated across the total population. As such, results may or may not be reflective of the overall population.

Benchmarking Analysis

The monitoring and reporting techniques employed by the State Engineers appear to be consistent with those of other western states with similar water laws. In addition to research, interviews were conducted with representatives from three comparable states: Montana, South Dakota and Wyoming. In each state annual self-reporting was the primary tool used to collect water use information. Supplemental monitoring techniques such as monthly reporting and field inspections were also employed. The supplemental techniques identified are also being utilized by the State Engineer.

As the monitoring and reporting processes are data driven, each state indicated the use of a data base system to manage and communicate permit/water usage data. As a part of the benchmarking, we did not review the benchmarking states database for complexity.

The following table helps illustrate the various monitoring and reporting techniques utilized by the states included in the benchmarking analysis.

State	Annual Reporting	Monthly Reporting	Weekly Reporting	Field Inspections	Well Runs
North Dakota	Yes	Yes	Yes	Yes	Yes
Montana	Yes	N/I ^(1,2)	N/I	Yes ⁽³⁾	Yes
South Dakota	Yes	N/I	N/I	N/I	Yes
Wyoming	Yes ⁽⁴⁾	N/I	Yes	Yes ⁽⁵⁾	Yes

Notes

- (1) N/I – None Identified by the interviewee
- (2) Permit conditions require the permit holder to obtain monthly meter information but reporting is performed annually
- (3) Resources not available to perform routine inspections but staff perform periodic site visits
- (4) Annual reporting required for permits issued for ground water resources; permits issued for surface water do not have annual reporting conditions
- (5) Inspections were performed in the southeastern part by a paid contractor but funds for this program were exhausted, as such inspections are now performed by state personnel but the frequency of inspections appears to be undefined

Findings and Recommendations

Findings and recommendations were drafted related to areas on noncompliance, exceptions and process gaps. The following table further illustrates the structure of the findings and recommendations.

GAO ELEMENT	DESCRIPTION
Criteria	The criterion cites and summarizes the laws, regulations, policies, procedures, and leading or standard practices of the program or operation mentioned in the finding.
Condition	The condition provides specific observations and examples of the finding in the current state and provides evidence that supports the cause of the finding.
Effect	The effect indicates the possible risk the finding may have.
Recommendation	The recommendation(s) are suggestions management may consider when formulating action plans to address the findings and potential risks we identified in the report.
Management Response	<i>Current Status of Condition:</i> Comments on the finding from management responsible for implementing action plans to mitigate the risks. <i>Response to Recommendation:</i> Comments on the recommendations from management responsible for implementing action plans to mitigate the risks.

Section 4: Findings and Recommendations

ELEMENT #1 – REVIEW OF LAWS, RULES, REGULATIONS POLICIES, PROCEDURES AND PROCESSES

MONITORING AND REPORTING PROCESSES INCLUDED IN ELEMENT #1

1. Monitoring water use limitations and levels of conditional/perfected water permits
2. Monitoring aquifer levels
3. Temporary authorization for holders of existing irrigation permits to use water for industrial purposes (i.e., temporary in lieu of irrigation permits)
4. Temporary surface water permits issued for industrial use (i.e., temporary industrial use permits)
5. Establishment, imposition and collection of penalties
6. Enforcement of State Water Commission’s metering and reporting policies

MONITORING AND REPORTING TOOLS

The following monitoring and reporting tools are related to element #1:

MONITORING TOOLS	REPORTING TOOLS
PERMITS	ANNUAL USE FORMS
IN-LINE METERS	MONTHLY REPORTING FORMS
FIELD INSPECTIONS	WEEKLY REPORTING
SATELLITE IMAGERY	
TELEMETRY DEVICES (PILOT PROGRAM)	
INQUIRES FROM THE PUBLIC	
WELL RUN LOGS	

FINDINGS AND RECOMMENDATIONS – ELEMENT #1

FINDING 1.1	SWC PROCESSES DO NOT APPEAR TO BE FORMALLY/ADEQUATELY DOCUMENTED
<p>Criteria</p>	<p><i>SWC is responsible for the allocation and management of state water resources in accordance with applicable laws, regulations, and policies.</i></p>
<p>Condition</p>	<p>The Water Appropriations Division leverages the Century Code and Administrative Code as Division-level policies and procedures. Actual processes executed to monitor and report compliance requirements do not appear to be formally and/or adequately documented.</p> <p>The Water Appropriations Division provided the following policies and procedures to demonstrate Division-level governance documentation:</p> <ul style="list-style-type: none"> • “Annual Use Report Cross-Checking” • “Procedures for Processing Water Permits and Applications – Revised 10/23/12” • “Steps to Mass Mailing AUFs” • “Policy for Obtaining a Temporary Water Permit for Industrial Use, In Lieu of Irrigation” • “A Summary of Water Availability, Allocation, Use and Water Use Monitoring for Oil Field Industrial Needs in Western North Dakota” <ul style="list-style-type: none"> ○ This report provides an overview of certain monitoring and reporting processes and references applicable Century or Administrative Codes; however, the processes are not formally documented within the report. <p>The Water Appropriate Division level policies and procedures documents appear inconsistent in format, informal in content, may not provide adequate guidance as stand-alone documents for understanding or executing the related process, and do not appear to be comprehensive of all monitoring and reporting processes.</p> <p>Additional documentation was obtained from the North Dakota State Water Commission website (http://www.swc.state.nd.us), including the following documents contained in the “Water Laws and Polices” section:</p> <ul style="list-style-type: none"> • Administrative Code • Cost-Share Application Form • Cost-Share Policies • Century Code • Water Supply Cost-Share Policy • Current Legislation <p>While the Water Appropriation Division personnel can clearly articulate monitoring and reporting processes and protocols; all processes do not appear to be formally and/or adequately documented.</p>
<p>Effect</p>	<p>The lack of formally documented policies and procedures may result in:</p> <ul style="list-style-type: none"> • Inconsistent application of processes across the organization • Loss of institutional knowledge due to staff turnover • Limited ability to manage and communicate protocols and updates • Noncompliance with governing laws, regulations, rules, mandates, etc.

FINDING 1.1	SWC PROCESSES DO NOT APPEAR TO BE FORMALLY/ADEQUATELY DOCUMENTED
Recommendation	<p>The Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Develop a standard format for all process documentation. The standard operating procedures (SOPs) may include the following components: <ul style="list-style-type: none"> ○ Applicable rule/regulation ○ Related process (narrative and/or process flow) ○ Related documentation required to execute process ○ Potential impact for noncompliance of rule/regulation <p>Brief operational aides may also be developed to summarize processes for staff to reference in the field. This may be of value for new Field Technicians.</p> 2. Document the following processes to reflect agency protocols: <ul style="list-style-type: none"> ○ Monitoring water use limitations and levels ○ Monitoring aquifer levels ○ Establishment, imposition and collection of penalties ○ Enforcement of State Water Commission's metering and reporting policies 3. Establish a protocol to disseminate SOPs and keep staff abreast of current and revised guidance. These protocols should consider leveraging technology to the extent possible.
Management Response	<p>We agree and the Water Appropriations Division will 1) develop standard operating procedures (SOP's) as recommended, 2) document processes as noted to reflect agency protocols, and 3) establish a protocol to disseminate SOP's and keep staff abreast of current and revised guidance.</p>

FINDING 1.2	ANNUAL USE FORM SUBMISSION DATES DO NOT APPEAR TO BE CONSISTENT WITH NDCC SUBMISSION REQUIREMENT
<p>Criteria</p>	<p>NDCC 61-04-27: <i>“On or before the first day of February of each year all persons holding a water permit, including irrigation districts, federal agencies, and political subdivisions, shall file with the state engineer, on forms supplied by the state engineer, topographic, mapping, foundation test borings, design, water use, and such other information as the state engineer shall require.”</i></p>
<p>Condition</p>	<p>In December/January of each year, the Water Appropriations Division issues notification letters to all permit holders communicating the required submittal date by which Annual Use Forms (AUF) are to be received. The notification letters issued by the Water Appropriations Division in both calendar years 2010 and 2011 to industrial use permits holders indicated a required submission date of March 7th.</p> <p>The Water Appropriations Division indicated the variance between the Century Code requirement and the current practice is intentional to help alleviate the administrative burden associated with the processing of AUFs. As all permits require the submission of an AUF, the manual effort required to process the form can be significant. The staggered approach allows the Water Appropriations Division to manage this effort.</p>
<p>Effect</p>	<p>Delays in reporting may increase the risk associated with:</p> <ul style="list-style-type: none"> • Noncompliance with NDCC 61-04-27 requirements • Timely identification of potential violations and/or corrective actions
<p>Recommendation</p>	<p>The Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Enforce compliance with NDCC 61-04-27 required submission date. 2. Request an amendment to NDCC 61-04-27 to revise the AUF required submission date to allow for timely and efficient processing. 3. Develop and implement an electronic reporting tool to help reduce the manual processing effort associated with the current paper-based process, drive efficiencies and help ensure adherence to regulations.
<p>Management Response</p>	<ol style="list-style-type: none"> 1. We disagree (see response to 1.2.2). 2. We agree and the State Engineer will pursue legislation to change the AUF filing date to March 15 of each year. 3. We agree and an electronic submission tool will be developed by the division to allow permit holders to file annual water use electronically. It is important to note that proposed electronic filing system will not replace the paper filing system in the near future and as a result the division will support a “dual” filing reporting system. Because it is unknown which permit holders can file electronically, paper forms will be sent to all permit holders. Some will file electronically and some will file the paper report by surface mail. Although paper reductions will be a benefit, reporting errors will occur using the electronic filing system and

FINDING 1.2	ANNUAL USE FORM SUBMISSION DATES DO NOT APPEAR TO BE CONSISTENT WITH NDCC SUBMISSION REQUIREMENT
	<p>as a result each report must be manually verified prior to storing in the electronic database. Due to the potential for reporting errors, I do not envision allowing the permit holder to directly enter water use data into our electronic database. Those permit holders filing AUF's electronically will not be required to file paper forms.</p>
<p>Auditor's Concluding Remarks</p>	<p>Notification letters for 2010 and 2011 clearly indicated a submission date not compliant with NDCC 61-04-27. Pursuit of a legislative change to NDCC 61-04-27 may assist in managing the Water Appropriations Division's administrative burden related to receipt of AUFs; however, until such change is approved, the Water Appropriations Division should ensure compliance with submission date dictated by NDCC 61-04-27.</p> <p>It is understood that an electronic submission option may not eliminate the manual submission of AUFs by mail. It is also understood that permit holders would not and should not have direct access to enter information into the Water Appropriations Division database. Consistent with the review process of the manual AUF submissions, the electronic submissions would be subject to a review process. However, electronic submissions would allow for efficiencies to be gained, including: reduction of paper AUFs, reduction of manual conversions, ensuring data fields on the AUF are complete, reduction of manual entry of information into database, and reduction of scanning into the database.</p> <p>A recommended approach for the Water Appropriations Division to consider would to pilot or phase in the electronic AUF submission requirement with the long term goal of eliminating the manual submission of AUFs.</p>

ELEMENT #2 – MONITORING WATER USAGE LIMITATIONS AND LEVELS RELATING TO INDUSTRIAL WATER USE AND AQUIFER LEVELS

MONITORING AND REPORTING PROCESSES INCLUDED IN ELEMENT #2

1. Conditional/Perfected Industrial Use Water Permits
2. Monitoring Aquifer Levels

MONITORING AND REPORTING TOOLS

The following monitoring and reporting tools are related to element #2:

MONITORING TOOLS	REPORTING TOOLS
PERMITS	ANNUAL USE FORMS
IN-LINE METERS	MONTHLY REPORTING FORMS
FIELD INSPECTIONS	
TELEMETRY DEVICES (PILOT PROGRAM)	
INQUIRES FROM THE PUBLIC	

Findings and Recommendations – Element #2 (Conditional/Perfected Permits)

FINDING 2.1	WATER USE PROGRAM IS RELIANT ON PERMIT HOLDER SELF-REPORTING
Criteria	<p><i>The purpose of the Water Use Program is to provide water use data that when used as model input provides Hydrologist a stronger basis for assessing hydrologic system response to pumping. Ancillary uses include identification of water use violations and providing water use data to the U.S. Geological Survey for compiling national water use surveys.</i></p>
Condition	<p>The Water Use Program utilizes the following monitoring and reporting protocols to obtain water use data:</p> <ul style="list-style-type: none"> • Annual reporting (self-reporting) • Monthly reporting (self-reporting) • Field inspections (obtained by the state) • Remote terminal metering devices (pilot phase) <p>Of these protocols, only field inspections include Water Appropriations Division staff validation of reported use data, as the remote terminal metering devices are in a pilot phase and a determination for future use has not been concluded as of this report.</p> <p>Water Appropriations Division practice is to conduct a field inspection of water depot sites and other specific permit types, at least annually, to allow for the state to validate meter information provided by through the reporting process; however, the majority of permit holders are not subject to field inspections. For those permits that are subject to field inspections, there does not appear to be documented criteria to establish the frequency with which inspections should occur. As such, some permits are reviewed only once annually, while others are inspected more frequently.</p> <p>While the field inspections serve as a quality assurance tool, the Water Use Program still relies on the self-reporting of permit holders or an “honor system” and is thus reliant on the permit holder to accurately represent usage amounts.</p>
Effect	<p>The self-reporting system may increase the risk associated with:</p> <ul style="list-style-type: none"> • Accuracy of information reported • Timeliness of violation identification
Recommendation	<p>The Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Require implementation of remote terminal metering devices to supplement or replace the current self-reporting system. <ul style="list-style-type: none"> ○ Initial implementation efforts may focus on water depot sites and/or industrial sites with network accessibility in order to alleviate cost and data transfer concerns. ○ Consideration should be given the potential cost sharing options with the permit holders to disperse the costs associated with implementation. 2. Development of formal policies and procedures to govern field inspection activities to help ensure that all sites/permits requiring an inspection are assessed and meter readings obtained. Established policies and procedures may include:

FINDING 2.1	WATER USE PROGRAM IS RELIANT ON PERMIT HOLDER SELF-REPORTING
	<ul style="list-style-type: none"> ○ Development of universal requirements/criteria to determine the frequency with which field inspections should be conducted ○ Creation of a comprehensive field inspection schedule ○ Establishment of protocols to validate execution of all required field inspections
Management Response	<ol style="list-style-type: none"> 1. We agree and the Water Appropriations Division is considering the installation of remote metering devices as a condition on industrial use (water depots) permits providing water for oil field industrial use. A pilot study for evaluating the utility of remote metering devices was completed in January 2013 and a report including recommendations has been completed and will be provided to Legislative Audit and Fiscal Review Committee (LAFRC) committee members at the committee meeting on January 24, 2013. 2. We agree and the Water Appropriations Division will document formal policies and procedures to govern field inspection activities as recommended.
Auditor's Concluding Remarks	<p>The pilot study for the remote metering devices was not complete at the time this report was drafted; therefore, the recommendations were not reviewed or considered in our analysis.</p>

FINDING 2.2	ANNUAL USE FORM PROCESSING IS MANUAL IN NATURE
Criteria	<i>Complete and timely submission of Annual Use Forms promotes efficient review to identify potential condition violations.</i>
Condition	<p>The Water Appropriations Division issues over 2,200 AUFs for irrigation permits (<i>refer to page 8</i>) and more than 800 AUFs for municipal, rural water and industrial permits annually. Based on data provided by the Water Appropriations Division, approximately 93% of irrigation permit holders return an AUF ($\approx 2,046$) and 97% of municipal, rural water and industrial permit holders return an AUF (≈ 776). The majority of AUFs are returned in hard copy format via mail.</p> <p>Upon receipt of the AUFs, the Water Appropriations Division:</p> <ul style="list-style-type: none"> • Manually reviews the AUF for completeness • Manually tabulates the use information provided <ul style="list-style-type: none"> ○ All use data, including total approved allocation, is stored in the database in units of acre-feet, however, most permit holders report usage based on the units of measurement displayed on their meter. Thus the tabulation process requires manual unit conversions by Water Appropriations Division staff in order to assess usage data against permit conditions (e.g., X10 Gallons → Acre-Feet). • Manually enters the data from the AUF into the appropriate database • Scans AUFs and uploads images into the appropriate database • Files AUFs in the hard copy permit folder
Effect	<p>Manual processes may increase the risk associated with:</p> <ul style="list-style-type: none"> • Data entry errors • Unit conversion errors • Timeliness of violation identification • Inefficient utilization of resources
Recommendation	<p>The Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Development and implementation of an online data entry system to allow permit holders to submit use data electronically. Design elements of an online reporting system to consider may include: <ul style="list-style-type: none"> ○ Interface with databases (i.e., 4D) ○ Form design (e.g., required fields) ○ Electronic unit conversion calculations ○ User account creation to allow management of multiple permits ○ Electronic notification capabilities (e.g., annual AUF memo) ○ Controls to identify potential condition violations (e.g. exceptions reporting) <p>An online reporting tool could help alleviate much of the administrative effort associated with the current paper-based process and be expanded to address other self-reporting controls such as the Monthly Meter Reporting process.</p>

FINDING 2.2	ANNUAL USE FORM PROCESSING IS MANUAL IN NATURE
	<ol style="list-style-type: none"> 2. Encourage e-mail submission of AUFs. E-mail submission would allow for the Water Appropriations Division to receive AUFs in a format that could be attached in appropriate database, removing the need for scanning. 3. Explore current database capabilities related to conducting automatic conversion of measurement data to acre-feet. Automatic conversion would help remove a manual step from the process and help ensure accurate and consistent water usage conversion.
<p style="text-align: center;">Management Response</p>	<ol style="list-style-type: none"> 1. We agree and an electronic submission tool will be developed by the division to allow permit holders to file annual water use electronically. It is important to note that proposed electronic filing system will not replace the paper filing system in the near future and as a result the division will support a “dual” filing reporting system. Because it is unknown which permit holders can file electronically, paper forms will be sent to all permit holders. Some will file electronically and some will file the paper report by surface mail. Although paper reductions will be a benefit, reporting errors will occur using the electronic filing system and as a result each report must be manually verified prior to storing in the electronic database. Due to the potential for reporting errors, I do not envision allowing the permit holder to directly enter water use data into our electronic database. Those permit holders filing AUF’s electronically will not be required to file paper forms. 2. We agree and the Water Appropriations Division will provide written notice to all water permit holders encouraging electronic submission of annual water use reports. 3. We agree and unit conversion capabilities will be provided as part of the electronic submission process.
<p style="text-align: center;">Auditor’s Concluding Remarks</p>	<p style="color: red;">It is understood that an electronic submission option may not eliminate the manual submission of AUFs by mail. It is also understood that permit holders would not and should not have direct access to enter information into the Water Appropriations Division database. Consistent with the review process of the manual AUF submissions, the electronic submissions would be subject to a review process. However, electronic submissions would allow for efficiencies to be gained, including: reduction of paper AUFs, reduction of manual conversions, ensuring data fields on the AUF are complete, reduction of manual entry of information into database, and reduction of scanning into the database.</p> <p style="color: red;">A recommended approach for the Water Appropriations Division to consider would to pilot or phase in the electronic AUF submission requirement with the long term goal of eliminating the manual submission of AUFs.</p>

FINDING 2.3	REPORTING PRACTICES ALLOW FOR PERMIT ASSOCIATION AND COMBINED USE ALLOCATION
<p>Criteria</p>	<p>NDAC 89-03-01-13: <i>“The form for reporting water usage pursuant to North Dakota Century Code section 61-04-27 must include the permit number, name of water source, amount of water usage, pumping rate, and such other information as the state engineer shall require. One form must be filed for each water permit held within the timeframe set by North Dakota Century Code section 61-04-27.”</i></p> <p>NDCC 61-04-27: <i>“On or before the first day of February of each year all persons holding a water permit, including irrigation districts, federal agencies, and political subdivisions, shall file with the state engineer, on forms supplied by the state engineer, topographic, mapping, foundation test borings, design, water use, and such other information as the state engineer shall require. The state engineer may also require any such persons to install measuring devices, which must conform to the state engineer’s specifications, at all points specified by the state engineer.”</i></p>
<p>Condition</p>	<p>The Water Appropriations Division receives approximately 420 AUFs annually for industrial use permits (refer to page 8). In many cases, a single individual/entity will hold multiple industrial use permits. Per NDAC, the permit holder is to submit one form for each water permit that includes water use information for that permit; however, current Water Appropriations Division practice allows permit holders to report usage related to multiple permits on a single AUF. This appears to be especially prevalent with water depots.</p> <p>As such, potential overages identified during the review process were subsequently explained by the Water Appropriations Division as having additional water available from an associated permit; therefore, no action was required by the Water Appropriations Division. This practice appears inconsistent with the policy established by NDAC 89-03-01-13, and requires specific knowledge of associated permits in order to effectively identify and manage potential use violations.</p>
<p>Effect</p>	<p>Current practices may increase the risk associated with:</p> <ul style="list-style-type: none"> • Timeliness of AUF processing <ul style="list-style-type: none"> ○ Identification of associated permits ○ Reliance on historical knowledge of Project Hydrologists ○ Total use calculations • Timeliness of violation identification • Noncompliance with NDAC 89-03-01-13 requirements
<p>Recommendation</p>	<p>The Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Enforce compliance with applicable NDAC requirement of a 1:1 permit-to-AUF reporting relationship. This may assist in more efficiently and effectively processing AUFs and subsequently the identification of use violations. 2. Communicate requirements and expectations to permit holders. 3. Develop and implement an online reporting system to allow permit holders to submit use data electronically to support enforcement of 1:1 reporting relationship.

FINDING 2.3	REPORTING PRACTICES ALLOW FOR PERMIT ASSOCIATION AND COMBINED USE ALLOCATION
<p>Management Response</p>	<ol style="list-style-type: none"> 1. We agree and the Water Appropriations Division will develop a more efficient method for reporting and processing industrial water use from water depots having multiple permits under the same permit holder. 2. We agree and the new reporting process will be communicated to the appropriate water permit holders. 3. We agree and an electronic submission tool will be developed by the division to allow permit holders to file annual water use electronically. It is important to note that proposed electronic filing system will not replace the paper filing system in the near future and as a result the division will support a “dual” filing reporting system. Because it is unknown which permit holders can file electronically, paper forms will be sent to all permit holders. Some will file electronically and some will file the paper report by surface mail. Although paper reductions will be a benefit, reporting errors will occur using the electronic filing system and as a result each report must be manually verified prior to storing in the electronic database. Due to the potential for reporting errors, I do not envision allowing the permit holder to directly enter water use data into our electronic database. Those permit holders filing AUF’s electronically will not be required to file paper forms.
<p>Auditor’s Concluding Remarks</p>	<p>It is understood that an electronic submission option may not eliminate the manual submission of AUFs by mail. It is also understood that permit holders would not and should not have direct access to enter information into the Water Appropriations Division database. Consistent with the review process of the manual AUF submissions, the electronic submissions would be subject to a review process. However, electronic submissions would allow for efficiencies to be gained, including: reduction of paper AUFs, reduction of manual conversions, ensuring data fields on the AUF are complete, reduction of manual entry of information into database, and reduction of scanning into the database.</p> <p>A recommended approach for the Water Appropriations Division to consider would to pilot or phase in the electronic AUF submission requirement with the long term goal of eliminating the manual submission of AUFs.</p>

FINDING 2.4	INCONSISTENCY WITHIN THE DOCUMENT MANAGEMENT SYSTEM AND ACROSS FILE TYPES
Criteria	<i>The Water Appropriations Division maintains a document management system that consists of a collection of databases and hard copy permit/water file system.</i>
Condition	<p>The Water Appropriations Division maintains permit files using both an electronic database and hard copy files. During fieldwork activities, water usage and permit information was reviewed from both the appropriate database and hard copy files. There were inconsistencies related to the level of information maintained in both the database and hard copy permit files. For example, information contained in the database was not supported by the documentation contained in the corresponding hard copy permit file, and vice versa.</p> <p>The hard copy permit files also included various annotations and notes on post-it notes, the file itself, and permit documents that did not appear to be organized in a consistent manner and/or were not always reflected in the database.</p> <p>In addition, the database included notes/comments pertinent to multiple associated permits that were not reflected in each of the impacted permit/water depot files.</p>
Effect	Gaps between the database and hard copy files may impact the Water Appropriations Division ability to effectively assess water use information in a timely manner.
Recommendation	<p>The Water Appropriations Division should consider:</p> <ol style="list-style-type: none"> 1. Developing policies and procedures to help ensure consistency across the document management system. Policies and procedures would help to establish consistency with regards to the timeliness of filing/uploading documentation, the association of documents/notes across all pertinent file sources, and consistency in notification format (e.g., date, author, purpose). 2. Explore database enhancements, such as system notifications that remind the user of the necessary filing steps, including association of files will all impacted permit records.
Management Response	<ol style="list-style-type: none"> 1. We agree and the Water Appropriations Division will develop policies and procedures to help ensure consistency across the document management system. It is important to note that inconsistencies exist between the paper record and the digital record because the conversion to digital records is not complete. The records management component of the database was developed and initiated approximately two years ago. At that time, there were more than 6,000 water permit files that were to be scanned. The Water Appropriations Division lacked sufficient staff resources at that time to systematically scan all of the existing water permit files. The decision was made to move forward by scanning all new permits and all of the historic annual water use forms. To date, processes are in place to address scanning and document capture for all new permits. The division is well underway to completing the scanning of historic annual water use, which currently includes all of the historic water use form dating back to 1994. Ongoing efforts will address the remaining annual water use forms dating back to 1976. 2. We agree and the Water Appropriations Division will explore database enhancements as noted.

FINDING 2.4	INCONSISTENCY WITHIN THE DOCUMENT MANAGEMENT SYSTEM AND ACROSS FILE TYPES
Auditor's Concluding Remarks	The scope of this performance audit was calendar years 2010, 2011, and January – June 2012 and all inconsistencies identified were for this period.

FINDING 2.5	VARIATIONS IN THE QUANTITY AND QUALITY OF USE INFORMATION REPORTED
<p>Criteria</p>	<p>NDAC 89-03-01-13:“The form for reporting water usage pursuant to North Dakota Century Code section 61-04-27 must include the permit number, name of water source, amount of water usage, pumping rate, and such other information as the state engineer shall require. One form must be filed for each water permit held within the timeframe set by North Dakota Century Code section 61-04-27.”</p>
<p>Condition</p>	<p>The Water Appropriations Division issues and receives over 3,000 AUFs annually (<i>refer to page 8</i>). The AUF template provided to permit holders includes pre-populated information explicitly for that permit, including permit number and water source. The permit holder is responsible for completing the AUF by indicating usage by month, usage for the year and providing a pumping rate. The AUFs are then returned to the Water Appropriations Division for processing.</p> <p>During the file reviews, it was identified that not all AUFs were completed fully and/or contained inconsistent information. Examples noted include:</p> <ul style="list-style-type: none"> • No monthly information provided • Partial monthly information provided • No pumping rate provided • Inconsistency between monthly use and annual use information
<p>Effect</p>	<p>Inconsistency and/or gaps in use data may increase the risk associated with:</p> <ul style="list-style-type: none"> • Accuracy of information • Timeliness of violation identification • Efficient management of water resources • Noncompliance with NDAC 89-03-01-13 requirements
<p>Recommendation</p>	<p>The Water Appropriations Division should consider:</p> <ol style="list-style-type: none"> 1. Enforcing compliance with NDAC 89-03-01-13 and current policy for AUF completion, including potential rejection of the AUF, additional field inspections and/or suspension of water use pending receipt of complete AUF. 2. Communicating/Educating completion requirements and expectations to permit holders. This may include posting additional guidance on the reporting process on the SWC website and/or conducting community education sessions. 3. Developing and implementing an online reporting system to allow permit holders to submit use data electronically. Form design would allow for the creation of required fields, thus helping to ensure complete information is obtained.
<p>Management Response</p>	<ol style="list-style-type: none"> 1. We agree and the Water Appropriations Division will enforce compliance with NDAC 89-03-01-13 as recommended. An enforcement approach to be considered is the imposition of fines on water permit holders that do not file annual water use reports as required. 2. We agree and the Water Appropriations Division will improve communication/education AUF completion requirements and expectations to water permit holders. Guidance for AUF completion requirements and expectations will be posted on the SWC website.

FINDING 2.5	VARIATIONS IN THE QUANTITY AND QUALITY OF USE INFORMATION REPORTED
	<p>3. We agree and an electronic submission tool will be developed by the division to allow permit holders to file annual water use electronically. It is important to note that proposed electronic filing system will not replace the paper filing system in the near future and as a result the division will support a “dual” filing reporting system. Because it is unknown which permit holders can file electronically, paper forms will be sent to all permit holders. Some will file electronically and some will file the paper report by surface mail. Although paper reductions will be a benefit, reporting errors will occur using the electronic filing system and as a result each report must be manually verified prior to storing in the electronic database. Due to the potential for reporting errors, I do not envision allowing the permit holder to directly enter water use data into our electronic database. Those permit holders filing AUF’s electronically will not be required to file paper forms.</p>
<p>Auditor’s Concluding Remarks</p>	<p>It is understood that an electronic submission option may not eliminate the manual submission of AUFs by mail. It is also understood that permit holders would not and should not have direct access to enter information into the Water Appropriations Division database. Consistent with the review process of the manual AUF submissions, the electronic submissions would be subject to a review process. However, electronic submissions would allow for efficiencies to be gained, including: reduction of paper AUFs, reduction of manual conversions, ensuring data fields on the AUF are complete, reduction of manual entry of information into database, and reduction of scanning into the database.</p> <p>A recommended approach for the Water Appropriations Division to consider would to pilot or phase in the electronic AUF submission requirement with the long term goal of eliminating the manual submission of AUFs.</p>

FINDING 2.6	WELL RUN PROCESSES ARE MANUAL IN NATURE
Criteria	<i>State Engineer policy requires that observation wells be measured at least annually.</i>
Condition	<p>Approximately 98% of observation wells are measured by state personnel, contractors or the U.S. Geological Survey, with 2% monitored utilizing Water Loggers.</p> <p>Field Technicians conduct well runs throughout the Field Season (May – November) to gather well data in accordance with an established schedule. For a majority of the observation wells, the Field Technicians must obtain well data, including depth measurements, manually and transcribe the measurements into Field Books.</p> <p>Observation wells equipped with Water Loggers require Field Technicians to manually download the information from the device. The data collected during the well runs is then manually entered or uploaded into the Well Database by the Field Technicians, typically within a week of the measurement being obtained. To help alleviate the risk of entering the information incorrectly, the Water Appropriations Division has established a double-entry system in the database, which essentially entails entering the data into the database twice by the same Field Technician.</p>
Effect	<p>Manual processes may create increase risk associated with:</p> <ul style="list-style-type: none"> • Data entry errors • Unit conversion errors • Timeliness of violation identification • Inefficient utilization of resources
Recommendation	<p>The Water Appropriations Division should consider:</p> <ol style="list-style-type: none"> 1. Use of electronic recording devices that would allow for the collection and transmission of well data to the database directly from the field, thus reducing/eliminating the need to enter the data into the Field Book and database. <ul style="list-style-type: none"> ○ The Division previously piloted handheld devices but the program was terminated due to Field Technician concerns. Given the amount of data collected and the administrative time required to input the well data into the database manually, consideration should be given to reinstatement of the electronic recording devices. 2. Increase the use of Water Loggers or alternative electronic data collection tools. Consideration should be given to cost and maintenance prior to implementation.
Management Response	<ol style="list-style-type: none"> 1. We agree and the division will explore on site electronic water level data entry using these devices In the latter part of the 2012 field season, each of the four Water Appropriations Division field technicians were equipped with portable electronic devices. 2. We agree that future demands may require deployment of more water level loggers. However, they will not fully replace manual monthly water-level measurements. The Water Appropriations Division does consider purchase and maintenance costs of transducer type water level loggers. Each logger costs about \$1,000 depending on cable length. Of the 60 loggers the division currently employs, about 10 to 15 loggers require

FINDING 2.6	WELL RUN PROCESSES ARE MANUAL IN NATURE
	<p>maintenance each year. Water levels are downloaded from the loggers on a monthly basis as part of the monthly “well runs” when water levels are measured manually. The loggers need to be checked each month to verify they are operating as required. The purpose of the loggers is not to reduce manual monthly water level measurements, but rather to measure water levels at a much greater frequency (hourly, daily). Electronic data loggers are deployed on an as need basis by the project hydrologist when the project hydrologist needs more frequent water level measurements to aid in the evaluation of pending water permit applications. In 2012, the Water Appropriations Division monitored water levels in 3,721 observation wells. It is not necessary or practical to install water level loggers in each of the 3,721 observation wells.</p>
<p>Auditor’s Concluding Remarks</p>	<p>It is understood that it is impractical to equip 3,721 observation wells with water loggers due to the volume and costs; however, it is recommended that the Water Appropriations Division develop a strategy to leverage technology related to measuring observation wells. This strategy may include the deployment of additional water level loggers or other electronic measuring devices/options. The strategy should also include a systematic approach to selecting which observations wells may warrant electronic measuring.</p> <p>The Water Appropriations Division should consider additional revenue streams to account for the additional costs, including: increase in permit fees, allocation of fines/penalties, potential grants, inclusion in annual budget, etc.</p>

FINDING 2.7	TESTING RESULTS – ELEMENT #2																																																							
Criteria	<i>Testing was conducted to help determine compliance with established regulations, policies and procedures. Additional criteria established for each testing component is contained in Appendix B.</i>																																																							
Condition	<p>The testing results are provided below by component. Key observations include:</p> <ul style="list-style-type: none"> • 22% of the sample population in 2010 and 13% of the sample population in 2011 were not compliant with the annual submission date established by the Water Appropriations Division (March 7th). Please refer to Finding 1.2 for recommendations related to the timeliness of AUF submission. • 17% of the sample population tested did not appear to have a complete set of monthly meter reports on file for 2012. Please refer to Finding 4.2 for recommendations related to the submission of monthly meter information. • No evidence of a field inspection was located for 3% of the sample population. Please refer to Finding 4.3 for recommendations related to field inspections. • The potential use violations were identified by the Water Appropriations Division and corrective actions, to include permit holder communications, were conducted to mediate the exception. During testing follow-up activities, the Water Appropriations Division was able to communicate the appropriate corrective actions related to the use exceptions. <ul style="list-style-type: none"> ○ Not all exceptions resulted in an Administrative Order, as the Water Appropriations Division practice is to attempt to address the exception through other means, including a reduction in future use. • No evidence of a well measurement was located for 1% of the sample population. Please refer to Finding 2.6 for recommendations related well runs. <table border="1" data-bbox="440 1163 1395 1751"> <thead> <tr> <th>Test Condition</th> <th>Year</th> <th>Sample Population</th> <th>Compliance Rate</th> <th>No. of Exceptions</th> </tr> </thead> <tbody> <tr> <td rowspan="2">AUF Filed</td> <td>2010</td> <td>51 Permits</td> <td>100%</td> <td>0</td> </tr> <tr> <td>2011</td> <td>60 Permits</td> <td>100%</td> <td>0</td> </tr> <tr> <td rowspan="2">AUF Filed Timely *Based on Division Policy</td> <td>2010</td> <td>51 Permits</td> <td>78%</td> <td>11</td> </tr> <tr> <td>2011</td> <td>60 Permits</td> <td>87%</td> <td>8</td> </tr> <tr> <td>Monthly Meter Report Filed</td> <td>2012</td> <td>35 Permits</td> <td>83%</td> <td>6</td> </tr> <tr> <td>Field Inspections</td> <td>2012</td> <td>36 Permits</td> <td>97%</td> <td>1</td> </tr> <tr> <td rowspan="2">Potential Use Violations</td> <td>2010</td> <td>51 Permits</td> <td>84%</td> <td>8</td> </tr> <tr> <td>2011</td> <td>60 Permits</td> <td>82%</td> <td>11</td> </tr> <tr> <td rowspan="3">Annual Well Run Conducted</td> <td>2010</td> <td>198 Wells</td> <td>99%</td> <td>1</td> </tr> <tr> <td>2011</td> <td>208 Wells</td> <td>100%</td> <td>0</td> </tr> <tr> <td>2012</td> <td>218 Wells</td> <td>99%</td> <td>1</td> </tr> </tbody> </table>	Test Condition	Year	Sample Population	Compliance Rate	No. of Exceptions	AUF Filed	2010	51 Permits	100%	0	2011	60 Permits	100%	0	AUF Filed Timely *Based on Division Policy	2010	51 Permits	78%	11	2011	60 Permits	87%	8	Monthly Meter Report Filed	2012	35 Permits	83%	6	Field Inspections	2012	36 Permits	97%	1	Potential Use Violations	2010	51 Permits	84%	8	2011	60 Permits	82%	11	Annual Well Run Conducted	2010	198 Wells	99%	1	2011	208 Wells	100%	0	2012	218 Wells	99%	1
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FINDING 2.7	TESTING RESULTS – ELEMENT #2
<p>Recommendation</p>	<p>The Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Review exceptions in Appendix B and take appropriate action to address. 2. Ensure compliance with applicable laws, regulations and/or policies. 3. Leverage technology where applicable to reduce manual effort that may attribute to exception. 4. Findings and Recommendations included throughout the report are intended to help address performance gaps identified that may have resulted in the exception.
<p>Management Response</p>	<ol style="list-style-type: none"> 1. We agree and exceptions associated with water use reporting and overuse will be reduced with the addition of a full-time Water Resource Manager to increase field inspections and process monthly water use reports. Exceptions identified by the testing process will be investigated and appropriate actions will be taken to achieve compliance. It is important to note the overages shown in Appendix B of the audit report are very small and as a result, the impact on the water sources and waters users is negligible. 2. We agree and enforcement with applicable laws, regulations, and policies will be improved with the addition of a full time Water Resource Manager to increase field inspections and process monthly water use reports to verify compliance with applicable laws, regulations, and policies. Enforcement of existing laws other than meeting the February 1 water use filing date do not appear to be problematic. 3. We agree and additional electronic water use monitoring (field – remote telemetry) and office (electronic annual water use filing) are/will be evaluated.
<p>Auditor's Concluding Remarks</p>	<p>The hiring of an additional full-time Water Resource Manager may assist in reducing/addressing the stated finding(s); however, the Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Analysis that the addition of one (1) full-time Water Resource Manager is adequate to meet the Division's needs. 2. Contingency approach to address stated findings if the hiring of this additional one (1) full-time Water Resource Manager is delayed or not approved. 3. Expediting the hiring request of the one (1) full-time Water Resource Manager within the hiring/budget cycle.

ELEMENT #3 – TEMPORARY AUTHORIZATIONS FOR HOLDERS OF EXISTING IRRIGATION WATER PERMITS TO USE WATER FOR INDUSTRIAL USE AND EXTENSION OF TEMPORARY AUTHORIZATIONS

MONITORING AND REPORTING PROCESSES INCLUDED IN ELEMENT #3

1. Temporary authorization for holders of existing irrigation permits to use water for industrial purposes (i.e., temporary in lieu of irrigation permits)

MONITORING AND REPORTING TOOLS

The following monitoring and reporting tools are related to element #3:

MONITORING TOOLS	REPORTING TOOLS
PERMITS	ANNUAL USE FORMS
IN-LINE METERS	MONTHLY REPORTING FORMS
FIELD INSPECTIONS	
LANDSAT SATELLITE	
INQUIRES FROM THE PUBLIC	

FINDINGS AND RECOMMENDATIONS - Element #3 (Temporary In Lieu of Irrigation Permits)

FINDING 3.1	TESTING RESULTS – ELEMENT #3																																						
<p>Criteria</p>	<p>Testing was conducted to help determine compliance with established regulations, policies and procedures. Additional criteria established for each testing component is contained in Appendix B.</p>																																						
<p>Condition</p>	<p>The testing results are provided below by component. Key observations include:</p> <ul style="list-style-type: none"> • No evidence of a field inspection was located for 17% of the sample population. Please refer to Finding 4.3 for recommendations related to field inspections. • The potential use violations were identified by the Water Appropriations Division and corrective actions, to include permit holder communications, were conducted to mediate the exception. During testing follow-up activities, the Water Appropriations Division was able to communicate the appropriate corrective actions related to the use exceptions. <ul style="list-style-type: none"> ○ Not all exceptions resulted in an Administrative Order, as the Water Appropriations Division practice is to attempt to address the exception through other means, including a reduction in future use. <table border="1" data-bbox="440 898 1398 1243"> <thead> <tr> <th>Test Condition</th> <th>Year</th> <th>Sample Population</th> <th>Compliance Rate</th> <th>No. of Exceptions</th> </tr> </thead> <tbody> <tr> <td>Permit Period</td> <td>All</td> <td>25 Permits</td> <td>100%</td> <td>0</td> </tr> <tr> <td rowspan="2">AUF Filed</td> <td>2010</td> <td>5 Permits</td> <td>100%</td> <td>0</td> </tr> <tr> <td>2011</td> <td>13 Permits</td> <td>100%</td> <td>0</td> </tr> <tr> <td>Monthly Meter Report Filed</td> <td>2012</td> <td>6 Permits</td> <td>100%</td> <td>0</td> </tr> <tr> <td>Field Inspections</td> <td>2012</td> <td>6 Permits</td> <td>83%</td> <td>1</td> </tr> <tr> <td rowspan="2">Potential Use Violations</td> <td>2010</td> <td>5 Permits</td> <td>100%</td> <td>0</td> </tr> <tr> <td>2011</td> <td>13 Permits</td> <td>85%</td> <td>2</td> </tr> </tbody> </table>	Test Condition	Year	Sample Population	Compliance Rate	No. of Exceptions	Permit Period	All	25 Permits	100%	0	AUF Filed	2010	5 Permits	100%	0	2011	13 Permits	100%	0	Monthly Meter Report Filed	2012	6 Permits	100%	0	Field Inspections	2012	6 Permits	83%	1	Potential Use Violations	2010	5 Permits	100%	0	2011	13 Permits	85%	2
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<p>Effect</p>	<p>Exceptions represent potential non-compliance with laws, regulations and/or policies.</p>																																						
<p>Recommendation</p>	<p>The Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Review exceptions in Appendix B and take appropriate action to address. 2. Ensure compliance with applicable laws, regulations and/or policies. 3. Leverage technology where applicable to reduce manual effort that may attribute to exception. 4. Findings and Recommendations included throughout the report are intended to help address performance gaps identified that may have resulted in the exception. 																																						
<p>Management Response</p>	<ol style="list-style-type: none"> 1. We agree and exceptions associated with water use reporting and overuse will be greatly reduced with the addition of a full-time Water Resource Manager to increase field inspections, process monthly water use reports and help oversee monitoring of real-time water use data if remote telemetry metering devices are deployed. Exceptions identified by the testing process will be investigated and appropriate actions will be 																																						

FINDING 3.1	TESTING RESULTS – ELEMENT #3
	<p>taken to achieve compliance. It is important to note the overages shown in Appendix B of the audit report are very small and as a result, the impact on the water sources and waters users is negligible.</p> <ol style="list-style-type: none"> 2. We agree and compliance with applicable laws, regulations, and policies will be improved with the addition of a full time Water Resource Manager to increase field inspections and process monthly water use reports to verify compliance with applicable laws, regulations, and policies. Enforcement of existing laws other than meeting the February 1 water use filing date do not appear to be problematic. 3. We agree and additional electronic water use monitoring (field – remote telemetry) and office (electronic annual water use filing) are/will be evaluated.
<p>Auditor's Concluding Remarks</p>	<p>The hiring of an additional full-time Water Resource Manager may assist in reducing/addressing the stated finding(s); however, the Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Analysis that the addition of one (1) full-time Water Resource Manager is adequate to meet the Division's needs. 2. Contingency approach to address stated findings if the hiring of this additional one (1) full-time Water Resource Manager is delayed or not approved. 3. Expediting the hiring request of the one (1) full-time Water Resource Manager within the hiring/budget cycle.

ELEMENT #4 – TEMPORARY SURFACE WATER PERMITS FOR INDUSTRIAL USE

MONITORING AND REPORTING PROCESSES INCLUDED IN ELEMENT #4

1. Temporary surface water permits issued for industrial use (i.e., temporary industrial use permits)

MONITORING AND REPORTING TOOLS

The following monitoring and reporting tools are related to element #4:

MONITORING TOOLS	REPORTING TOOLS
PERMITS	ANNUAL USE FORMS
IN-LINE METERS	MONTHLY REPORTING FORMS
FIELD INSPECTIONS	WEEKLY REPORTING

FINDINGS AND RECOMMENDATIONS – ELEMENT #4 (TEMPORARY INDUSTRIAL USE PERMITS)

FINDING 4.1	INCONSISTENT APPLICATION OF REPORTING CONDITIONS
Criteria	<i>In 2012, the State Engineer established a policy requiring individuals/entities holding temporary industrial use permits with an allocation >15 acre-feet to submit monthly meter information to the State Engineer.</i>
Condition	<p>At the beginning of the authorization period for temporary industrial use permits, the Water Appropriations Division provides individuals/entities with Monthly Meter Reports to report monthly meter readings. The practice of monthly reporting provides the Water Appropriations Division greater insight into the water use of temporary permit holders and the ability of enhanced identification and responsiveness of potential use violations.</p> <p>During the course of the review, it was noted that not all industrial use permits with an allocation of >15 acre-feet were subject to the above reporting requirements, and that other criteria, including water source, may impact whether a permit is required to submit use information.</p>
Effect	<p>Current practice may increase the risks associated with:</p> <ul style="list-style-type: none"> • Inconsistent application of policy • Undefined criteria defining reporting requirements • Lack of complete water use data
Recommendation	<p>The Water Appropriations Division should clearly document the reporting requirements for each permit type to include the criteria utilized to determine reporting requirements. Any exemption to a reporting requirement for a specific permit type, including hydrologist discretion, should be clearly documented in the permit file.</p>
Management Response	<p>1. We agree and the Water Appropriations Division will document water use reporting requirements for each water permit type to include the criteria used to determine reporting requirements. Any exemption to a reporting requirement for a specific permit type, including hydrologist discretion will be documented in the permit file. The addition of an additional full time Water Resource Manager will facilitate the implementation of these recommendations.</p>
Auditor's Concluding Remarks	<p>The hiring of an additional full-time Water Resource Manager may assist in reducing/addressing the stated finding(s); however, the Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Analysis that the addition of one (1) full-time Water Resource Manager is adequate to meet the Division's needs. 2. Contingency approach to address stated findings if the hiring of this additional one (1) full-time Water Resource Manager is delayed or not approved. 3. Expediting the hiring request of the one (1) full-time Water Resource Manager within the hiring/budget cycle.

FINDING 4.2	VARIATIONS IN THE CONSISTENCY OF USE DATA AND TIMELINESS OF REPORTING
Criteria	<i>In 2012, the State Engineer established a policy requiring individuals/entities operating water depots, holding temporary in lieu of irrigation permits, or temporary industrial use permits with an allocation >15 acre-feet to submit monthly meter information to the State Engineer. In addition, permit conditions established for temporary permit holders require the submission of an AUF within thirty (30) days of the end of the authorization period.</i>
Condition	<p>At the beginning of the authorization period, the Water Appropriations Division provides water depots, temporary in lieu of irrigation permits or temporary industrial use permits with an allocation >15 acre-feet with Monthly Meter Reports to report monthly meter readings. The policy of monthly reporting provides the Water Appropriations Division greater insight into the water use of water depots and temporary permit holders and the ability of enhanced identification and responsiveness of potential use violations.</p> <p>The Water Appropriations Division also requires the majority of temporary industrial use permit holders to submit an AUF within thirty (30) days of the end of the authorization period. During the course of the review, it was noted:</p> <ul style="list-style-type: none"> • Monthly meter reports were not consistently received within the established timeline. • Monthly meter reports were not present for all months; in some cases the submission of the monthly report would stop once the permit reached its allocation limit. • An instance where no evidence of a Monthly Meter Report was available. • AUFs submitted more than thirty (30) days after the authorization period.
Effect	<p>Lack of timely and complete information may increase risk associated with:</p> <ul style="list-style-type: none"> • Timeliness of violation identification • Inefficient management of water resources
Recommendation	<p>The Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Enforce compliance with procedures for incomplete forms, including the potential rejection of the form, additional field inspections and/or suspension of water use pending receipt of complete information. 2. Communicate/educate permit holders of their responsibilities in the monitoring and reporting process, and clearly articulate expectations with regards to annual and monthly reporting controls. This may include posting additional guidance on the reporting process on the SWC website and/or conducting community education sessions. 3. Implement an online reporting tool; the tool can include required data fields to help ensure completion of forms prior to submission.

FINDING 4.2	VARIATIONS IN THE CONSISTENCY OF USE DATA AND TIMELINESS OF REPORTING
<p style="text-align: center;">Management Response</p>	<ol style="list-style-type: none"> 1. We agree and enforcement of water use reporting and performance of additional field inspections will be significantly improved with the addition of a full time Water Resource Manager. Duties of the additional Water Resource Manager will include processing and validating monthly and annual water use reports that will lead to better quality control and enforcement of water use reporting (corrections or lack of filing). 2. We agree that letters can be developed and sent to industrial use water permit holders in excess of 15 acre-feet of water annually to help educate permit holders on the importance of proper reporting and fines/penalties that may result from non-compliance. This information will also be published on the SWC website as recommended. 3. We agree and an electronic submission tool will be developed by the division to allow permit holders to file annual water use electronically. It is important to note that proposed electronic filing system will not replace the paper filing system in the near future and as a result the division will support a “dual” filing reporting system. Because it is unknown which permit holders can file electronically, paper forms will be sent to all permit holders. Some will file electronically and some will file the paper report by surface mail. Although paper reductions will be a benefit, reporting errors will occur using the electronic filing system and as a result each report must be manually verified prior to storing in the electronic database. Due to the potential for reporting errors, I do not envision allowing the permit holder to directly enter water use data into our electronic database. Those permit holders filing AUF’s electronically will not be required to file paper forms.
<p style="text-align: center;">Auditor’s Concluding Remarks</p>	<p>The hiring of an additional full-time Water Resource Manager may assist in reducing/addressing the stated finding(s); however, the Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Analysis that the addition of one (1) full-time Water Resource Manager is adequate to meet the Division’s needs. 2. Contingency approach to address stated findings if the hiring of this additional one (1) full-time Water Resource Manager is delayed or not approved. 3. Expediting the hiring request of the one (1) full-time Water Resource Manager within the hiring/budget cycle. <p>It is understood that an electronic submission option may not eliminate the manual submission of AUFs by mail. It is also understood that permit holders would not and should not have direct access to enter information into the Water Appropriations Division database. Consistent with the review process of the manual AUF submissions, the electronic submissions would be subject to a review process. However, electronic submissions would allow for efficiencies to be gained, including: reduction of paper AUFs, reduction of manual conversions, ensuring data fields on the AUF are complete, reduction of manual entry of information into database, and reduction of scanning into the database.</p>

FINDING 4.2	VARIATIONS IN THE CONSISTENCY OF USE DATA AND TIMELINESS OF REPORTING
	<p>A recommended approach for the Water Appropriations Division to consider would to pilot or phase in the electronic AUF submission requirement with the long term goal of eliminating the manual submission of AUFs.</p>

FINDING 4.3	INCONSISTENCY WITH REGARD TO FIELD INSPECTION PRACTICES
<p>Criteria</p>	<p><i>In 2012, the State Engineer established a policy requiring that state personnel conduct a meter inspection of all water depots, temporary in lieu of irrigation permits and temporary industrial use permits with an allocation >15 acre-feet at least once annually, or during the authorization period, to verify the meter information was consistent with that reported by the permit holder.</i></p>
<p>Condition</p>	<p>State personnel perform field inspections throughout the course of the year to obtain meter information for water depots, temporary in lieu of irrigation permits and temporary industrial use permits with an allocation >15 acre-feet permits. The meter information is manually captured in Field Books and subsequently manually entered into the appropriate database.</p> <p>It was observed during the review that:</p> <ul style="list-style-type: none"> • The frequency with which field inspections were performed on permits requiring an inspection varied. • In some cases, no support documentation/record of an inspection or state confirmed meter reading was available. • In one instance, state personnel were unable to obtain a meter reading on multiple occasions due to the facility being locked. <p>The field inspection process is a critical component of the Water Use Program as a monitoring practice that allows the Water Appropriations Division to verify the information provided through the self-reporting process.</p>
<p>Effect</p>	<p>Lack of data validation may increase risk associated with:</p> <ul style="list-style-type: none"> • Data integrity • Timeliness of violation identification
<p>Recommendation</p>	<p>The Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Develop formal policies and procedures to govern field inspection activities to help ensure that all sites/permits requiring an inspection are accessed and meter readings obtained. <ul style="list-style-type: none"> ○ Established policies and procedures may include development of universal requirements/criteria to determine the frequency with which field inspections should be conducted, the creation of a comprehensive field inspection schedule and protocols to validate execution of all required field inspections.
<p>Management Response</p>	<ol style="list-style-type: none"> 1. We agree and formal policies and procedures will be developed to govern meter inspection activities as recommended. The addition of a full time Water Resource Manager will increase the frequency of on-site water meter inspections.

FINDING 4.4	TESTING RESULTS – ELEMENT #4																																										
Criteria	<i>Testing was conducted to assess execution of defined practices and verify compliance with established regulations, policies and procedures. Criteria established for each testing component is contained in Appendix B.</i>																																										
Condition	<p>The testing results are provided below by component. Key observations include:</p> <ul style="list-style-type: none"> • 14% of the sample population in 2010 and 18% of the sample population in 2011 did not appear to have an AUF on file. Please refer to Finding 2.2 for recommendation related to enhancing report filing capabilities. • 12% of the sample population tested did not appear to have a complete set of monthly meter reports on file for 2012. Please refer to Finding 4.2 for recommendations related to monthly reporting. • No evidence of a field inspection was located for 42% of the sample population. Please refer to Finding 4.3 for recommendations related to field inspections. • The potential use violations were identified by the Water Appropriations Division and corrective actions, to include permit holder communications, were conducted to mediate the exception. During testing follow-up activities, the Water Appropriations Division was able to communicate the appropriate corrective actions related to the use exceptions. <ul style="list-style-type: none"> ○ Not all exceptions resulted in an Administrative Order, as the Water Appropriations Division practice is to attempt to address the exception through other means, including a reduction in future use. <table border="1" data-bbox="440 1083 1395 1493"> <thead> <tr> <th>Test Condition</th> <th>Year</th> <th>Sample Population</th> <th>Compliance Rate</th> <th>No. of Exceptions</th> </tr> </thead> <tbody> <tr> <td>Permit Period</td> <td>All</td> <td>50 Permits</td> <td>100%</td> <td>0</td> </tr> <tr> <td rowspan="2">AUF Filed</td> <td>2010</td> <td>7 Permits</td> <td>86%</td> <td>1</td> </tr> <tr> <td>2011</td> <td>22 Permits</td> <td>82%</td> <td>4</td> </tr> <tr> <td>Monthly Meter Report Filed</td> <td>2012</td> <td>7 Permits</td> <td>88%</td> <td>1</td> </tr> <tr> <td>Field Inspections</td> <td>2012</td> <td>7 Permits</td> <td>58%</td> <td>3</td> </tr> <tr> <td rowspan="2">Potential Use Violations</td> <td>2010</td> <td>18 Permits</td> <td>100%</td> <td>0</td> </tr> <tr> <td>2011</td> <td>24 Permits</td> <td>96%</td> <td>1</td> </tr> </tbody> </table>					Test Condition	Year	Sample Population	Compliance Rate	No. of Exceptions	Permit Period	All	50 Permits	100%	0	AUF Filed	2010	7 Permits	86%	1	2011	22 Permits	82%	4	Monthly Meter Report Filed	2012	7 Permits	88%	1	Field Inspections	2012	7 Permits	58%	3	Potential Use Violations	2010	18 Permits	100%	0	2011	24 Permits	96%	1
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Effect	Exceptions represent potential non-compliance with laws, regulations and/or policies.																																										

FINDING 4.4	TESTING RESULTS – ELEMENT #4
<p>Recommendation</p>	<p>The Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Review exceptions in Appendix B and take appropriate action to address. 2. Ensure compliance with applicable laws, regulations and/or policies. 3. Leverage technology where applicable to reduce manual effort that may attribute to exception. 4. Findings and Recommendations included throughout the report are intended to help address performance gaps identified that may have resulted in the exception.
<p>Management Response</p>	<ol style="list-style-type: none"> 1. We agree and exceptions associated with water use reporting and overuse will be reduced with the addition of a full-time Water Resource Manager to increase field inspections, process monthly water use reports and help oversee monitoring of real-time water use data if remote telemetry metering devices are deployed. Exceptions identified by the testing process will be investigated and appropriate actions will be taken to achieve compliance. It is important to note the overages shown in Appendix B of the audit report are very small and as a result, the impact on the water sources and waters users is negligible. 2. We agree and enforcement with applicable laws, regulations, and policies will be improved with the addition of a full time Water Resource Manager to increase field inspections and process monthly water use reports to verify compliance with applicable laws, regulations, and policies. Enforcement of existing laws other than meeting the February 1 water use filing date do not appear to be problematic. 3. We agree and additional electronic water use monitoring (field – remote telemetry) and office (electronic annual water use filing) will be evaluated. <p>It is important to note that the source of water for the temporary industrial permits was surface water. Most of the surface water sources were/are small water filled depressions that expanded greatly in large part due to the increased snowpack in the winter of 2011-2012. If this water is not put to beneficial use, much of the water will be lost to evaporation during typical growing seasons. Many of these intermittent surface water bodies are flooding agricultural land, roads and other infrastructure. These surface water bodies are not managed as long-term sustainable sources of water. They represent short-term water sources, the depletion of which will not cause any undue harm to other water users. Given the above, regulatory oversight in the form of strict water use reporting and compliance is considered a much lower priority in relation to other sustainable sources of water, particularly with the current staff shortage. However, the addition of another Water Resource Manager will allow the Water Appropriations Division to provide additional regulatory oversight as recommended in Finding 4.4.</p>

FINDING 4.4	TESTING RESULTS – ELEMENT #4
<p>Auditor's Concluding Remarks</p>	<p>The hiring of an additional full-time Water Resource Manager may assist in reducing/addressing the stated finding(s); however, the Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Analysis that the addition of one (1) full-time Water Resource Manager is adequate to meet the Division's needs. 2. Contingency approach to address stated findings if the hiring of this additional one (1) full-time Water Resource Manager is delayed or not approved. 3. Expediting the hiring request of the one (1) full-time Water Resource Manager within the hiring/budget cycle.

ELEMENT #5 – ESTABLISHMENT, IMPOSITION AND COLLECTION OF PENALTIES

MONITORING AND REPORTING PROCESSES INCLUDED IN ELEMENT #5

1. Establishment, imposition and collection of penalties
2. Enforcement of State Water Commission’s metering and reporting policies

MONITORING AND REPORTING TOOLS

The following monitoring and reporting tools are related to element #5:

MONITORING TOOLS	REPORTING TOOLS
PERMITS	ANNUAL USE FORMS
IN-LINE METERS	MONTHLY REPORTING FORMS
FIELD INSPECTIONS	WEEKLY REPORTING
SATELLITE IMAGERY	
TELEMETRY DEVICES (PILOT PROGRAM)	
INQUIRES FROM THE PUBLIC	
WELL RUN LOGS	

FINDINGS AND RECOMMENDATIONS – ELEMENT #5

FINDING 5.1	POLICIES AND PROCEDURES RELATED TO THE ESTABLISHMENT, IMPOSITION AND COLLECTION OF PENALTIES DO NOT APPEAR TO BE FORMALLY DOCUMENTED
Criteria	<p>NDCC 61-04-29, NDCC61-04-30 and NDCC 61-03-23 provide the State Engineer the authority to prosecute violators of unauthorized water usage.</p>
Condition	<p>NDCC 61-04-29, 61-04-30 and 61-03-23 provide the State Engineer the power and authority to prosecute violators for unauthorized use of water. These statutes also provide the State Engineer the authority to conduct an administrative hearing, serve cease and desist of water usage orders and assess and collect penalties.</p> <p>Currently, there is 1.0 full-time employee dedicated to conducting the administrative use review proceedings; however, the Water Appropriations Division collectively works as a team in conducting follow-up to inquires, analyzing reports and identifying case of noncompliance with water use conditions. The current Water Appropriations Division practice related to noncompliance and/or violations include the following:</p> <ul style="list-style-type: none"> • Identification via multiple avenues to include report analysis, inquires from the public and field inspections • Communicate noncompliance/violation to permit holder and/or individual • Attempt to resolve identified issue through management/reduction of remaining/future water usage allocation, if applicable • Proceed with administrative actions • Assess and impose penalty <p>The Water Appropriations Division adheres in practice to the appropriate NDCC related to imposition of penalties; however, does not have formally documented policies and procedures related to the Water Appropriations Division processes to maintain compliance with the NDCC.</p>
Effect	<p>The lack of formally documented policies and procedures may result in:</p> <ul style="list-style-type: none"> • Inconsistent application of processes across the organization • Loss of institutional knowledge due to staff turnover • Limited ability to manage and communicate protocols and updates • Noncompliance with governing laws, regulations, rules, mandates, etc.
Recommendation	<p>The Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Formally documenting policies and procedures related to imposition and collection of penalties to promote consistent application of approved processes across the organization. 2. Allocate responsibilities to Hydrologist to manage imposition and collection of penalties process in their designated assigned regions. The Director of the Water Appropriations Division would serve as oversight of the process to ensure compliance with policies and procedures.

FINDING 5.1	POLICIES AND PROCEDURES RELATED TO THE ESTABLISHMENT, IMPOSITION AND COLLECTION OF PENALTIES DO NOT APPEAR TO BE FORMALLY DOCUMENTED
Management Response	<ol style="list-style-type: none">1. We agree and the Water Appropriations Division will document policies and procedures related to the imposition and collection of penalties as recommended.2. We agree and the Water Appropriations Division will allocate more responsibilities to the project Hydrologist to manage and collect penalties as recommended.

FINDING 5.2	PENALTIES ASSESSED FROM 2010 - 2012
Criteria	<i>NDCC 61-04-29, NDCC61-04-30 and NDCC 61-03-23 provide the State Engineer the authority to prosecute violators of unauthorized water usage.</i>
Condition	<p>Historically there have been a small number of enforcement actions/penalties issued by the State Engineer for water permit violations and unauthorized water use. For the period of January 2010 – June 2012, there were seven (7) violations resulting in the issuance of an Administrative Order identified. The violations can be categorized as follows:</p> <ul style="list-style-type: none"> • Five (5) violations were a result of permit term violations. • Two (2) were a result of individuals/entities pumping water without a valid permit. <p>In each case, the Administrative Order required the user to cease operations, reduce future use to accommodate for any incurred overages and/or pay a fine for the violation. The majority of use violations identified by the Water Appropriations Division are managed through outreach and future compliance.</p> <p>Additionally, on September 17, 2012, SWC met at the State Office Building, and as part of the agenda the State Engineer apprised commissioners with a proposed change in the monetary fine policy applied to consent agreements related to unauthorized water use for industrial applications. This item was pending at the time of this report.</p>
Effect	This finding was informational in nature.
Recommendation	This finding was informational in nature.
Management Response	N/A

ELEMENT #6 – ENFORCEMENT OF SWC’S METERING AND REPORTING POLICIES

MONITORING AND REPORTING PROCESSES INCLUDED IN ELEMENT #6

1. All monitoring and reporting processes

MONITORING AND REPORTING TOOLS

The following monitoring and reporting tools are related to element #6:

MONITORING TOOLS	REPORTING TOOLS
PERMITS	ANNUAL USE FORMS
IN-LINE METERS	MONTHLY REPORTING FORMS
FIELD INSPECTIONS	WEEKLY REPORTING
SATELLITE IMAGERY	
TELEMETRY DEVICES (PILOT PROGRAM)	
INQUIRES FROM THE PUBLIC	
WELL RUN LOGS	

FINDINGS AND RECOMMENDATIONS – ELEMENT #6

FINDING 6.1	IDENTIFICATION OF USE VIOLATIONS
<p>Criteria</p>	<p>61-04-06.2: <i>“The state engineer may issue a conditional permit for less than the amount of water requested, but in no case may the state engineer issue a permit for more water than can be beneficially used for the purposes stated in the application except that water permits for incorporated municipalities or rural water systems may contain water in excess of present needs if based upon reasonable projections of future water needs of the municipality or the rural water system. The state engineer may require modification of the plans and specifications for the appropriation. The state engineer may issue a permit subject to fees for water use, terms, conditions, restrictions, limitations, and termination dates the state engineer considers necessary to protect the rights of others and the public interest. Conditions and limitations so attached must be related to matters within the jurisdiction of the state engineer; provided, however, that all conditions attached to any permit issued prior to July 1, 1975, are binding upon the permittee.”</i></p>
<p>Condition</p>	<p>The Water Appropriations Division has established various reporting and monitoring practices, in addition to those required by law or regulation, to help manage water use consumption and water resources.</p> <p>The review identified instances where practices were not formally documented, instances of noncompliance related to reporting water usage and reporting requirements, and instances of inconsistent enforcement of noncompliance and/or violations.</p> <p>Current reporting and monitoring practices utilized to help identify potential water use violations are manual in nature, and require substantial Water Appropriations Division resource effort to manage the use data.</p>
<p>Effect</p>	<p>Current practices may not facilitate efficient and/or consistent identification of potential use violations.</p>
<p>Recommendation</p>	<p>The Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Conduct a staffing analysis to help determine if additional resources are required and/or if reallocation of responsibilities is appropriate. 2. Require permit holders to implement remote terminal monitoring or enhance and expand the current field inspection activities. 3. Formally document standard operating procedures to standardize processes and help ensure consistent application. 4. Assess and leverage technology capabilities for reporting and monitoring practices.

FINDING 6.1	IDENTIFICATION OF USE VIOLATIONS
<p>Management Response</p>	<ol style="list-style-type: none"> 1. The addition of a full time Water Resource Manager will lead to more efficient water use management. Duties will include, increased field inspections, processing of monthly water use reports, processing, verifying, and entering water use data in the electronic data base, and helping oversee monitoring of real-time water use data if remote telemetry metering devices are deployed. Our analysis indicates the addition of a Water Resource Manager is long overdue. For example, a full time Water Use Manager was first employed by the Water Appropriations Division in 1977 to oversee the water use management program. At that time, there were 1,880 issued conditional/perfected water permits on file. At present there are about 4,700 issued conditional/perfected water permits on file. In addition, with the growth in oil field industrial use in western North Dakota and the concern over unauthorized water use, the Water Resource Manager has been required to monitor and process monthly water use reports and perform more field inspections. Further, oil field demand for water has greatly expanded the filing and issuance of temporary water permits many of which are for oil field industrial use that require water use oversight. 2. We agree and the addition of a full time Water Resource Manager will lead to increased field inspection activities as indicated. A pilot study report assessing the application of remote telemetry water use monitoring was completed in January 2013 and it provides various recommendations. The report will be provided to LMLAF committee members at the committee meeting on January 24, 2013. 3. We agree and standard operating procedures will be developed as recommended. 4. We agree. The remote telemetry pilot study is an example of technology assessment invoked by the Water Appropriations Division. Other technologies will be assessed on an as-need basis.
<p>Auditor's Concluding Remarks</p>	<p>The hiring of an additional full-time Water Resource Manager may assist in reducing/addressing the stated finding(s); however, the Water Appropriations Division should consider the following:</p> <ol style="list-style-type: none"> 1. Analysis that the addition of one (1) full-time Water Resource Manager is adequate to meet the Division's needs. 2. Contingency approach to address stated findings if the hiring of this additional one (1) full-time Water Resource Manager is delayed or not approved. 3. Expediting the hiring request of the one (1) full-time Water Resource Manager within the hiring/budget cycle.

Appendix A – Relevant State Statutes

North Dakota Century Code

61-04-02. Permit for beneficial use of water required.

Any person, before commencing any construction for the purpose of appropriating waters of the state or before taking waters of the state from any constructed works, shall first secure a water permit from the state engineer unless such construction or taking from such constructed works is for domestic or livestock purposes or for fish, wildlife, and other recreational uses or unless otherwise provided by law. However, immediately upon completing any constructed works for domestic or livestock purposes or for fish, wildlife, and other recreational uses, the water user shall notify the state engineer of the location and acre-feet [1233.48 cubic meters] capacity of such constructed works, dams, or dugouts. Regardless of proposed use, however, all water users shall secure a water permit prior to constructing an impoundment capable of retaining more than twelve and one-half acre-feet [15418.52 cubic meters] of water or the construction of a well from which more than twelve and one-half acre-feet [15418.52 cubic meters] of water per year will be appropriated. If a permit is not required of a landowner or the landowner's lessee to appropriate less than twelve and one-half acre-feet [15418.52 cubic meters] of water from any source for domestic or livestock purposes or for fish, wildlife, and other recreational uses, those appropriators may apply for water permits in order to clearly establish a priority date and the state engineer may waive any fee or hearing for such applications. An applicant for a water permit to irrigate need not be the owner of the land to be irrigated.

61-04-02.1. Emergency or temporary authorization.

The state engineer may authorize emergency or temporary use of water for periods not to exceed twelve months if the state engineer determines such use will not be to the detriment of existing rights. The state engineer shall establish by rule a separate procedure for the processing of applications for emergency or temporary use. No prescriptive or other rights to the use of water shall be acquired by use of water as authorized herein.

61-04-06.2. Terms of permit.

The state engineer may issue a conditional permit for less than the amount of water requested, but in no case may the state engineer issue a permit for more water than can be beneficially used for the purposes stated in the application except that water permits for incorporated municipalities or rural water systems may contain water in excess of present needs if based upon reasonable projections of future water needs of the municipality or the rural water system. The state engineer may require modification of the plans and specifications for the appropriation. The state engineer may issue a permit subject to fees for water use, terms, conditions, restrictions, limitations, and termination dates the state engineer considers necessary to protect the rights of others and the public interest. Conditions and limitations so attached must be related to matters within the jurisdiction of the state engineer; provided, however, that all conditions attached to any permit issued prior to July 1, 1975, are binding upon the permittee.

61-04-15.1. Change in point of diversion or use.

1. A permit holder may change the point of diversion or purpose of use without affecting the priority date if approved by the state engineer.
2. The state engineer may approve the proposed change if the state engineer determines that the proposed change will not adversely affect the rights of other appropriators. Applications for a change in the point of diversion or any purpose of use shall be processed and evaluated in the same manner as an application for a water permit.
3. A change in the purpose of use may be authorized only for a superior use as determined by the order of priorities contained in section 61-04-06.1.

61-04-23. Forfeiture of water rights - Inspection of works.

Any appropriation of water must be for a beneficial use, and when the appropriator fails to apply it to the beneficial use cited in the permit or ceases to use it for the beneficial use cited in the permit for three successive years, unless the failure or cessation of use has been due to the unavailability of water, a justifiable inability to complete the works, or other good and sufficient cause, the state engineer may declare the water permit or right forfeited. For purposes of this chapter, an incorporated municipality or rural water system has good and sufficient cause excusing the failure to use a water permit, if the water permit may reasonably be necessary for the future water requirements of the municipality or the rural water system. The state engineer shall, as often as necessary, examine the condition of all works constructed or partially constructed within the state and compile information concerning the condition of every water permit or right and all ditches and other works constructed or partially constructed thereunder.

61-04-27. Information filed with state engineer - Installation of measuring devices.

On or before the first day of February of each year all persons holding a water permit, including irrigation districts, federal agencies, and political subdivisions, shall file with the state engineer, on forms supplied by the state engineer, topographic, mapping, foundation test borings, design, water use, and such other information as the state engineer shall require. The state engineer may also require any such persons to install measuring devices, which must conform to the state engineer's specifications, at all points specified by the state engineer.

61-04-29. Enforcement.

The state engineer has full power and authority to institute, maintain, and prosecute to determination in an administrative proceeding or any of the courts of this state, or in any of the federal courts, any and all actions, suits, and special proceedings that may be necessary to enjoin unauthorized use of water, to enforce an order of the state engineer or the state water commission, or to otherwise administer the provisions of this chapter. Notwithstanding any other provision of law, the state engineer may issue administrative orders requiring the immediate cessation of water use when the state engineer has a reasonable belief that such use is unauthorized or continued use will damage the rights of prior appropriators.

61-04-30. Penalty.

A person who constructs works for an appropriation, or diverts, impounds, withdraws, or uses a significant amount of water from any source without a permit specifically authorizing such action, except as otherwise provided in section 61-04-02; who violates an order of the state engineer; who fails or refuses to install meters, gauges, or other measuring devices or to control works; who violates an order establishing corrective controls for an area or for a source of water; who violates the terms of the permit; or who knowingly makes a false or misleading statement in a declaration of existing rights is guilty of a class A misdemeanor. As used in this section, "significant amount of water" means any amount of water in excess of that allowed in a valid water permit, or any amount of water in excess of the needs for domestic and livestock purposes where no permit has been issued.

North Dakota Administrative Code

89-03-01-10. Emergency or temporary authorization.

Application for a temporary appropriation must be made on the form provided by the state engineer. In that request the applicant must indicate the reason for the permit, quantity of water needed, proposed point of diversion, type of use, place of use, rate of withdrawal, source of water, dates of proposed use, and applicant's address. The state engineer will evaluate the request and, if it is granted, the state engineer will list on the temporary authorization conditions that govern the appropriation. An applicant for emergency use of water, if the situation warrants, may telephone the office of the state engineer requesting immediate use of water. Following an oral request and oral approval by the state engineer for authorization, the above procedures must be completed. The applicant for temporary or emergency appropriations is responsible for all damages that may be caused to other appropriators and any other individual as a result of an emergency or temporary use of water.

History: Effective April 1, 1989.

General Authority: NDCC 28-32-02, 61-03-13

Law Implemented: NDCC 61-04-02.1

89-03-01-10.1. Temporary water transfer for irrigation.

To accommodate annual crop rotation requirements, the holder of a water permit for irrigation may make a request to the state engineer for the temporary transfer of the volume of water appropriated from an approved point of diversion to another tract of land. The transfer must be made for an entire irrigation season and conform to the terms and conditions of the water permit, except that no water right will accrue to the land under temporary irrigation. Irrigation may not take place on the tract of land from which the transfer is made during that irrigation season. The request for a transfer must be made by May fifteenth of the year the transfer is to be in effect.

History: Effective August 1, 1994.

General Authority: NDCC 28-32-02, 61-03-13

Law Implemented: NDCC 61-04-02.1

89-03-01-13. Report of water usage.

The form for reporting water usage pursuant to North Dakota Century Code section 61-04-27 must include the permit number, name of water source, amount of water usage, pumping rate, and such other information as the state engineer shall require. One form must be filed for each water permit held within the timeframe set by North Dakota Century Code section 61-04-27.

History: Effective April 1, 1989.

General Authority: NDCC 28-32-02, 61-03-13

Law Implemented: NDCC 61-04-27

Appendix B – Testing Results

TESTING RESULTS FOR ELEMENT #2:

Testing was conducted to confirm that the execution of the defined monitoring and reporting practices for conditional/perfected industrial water use permits was consistent with established regulations, policies and procedures. Each of the testing components is outlined below, followed by any identified exceptions from the sample population. Additional information related to Element #2 testing can be located in *Section 4 – Findings and Recommendations, Finding 2.7* of this report.

Annual Report Filed in 2010 and 2011 (Sample Size = 60 Conditional / Perfected Permits)

1. Consistent with NDCC 61-04-27 and NDAC 89-03-01-12, the State Engineer requires permit holders to submit an AUF to the state annually. Testing was conducted to validate receipt of an AUF for the calendar years of 2010 and 2011.
 - **2010:** 100% of the sample population tested for 2010 (51 Permits) submitted an AUF.
 - **2011:** 100% of the sample population tested for 2011(60 Permits) submitted an AUF.

According to the Water Appropriations Division, approximately 97% of municipal and industrial permit holders return an AUF annually from the initial notice, with the remaining 3% returned after additional follow-up, notices, etc. is conducted.
2. NDCC 61-04-27 requires that annual reports be submitted to the state on or before February 1st of the following year. Testing was conducted to confirm that an AUF, if submitted, was received by Water Appropriations Division prior to the established deadline.
 - **2010:** 35.3% of the AUF population tested for 2010 (51 Permits) indicated receipt of an annual report by the State Engineer prior to the deadline established by the NDCC.

A letter issued on December 29, 2010 from the State Engineer requested receipt of the AUFs from permit holders by March 7, 2011. Based on the March receipt date, 78.4% of the sample AUF population appears to be in compliance.
 - **2011:** 36.7% of the AUF population tested in 2011 (60 Permits) indicated receipt of an annual report by the State Engineer prior to the deadline established by the NDCC.

A letter issued on January 9, 2012 by the Water Appropriations Division requested receipt of the AUFs from permit holders by March 7, 2012. Based on the March receipt date, 86.7% of the sample AUF population appears to be in compliance.

The Water Appropriations Division has established protocols to manage the submission process and address delinquent permit holders. Protocols include issuing additional request notices and/or direct customer outreach. Additional information related to Element #2 testing can be located in *Section 4 – Findings and Recommendations, Finding 1.2* of this report.

Monthly Meter Report Provided by Water Depots (Sample Size = 40 Water Depot Permits)

1. The State Engineer enacted a new policy in January 2012 requiring water depots to submit monthly meter reports to the state. Testing was conducted to confirm that a monthly report was received by the Water Appropriations Division for the months January – June of 2012.
 - **Monthly Reporting:** The sample size included 40 water depots to be tested; however five (5) water depots were not subject to monthly reporting for the following reasons:

- Three (3) of the water depots in the sample population were identified as not being active in 2012
- One (1) water depot was identified as not being active until October 2012 (out-side of scope)
- One (1) water depot utilizes telemetry technology and therefore no monthly reporting is required
- **Complete Reporting Record:** 82.8% of the water depot sample population tested for 2012 (35 Water Depots) had complete monthly reporting records on file (i.e., one report per month) per policy of the State Engineer. The exceptions from the sample population are identified below.

Permit No.	Depot ID	Justification
4063	55	No Meter Report located for the month of June 2012.
5779	53	No initial Meter Report located for 2012.
5989	15	No Meter Report located for the months of March or June 2012.
6033	17	No Meter Report located for the month of February 2012.
6157	78	No initial Meter Report located, and no Meter Report for the month of June 2012
6159	25	No Meter Report located for the months of January, February, March or April 2012.

Site Inspection for Water Depots Conducted (Sample Size = 40 Water Depot Permits)

1. The State Engineer enacted a new policy in January 2012 requiring that state personnel perform an inspection of each active water depot at least once annually to verify that the meter value is consistent with what is being reported by the permit holder. Testing was conducted to confirm that an inspection was completed in 2012. The testing period was extended for this testing condition to include January – October.
 - **2012:** 97.2% of the water depot sample population tested for 2012 (36 Water Depots) had evidence of at least one field inspection being performed by state personnel in 2012. Four (4) of the sample identified were not tested for the following reasons:
 - Three (3) water depots were not active at the time of testing,
 - One (1) water depot utilized telemetry technology; therefore, no inspection was required.
 The exception from the sample population is identified below.

Permit No.	Depot ID	Test Note
6086	48	State personnel attempted to access the water depot in April to obtain a reading but they were unable to access the meter and/or obtain a meter reading.

Additional information related to Element #2 testing can be located in *Section 4 – Findings and Recommendations, Finding 4.3* of this report.

Use vs. Allocation (Sample Size = 60 Conditional / Perfected Permits)

1. NDCC 61-04-06.2 provides the State Engineer the ability to place use constraints on water permits, and NDCC 61-04-30 provides the State Engineer the authority to enforce penalties on any permit holder who “violates the terms of the permit”. Testing was conducted to confirm that permits did not exceed established use limits.

- **2010:** 84.3% of the sample population tested for 2010 (51 Permits) indicated no overage based on AUFs and database information reviewed. The exceptions from the sample population are identified below. All overages appear to have been identified and addressed by the Water Appropriations Division prior to the review.

Permit No.	Justification
3562	Permit #3562 has an allocation of 2.4 acre-feet; however, the 2010 AUF indicated 6.5 acre-feet of use. The total overage calculated is 4.1 acre-feet.
3711	Permit #3711 has an allocation of 1.7 acre-feet; however, the 2010 AUF indicated 4.7 acre-feet of use. The total overage calculated is 3.0 acre-feet.
5453	Permit #5453 has an allocation of 15.3 acre-feet; however, the 2010 AUF indicated 17.06 acre-feet of use. The total overage calculated is 1.76 acre-feet.
5721	Permit #5721 has an allocation of 18.4 acre-feet; however, the 2010 AUF indicated 19.1 acre-feet of use. The total overage calculated is 0.7 acre-feet. Additionally, the history indicates that the <u>entire</u> permit was placed in abeyance from 12/28/04 through 12/7/10, yet there is usage reported on the permit during the time the permit was held in abeyance.
5989	Permit #5989 has an allocation of 130.0 acre-feet. Notes associated with the permit indicate that the allocation of #5989 should be combined with the allocation of Permit #5915 (20.0 acre-feet). Thus the total available allocation would equal 150.0 acre-feet. In reviewing the AUFs filed for each permit, the combined usage reported is equal to 150.1 acre-feet (20.0 acre-feet reported for #1915 and 130.1 acre-feet reported for #5989). The total overage calculated is 0.1 acre-feet.
6005	Permit #6005 has an allocation of 75.0 acre-feet; however, the 2010 AUF indicated 75.7 acre-feet of use. The total overage calculated is 0.7 acre-feet.
6027	Permit #6027 has an allocation of 400.0 acre-feet. Notes associated with the permit indicate that the allocation of #6027 should be combined with the allocation of Permits #3233, #5955 and #6255, and that the total available allocation should not exceed 1,100 acre-feet. In reviewing the AUFs filed for each permit, the combined usage reported is equal to 1,131.1 acre-feet (396.0 acre-feet reported for #3233, 139.1 acre-feet reported for #5955, 596.0 acre-feet reported for #6027, and 0.0 acre-feet reported for #6265). The total overage calculated is 31.1 acre-feet.
5828A	Permit #5828A has an allocation of 20.0 acre-feet. Notes associated with the permit indicate that the allocation of #5828A should be combined with the allocation of Permit #5973 (30.0 acre-feet). Thus the total available allocation would equal 50.0 acre-feet. In reviewing the AUFs filed for each permit, the combined usage reported is equal to 57.0 acre-feet (29.1 acre-feet reported for #5973 and 27.9 acre-feet reported for #5828A). The total overage calculated is 7.0 acre-feet.

- **2011:** 81.7% of the sample population tested for 2011 (60 Permits) indicated no overage based on AUFs and database information reviewed. The exceptions from the sample population are identified below. All overages appear to have been identified and addressed by the Water Appropriations Division prior to the review.

Permit No.	Justification
775	Permit #775 has an allocation of 1,000.0 acre-feet; however, the 2011 AUF indicated 1,001.1 acre-feet of use (326,214,000 Gallons). The total overage calculated is 1.1 acre-feet.
3562	Permit #3562 has an allocation of 2.4 acre-feet; however, the 2011 AUF indicated 8.2 acre-feet of use. The total overage calculated is 5.8 acre-feet.
3711	Permit #3711 has an allocation of 1.7 acre-feet; however, the 2011 AUF indicated 4.7 acre-feet of use. The total overage calculated is 3.0 acre-feet.
3879	Permit #3879 has an allocation of 4.8 acre-feet; however, the 2011 AUF indicated 6.1 acre-feet of use. The total overage calculated is 1.3 acre-feet.
3882	Permit #3882 has an allocation of 19.4 acre-feet; however, the 2011 AUF indicated 19.6 acre-feet of use. The total overage calculated is 0.2 acre-feet.
5453	Permit #5453 has an allocation of 15.3 acre-feet; however, the 2011 AUF indicated 17.1 acre-feet of use. The total overage calculated is 1.81 acre-feet.
5721	Permit #5721 has an allocation of 18.4 acre-feet; however, the 2011 AUF indicated 19.1 acre-feet of use. The total overage calculated is 0.7 acre-feet.
5754	Permit #5754 has an allocation of 1,130.0 acre-feet. Notes associated with the permit indicate that the allocation of #5754 should be combined with the allocation of Temporary Permit #2011-4768, increasing the overall allocation to 1,186.0. The 2011 AUF filed for #5754 indicated usage equal to 1,189.4 acre-feet equating to an overage of 3.4 acre-feet. Any additional usage reported on #2011-4768 would increase the overage.
5779	Permit #5779 has an allocation of 20.0 acre-feet; however, the 2011 AUF indicated 20.3 acre-feet of use. The total overage calculated is 0.3 acre-feet.
6027	Permit #6027 has an allocation of 400.0 acre-feet. Notes associated with the permit indicate that the allocation of #6027 should be combined with the allocation of Permits #3233, #5955 and #6255, and that the total available allocation should not exceed 1,100 acre-feet. In reviewing the 2011 AUFs filed for each permit, the combined usage reported is equal to 1,126.8 acre-feet. The total overage calculated is 26.8 acre-feet.
5761A	Permit #5761A has an allocation of 20.0 acre-feet; however, the 2011 AUF indicated 20.1 acre-feet of use. The total overage calculated is 0.1 acre-feet.

Aquifer Monitoring Conducted (Sample Size = 218 Wells)

- The State Engineer policy requires state personnel to conduct well runs on all observation wells annually. Testing was conducted to confirm that wells were monitored at least once annually.
 - 2010:** 99.5% of the sample population of observation wells tested for 2010 (198 Observation Wells) had evidence of at least one well run being completed. Twenty (20) wells included in the sample were drilled after 2010 and/or measurements did not begin until after 2010. The exception from the sample population is identified below.

Well Location
16310135DCB

It was noted by the Water Appropriations Division that this well is located in an agricultural field with no road access. As such, this well is not commonly measured due to access issues.

- 2011:** 100% of the sample population of observation wells tested for 2011 (208 Observation Wells) had evidence of at least one well run being completed. Ten (10) wells included in the sample were drilled after 2011 and/or measurements did not begin until after 2011.
- 2012:** 99.5% of the sample population of observation wells tested for 2012 (218 Observation Wells) had evidence of at least one well run being completed. The exception from the sample population is identified below.

Well Location
16310135DCB

It was noted by the Water Appropriations Division that this well is located in an agricultural field with no road access. As such, this well is not commonly measured due to access issues.

- The State Engineer policy requires state personnel to conduct well runs in accordance with the Well Run Schedule. The Well Run Schedule indicates the frequency of measurements (i.e., monthly, quarterly or annual) required per well as determined by the Project Hydrologists. Testing was conducted to confirm that wells were monitored in accordance with the Well Run Schedule for 2010, 2011 and 2012. The table below includes well runs for which the anticipated number of measurements was not achieved in a given year based on the Well Run Schedule.

Well Location	Year	Anticipated Measurements	No. of Measurements
13205611DBB	2010	7	6
15609004ABB	2010	7	1
13205611DBB	2011	7	4
14409416BBA	2011	7	6
13807619BCC	2011	7	6
140808707AAA1	2011	3	2
140808707AAA2	2011	3	2
14908819BCC	2011	3	2

Well Location	Year	Anticipated Measurements	No. of Measurements
14908819BCC	2012	3	2

Testing Results – Element #3

Testing was conducted to confirm the execution of the defined practices related to temporary in lieu of irrigation permits were consistent with established regulations, policies and procedures. Each of the testing components is outline below, followed by any identified exceptions. Additional information related to Element #2 testing can be located in *Section 4 – Findings and Recommendations, Finding 3.1* of this report.

Permit Approval Period Valid (Sample Size = 25 In Lieu of Irrigation Permits)

- Per NDCC 61-04-02.1, the State Engineer can authorize temporary use of water for periods not to exceed twelve (12) months. Testing was conducted to confirm that no permits were issued for a period of greater than the allowable temporary permit period.
 - All:** 100% of the temporary in lieu of irrigation permit population tested for 2010 (5 Permits), 2011 (13 Permits) and 2012 (7 Permits) were issued for a period of 365 days or less.

While permits were not issued for periods of greater than 365 days, permit holders are able to submit applications for additional years.

Annual Report Filed for Authorized Period (Sample Size = 25 In Lieu of Irrigation Permits)

- Per policy of the State Engineer, temporary in lieu of irrigation permit holders are required to submit an annual report at the end of the temporary appropriation period. Testing was conducted to confirm an AUF was submitted for all permits requiring submission.
 - 2010:** 100% of the temporary in lieu of irrigation permit population tested for 2010 (5 Permits) had evidence of an AUF being submitted.
 - 2011:** 100% of the temporary in lieu of irrigation permit population tested for 2011 (13 Permits) had evidence of an AUF being submitted. Permit #210-4316 was voided during the authorized period when the Water Appropriations Division issued a second temporary in lieu of irrigation permit. Per the Water Appropriations Division, no annual report was required for this permit.
 - 2012:** Temporary in lieu of irrigation permits issued for the year 2012 (7 Permits) would not be subject to the annual reporting requirement until 2013 or the end of the authorization period.

Monthly Meter Report Provided (Sample Size = 7 In Lieu of Irrigation Permits)

- Beginning in 2012, the State Engineer enacted a policy requiring temporary in lieu of irrigation permit holders to submit monthly meter reports. Testing was conducted to confirm that monthly meter reports were submitted. It was noted during the review that permit #2012-14355 had not been fully developed and therefore no monthly reports were required. As such, testing was performed only on the remaining six (6) permits in the sample.
 - 2012:** 100% of the temporary in lieu of irrigation permit population tested for 2012 (6 Permits) had evidence of the submission of monthly usage reports.

Filed Inspection Conducted (Sample Size = 7 In Lieu of Irrigation Permits)

- Beginning in 2012, the State Engineer enacted a policy requiring inspections of temporary in lieu of irrigation permits by state personnel. Testing was conducted to confirm that inspections were performed for all permits. It was noted during the review that permit #2012-14355 had not been fully developed and therefore no field inspection was required. As such, testing was performed only on the remaining six (6) permits in the sample.
 - 2012:** 83.3% of the active temporary in lieu of irrigation permit population tested for 2012 (6 Permits) had evidence of an inspection being conducted by state personnel. The exception from the sample population is identified below.

Permit No.	Justification
2011-4419	No evidence of an inspection was located during testing.

Additional information related to Element #2 testing can be located in *Section 4 – Findings and Recommendations, Finding 4.3* of this report.

Use in Excess of Permitted Amount (Sample Size = 25 In Lieu of Irrigation Permits)

- Temporary in lieu of irrigation permits have use conditions established. Testing was conducted to confirm that use limitations were not exceeded.
 - 2010:** 100% of the sample population tested for 2010 (5 Permits) indicated no overage based on AUFs and database information reviewed.
 - 2011:** 84.6% of the sample population tested for 2011 (13 Permits) indicated no overage based on AUFs and database information reviewed. The exceptions from the sample population are identified below.

Permit No.	Justification
2010-4333	Permit #2010-4333 had an allocation of 144.8 acre-feet; however, the 2010 annual use report indicated 144.9 acre-feet of use. The total overage calculated is 0.1 acre-feet.
2011-4486	Permit #2011-4486 had an allocation of 118.4 acre-feet; however, the 2011 annual use report indicated 127.3 acre-feet of use. The total overage calculated is 8.9 acre-feet.

- 2012:** Seven (7) temporary in lieu of irrigation permits tested for 2012 indicated no overages, as of June, based on the monthly reports reviewed. Permit #2012-14355 had not been fully developed; therefore, no monthly reports were required.

TESTING RESULTS – ELEMENT #4

Testing was conducted to confirm the execution of the defined practices related to temporary industrial use permits were consistent with established regulations, policies and procedures. Each of the testing components is outline below, followed by any identified exceptions. Additional information related to Element #2 testing can be located in *Section 4 – Findings and Recommendations, Finding 4.4* of this report.

Permit Approval Period Valid (Sample Size = 50 Temporary Industrial Use Permits)

1. Per NDCC 61-04-02.1, the State Engineer can authorize temporary use of water for periods not to exceed twelve (12) months. Testing was conducted to confirm that no permits were issued for a period of greater than allowable temporary permit period.
 - **All:** 100% of the Temporary Industrial Use Permits tested for 2010, 2011 and 2012 (50 Permits) were issued for a period of 365 days or less.

Annual Use Form Received (Sample Size = 50 Temporary Industrial Use Permits)

1. As of 2012, the State Engineer requires that annual water usage associated with temporary industrial use permits be submitted to the State Engineer. Prior to 2012, division policy did not require that an annual reporting condition be placed on temporary permits. In some cases, reporting conditions were placed on temporary permits and in others no reporting condition was established. Testing was conducted to confirm that annual use was reported for those permits with a use reporting condition. Additional information related to Element #2 testing can be located in *Section 4 – Findings and Recommendations, Finding 4.1* of this report.
 - **2010:** Of the temporary industrial use permits tested for 2010 (18 Permits), eight (8) AUFs were located on file; however, only seven (7) of the eighteen (18) permits included a use reporting condition on the permit. Of the seven (7) permits that were required to submit an AUF, 85.7% had an AUF on file. The exception from the sample population is identified below.

Permit No.	Test Notes
2010-4372	No evidence of an AUF located during testing.

The other eleven (11) permits included in the 2010 sample did not require submission of an annual use form per the conditions of the permit. One of those permit holders submitted an annual use form. Of those permit holders that were not required to submit an annual use form, use allocations ranged from 3.5 acre-feet to 100.0 acre-feet.

- **2011:** Of the temporary industrial use permits sample population tested for 2011 (24 Permits), eighteen (18) AUFs were located on file. Two (2) permit holders did not submit an annual use report; however, no condition on the permit required annual reporting. Those permits that did not require an AUF had allocated amounts of 6.0 acre-feet and 56.0 acre-feet. Of the twenty-two (22) permits for which an AUF was expected, 81.8% had an AUF on file. The exceptions from the sample population are identified below.

Permit No.	Test Notes
2011-4425	No evidence of an AUF located during testing.
2011-4721	No evidence of an AUF located during testing.

Permit No.	Test Notes
2011-4723	No evidence of an AUF located during testing.
2011-4766	No evidence of an AUF located during testing.

Additional information related to Element #2 testing can be located in *Section 4 – Findings and Recommendations, Finding 4.2* of this report.

Monthly Meter Report Provided – >15 Acre-Feet (Sample Size = 8 Temp. Industrial Use Permits)

- Effective January 2012, the State Engineer requires that monthly meter readings be submitted for temporary industrial use permit holders with an allocation of >15 acre-feet; in some instances a monthly reporting condition may not have been included on the permit. Testing was conducted to confirm monthly meter data was submitted. During testing it was noted that one (1) permit in the sample population had not been fully developed and thus no monthly reports were required. As such, testing was performed on the remaining seven (7) permits in the sample population.

- Of the temporary industrial use permits population that were issued in 2012, seven (7) were identified as active in 2012.

Of the seven (7) that were tested, 87.5% had evidence of monthly reports on file. The exception from the sample population is identified below.

Permit No.	Test Notes
2012-4859	No evidence of a monthly meter reporting located during testing.

Additional information related to Element #2 testing can be located in *Section 4 – Findings and Recommendations, Finding 4.2* of this report.

Field Inspection Conducted (Sample Size = 8 Temporary Industrial Use Permits)

- Effective January 2012, the State Engineer requires at least an annual field inspection of Temporary Industrial Use Permits with an allocation of >15 acre-feet. Testing was conducted to confirm an annual inspection was conducted. During testing it was noted that one (1) permit in the sample population had not been fully developed and thus no field inspection was required. As such, testing was performed on the remaining seven (7) permits in the sample population.

- As of November 30, 2012, 57.1% of the Temporary Industrial Permits (7 Permits) tested had evidence of an inspection being conducted by state personnel. The exceptions from the sample population are identified below.

Permit No.	Test Notes
2012-4856	No evidence of a field inspection located during testing.
2012-4859	No evidence of a field inspection located during testing.
2012-14140	No evidence of a field inspection located during testing.

Additional information related to Element #2 testing can be located in *Section 4 – Findings and Recommendations, Finding 4.3* of this report.

Use in Excess of Permitted Amount (Sample Size = 50 Temporary Industrial Use Permits)

1. Temporary industrial use permits have use conditions established when issued. Testing was conducted to confirm that established use limitations were not exceeded.
 - **2010:** 100% of the sample population tested for 2010 (18 Permits) indicated no overage based on AUFs and database information reviewed.
 - **2011:** 95.8% of the sample population tested for 2011 (24 Permits) indicated no overage based on AUFs and database information reviewed. The exception is noted below.

Permit No.	Justification
2011-4540	Permit #2011-4540 had an allocation of 15.0 acre-feet; however, the 2011 annual use report indicated 15.1 acre-feet of use. The total overage calculated is 0.1 acre-feet.

- **2012:** 100% of the sample population tested for 2012 (8 Permits) indicated no overages as of June based on monthly reports.