Guidance for Developing a Ground Water Quality Monitoring Program for Managed Recharge Projects by Land Application

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Acronyms, Abbreviations, and Symbols

ASTM	ASTM International
BMP	best management practice
cfs	cubic foot per second
CLPP	Community-level physiological profiling
DEQ	Idaho Department of Environmental Quality
EPA	US Environmental Protection Agency
E. coli	*Escherichia coli*
GIS	geographic information system
IDWR	Idaho Department of Water Resources
ISDA	Idaho State Department of Agriculture
mL	milliliter
MPN	most probable number
TOC	total organic carbon
TOT	time of travel
USGS	US Geological Survey
VOC	volatile organic compound

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Executive Summary

Managed (artificial) recharge, which is the management of water specifically for the purpose of adding water to the zone of saturation by land application, may be one of several solutions to restore declining water levels in some aquifers. In other western states, permitted programs are used to facilitate increased water storage in aquifers without adverse impacts to ground water quality.

The Idaho Department of Environmental Quality (DEQ) is providing this guidance document to assist interested parties in developing an appropriate ground water quality monitoring program for DEQ review and approval. Because of the variability of site characteristics in Idaho, each project will be reviewed on a case-by-case basis. The details of a monitoring program are expected to vary by site and project; monitoring requirements are flexible once sufficient information is provided to demonstrate ground water quality is improved or maintained by managed recharge activities.

This guidance is not a rule, nor is it rulemaking; it provides direction for entities developing monitoring programs consistent with the applicable sections in the “Wastewater Rules” (IDAPA 58.01.16.600). The term “should” is used throughout this guidance and is intended to be a suggestion, not a requirement or rule.

Purpose

This guidance will help interested parties develop a ground water quality monitoring program demonstrating that a land application recharge project will not adversely affect a beneficial use of waters of the state. Included in the guidance is a description of those conditions that DEQ will consider in approving a ground water quality monitoring program for a recharge project.

This guidance applies in situations where water is delivered to a wetland, dry streambed, or dry lake bed or basin to offset ground water withdrawal or as beneficial use of a water right when a DEQ-approved ground water quality monitoring program is required.

Projects exempt from this guidance include those operating before January 1, 1985, when provision was made for water quality monitoring at sites where recharge water is land applied under the “Water Quality Standards” (IDAPA 58.01.02) and “Wastewater Rules” (IDAPA 58.01.16). Sites developed before January 1, 1985, that receive water before, during, or after the irrigation season are also exempt from the rule as long as recharge occurs within the pre-January 1, 1985, site boundary. Any expansion or infrastructure construction at existing sites after January 1, 1985, is subject to the current IDAPA 58.01.16.600. This guidance does not apply to incidental recharge resulting from precipitation; irrigation practices and delivery system leakage; surface water seepage from creeks, streams, or lakes; lagoons; stormwater runoff and storage; lagoons associated with confined animal operations; mining operations; wastewater land applications; early or late season in-canal recharge (before or after the normal irrigation season); emergency flood spills of 7 days or less; or recharge water applied through the use of injection wells. Discussions among Comprehensive Aquifer Management Plan Working Groups attended by representatives from irrigation entities reached consensus that 7 days represents the maximum amount of time typically required for emergency canal operations.

Other situations in which this guidance may not fully apply may include a recharge event (not exceeding 7 days) to determine site feasibility for recharge or a trace test to determine ground water flow direction. For such 7-day or less recharge events, it is strongly recommended that the source water being used for recharge be analyzed for bacteria at a minimum. When recharge occurs longer than 7 days, a DEQ-approved ground water quality monitoring program will be required.

The use of best management practices is required by the "Ground Water Quality Rule" (IDAPA 58.01.11). Thus, if the site is being used for the first time, DEQ may require the interested party to evaluate potential water quality impacts to nearby drinking water wells by conducting water quality testing upgradient and downgradient of the application site before, during, and after recharge. Ground water sampling constituents and sampling frequency should be determined based on site-specific conditions. An evaluation of hydrologic changes such as potential mounding is highly recommended.

If the source of recharge water is treated wastewater, including Class A effluent, the project is subject to the "Recycled Water Rules" (IDAPA 58.01.17). Noncontact cooling water can be land applied as recharge water based on DEQ approval as described in IDAPA 58.01.16.600.04–05.

Authority and Rules that Apply to this Guidance

Authorities for this guidance are defined in the Ground Water Quality Protection Act (Idaho Code §39-102, §39-120), *Idaho Ground Water Quality Plan* (GWQC 1996), IDAPA 58.01.11, and IDAPA 58.01.16.

- The Ground Water Quality Protection Act designates DEQ as the primary agency to coordinate and administer ground water quality protection programs for the state.
- The *Idaho Ground Water Quality Plan* (section V-C) directs DEQ, in cooperation with other appropriate agencies, to develop guidelines, management practices, and rules pertaining to ground water recharge projects.
- IDAPA 58.01.11 establishes minimum requirements for protection of ground water quality through standards and an aquifer categorization process that serves as the basis for DEQ to administer programs that address ground water quality.
- IDAPA 58.01.16 authorizes DEQ to approve ground water quality monitoring programs for aquifer recharge projects by land application.

Specific rules DEQ will consider when reviewing a ground water quality monitoring program for a recharge project include the following:

- IDAPA 58.01.16, "Wastewater Rules," including sections pertaining to applied waters restricted to premises (IDAPA 58.01.16.600.02), monitoring (IDAPA 58.01.16.600.04), and basis for evaluation (IDAPA 58.01.16.600.05)
- IDAPA 58.01.11, "Ground Water Quality Rule," including sections pertaining to management of activities with the potential to degrade aquifers (IDAPA 58.01.11.301) and ground water contamination (IDAPA 58.01.11.400)

Process Overview

The process defined by this guidance includes the following actions:

- *Pre-Project Meeting*—The responsible party interested in conducting a recharge project contacts the appropriate DEQ regional office to set up a pre-project meeting. It is highly recommended that the responsible party review the recharge project outline in Appendix A before the pre-project meeting. Reviewing the outline will assist the applicants with formulating questions and concerns to discuss with DEQ.
- *Program Submittal*—The responsible party submits a recharge ground water quality monitoring program to DEQ that describes the monitoring program to be conducted.
- *Public Notice and Comment*—DEQ may provide public notice to private property owners within the potential zone of influence of the recharge project and to the general public via the agency's website that a recharge ground water quality monitoring program is available for review. DEQ takes public comments into consideration.
- *Evaluation and Review*—DEQ reviews recharge ground water quality monitoring programs on a case-by-case basis and responds within a reasonable timeframe, generally 30 days from the end of the public comment period.
- *Opportunity for Appeal*—Opportunity is provided for appeal of DEQ decisions.
- *Reporting.* The responsible party provides DEQ with a schedule for reporting monitoring results.
- *Project Review and Modification*—DEQ reviews the project data. In the event that water quality is degraded, additional monitoring, modification of practices, or cessation of activity may be required.

Contents of a Ground Water Monitoring Program

A program for monitoring ground water quality for recharge by land application should address the following:

- *Project Description*—This includes legal and physical descriptions of the recharge basin and landownership.
- *Recharge Area Characterization*—This includes soil and geology; hydrogeologic and surface water features; contaminant sources, land use, and vegetation; and measures used to confine recharge water to the recharge site.
- *Recharge Facility Description*—This includes a description of the facility or basin, water delivery system, water quantity measurement system, and any structures/infrastructure or features considered a part of the recharge facility.
- *Evaluation of Potential Impacts*—This is completed to determine if the project will reduce the quality of ground or surface water, cause an exceedance of a ground water quality standard, or adversely affect drinking water or other uses of ground or surface water. Nearby well owners potentially impacted by recharge activities should be identified.
- *Water Quality Monitoring Program*—This includes ambient ground water quality monitoring, locations to sample and monitor, monitoring frequency, field parameters, constituents for laboratory analyses, and best management practices to maintain or improve existing ground water quality.

- *Management Practices*—This includes reporting schedules, contingency planning, and a description of any recharge water treatment processes proposed.

It is highly recommended that the interested party submit the recharge project outline in Appendix A with the monitoring program.

Monitoring Program Approval

Approved ground water quality monitoring programs for land application recharge projects will include appropriate sampling parameters, sampling frequency, and reporting schedules. Failure to implement the approved monitoring program could subject the project owner to an enforcement action.

1 Purpose

This guidance will help interested parties develop a ground water quality monitoring program demonstrating that a land application recharge project will not adversely affect a beneficial use of waters of the state. Included in the guidance is a description of those conditions that the Idaho Department of Environmental Quality (DEQ) will consider in approving a ground water quality monitoring program for a recharge project. The term “should” is used throughout this guidance and is intended to be a suggestion, not a requirement or rule.

This guidance applies in situations where water is delivered with intent of aquifer recharge to a wetland, dry streambed, or dry lake bed or basin to offset ground water withdrawal or as beneficial use of a water right when a DEQ-approved ground water quality monitoring program is required.

Projects exempt from this guidance include those operating before January 1, 1985, when provision was made for water quality monitoring at sites where recharge water is land applied under the “Water Quality Standards” (IDAPA 58.01.02) and “Wastewater Rules” (IDAPA 58.01.16). Sites developed before January 1, 1985, that receive water before, during, or after the irrigation season are also exempt from the rule as long as recharge occurs within the pre-January 1, 1985, site boundary. Any expansion or infrastructure construction at existing sites after January 1, 1985, is subject to the current IDAPA 58.01.16.600. This guidance does not apply to incidental recharge resulting from precipitation; irrigation practices and delivery system leakage; surface water seepage from creeks, streams, or lakes; lagoons; stormwater runoff and storage; lagoons associated with confined animal operations; mining operations; wastewater land applications; early or late season in-canal recharge (before or after the normal irrigation season); emergency flood spills; or recharge water applied through the use of injection wells. Discussions among Comprehensive Aquifer Management Plan Working Groups attended by representatives from irrigation entities reached consensus that 7 days represents the maximum amount of time typically required for emergency canal operations.

Other situations in which this guidance may not fully apply may include a recharge event (not exceeding 7 days) to determine site feasibility for recharge or a tracer test to determine ground water flow direction. For such a 7-day or less recharge events, it is strongly recommended that the source water being used for recharge be analyzed for bacteria at a minimum. When recharge occurs longer than 7 days, a DEQ-approved ground water quality monitoring program will be required.

The use of best management practices is required by the “Ground Water Quality Rule” (IDAPA 58.01.11). Thus, if the site is being used for the first time, DEQ may require the interested party to evaluate potential water quality impacts to nearby drinking water wells by conducting water quality testing upgradient and downgradient of the application site before, during, and after recharge. Ground water sampling constituents and sampling frequency should be determined based on site-specific conditions. An evaluation of hydrologic changes such as potential mounding is highly recommended.

If the source of recharge water is treated wastewater, including Class A effluent, the project is subject to the "Recycled Water Rules" (IDAPA 58.01.17). Noncontact cooling water can be land applied as recharge water based on DEQ approval as described in IDAPA 58.01.16.600.04–05.

This guidance defines a process of developing a ground water quality monitoring program that can be used by responsible parties to demonstrate that a recharge project will not adversely affect a beneficial use of waters of the state. This guidance provides the criteria DEQ will use to approve such a program and is not a rule or a rulemaking.

As used within this guidance, a responsible party can be an individual, group, corporation, or other entity that is to be held accountable for implementation of the approved ground water quality monitoring program. The responsible party will be considered the land owner unless explicitly identified as another entity or individual in the monitoring program.

Because of the variability of site characteristics in Idaho, each ground water quality monitoring program will be reviewed on a case-by-case basis.

2 Introduction

An increased demand for ground water, coupled with decreased precipitation and changing irrigation practices, has resulted in declining water levels in some areas of Idaho. Managed aquifer recharge, which is the management of water specifically for the purpose of adding water to the zone of saturation by land application, may be one of several solutions to restore declining water levels in some aquifers.

In many western states, managed recharge is conducted through a permitted program to facilitate increased water storage in aquifers without adverse impacts to ground water quality. In Idaho, managed recharge using injection wells is a permitted activity managed by the Idaho Department of Water Resources (IDWR).

DEQ is proactively providing this guidance document to assist interested parties in developing an appropriate ground water quality monitoring program for review and approval by DEQ. Because recharge projects have the potential to impact ground and inter-connected surface waters, they must comply with state policy, such as the Ground Water Quality Protection Act (Idaho Code §39-102, §39-120) and *Idaho Ground Water Quality Plan* (GWQC 1996). This guidance document will assist the responsible party wanting to comply with the legislative mandates and DEQ rules.

- Section 3 describes the statutes and rules that apply to recharge projects.
- Section 4 outlines specific DEQ rules that apply to recharge projects.
- Section 5 lists the steps necessary to receive DEQ approval of a ground water quality monitoring program for an aquifer recharge project.
- Section 6 provides the responsible party with information necessary to develop a ground water quality monitoring program.

3 Statement of Authority

DEQ's authority is defined in the Ground Water Quality Protection Act (Idaho Code §39-102, §39-120), *Idaho Ground Water Quality Plan* (GWQC 1996), IDAPA 58.01.11, and IDAPA 58.01.16.

3.1 Ground Water Quality Protection Act

The Ground Water Quality Protection Act was introduced as Senate Bill No. 1269 in 1989 and was enacted to include the "State Policy on Environmental Protection," which states that "[i]t is the policy of the state to prevent contamination of ground water from any source to the maximum extent practical" (Idaho Code §39-102(3)(a)) and "[a]ll persons in the state should conduct their activities so as to prevent the nonregulated release of contaminants into ground water" (Idaho Code §39-102(3)(c)). The act also defines agency responsibilities (Idaho Code §39-120) and designates DEQ as the primary agency to coordinate and administer ground water quality protection programs for the state.

3.2 Idaho Ground Water Quality Plan

The Ground Water Quality Protection Act provided for the development of a ground water quality plan to be submitted to and approved by the Idaho legislature. The plan was adopted in 1992 and later revised in 1996 to include the Agricultural Ground Water Quality Protection Program for Idaho (GWQC 1996).

Ground Water Protection Policy I-B of the plan states that "The policy of the state of Idaho is that existing and projected future beneficial uses of ground water shall be maintained and protected, and degradation that would impair existing and projected future beneficial uses of ground water and interconnected surface water shall not be allowed" (GWQC 1996, p. 23). In part, the intent of Ground Water Protection Policy I-B is to "ensure that the quality of ground water that discharges to surface water does not impair identified beneficial uses of the surface water and that surface water infiltration does not impair beneficial uses of ground water (GWQC 1996, p. 24).

Ground Water Quality Monitoring Policy V-C of the plan addresses recharge by stating that "The policy of the state of Idaho is that any program designed specifically for the artificial recharge of ground water, existing or proposed, be consistent with the policies and management objectives for water quality and quantity" (GWQC 1996, p. 43). In part, this policy was adopted because "artificial recharge has the potential to significantly impact the quality of ground water" (GWQC 1996, p. 43). This section of the plan directs DEQ, in cooperation with other appropriate agencies, to develop guidelines, management practices, and rules to ensure that artificial ground water recharge projects comply with the *Idaho Ground Water Quality Plan* (GWQC 1996).

3.3 Wastewater Rules and Ground Water Quality Rule

IDAPA 58.01.16.600 applies to "Land Application of Wastewater(s) or Recharge Waters," which authorizes DEQ to approve ground water quality monitoring programs for aquifer recharge projects by land application. DEQ is aware of the widespread social and economic considerations of recharge projects and recognizes the importance of these projects to help minimize ground water depletions. DEQ has a regulatory obligation to review monitoring programs for recharge projects and to ensure that ground water will not be degraded and that negative impacts will not occur to a beneficial use of ground or surface water. DEQ may also review the recharge project method of application, site-specific conditions, and source of recharge water to comply with IDAPA 58.01.11.

4 Applicable DEQ Rules

This section describes the specific rules DEQ considers when reviewing a ground water quality monitoring program for a recharge project. As set out below, a ground water quality monitoring program must be developed for recharge projects and is subject to DEQ approval. The monitoring program must contain sufficient information to ensure that beneficial uses are protected. In addition, DEQ rules contain provisions to ensure protection of ground water quality. To help ensure the project is consistent with ground water quality rules, DEQ may also provide comments regarding the ground water recharge project or conditions for approval of the monitoring program.

4.1 Wastewater Rules

The applicable portions of IDAPA 58.01.16.600, “Land Application of Wastewater(s) or Recharge Waters,” are discussed below. Rule language is paraphrased to emphasize sections relevant to this guidance.

4.1.1 Applied Waters Restricted to Premises (IDAPA 58.01.16.600.02)

> ... recharge waters applied to the land surface must be restricted to the premises of the application site unless permission has been obtained from the Department authorizing a discharge into the waters of the state.

4.1.2 Monitoring (IDAPA 58.01.16.600.04)

> Provisions must be made for monitoring the quality of the ground water in proximity of the application (recharge) site. The ground water monitoring program is subject to approval by the Department. All data and reports resulting from the ground water monitoring program must be submitted to the Department upon request.

4.1.3 Basis for Evaluation (IDAPA 58.01.16.600.05)

This section describes the physical characteristics of the site that DEQ will consider when reviewing the monitoring program.

> The evaluation for an approval to irrigate, either by sprinkling or flooding or surface spreading of wastewater material or by burying wastewater material or recharge water in the upper soil horizon as a method of treatment, must include, but will not necessarily be limited to, consideration of the following items:

a. . . . Other wastewater(s) or recharge waters will be considered provided it can be shown that land application will not adversely affect current or future beneficial uses of waters of the state.

b. The nature of the soils and geologic formations underlying the application site. The entity proposing the activity must provide reasonable assurance that the soils and site geology will provide the required level of treatment and will not allow movement of pollutants into the underlying ground water.

c. The ability of the soil and vegetative cover on the application site to remove the pollutants contained in the applied waters through the combined processes of consumptive use and biological and chemical inactivation.

4.2 Ground Water Quality Rule

This section lists the applicable portions of IDAPA 58.01.11. Aquifers in Idaho are categorized into three classifications: sensitive resource, general resource, and other resource (IDAPA 58.01.11.300). Each classification requires slightly different management strategies. The Spokane Valley–Rathdrum Prairie Aquifer is the only sensitive resource aquifer in Idaho. All other aquifers in the state are general resource aquifers. Currently, no aquifers are classified as other resource in Idaho.

The "Ground Water Quality Rule" describes management of activities with the potential to degrade aquifers in IDAPA 58.01.11.301 and IDAPA 58.01.11.400 discusses ground water contamination.

4.2.1 Management of Activities with the Potential to Degrade Aquifers (IDAPA 58.01.11.301.01)

01. Sensitive Resource Category Aquifers.

a. Activities with the potential to degrade Sensitive Resource aquifers shall be managed in a manner which maintains or improves existing ground water quality through the use of best management practices and best available methods.

b. Numerical and narrative standards identified in Section 200 shall apply to aquifers or portions of aquifers categorized as Sensitive Resource. In addition, stricter numerical and narrative standards, for specified constituents, may be adopted pursuant to Section 350 on a case by case basis and listed in Section 300.

02. General Resource Category Aquifers.

a. Activities with the potential to degrade General Resource aquifers shall be managed in a manner which maintains or improves existing ground water quality through the use of best management practices and best practical methods to the maximum extent practical…

b. Numerical and narrative standards identified in Section 200 shall apply to aquifers or portions of aquifers categorized as General Resource.

4.2.2 Ground Water Contamination (IDAPA 58.01.11.400)

01. Releases Degrading Ground Water Quality. No person shall cause or allow the release, spilling, leaking, emission, discharge, escape, leaching, or disposal of a contaminant into the environment in a manner that:

a. Causes a ground water quality standard to be exceeded;

b. Injures a beneficial use of ground water; or

c. Is not in accordance with a permit, consent order or applicable best management practice, best available method or best practical method.

02. Measures Taken in Response to Degradation.

a. Except when a point of compliance is set pursuant to Section 401, when a numerical standard is not exceeded, but degradation of ground water quality is detected and deemed significant by the Department, the Department shall take one (1) or more of the following actions:

i. Require a modification of regulated activities to prevent continued degradation;

ii. Coordinate with the appropriate agencies and responsible persons to develop and implement prevention measures for activities not regulated by the Department;

iii. Allow limited degradation of ground water quality for the constituents identified in Subsections 200.01.a. if it can be demonstrated that:

(1) Best management practices, best available methods or best practical methods, as appropriate for the aquifer category, are being applied; and

(2) The degradation is justifiable based on necessary and widespread social and economic considerations; or

iv. Allow degradation of ground water quality up to the standards in Subsection 200.01.b. if it can be demonstrated that:

(1) Best management practices are being applied; and

(2) The degradation will not adversely impact a beneficial use.

b. The following criteria shall be considered when determining the significance of degradation:

i. Site-specific hydrogeologic conditions;

ii. Water quality, including seasonal variations;

iii. Existing and projected future beneficial uses;

iv. Related public health issues; and

v. Whether the degradation involves a primary or secondary constituent in Section 200.

03. Contamination Exceeding A Ground Water Quality Standard. The discovery of any contamination exceeding a ground water standard that poses a threat to existing or projected future beneficial uses of ground water shall require appropriate actions, as determined by the Department, to prevent further contamination. These actions may consist of investigation and evaluation, or enforcement actions if necessary to stop further contamination or clean up existing contamination, as required under the Environmental Protection and Health Act, Section 39-108, Idaho Code

5 Process Overview

An overview of the process to receive DEQ approval of a ground water quality monitoring program for a recharge project is provided below.

5.1 Pre-Project Planning Meeting

The responsible party interested in conducting a recharge project should contact the appropriate DEQ regional office to set up a pre-project consultation meeting. DEQ highly recommends the responsible party review the recharge project outline (Appendix A) before the meeting. Feasibility testing to evaluate potential recharge sites may require developing a ground water quality monitoring program.

5.2 Program Submittal

Responsible parties interested in conducting a recharge project should provide three hard copies and one electronic version of the submitted materials to the appropriate DEQ regional office. The major components of the program include the following:

1. Project description
2. Recharge area characterization
3. Evaluation of potential impacts
4. Water quality monitoring program
5. Management practices

The ground water quality monitoring program for recharge projects should be developed by a qualified party with experience in subsurface resource evaluation practices. Qualified parties are typically environmental consultants with backgrounds in geology, hydrogeology, soil science, and geochemistry or related engineering disciplines. The soil, geology, and hydrologic conditions of both the recharge site and the affected subsurface area, along with the quality of the recharge water and ground water, will determine the specifics of the submitted recharge program.

Recharge projects lasting fewer than 30 days, with a recharge rate of 2 cubic feet per second (cfs) or less are considered small-scale projects. The ground water quality monitoring program for small-scale projects may differ from that of full scale recharge projects. Small-scale projects are discussed in section 6.5.

5.3 Public Notice and Comment

DEQ may provide public notice to potentially affected property owners within the zone of influence regarding the potential risks associated with recharging ground water with surface water. The zone of influence is the minimum distance from the recharge basin that ground water must travel to ensure pathogens (e.g., bacteria, *Cryptosporidium*, and viruses) are removed from the recharge water and the water is safe to drink. DEQ considers a 6-month time of travel (TOT) to be necessary for pathogens in recharge water to degrade naturally in the aquifer. Any modeling inputs or parameters used for TOT calculations should be provided. TOT is described in the *Idaho Source Water Plan* (DEQ 1999), and TOT modeling is described in Haitjema et al. (1994).

Notification may be by certified mail, return receipt requested. Notification may include an opportunity to submit comments to DEQ. DEQ may also provide a public comment period for the general public via DEQ’s website. The comment period will extend for 30 days following posting of the recharge project notice on the DEQ website. All public comments shall be considered during the review period.

5.4 Evaluation and Review

The applicable DEQ regional office will review the submitted ground water quality monitoring program for a recharge project and will consider public comment materials in making its decision. DEQ will respond within a reasonable timeframe, generally 30 days from the end of the public comment period. The DEQ regional office will issue a letter that approves as-is, disapproves, or approves with conditions, the ground water monitoring program for a recharge project (Appendix B contains a sample monitoring program agreement). DEQ may also provide comments regarding the method of application to help ensure the project is consistent with DEQ's ground water quality protection rules. DEQ does not anticipate issuing a wastewater land application permit for a recharge project.

Due to the variability of site characteristics within Idaho, ground water monitoring programs for each recharge project will be considered on a case-by-case basis. As discussed in section 6, case-by-case consideration is based on the information submitted in the program. In addition to hydrogeologic site and soil characterization of the recharge site, the ambient ground water quality is necessary to determine the parameters and frequency of ground water quality monitoring during and after recharge. The number of water quality samples that are adequate for determining the ambient ground water quality at the recharge site will be determined on a case-by-case basis.

5.5 Opportunity for Appeal

Idaho Code §39-107 and the "Rules of Administrative Procedure Before the Board of Environmental Quality" (IDAPA 58.01.23) provide that any person aggrieved by an action or inaction of DEQ, including those related to recharge projects, may file a petition for a contested case with the Board of Environmental Quality within 35 days of DEQ's action or inaction.

5.6 Reporting

The responsible party should provide a reporting schedule for monitoring results, an annual report, and an expedited report when monitoring results meet or exceed an alert level (section 6.4.8). If an alert level is reached, the DEQ regional office should be notified within 24 hours of receiving laboratory results.

Routine water quality reports with field parameter sheets should be submitted to the DEQ regional office by the entity conducting recharge within 10 days of receiving laboratory results. However, the frequency for monitoring may be reduced following review of an annual report.

An annual report is to be submitted to the DEQ regional office within 2 months following the recharge duration or season. The annual report should do the following:

- Describe the recharge activities, including the following:
    - Map of recharge area

    - Photos or drawings of the basin and infrastructure
    - Dates of recharge
    - Diversion rate
    - Volume of recharge
    - Any deviations from the original plan or program
    - Any unexpected occurrence or contingency actions
- Describe monitoring, including the following:
    - Sampling methods
    - Map of sample locations
    - Global Positioning System coordinates of sample locations
    - Sampling dates
    - Water level measurements
- Summarize results, including the following:
    - Dated analytical results in tabular form
    - Description of how results were evaluated
    - Graphics
    - Comparison to ambient (background) water quality
- Draw conclusions and list future adjustments including the following:
    - Successes
    - Problems encountered
    - Improvements or changes planned

Monitoring constituents are discussed in detail in section 6 and listed in Appendix C.

5.7 Project Review and Modification

The DEQ regional office will consult with the DEQ State Office for review of all routine water quality reports during recharge and the annual report following the conclusion of the recharge season. Based on the results of this consultation, modifications to the recharge project may be necessary.

For example, in the event ground water quality is degraded by recharge water, DEQ may require additional monitoring, modification of recharge practices, or cessation of the activity. Additional monitoring may include increased frequency of sampling events at selected wells or installing new monitoring wells. On the other hand, if ground water quality shows no indication of degradation or an improvement in the ground water quality, monitoring requirements may be decreased.

The use of best management practices (BMPs) or best practical methods may be required as modifications to the recharge activity. BMPs that may be applicable as protective measures for recharge projects may be found in Meitl and Maguire (2003) or discussed with the appropriate regional office. Additional BMPs for recharge in Idaho are expected to be developed over time.

6 Contents of a Ground Water Quality Monitoring Program

This guidance assists interested parties in preparing the information that DEQ will consider when reviewing ground water quality monitoring programs. Ground water quality monitoring programs are to be submitted to the appropriate DEQ regional office by the responsible party proposing a recharge project. The responsible party should be identified in the monitoring program. The responsible party is considered the land owner unless explicitly identified as another entity or individual. Two example monitoring programs are provided in Appendix D.

The responsible party should provide assurance that a current or future beneficial use of waters of the state will not be adversely affected by recharge projects. The physical characteristics of the site, nearby wells or potential future wells, existing ground water quality, and water quality of the recharge water will be evaluated to determine if the project protects ground water quality. Potential changes in water quality resulting from the introduction of recharge water into an aquifer by infiltration must be identified.

The contents of a recharge ground water monitoring program should include the elements described in the following sections. Applicants should use the outline (Appendix A) to prepare a monitoring program.

6.1 Project Description

The ground water quality monitoring program for the recharge project should provide a legal description of the recharge site, a physical description of the site, a statement of landownership, a statement of intended purpose of the recharge activity, and expected outcome. The project description should also include the source, diversion location, and type of water used for recharge; the expected volume of water; project duration; project delivery system; and a general site map.

6.2 Recharge Area Characterization

The area to be characterized for the recharge project includes the site and all downgradient areas within the zone of influence. The zone of influence is the minimum distance from the recharge site that ground water must travel to ensure pathogens are removed from the recharge water and the water is safe to drink. DEQ considers a 6-month TOT to be necessary for pathogens in recharge water to degrade naturally in the aquifer. Any modeling inputs or parameters used for TOT calculations should be provided. TOT is described in the *Idaho Source Water Plan* (DEQ 1999), and TOT modeling is described in Haitjema et al. (1994).

The characterization should include information on the recharge area soils, geology, hydrogeology, potential contaminant sources, land use, vegetation, and surface water features. The following maps should be included:

- Soils and geology
- Hydrogeologic and surface water features
- Contaminant sources, land use, and vegetation

6.2.1 Soils and Geology—Map and Description

A soils map and a geologic map of the area should be included and provide the information described in the following sections.

6.2.1.1 Soils Information

Soil infiltration rate should be determined to demonstrate the site's capacity and feasibility for recharge. This type of testing will help interested parties determine if the site is suitable for ground water recharge. Site-specific conditions may require developing a ground water quality monitoring program for feasibility testing activities.

The soil types should be identified by thickness, organic matter content, textural class, bulk density, permeability, available water holding capacity, and cation exchange capacity for each soil type. The Natural Resources Conservation Service (NRCS 2012) and the Idaho Soil and Water Conservation Commission may provide useful soil information.

Test pits or borings may be required to adequately determine soil types and thicknesses in areas with limited existing data; the test pit and boring locations, along with the areal extent of the soils, should be shown on the soils map.

Soils act as a filtration system that removes microbial organisms or as a sorption material for attenuating chemical contaminants in the recharge water. Information on the soils throughout the site is important for developing ground water quality monitoring requirements. These monitoring requirements may be reduced for recharge sites where it can be demonstrated that the nature of the soil at the recharge site will prevent bacteria and pathogens present in recharge water from reaching ground water. Demonstrations may include the following options:

- Construct the recharge site using stormwater infiltration guidelines from the states of Minnesota (Minnesota Pollution Control Agency 2016), Maryland (Center for Watershed Protection and MDE 2000), and Wisconsin (Wisconsin Department of Natural Resources 2014).
- Determine the infiltration rate at the site following an ASTM International (ASTM) standard method that may include the following:
  - Conducting double-ring infiltrometer field tests per ASTM D3385
  - Conducting a single-cylinder infiltrometer field test as described by Bouwer (2002) and Blew et al. (2007)
  - Sampling and analyzing soil per ASTM D2488, ASTM D1452, or the US Army Corps of Engineers Unified Soil Classification System (USACE 1953a,b)
- Use a pretreatment filtering system to capture and temporarily store water for infiltration and pass it through a filter bed of sand, organic matter, soil, or other media slow sand filter as used in Minnesota stormwater infiltration guidelines (Minnesota Pollution Control Agency 2016).

DEQ may consider reduced monitoring at sites with an infiltration rate of 1 inch per hour or less if the site has a minimum thickness of 3 feet of soil that contains at least 20% fine-grained material; is classified according to the US Army Corps of Engineers Unified Soil Classification System as SM, SC, ML, CL, and OL as sampled and tested using ASTM Methods D1452 and D2488; and is not located within 500 feet of a public or private drinking water well.

In areas without adequate soil cover, and where the soils are proposed for importation to augment the soil cover at the site, it is strongly recommended the proposal be presented to DEQ before importing soils. Specific details regarding requirements for such sites will be determined on a case-by-case basis.

6.2.1.2 Geologic Information

Geologic features to be identified include lithology, outcrops, faults, fractures, and joint patterns. Exposed rock outcrops, fractures, or faulting zones could act as direct conduits for the recharge water to enter the ground water without the benefit of filtration.

6.2.2 Hydrogeologic and Surface Water Features—Map and Description

A hydrologic map must be provided that includes the location of springs, wells, hydrogeologic boundaries, and surface water features, including canals and diversion structures. The configuration of the recharge site should be depicted on this map, along with the delivery system of the recharge water. In cases of considerable transport distance, a description may be appropriate.

6.2.2.1 Vadose Zone Characterization

The vadose zone is the unsaturated material between the land surface and water table. The monitoring program should provide a description of the vadose zone that includes the thickness, lithologic characteristics, and hydraulic properties (such as hydraulic conductivity and porosity).

6.2.2.2 Aquifer Characterization

An aquifer is a geologic unit of permeable saturated material capable of yielding economically significant quantities of water to wells or springs. A description of the aquifers that will be affected by the recharge activity should include the areal extent, thickness, hydraulic conductivity, boundary conditions, hydraulic gradient, ground water flow direction (regional and local), storage potential, and natural ground water flow velocity. Any modeling inputs or parameters used for TOT calculations should be provided.

In the case of a multiple-aquifer system, the parameters for the portion of the system that will be affected by the recharge activity must be described. A description of the extent, porosity, and thickness of any confining layers should also be provided.

A description of potential impacts that could affect a beneficial use of ground water within the aquifer system should be provided. The anticipated changes in the direction of ground water flow and a description of subsurface geology, including any potential perching units that may intercept the recharging water or impede recharge, should also be provided.

To provide the aquifer characteristics described above, and to determine the availability of existing wells that may serve as sampling sites for the monitoring program, an inventory of up- and downgradient wells is recommended. IDWR maintains a website to search well logs at *www.idwr.idaho.gov/Apps/appsWell/WCInfoSearchExternal*. Copies of well logs within the area should be provided and the wells located on the hydrologic map.

Well logs can provide depth to water, specific capacity estimates, lithologic descriptions of the subsurface, and well construction details. By locating wells on a topographic map, generalized elevations can be determined for the top of casing, water table, and lithologic zones.

Hydraulic conductivity and porosity can be determined from published values for the respective lithology. Ideally, hydraulic conductivity should be determined on a site-specific basis through the use of appropriately designed and conducted aquifer tests.

To evaluate potential impacts from recharge, the zone of influence should be determined and include the nearest downgradient drinking water well within 300 feet of the recharge basin. The spatial extent of the zone of influence can be estimated by multiplying the ground water flow velocity at the site by 6 months. (DEQ considers a 6-month travel time to be adequate for pathogens in recharge water to degrade naturally in the aquifer.) The ground water flow velocity can be calculated from measured or estimated values of the hydraulic conductivity, hydraulic gradient, and porosity.

6.2.2.3 Springs Description

Springs can be located from a site survey, maps, and remote sensing images. Springs within the zone of influence should be noted on the hydrogeologic map. A description of each spring should include the discharge rate and any other pertinent information. Springs may serve as potential sampling sites for the monitoring program.

6.2.2.4 Surface Water Description

Streams (including intermittent), rivers, canals, ditches and any other surface water features should be located on the hydrogeologic map. All structures, diversions, and features associated with recharge operations should also be located on the map.

If the recharge site is within a 100-year flood plain, that information should be provided. Federal Emergency Management Agency maps delineate 100-year flood plain areas and are available at *www.fema.gov*. The 100-year flood plain designations may also be available at county offices. If the recharge site is in an area with a high potential to flood, recharge related structures, including soil cover have the potential to be washed out.

6.2.3 Contaminant Sources, Land Use, and Vegetation—Map and Description

A land use map should be provided that includes the locations of potential contaminant sources; known sources or contaminant plumes; land use structures (such as buildings, roads, etc.); and land use areas, including vegetation type (such as irrigated agriculture, dry agriculture, urban, etc.). County land use maps, tax code maps, Sanborn maps, or comprehensive plans may be a resource.

6.2.3.1 Identifying Contaminant Sources

Potential and known contaminant sources within the immediate recharge site can be determined from site surveys, local knowledge, and geographic information system (GIS) coverages. Source water assessments (DEQ 1999) for local public water supply wells may help identify potential contaminant sources and are available at the local DEQ regional office or at *www2.deq.idaho.gov/water/swaOnline/Search*.

Potential contaminant sources may include cemeteries; septic systems; sand, gravel, or mineral extraction operations; wastewater treatment facilities; industries; active agricultural land; dairies or other confined animal feeding operations; landfills; underground storage tanks; Resource Conservation and Recovery Act sites; and Comprehensive Environmental Response, Compensation, and Liability Act sites.

6.2.3.2 Land Use Description

Past, present, and projected future land use and related structures at the site must be described. For example, if the site is currently used, or has been used, for a landfill or feedlot, use-related residual contaminants might exist in the area. Information on such contaminants can be obtained from local knowledge, GIS coverages, and a site survey. Public landownership should also be shown on the map.

Previous ownership records can provide historical land use activities and can be obtained from the local county assessor's office. County offices may be able to provide information regarding projected future land use. If land use changes occur during the recharge project, the responsible party may be required to change the sampling program or recharge process.

If the recharge site is located near an urban area or private land with future development potential, the recharge activity could eventually be intercepted by TOT areas for private or public drinking water supply wells.

6.2.3.3 Vegetative Cover Description

The type and distribution of vegetation within the recharge area should be identified. If vegetation is undisturbed, a description of the consumptive use that includes the plant uptake properties should be provided for each plant type. If vegetation is removed, the removal information and yearly maintenance in the basin should be described.

6.2.3.4 Confining Recharge Water to the Recharge Site

Before infiltration, the recharge water must be restricted to the premises of the application site (IDAPA 58.01.16.600.02). Any structural controls or berms required to achieve containment of the recharge water within the recharge site should be shown on the land use map.

6.3 Recharge Project Evaluation and Other Considerations

The responsible party should evaluate the project to determine consistency with the rules set out in section 4. In general, the responsible party should evaluate the project to determine whether the project will result in any of the following:

- Lowering the current quality of ground or surface water
- Exceeding any ground water quality standard in IDAPA 58.01.11
- Adversely affecting drinking water or other uses of ground or surface water
- Creating any health risks, safety risks, or nuisance conditions

For sites that have not been previously used for managed aquifer recharge, DEQ suggests the applicant identify nearby well owners as part of the evaluation of potential impacts from the recharge project. The distance to the closest receptors and ground water velocity will determine if the level of monitoring detail and frequency proposed will ensure that beneficial uses are protected. For example, if the receptors are located within a few hundred feet and ground velocity is fast, then the monitoring frequency will need to be more frequent than if the ground water flow velocity is slow.

All insect and weed control chemicals that may have been used in the recharge site or in the delivery system should be identified to guide the selection of constituents for possible inclusion in the ground water quality monitoring program. Residual concentrations of chemicals can remain in soil long after application may pose a threat to ground water quality if applied incorrectly.

Analytical or numeric modeling can be used to predict mounding and the areal extent of the proposed recharge as a way to estimate the potential area of impact and is highly recommended, especially for sites that have not been previously used for recharge.

Preventive measures, such as fencing designed to prevent animals from entering the recharge basin, may be necessary to prevent introduction of bacterial contaminants at the site that could impact water quality. For safety reasons, signs to notify the public of the recharge practice and the sensitivity of the area may be necessary. BMPs that may be applicable as additional preventive measures or as operational practices for recharge projects may be found in Meitl and Maguire (2003) or from a DEQ regional office.

6.4 Ground Water Quality Monitoring Program

The purpose of a ground water quality monitoring program is to determine the effects of introducing recharge water into the ground water. Several site-specific factors, including site hydrogeology, filtration medium properties, ground water quality of the site, proximity of domestic wells, and recharge water quality will determine the level of detail necessary for the water quality monitoring program. The responsible party should provide a ground water quality monitoring program that adequately evaluates ground water quality, and a location map of the recharge site and sample sites..

The ground water quality monitoring program needs to evaluate potential changes in water quality and water levels resulting from the introduction of recharge water into the aquifer by land application. The program should include a description of equipment used to obtain field parameters, sampling collection procedures, and sample holding times and a description of the quality control and quality assurance measures that will be followed to ensure data integrity. The analytical results will be used to evaluate any changes to ground water quality from the introduction of recharge water. Other nearby hydrologic features, such as springs and recharge basin locations, should be depicted on a recharge site and sample location map. Recharge programs must be developed with appropriate BMPs to maintain or improve existing ground water quality.

The level of detail, or minimum requirements, for each monitoring program will be determined by site-specific hydrogeologic factors. If the recharge water is of higher quality than ground water at the site, or if the basin has high filtration potential, some monitoring requirements or parameters for the project may be reduced or waived depending on site-specific characteristics.

6.4.1 Recharge Facility Description

The responsible party should describe the recharge facility that would include the water delivery system to the site or conveyance system, water quantity measurement system, water quantity measurement frequency, and any berms or other structures/infrastructure that would be part of the recharge facility. All recharge facility components should be included on the recharge site and sample location map.

6.4.2 Ambient Ground Water Quality

The responsible party should provide ambient ground water quality data to characterize ground water quality in the area surrounding the recharge site before initiation of recharge. Ambient ground water quality information may be available from the IDWR Statewide Monitoring Network, United States Geological Survey (USGS), Idaho State Department of Agriculture (ISDA), or DEQ. The number of samples necessary to determine ambient conditions will be determined on a case-by-case basis and will be discussed during the recommended pre-project planning meeting (section 5.1). The results of the ambient ground water quality monitoring will be used to determine the parameters and frequency for water quality monitoring during and after recharge.

Monitoring data for 1 year before recharge is recommended to determine ambient ground water quality. Ambient levels for pathogens in ground water will be considered to be zero unless shown otherwise.

6.4.3 Ground Water Monitoring Location

From the inventory of wells and springs (section 6.2.2.2), the responsible party should suggest locations to monitor ground water quality. Sites should be selected based on their location with respect to ground water flow, well construction details, spring discharge, and access.

The location and number of existing wells and springs will determine whether new monitoring wells are necessary to evaluate ground water quality on a case-by-case basis. Ground water sampling locations should be upgradient and downgradient and be shown on the recharge site and sample location map.

6.4.4 Recharge Water Quality and Monitoring Location

The responsible party should provide ambient recharge water quality data as part of the monitoring program. This information may be available from the USGS Idaho Surface Water Quality Statewide Network, the US Bureau of Reclamation National Irrigation Water Quality Program, the US Army Corps of Engineers, the US Environmental Protection Agency (EPA), or the ISDA Agricultural Surface Water Quality Program.

The locations for sampling the recharge water should be shown on the recharge site and sample location map, and the water quality of the recharge water should be evaluated to determine that ground water will not be degraded by the introduction of the recharge water. The source of the recharge water, timing, and volume of water to be recharged should also be described. Because the lag time for recharge water to arrive at the recharge diversion is dependent on the distance from the head of the canal, the recharge water sample collection site can be at an upstream location before the recharge basin diversion.

Coliform bacteria are commonly present in untreated surface water that is used for recharge, which is why the physical conditions of the recharge site are so important. The responsible party must demonstrate site conditions will provide the necessary level of treatment to remove microbial contaminants.

6.4.5 Monitoring Frequency

The responsible party should provide a proposed frequency for water quality monitoring as part of the monitoring program. The elements to consider when developing a monitoring schedule are the ground water flow system, availability and quality of the recharge water, and duration of recharge.

Generally, ground water monitoring should occur before, during, and after recharge. The recharge water should be monitored before and during recharge. The monitoring frequency will need to be increased for locations that pose a higher risk of transporting contaminants to the ground water.

DEQ may consider reduced monitoring at recharge sites where it can be demonstrated that any microbial constituent will die before reaching the nearest point of use. Such conditions are dependent on initial microbial concentrations of the recharge water and ground water velocity, which is a function of hydraulic gradient, hydraulic conductivity, porosity, and the distance to the nearest receptors. Examples for microbial transport models in ground water include Yates and Yates (1990) and Harvey (1991). Examples of microbial survival studies include John and Rose (2005).

Dye trace studies may be useful in some projects to determine TOT and flow direction. These studies can demonstrate that recharge activities will not impact nearby beneficial uses. The dye trace study can identify wells impacted by recharge water and assess TOT. Several fluorescent dye trace studies have been conducted and documented on the Snake River Plain by IDWR (2009a,b, 2010, 2011, 2014a,b) (*www.idwr.idaho.gov/press/technical-publications.html*). Resources for hydrogeologic information include published hydrogeologic investigations conducted in the area by various agencies such as DEQ, IDWR, USGS, ISDA, and the Idaho Water Resource Research Institute.

6.4.6 Field Parameters

The responsible party should provide a proposed list of field parameters for water quality monitoring as part of the monitoring program. Field measurements should include static water level measurements in all wells. When monitoring wells, springs, and recharge water, field measurements should include the following:

- Water temperature
- Specific conductance
- Dissolved oxygen
- pH
- Turbidity (optional)

6.4.7 Laboratory Analyses

The responsible party should provide a proposed list of constituents for water quality monitoring; laboratory analyses will be necessary to evaluate chemical and pathogenic microbiological changes in water quality. Constituents of concern are those chemical and pathogenic microbial constituents that may be related to land use along the delivery system and within the recharge area.

All recharge projects should monitor for major anions and cations, metals, bacteria, and nutrients and should include an initial analysis for pesticides and volatile organic compounds (VOCs). The project manager is advised to contact an EPA-certified laboratory for appropriate sample containers and sampling methods. The individual constituents that should be included in initial monitoring are described below and listed in detail in Appendix C (Table C-1).

- *Major Anions*—sulfate, bicarbonate, chloride
- *Major Cations*—calcium, sodium, potassium, magnesium
- *Metals*—arsenic, selenium, cadmium
- *Bacteria*—total coliform and *Escherichia coli (E. coli)*
- *Nutrients*—total phosphorus and nitrate
- *Pesticides*—immunoassay screening or EPA methods, such as 507, 515.2, 515.3, 515.4, or 525.2, for chemicals used in the area or an appropriate alternative analysis

Constituents should be analyzed for total concentrations for comparison to the Idaho "Ground Water Quality Standards" (IDAPA 58.01.11.200). If ambient ground water quality conditions were determined using dissolved concentrations, then dissolved concentrations may be needed for valid comparisons. Based on land use and management practices associated with the recharge project, DEQ may request analysis for additional constituents (Tables C-2, C-3, and C-4).

The responsible party should consult with ISDA to determine the types of pesticides and herbicides used in the recharge area and along the delivery system of the recharge water. The responsible party should contact an EPA-certified laboratory for appropriate analytical methods for the chemicals used.

DEQ may request analyses for constituents such as C*ryptosporidium*, *Giardia*, and viruses such as coliphage. Analyses for total organic carbon (TOC), disinfectants, and disinfectant byproducts (section 6.4.9) may be requested on a case-by-case basis if the recharge water is treated prior to recharge.

TOC is used as an indicator for a range of organic compounds present in surface water. The presence or absence of organic compounds can determine the effectiveness of the filtration medium. DEQ may also request community-level physiological profiling (CLPP), which can be used to differentiate the microbial communities present in surface water from those in ground water. CLPP can be used to determine if bacteria detected in ground water is influenced by surface water.

Analytical methods for microorganisms are frequently updated. Responsible parties are encouraged to consult ASTM, *Standard Methods for the Examination of Water and Wastewater* (Clesceri et al. 2012), American Public Health Association, American Water Works Association and the Water Environment Federation for the most recent methods.

Initial analytical results, along with site-specific land use, aquifer characteristics, and potential contaminant sources, may be used to determine subsequent monitoring requirements.

6.4.8 Monitoring Results and Alert Levels

A monitoring alert level, as defined below, may be considered a trigger to reevaluate or implement additional measures and to prevent degradation resulting from the recharge project. When an alert level for a constituent is reached, DEQ must be notified within 24 hours and a repeat sample must be taken for confirmation. Alert levels can be found in Appendix C.

An alert level reached in a ground water sample is one of the following:

- For VOCs, synthetic organics, bacteria, and viruses, a detection is the alert level. If *E. coli* is detected in the repeat sample, then analysis for *Cryptosporidium* and *Giardia* will be required and viruses and CLPP may be required.
- For inorganics (other than nitrate), radionuclides, and some secondary or unclassified constituents, half of the ground water standard is the alert level.

For nitrates, the alert level depends on whether the analytical result is less than or greater than half the value of the ground water standard, and to what degree.

- If the analytical result for nitrate is *less than or equal to* half the ground water standard, the following distinctions apply:
  - An alert level is not reached, and no action is required, if the analytical result is *less than or equal to* 25% above the ambient (background) level for the area.
  - An alert level is reached, and additional monitoring may be required, if the analytical result is *greater than* 25% above the ambient (background) level for the area.
- If the analytical result for nitrate is *greater than* half the ground water standard, the following distinctions apply:
  - An alert level is not reached, and no action is required, if the analytical result is *less than or equal to*10% above the ambient (background) level for the area.
  - An alert level is reached, and additional monitoring may be required, if the analytical result is *greater than* 10% above the ambient (background) levels for the area.

If natural ambient (background) levels are above a ground water standard in the area, that natural ambient (background) level may be considered to be the ground water standard for that area. Ambient (background) levels are discussed more fully in section 6.4.2.

If the repeat sample confirms that an alert level has been reached, DEQ must be notified within 24 hours of receipt of results, a report to DEQ must be submitted assessing the following:

- Why the alert level was reached and potential sources
- Additional contingency actions or BMP implementation (possibly additional monitoring)

6.4.9 Recharge Water Treatment

The responsible party should provide a description of any treatment processes applied to the proposed recharge water to minimize or eliminate contamination from entering the ground water system. Should disinfectants be used in any treatment process, the disinfectant and disinfectant byproducts should be considered as contaminants of concern and analyzed accordingly.

6.5 Small-Scale Projects

Projects lasting 30 days or less with a flow rate of 2 cfs or less are considered small-scale projects. DEQ may allow the monitoring requirements for small-scale projects to vary from full-scale recharge projects. However, the recharge site characterization requirements described in section 6.2 of this guidance still need to be satisfied per IDAPA 58.01.16.600.04–05.

If the small-scale recharge project occurs between February 1 and May 1, when the surface water used for recharge is snowmelt and unlikely to contain anthropogenic sources of contamination such as VOCs and synthetic organic compounds, then ground water monitoring will be focused on contaminants that present acute health risks such as bacteria and pathogens. The ground water monitoring program will be based on the concentration of bacteria measured in the surface water used for recharge. Monitoring requirements such as frequency and number of sites will be directly proportional to the bacteria concentration in the surface water used for recharge. Small-scale projects occurring during other times of the year may be required to monitor for additional constituents.

6.5.1 Small-Scale Recharge Monitoring Requirements Evaluation Process

The process for determining monitoring requirements for small-scale recharge projects using surface water is illustrated in Figure 1. Reduced or no ground water monitoring for small-scale projects may be acceptable if any of the following site-specific conditions are met:

- A ground water flow calculation indicates no drinking water wells are located within a 6-month TOT from the recharge site.
- A tracer test indicates drinking water wells are not impacted within a 6-month TOT.
- The infiltration rate throughout the site is measured to be 1 inch per hour or less. For example, a 1-acre site could take 1 cfs at this flow rate and recharge about 2 acre-feet per day.

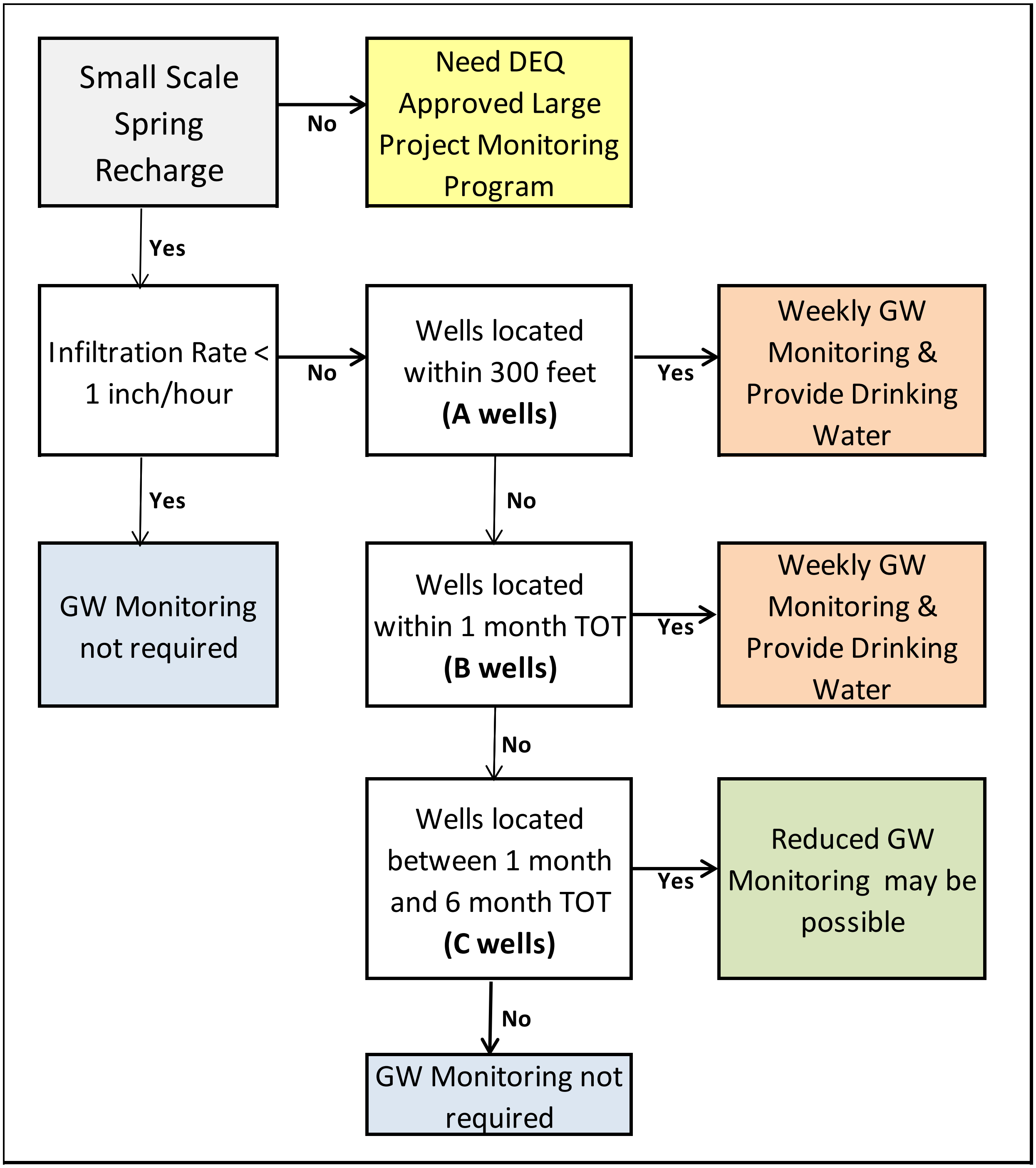

Figure 1. Process for determining monitoring at small-scale recharge sites.

The three alternatives above are believed to provide reasonable assurance that the soils and site geology will provide treatment to remove bacteria and pathogens from the recharge water before reaching the underlying ground water. Depth to ground water and soil geology will be a factor in determining if monitoring is required. For small-scale projects that do not meet one of the three alternatives above, monitoring would be required but limited to total coliform and *E. coli* at drinking water wells located within 300 feet upgradient and cross gradient of the recharge site and at downgradient drinking water wells within a 6-month TOT. Any modeling inputs or parameters used for calculations should be provided. Methods used for any trace testing or determining infiltration rate should be provided.

The 300-foot distance for monitoring and alternative drinking water supply from a recharge site is based on information from a trace test study DEQ recently completed in the Mountain Home area where a domestic well was contaminated with total coliform and *E. coli* bacteria (DEQ 2016). The trace test proved that a stormwater detention basin had direct connectivity to a local domestic well located 200 feet hydraulically upgradient from the basin. The trace test results showed that dye from the stormwater basin reached the domestic well within 2 hours of 9,000 gallons of water being added to the basin at a rate of 100 gallons per minute, or about 0.2 cfs. Additional testing of ground water samples from the domestic well over a period of 2 weeks confirmed the hydraulic connection with the stormwater basin. The trace test proved that contamination from improperly constructed drainage basins can move laterally on top of impermeable basalt layers in the shallow subsurface at a very rapid rate and contaminate wells with shallow seals in areas with deep water tables (DEQ 2016).

6.5.2 Monitoring Requirements

During recharge activities, ground water and surface water quality monitoring for bacteria should be conducted weekly. Ground water monitoring would be required at all drinking water wells located within a 1-month TOT distance or within 300 feet of the recharge site, whichever distance is farther, during recharge and for approximately 1 month following the completion of the recharge. This monitoring information is necessary to determine if the health of residents relying on wells more distant from the recharge site could be impacted by recharge activities. If bacteria are detected in any samples, an alternative water supply should be provided to the well owner and additional wells downgradient or farther from the detection will require monitoring.

The distance downgradient from the recharge basin for monitoring and the time that will be required to provide an alternative water supply is site-specific and dependent on the following factors:

- The concentration of bacteria in the surface water used for recharge
- The inactivation rate of the bacteria
- The ground water flow velocity of the uppermost aquifer below the recharge site—The ground water flow velocity can be calculated using hydraulic conductivity, gradient, and effective porosity values from DEQ or USGS reports.

The first two factors provide an estimate of the time necessary for the bacteria concentration to decrease to 1 MPN/100 milliliters (mL). The distance from the recharge basin is determined by multiplying the ground water velocity by the time needed to reduce bacteria levels to 1 MPN/100 mL. MPN stands for most probable number and refers to a method that uses dilution cultures and a probability calculation to determine the approximate number of viable cells in a given volume of sample. For example, 50 MPN/100 mL means that the most probable number of viable cells in 100 mL of sample is 50.

An alternative to domestic well monitoring is to provide residents who are within a 1-month TOT area or within 300 feet of a recharge site with an alternative drinking water supply (2 liters/day for each resident) during recharge activities and for approximately 1 month following the completion of the recharge. Total coliform concentrations in surface water used for recharge, as measured at the MP-31 head gate, ranged from less than 1 to over 4,839 MPN/100 mL (IDWR 2014). Without reasonable assurance of pathogen removal, nearby residences using ground water for drinking water could potentially be consuming insufficiently filtered surface water containing pathogens. Residents drinking water from wells located near recharge basins must be offered an alternative drinking water supply (2 liters/day for each resident) if their wells test positive for total coliform.

6.5.3 Total Coliform Bacteria Inactivation

The phased monitoring approach, where only the wells in close proximity to the recharge site are sampled, is based on scientific data of the inactivation rates of coliform bacteria (John and Rose 2005) and can be used to ensure public health is protected at a minimal cost.

The 1-month TOT determination assumes an initial total coliform concentration in the recharge water of 100 MPN/100 mL and is based on a total coliform inactivation rate in ground water of 0.07 log/day (John and Rose 2005). Using this inactivation rate, recharge water containing a total coliform concentration of 100 MPN/100 mL would require 30 days to decrease two orders of magnitude to a concentration of 1 MPN/100 mL. Recharge water with a bacteria concentration of 1,000 MPN/100 mL would require 45 days to decrease to 1 MPN/100 mL. A plot showing a total coliform inaction rate of 15 days per log cycle is provided in Figure 2.

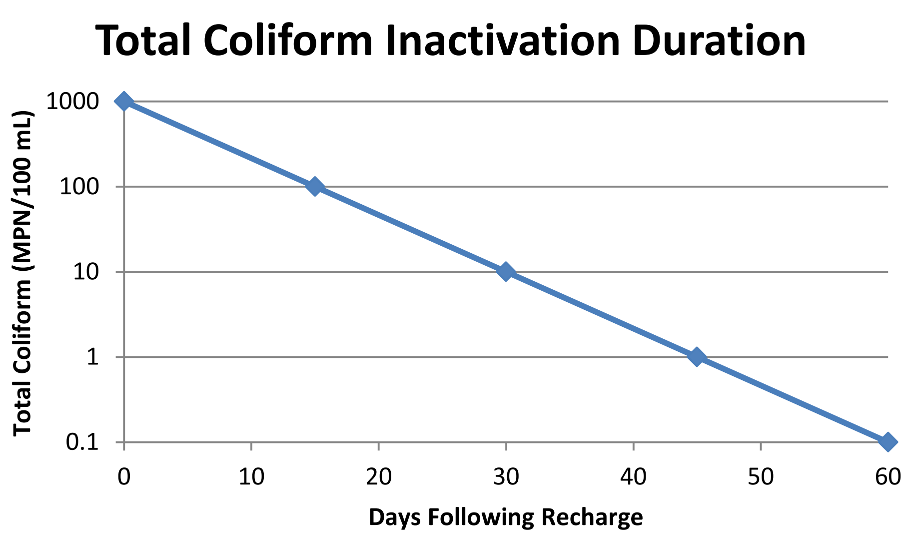

Figure 2. Example of total coliform decay with time.

For example, recharge water with a bacteria concentration of 1,000 MPN/100 mL would require wells within a 45-day TOT to be monitored and provided with an alternative drinking water supply. Recharge water with a bacteria concentration of 10 MPN/100 mL will require wells within a 15-day TOT to be monitored with an alternative drinking water supply (Figure 2).

6.5.4 Time of Travel calculation

The distance required to reduce bacteria from 100 MPN/100 mL in an aquifer with a ground water flow velocity of 12 feet per day is ground water velocity (12 ft/day) × inactivation time (30 days) = distance (360 feet). Ground water velocities in the Eastern Snake River Plain Aquifer range from less than 2 feet per day in the Springdale area of Cassia County (DEQ 2009) to over 1,000 feet per day near Malad Gorge (IDWR 2009a,b, 2010, 2011, 2014a,b).

If *E. coli* is persistently detected in ground water, DEQ may require the recharge to cease until *E.coli* is no longer detected in ground water.

6.5.5 Example Scenarios

The following examples illustrate monitoring requirements for various scenarios.

Scenario 1—A recharge site uses surface water with a total coliform concentration of 80 MPN/100 mL. One well is located within 300 feet upgradient from the recharge site (A well), and three downgradient wells are located within a 1-month TOT (B wells). These four wells should be monitored weekly or residents should be provided with an alternative source of drinking water. Monitoring should continue for 30 days after recharge ceases because approximately 30 days are estimated to be needed to reduce the total coliform from 80 MPN/100 mL to 0.8 MPN/100 mL.

Scenario 2—A recharge site uses surface water with a total coliform concentration of 2,000 MPN/100 mL. One well is located within 300 feet upgradient of the recharge site (A well), three downgradient wells are located within a 1-month TOT (B wells), and two wells are located near the 45-day TOT (C wells). The A and B wells should be monitored weekly, or residents should be provided with an alternative water source. The C wells should be monitored or residents should be provided with an alternative drinking water source if bacteria were detected in the B wells. Monitoring should continue for 60 days after recharge ceases because approximately 60 days are estimated to be needed to reduce the total coliform from 2,000 MPN/100 mL to 0.2 MPN/100 mL.

Scenario 3—A recharge site uses surface water with a total coliform concentration of 500 MPN/100 mL. Two wells are located within 300 feet upgradient of the recharge site (A wells), no downgradient wells are located within a 1-month TOT (B wells), and two wells are located near the 45-day TOT (C wells). The A and C wells would need to be monitored weekly or residents should be provided with an alternative source of drinking water. Monitoring should continue for 45 days after recharge ceases because approximately 45 days are estimated to be needed to reduce the total coliform from 500 MPN/100 mL to 0.5 MPN/100 mL.

Scenario 4—A recharge site uses surface water with a total coliform concentration of 950 MPN/100 mL. Two wells are located within 300 feet cross gradient from the recharge site (A wells), no downgradient wells are located within a 1-month TOT (B wells), and two wells are located near the 75-day TOT (C wells). The A wells would need to be monitored weekly or provided with an alternative water source. If bacteria are detected in the A wells, then the C wells should be monitored weekly or residents should be provided with an alternative source of water. Monitoring should continue for 45 days after recharge ceases because approximately 45 days are estimated to be needed to reduce the total coliform from 950 MPN/100 mL to 0.95 MPN/100 mL.

6.6 Water Quality Management Practices

Management practices should be in place to address report scheduling and contingency planning.

6.6.1 Reporting Schedule

Important reporting commitments associated with recharge project operation include the following:

- The responsible party should provide a reporting schedule for monitoring results, the annual report, and for expedited reports when monitoring results meet or exceed an alert level. Any treatment to the recharge water addressed in section 6.4.9 should be reported.
- If an alert level is reached, the DEQ regional office should be notified within 24 hours of receiving laboratory results. DEQ will immediately notify the homeowner by phone if ground water quality standards (IDAPA 58.01.02) are exceeded that pose a health threat.
- Routine laboratory analyses and field sheets for recharge and ground water quality monitoring should be submitted to the DEQ regional office within 10 days of receiving laboratory results.
- An annual report for the project should be submitted to the DEQ regional office within 2 months following the conclusion of the recharge duration or season for the year.

Reporting requirements may be reduced following review of an annual report. The annual report will outline the previous year of recharge activities, including a summary of all water quality monitoring results and recorded hydrogeologic changes along with a map showing monitoring locations.

6.6.2 Contingency Plan

A contingency plan should be developed and submitted as part of the monitoring program to address potential emergency situations at the recharge basin and in the recharge water delivery system. The contingency plan should address what actions will be taken by the responsible party in the event of an emergency. Examples of emergency situations include the following:

- Misapplication of pesticides or herbicides to either the recharge basin or the water delivery system during a period of recharge
- An accident involving a vehicle along the delivery system
- Aerial application of pesticides or herbicides to the recharge basin or along the delivery system
- Basin stability, such as sinkhole development

A notification procedure and plan of action should be included in the contingency plan.

7 Monitoring Program Approval

DEQ is authorized to approve ground water quality monitoring programs for land application recharge projects (IDAPA 58.01.16.600). Approval of a ground water quality monitoring program for recharge by land application will be considered on a case-by-case basis based on the information submitted in the program. Approved monitoring programs will include appropriate sampling locations and analyses (number and type), sampling frequency, and reporting. Failure to comply with the approved monitoring program is a violation of DEQ’s rules and may subject the project to an enforcement action.

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Glossary

Aquifer A geologic unit of permeable saturated material capable of yielding economically significant quantities of water to wells or springs.

Beneficial Uses Various uses of ground water in Idaho including, but not limited to, domestic water supplies, industrial water supplies, agricultural water supplies, aquacultural water supplies, and mining. A beneficial use is defined as actual current or projected future uses of ground water.

Best Available Method Any system, process, or method that is available to the public for commercial or private use to minimize the impact of point or nonpoint sources of contamination on ground water quality.

Best Management Practice (BMP) A practice or combination of practices determined to be the most effective and practical means of preventing or reducing contamination to ground water and interconnected surface water from nonpoint and point sources to achieve water quality goals and protect the beneficial uses of the water.

Best Practical Method Any system, process, or method that is established and in routine use that could be used to minimize the impact of point or nonpoint sources of contamination on ground water quality.

Class A Effluent Class A effluent is treated municipal reclaimed wastewater that must be oxidized, coagulated, clarified, and filtered or treated by an equivalent process and adequately disinfected. For comprehensive Class A effluent criteria and permitting requirements, refer to IDAPA 58.01.17, “Recycled Water Rules.”

Constituent Any chemical, ion, radionuclide, synthetic organic compound, microorganism, waste, or other substance occurring in ground water.

Contaminant Any chemical, ion, radionuclide, synthetic organic compound, microorganism, waste or other substance that does not occur naturally in ground water or naturally occurs at a lower concentration.

Contamination The direct or indirect introduction into ground water of any contaminant caused in whole or in part by human activities.

Degradation The lowering of ground water quality as measured in a statistically significant and reproducible manner.

Delivery System	An existing canal system used for carrying surface water to an infiltration basin.
Ground Water	Any water of the state that occurs beneath the surface of the earth in a saturated geological formation of rock or soil.
Ground Water Quality Standard	Values, either numeric or narrative, assigned to any constituent for the purpose of establishing minimum levels of protection.
Infiltration Basin	A natural depression in the earth's surface that may be capable of holding water that is intended to percolate through soils and geologic formations to an aquifer.
Land Application	A process or activity involving application of wastewater, surface water, or semiliquid material to the land surface for the purpose of disposal, pollutant removal, or ground water recharge.
Managed Recharge	Management of water specifically for the purpose of adding water to the zone of saturation by land application.
Natural Background Level	The level of any constituent in the ground water within a specified area, as determined by representative measurements of the ground water quality unaffected by human activities.
Noncontact Cooling Water	Water used to reduce temperature and does not come into direct contact with any raw material, intermediate product, waste product (other than heat), or finished product. Noncontact cooling water can be land applied as recharge water as discussed in the "Wastewater Rules," IDAPA 58.01.16, based on DEQ approval as described in sections 600.04–05.
Projected Future Beneficial Uses	Various uses of ground water, such as drinking water, aquaculture, industrial, mining, or agriculture that are practical and achievable in the future based on hydrogeologic conditions, water quality, future land use activities, and social/economic considerations.
Qualified Party	An individual or firm with experience in soils, geology, hydrogeology, hydrology, or similar field and recognized in Idaho as a registered professional geologist, engineer, or environmental health professional.
Recharge	The process of adding water to the zone of saturation.

Recharge Area An area where water infiltrates into the soil or geological formation and percolates to one or more aquifers. For the purpose of this guidance, a recharge area does not include areas with incidental recharge by precipitation, irrigation practices and conveyance system leakage, surface water seepage from creeks, streams or lakes, lagoons, stormwater runoff and storage, lagoons associated with confined animal operations, mining operations, wastewater land applications, or recharge water applied through the use of injection wells.

Recharge Water Water that is specifically used for the purpose of adding water to the zone of saturation.

Responsible Party The entity that is accountable for implementing the approved ground water quality monitoring program plan. The responsible party may be the landowner, operator, project manager, or benefactor. The responsible party must be identified in the monitoring plan.

Time of Travel (TOT) The time required for a contaminant to move in the saturated zone from a specific point to a well.

Wastewater Unless otherwise specified, sewage, industrial waste, agricultural waste, and associated solids or combinations of these, whether treated or untreated, together with such water as is present.

Zone of Influence The distance from a recharge basin that ground water must travel in the subsurface to ensure that pathogens (e.g., bacteria, *Cryptosporidium*, and viruses) are removed from the recharge water and the water is safe to drink.

Zone of Saturation The zone in which the voids in the rock or soil are filled with water at a pressure greater than atmospheric. The water table is the top of the saturated zone in an unconfined aquifer.

Appendix A. Recharge Project Monitoring Program

Print Form

Ground Water Quality Monitoring Program Components: Land Application of Recharge Water Projects

Operator Information

Operator/Organization ____ Contact Name ____

Address ____

Phone ____ Email ____

Project Description

Physical Description of the Recharge Site:

____

Legal Description: Township ____ Range ____ Section ____

Landownership ____ Recharge Area (acreage) ____

Project Purpose

____

Flow Rate ____ Project Start Date ____ End Date ____

Expected Total Volume per Season ____

Recharge Area Characterization

Soils Information

Soil thickness of 3 feet? ○ Yes ○ No

Remarks ____

Soil composed of 20% fine-grained material? ○ Yes ○ No

Remarks ____

Pretreatment filtering system proposed? ○ Yes ○ No

Remarks ____

Soil infiltration rate and method for determining:

____

Soil type and classification description:

____

Geologic Information

Map provided of soils and lithology, outcrops, faults, fractures, joint patterns, geology, and structures? ○ Yes ○ No

Print Form

Hydrologic Information

Map provided that includes the location and name of springs, wells, hydrogeologic boundaries, surface water features (e.g., streams, lakes, reservoirs, rivers, canals), diversion structures, recharge site configurations and delivery system? ◯ Yes ◯ No

Description of other pertinent information included in monitoring program? ◯ Yes ◯ No

Is the site located within a 100-year floodplain? ◯ Yes ◯ No

Vadose Zone

Lithology

Hydraulic properties or infiltrate rate

Depth to water

Cumulative thickness of material above the water table and any perched zones

Aquifer Characteristics

Well logs within and surrounding recharge site attached? ◯ Yes ◯ No

Thickness

Hydraulic conductivity

Hydraulic gradient

Boundary conditions

Regional ground water flow direction

Local ground water flow direction (if different than regional)

Summary of lithology

Ground water flow velocity (include model inputs or calculation parameters)

Has a 6-month TOT calculation been completed from the recharge site? ◯ Yes ◯ No

Has a trace study been completed from the recharge site? ◯ Yes ◯ No

Print Form

Contaminant Sources, Land Use, and Vegetation Map and Description

Potential or known contaminant sources:

Land Use Description

Describe historical, present, and future potential land use of the recharge area:

Vegetative Cover Type

Describe species present, consumptive use, and potential impacts:

Water Quality Monitoring Program Recharge Water and Ground Water Sampling Locations (include map)

Provide ambient ground water quality data.

List locations sampled. Sites should be selected based on the location with respect to ground water flow and well construction details The locations of monitoring sites should intercept all possible ground water flow directional changes caused by introducing recharge water to the aquifer.

Upgradient	Downgradient
1.	1.
2.	2.
3.	3.
4.	4.

List sample location, field parameters, and sampling dates for ambient ground water:

List ambient (background) and proposed initial constituents for ground water. Attach results in a separate table.

Major anions	
Major cations	
Bacteria	
Metals	

Print Form

Nutrients

Pesticide analysis conducted? ○Yes ○No Provide results in a separate table.

VOC analysis conducted? ○Yes ○No Provide results in a separate table.

Additional analysis:

Field parameters:

Sample frequency:

Recharge Water Monitoring

Provide a map of proposed locations of ground water monitoring sites to capture the effects of recharge? ○Yes ○No

Provide a map of proposed locations for monitoring recharge water to characterize water used for recharge? ○Yes ○No

Provide list of background recharge water quality and field parameters to be used for recharge and list the constituents, field parameters, frequency of monitoring of the recharge water, and treatment. Provide results in a separate table.

Appendix B. Monitoring Program Agreement

Project: ____

Location: ____

Project Purpose: ____

Project Duration: ____

Property Owner: ____

Operator: ____

Responsible Party: ____

The ground water quality monitoring program for ____________________ recharge project is hereby approved by the Idaho Department of Environmental Quality (DEQ) pursuant to IDAPA 58.01.16.600, "Wastewater Rules, Land Application of Wastewater(s) or Recharge Waters."

The number of sample sites, constituents, frequency, and reporting schedule are defined and described in the program. DEQ has determined the monitoring program to be protective of ground water quality beneficial uses when adhered to as described. Failure to comply with the monitoring program is a violation of DEQ's rules, and the responsible party may be subject to enforcement action.

____ ____________________

DEQ Regional Office Administrator **Date**

____ ____________________

Responsible Party **Date**

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Appendix C. Constituents and Alert Levels

Table C-1. Constituents included in initial ground water quality monitoring for recharge by land application projects.

	Constituent/Parameter	Standard[a] (mg/L unless otherwise specified)	Alert Level (mg/L unless otherwise specified)
Major Anions	Bicarbonate	—	—
	Chloride	250	125
	Sulfate	250	125
Major Cations	Calcium	—	—
	Magnesium	0.05	0.025
	Potassium	—	—
	Sodium	—	—
Metals	Arsenic	0.05[b]	0.025
	Cadmium	0.005	0.0025
	Selenium	0.005	0.0025
Bacteria	*Escherichia coli* (*E. coli*)	Less than 1 viable colony or colony-forming unit/100 mL using any EPA-approved method	Detection
	Total coliform	1 colony-forming unit/100 mL	Detection
Nutrients	Nitrate + nitrite	10	5
	Total phosphorus	Concentration before recharge (background)	Detection above background
Pesticide analyses	site-specific	Varies	Detection
VOC analyses	site-specific	Varies	Detection
Field parameters	Temperature, specific conductance, dissolved oxygen	N/A	N/A
	pH	>=6.5 to <=8.5	Detection below or above standard range

Notes: mg/L = milligram per liter; mL = milliliter; N/A = not applicable
[a] All concentrations are based on total concentrations from unfiltered samples.
[b] Idaho's standard for arsenic differs from EPA's drinking water standard, which is 0.010 mg/L.

Additional analyses maybe required for some of the constituents listed in Tables C-2, C-3, and C-4 if land use indicates the potential for contamination by any of these constituents.

Table C-2. Ground water quality primary constituent standards (IDAPA 58.01.11.200.01).

Chemical Abstract Service Number	Constituent	Standard	Alert Level
		(mg/L unless otherwise specified)	
7440-36-0	Antimony	0.006	0.003
7440-38-2	Arsenic	0.05[a]	0.025
1332-21-4	Asbestos	7 million fibers/L longer than 10 µm	3.5 million fibers/L longer than 10 µm
7440-39-3	Barium	2	1
7440-41-7	Beryllium	0.004	0.002
7440-43-9	Cadmium	0.005	0.0025
7440-47-3	Chromium	0.1	0.05
7440-50-8	Copper	1.3	0.65
57-12-5	Cyanide	0.2	0.1
16984-48-8	Fluoride	4	2
7439-92-1	Lead	0.015	0.0075
7439-97-6	Mercury	0.002	0.001
—[b]	Nitrate (as N)	10	5[c]
—[b]	Nitrite (as N)	1	0.5
—[b]	Nitrate and nitrite (both as N)	10	5[c]
7782-49-2	Selenium	0.05	0.025
7440-28-0	Thallium	0.002	0.001
15972-60-8	Alachlor	0.002	Detection
191 2-24-9	Atrazine	0.003	Detection
71-43-2	Benzene	0.005	Detection
50-32-8	Benzo(a)pyrene (PAH)	0.0002	Detection
75-27-4	Bromodichloromethane (THM)	0.1	Detection
75-25-2	Bromoform (THM)	0.1	Detection
1563-66-2	Carbofuran ran	0.04	Detection
56-23-5	Carbon Tetrachloride	0.005	Detection
57-74-9	Chlordane	0.002	Detection
124-48-1	Chlorodibromomethane (THM)	0.1	Detection
67-66-3	Chloroform (THM)	0.002	Detection
94-75-7	2,4-D	0.07	Detection
75-99-0	Dalapon	0.2	Detection
103-23-1	Di (2-ethylhexyl) adipate	0.4	Detection
96-12-8	Dibromochloropropane	0.0002	Detection
541 -73-1	Dichlorobenzene m-	0.6	Detection
95-50-1	Dichlorobenzene o-	0.6	Detection
106-46-7	1,4(para)-Dichlorobenzene or Dichlorobenzene p-	0.075	Detection
107-06-2	1,2-Dichloroethane	0.005	Detection
75-35-4	1,1 -Dichloroethylene	0.007	Detection
156-59-2	cis-1, 2-Dichloroethylene	0.07	Detection
156-60-5	trans-1, 2-Dichloroethylene	0.1	Detection
75-09-2	Dichloromethane	0.005	Detection

Chemical Abstract Service Number	Constituent	Standard	Alert Level
		(mg/L unless otherwise specified)	
78-87-5	1,2-Dichloropropane	0.005	Detection
117-81-7	Di (2-ethylhexyl) phthalate	0.006	Detection
88-85-7	Dinoseb	0.007	Detection
85-00-7	Diquat	0.02	Detection
145-73-3	Endothall	0.1	Detection
72-20-8	Endrin	0.002	Detection
100-41-4	Ethylbenzene	0.7	Detection
106-93-4	Ethylene dibromide	0.00005	Detection
1071-83-6	Glyphosate	0.7	Detection
76-44-8	Heptachlor	0.0004	Detection
1024-57-3	Heptachlor epoxide	0.0002	Detection
118-74-1	Hexachlorobenzene	0.001	Detection
77-47-4	Hexachlorocyclopentadiene	0.05	Detection
58-89-9	Lindane	0.0002	Detection
72-43-5	Methoxychlor	0.04	Detection
108-90-7	Monochlorobenzene	0.1	Detection
23135-22-0	Oxamyl (Vydate)	0.2	Detection
87-86-5	Pentachlorophenol	0.00 1	Detection
191 8-02-1	Picloram	0.5	Detection
1336-36-3	Polychlorinated biphenyls (PCBs)	0.0005	Detection
122-34-9	Simazine	0.004	Detection
100-42-5	Styrene	0.1	Detection
1746-01 -6	2,3,7,8-TCDD (Dioxin)	3.0 x 10-8	Detection
127-18-4	Tetrachloroethylene	0.005	Detection
108-88-3	Toluene	1	Detection
—[b]	Total Trihalomethanes [the sum of the concentrations of bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform)]	0.1	Detection
8001 -35-2	Toxaphene	0.003	Detection
93-72-1	2,4,5-TP (Silvex)	0.05	Detection
120-82-1	1,2,4-Trichlorobenzene	0.07	Detection
71-55-6	1,1,1 -Trichloroethane	0.2	Detection
79-00-5	1,1,2-Trichloroethane	0.005	Detection
79-01-6	Trichloroethylene	0.005	Detection
75-01-4	Vinyl Chloride	0.002	Detection
1330-20-7	Xylenes (total)	10	Detection
—[b]	Gross alpha particle activity (including radium-226, but excluding radon and uranium)	15 pCi/L	7.5 pCi/L
—[b]	Combined beta/photon emitters	4 millirems/yr effective dose equivalent	2 millirems/yr effective dose equivalent
—[b]	Combined Radium-r26 and radium-228	5 pCi/L	2.5 pCi/L
—[b]	Strontium 90	8 pCi/L	4 pCi/L

Chemical Abstract Service Number	Constituent	Standard	Alert Level
		(mg/L unless otherwise specified)	
—[b]	Tritium	20,000 pCi/L	10,000 pCi/L
—[b]	Total Coliform[d]	1 colony forming unit/100 mL	Detection
	Escherichia coli (E. coli)	Less than 1 viable colony or colony-forming unit/100 mL using any EPA approved method	Detection

Notes: µm = micrometer; pCi/L = picocurie per liter; mg/L = milligram per liter; mL = milliliter
[a] Idaho's standard for arsenic differs from EPA's drinking water standard, which is 0.010 mg/L.
[b] No Chemical Abstract Service Number exists for this constituent.
[c] Refer to section 6.4.8 of the guidance for alert levels.
[d] An exceedance of the primary ground water quality standard for total coliform is not a violation of these rules. If the primary ground water quality standard for total coliform is exceeded, additional analysis for *E. coli* will be conducted. An exceedance of the primary ground water quality standards for *E. coli* is a violation of the "Ground Water Quality Rule" (IDAPA 58.01.11).

Table C-3. Secondary constituent standards (IDAPA 58.01.00.200.01.b), constituents under Water Quality Standards (IDAPA 58.01.02.201.01.c).

Constituent	Standard	Alert Level
	(mg/L unless otherwise specified)	
Acrolein[a]	0.0032[c]	0.0016[b]
Aluminum	0.2	0.1
Chloride	250	125
Color	15 color units	7.5 color units
Foaming Agents	0.5	0.25
Iron	0.3	0.15
Manganese	0.05	0.025
Odor	3.0 threshold odor number	1.5 threshold odor number
Phosphorus, Total[c]	Concentration before recharge	Detection above background
Phosphorus, Ortho[c]	**Concentration before recharge**	**Detection above background**
pH	≥6.5 to ≤8.5 standard units	<6.5; >8.5 standard units
Silver	0.1	0.05
Sulfate	250	125
Total Dissolved Solids	500	250
Zinc	5	2.5

Notes: mg/L = milligram per liter
[a] Indicator of surface water influence (IDAPA 58.01.02.210.01.c).
[b] Common ions or other constituents for which no standard has been developed, but useful for evaluating water chemistry.
[c] Narrative standard; no numerical standard for phosphorus in ground water—may impact surface water quality.

Table C-4. Microbial constituents.

Constituent	Standard	Alert Level
	(mg/L unless otherwise specified)	
Total coliform[a]	1 colony-forming unit/100 mL	Detection
E. coli bacteria[a,b]	Less than 1 viable colony or colony-forming unit/100 mL using any EPA-approved method	Detection
Heterotrophic Plate Count (HPC)[c]	500 colonies/mL	250 colonies/mL
Cryptosporidium[a]	99% removal	Detection
Giardia lamblia[a]	99.9% removal	Detection
Viruses[a]	99.99% removal	Detection

Notes: mg/L = milligram per liter; mL = milliliter
[a] National Primary Drinking Water Standards, Environmental Protection Agency
[b] Bacterial constituents for follow-up sampling and analysis upon a positive total coliform result
[c] HPC is used as an indicator of recharge basin filtration efficiency.

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Appendix D. Example Monitoring Programs

Following are examples of ground water quality monitoring programs for recharge projects by land application of recharge water with the intention of infiltration from the surface to underlying aquifers. As stated in the guidance, the requirements for monitoring will be determined by site-specific hydrogeologic factors.

In 2013, the City of Gooding initiated an investigation into using recharge to offset water right issues and subsequently developed an Idaho Department of Environmental Quality (DEQ) approved recharge project in 2014. The City of Gooding's ground water quality monitoring program provides an example of a monitoring program that was approved by DEQ under the authority of the "Wastewater Rules" (IDAPA 58.01.16.600). DEQ is responsible, under the "Ground Water Quality Rule" (IDAPA 58.01.11), for protecting present and future beneficial uses of the waters of the state.

Technical staff from the Idaho Department of Water Resources also prepared a ground water quality monitoring program for the Milepost 31 Recharge Site.

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City of Gooding Recharge Program

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Project No. 1176-03-2014

Groundwater Quality Monitoring Program for the City of Gooding Recharge Site

Prepared for:

City of Gooding, Idaho

APPROVED
[signature] PE
ENVIRONMENTAL ENGINEER
DATE 9/22/14

September 17, 2014

For information concerning this report, contact
Charles G. Brockway, Ph.D., P.E.

BROCKWAY ENGINEERING P.L.L.C.

CHARLES E. BROCKWAY, PH.D., P.E.
CHARLES G. BROCKWAY, PH.D., P.E.

2016 NORTH WASHINGTON, SUITE 4
TWIN FALLS, IDAHO 83301

Project No. 1176-03-2014

Groundwater Quality Monitoring Program for the City of Gooding Recharge Site

Prepared for:

City of Gooding, Idaho

September 17, 2014

For information concerning this report, contact
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PROFESSIONAL ENGINEER REGISTERED 9195 9/17/2014 STATE OF IDAHO CHARLES G. BROCKWAY

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2016 NORTH WASHINGTON, SUITE 4
TWIN FALLS, IDAHO 83301

Groundwater Quality Monitoring Program for the City of Gooding Recharge Site

Brockway Engineering, PLLC
Charles G. Brockway, P.E.

September 17, 2014

Overview

The City of Gooding currently owns and operates both a potable water system and a gravity irrigation system throughout the City's water service area. Potable water supply is provided by three (3) deep wells diverting from the Eastern Snake River Plain aquifer (ESPA). Gravity irrigation is supplied by water diverted from the Little Wood River. At present, approximately 47% of the City's customers are served irrigation water from the gravity system, while another 27% are served partly from the gravity system and partly from the potable system.

The gravity system has deteriorated significantly since its construction in the 1930s and will no longer be utilized. All water demands including in-house and irrigation demands will be supplied by the existing wells and up to three (3) additional wells. An appropriation for the proposed additional groundwater withdrawal has been obtained from the Idaho Department of Water Resources (Permit No. 22850). As mitigation for the additional groundwater withdrawal, IDWR has also approved a transfer of the City's surface water irrigation rights, changing the use from irrigation to groundwater recharge. Under this plan, surface water from the Little Wood River will be diverted and recharged to the Eastern Snake Plain Aquifer. Groundwater modeling has indicated that all of the City's additional use will be mitigated by this program.

The Idaho Department of Environmental Quality has determined that a groundwater monitoring plan is required for the aquifer recharge project in order to establish baseline data and ensure that the project does not result in an unlawful degradation of groundwater quality. The purpose of this report is to describe and propose such a plan. The proposed plan generally follows the guidance set forth by IDEQ[1].

Recharge system description and operation

An existing diversion from the Little Wood River is the proposed point of diversion for the project. The location of the diversion is about 4.5 miles east of the City as shown on Figure 1. At this point, a concrete structure is in place which was constructed by the Corps of Engineers several decades ago as part of a flood control system. Under an agreement with the Corps, the City of Gooding maintains this structure.

[1] IDEQ (2010). Guidance for Developing a Ground Water Quality Monitoring Program for Managed Recharge Projects by Land Application.

The recharge plan will require measurement of the diversion to recharge, including instantaneous flow rate and total volume. A flow measurement device and recording apparatus will be installed by the City of Gooding.

A man-made channel, also constructed by the Corps of Engineers, runs from the river diversion west-northwest for approximately 0.7 miles where it joins a natural channel in the basalt flows northeast of the City. The basalt channel extends approximately 2.8 miles, running generally westerly. Historically, this channel has carried flood flows diverted at the structure described above in order to relieve water levels downstream through the City of Gooding. The City has historically managed this diversion using informal operating criteria.

The recharge area is a well-defined channel in the basalts, sometimes running directly on basalt and sometimes exhibiting fine-grained depositionary structure in reaches with lower slopes and slower velocities. Abundant anecdotal evidence exists based on the City's management of the flood control system that the entire basalt channel may easily lose 30 to 40 cfs along its length.

The maximum diversion rate from the Little Wood River to the recharge area will be 7.21 cfs, which is equal to the decreed total rate on the City's surface water right. The water will be diverted any time during the established period of use on the water rights, or March 15 through November 15. However, monthly recharge volumes will generally vary according to a pattern which follows the seasonal irrigation demand in the City. The total volume recharged each irrigation season will be a minimum of 1,846 acre-feet, but may be as high as 2,600 acre-feet.

Hydrogeologic Setting

The proposed recharge site is situated above the Eastern Snake Plain Aquifer (ESPA), the major aquifer in the State of Idaho encompassing some 11,000 square miles ranging from Ashton on the east to King Hill on the west. The aquifer generally consists of multiple, thin basalt flows and interbeds of sedimentary depositions, with total saturated thickness ranging from 200 to 5,000 feet. Water in the aquifer is present chiefly within fractures in the basalt flows, and the occurrence and transmission of water is non-uniform due to the heterogeneous nature of the rock fractures. It is estimated that the total volume of water contained in the aquifer is could approach 1 billion acre-feet and the total throughput in the thousand springs area annually is 4.35 million acre-feet or 6,004 cfs. The aquifer is highly productive in the Gooding area, with hydraulic conductivities typically 10 to 800 ft/day. Numerous large wells including those for the City of Gooding are completed in the aquifer.

At the proposed recharge site, well drilling records indicate that the prevailing aquifer composition is typical of the ESPA as described above. Aquifer saturated thickness at this site is estimated to be 1,500 feet. Local conditions in the direct vicinity of the site were evaluated utilizing well drilling records obtained from IDWR. Based on this data, it appears static water levels below ground surface within 1 mile of the recharge site range from 85 to 172 feet, with an average of 125 feet. Based on the driller-reported lithology and location of water bearing strata relative to the static water level, it appears that unconfined aquifer conditions prevail through the study area.

Water table contours have been defined by the modeling performed by IDWR leading to development of the ESPA model version 2.1. These contours are depicted on Figure 1. Based on the contours, groundwater flow is to the southwest and the gradient beneath the recharge site is 37.9 ft/mile or 0.00718 ft/ft.

The hydraulic characteristics of the aquifer have also been defined in the course of ESPAM 2.1 development. The six model cells encompassing or directly adjacent to the recharge site have calibrated hydraulic conductivities ranging from 18.7 ft/day to 26.0 ft/day, with an average of 22.2 ft/day. Storativity ranges from 0.029 to 0.037 with an average of 0.033.

The groundwater discharge occurring directly beneath the proposed recharge site was estimated using Darcy's law assuming a hydraulic conductivity of 22.2 ft/day, a gradient of 0.00718 ft/ft, and a saturated depth of 1,500 feet. The width of the recharge site perpendicular to groundwater flow lines is 8,550 feet. With these parameters, Darcy's law yields a discharge of 2,044,300 ft^3/day or 17,130 ac-ft/year beneath the recharge site.

Unsaturated zone

As noted above, the depth to the water table at the recharge site averages 125 feet. Water infiltrated from irrigation activities or managed recharge activities must pass through the soil material between the ground surface and the water table prior to entering the aquifer. The composition of this material was assessed by evaluating well drilling records in Sections 26, 27, and 28 (directly beneath the site). Eight (8) drilling records in these three sections report useful data, indicating topsoil depth ranging from 0 to 7 feet with an average of 2.6 feet (logs are provided in Appendix A). Three of the eight wells exhibit only fractured basalt and/or cinders from the bottom of the topsoil to the first water encounter. Five wells exhibit some presence of fine-grained sedimentary interbedding of sand or clay. The thickness of the interbedding ranges from 4 to 8 feet, with an average of 6.4 feet. The data from the well logs indicates that the degree of filtration will be spatial variable, but some filtration will occur through either fine-grained material or cinders at depth.

Travel time of infiltrated water within the unsaturated zone cannot be estimated with reasonable accuracy due to the unknown magnitude and direction of fracture patterns in the basalt strata. It is probable that most of the infiltrated water will proceed at a velocity of at least 5 ft/day, reaching the aquifer within a month. Some water will be delayed by encounters with more dense strata; some will proceed in a more direct fashion if extensive vertical fissuring exists.

Background water quality

Groundwater

Water in the ESPA is generally of high quality, suitable for drinking water purposes without treatment at all locations with extremely isolated exceptions. Locally, existing water quality conditions were assess using available data from well sampling within approximately three miles of the recharge site. A total of 36 wells were identified and are shown on Figure 1. These wells have been sampled by IDWR, IDEQ, or ISDA for a range of parameters including inorganics, volatile organic compounds, and synthetic organic compounds. Sampling dates ranged from 1997 through 2011. All data is provided in Appendix B.

- Nitrate-nitrogen concentrations have been measured at all 36 wells. Concentrations are universally low (less than 4 mg/l) with the exception of one well, 05S15E35DBD3. Nitrate concentration in this well has consistently been above 8 mg/l, and reached a maximum of 17.9 mg/l in June 2009. The last sample was taken in August 2010 indicated a concentration of 10.9 mg/l. The degraded water quality in this well is an isolated problem, as there are several other wells within one-half mile that do not indicated elevated levels. This well is used as a domestic water supply source, and it may be influenced by a poorly-performing septic system on the residential property.

- Total dissolved solids concentrations have been measured at 16 of the 36 wells. The maximum concentration is 352 mg/l and the average concentration is 268 mg/l in all wells except 05S15E35DBD3, which shows anomalously high readings averaging 495 mg/l with a maximum of 596 mg/l. Again, this well may be influenced by highly localized conditions such as a septic drainfield.

- Arsenic has been tested in 7 wells and is is less than 2 ug/l in all wells.

- Cadmium has been tested in 7 wells. No detection occurred in any well except 05S15E35DBD3, which showed two readings of 0.07 mg/l and 0.14 mg/l, the rest being non-detect.

- Fecal coliform was not detected in any well (seven wells tested).

- Selenium was detected at levels ranging from non-detect to 0.53 mg/l in well (seven wells tested), with other wells indicating non-detect (seven wells tested).

- Total phosphorous has been tested twice in one well located three miles east of the recharge site; both readings were 0.06 mg/l.

- Orthophosphorous has been tested in 23 wells. Levels ranged from non-detect to 0.42 mg/l.

- Sulfate has been tested in 34 wells. Levels are consistently below 75 mg/l.

- Pesticides and herbicides have been tested in nine wells and detection of one or more constituents was found at six locations. No detections were found with the exception of two wells. Atrazine is the most commonly-detected compound. Alachlor and Simazine have been detected in well 05S15E35DBD3. Propazine has been detected once in one well, and Diazinon has been detected once in one well.

- Volatile organic compounds have been tested in 6 wells, with no detection in any well.

In addition to the above-described data on monitored wells, the City of Gooding routinely tests for chlorine, arsenic, nitrate-nitrogen, total coliform, copper, and lead, and conducts less-frequent tests for radionuclides and some organic compounds. Levels of these constituents have been stable and have not exceeded MCLs. The City's CCR reports for 2009 through 2013 are included in Appendix C.

In summary, background water quality in the aquifer at the recharge site is generally excellent, with no widespread elevated levels of any constituent identified.

Surface water

Water quality information pertaining to the Little Wood River in the vicinity of Gooding is scarce for historical periods and recent years. A study performed by the Idaho Department of Health and Welfare Division of Environment in 1977 characterized water quality over a period of two months along the entire river from its mouth to its confluence with Silver Creek. The two closest sites to Gooding were at Highway 46 and above the sewer treatment plant west of the city. Data for these two sites is included in Appendix D. Of most interest are the nitrogen parameters, all of which are very low. Total phosphorous had a mean of 0.19 and 0.14 mg/l at the two sites. Ortho-P had a mean of 0.044 and 0.026 mg/l. Total coliform had a mean of 195 and 296 CFU/100 ml and fecal coliform had a mean of 60 and 94 CFU/100ml[2].

IDEQ conducted a subbasin assessment for the Little Wood River, in which the water quality was assessed for the river segment from Silver Creek to the mouth. Monthly monitoring was conducted from 2001-2003, and additional nutrient data was collected in 2004-2005. This data is summarized in Table 1.

[2] The units in the report are listed as "MFIMENDO / 100 ml" for total coliform and "MFM-FCBR / 100 ml" for fecal coliform. These abbreviations could not be deciphered. It is assumed that they represent organisms or colony-forming units per 100 ml.

Table 1. Little Wood River water quality 2001-2005.

Parameter	Count	Max	Average	Min
Spec Cond	75	509.0	356.3	224.9
pH	75	9.24		6.61
NH3	14	0.583	0.081	0.005
Turbidity	75	258.0	11.8	0
DO	78	13.23	9.41	4.98
BOD	13	9.0	5.5	3.0
TSS	8	16.0	3.3	0.5
Total P	20	0.124	0.051	0.011
Total inorg N	4	2.733	0.761	0.010
E. coli	30	110	15	1

The available data indicates no water quality concerns relative to use of this source for recharge purposes. Nitrogen is low, and the available biological indicators demonstrate the expected presence of microbes, but not at elevated levels.

Proposed dedicated monitoring wells

The City has evaluated alternative methods of conducting groundwater monitoring on a long-term basis in conjunction with the recharge activity. It was decided that utilizing of existing domestic wells, while convenient, carried additional burdens relative to owner concurrence, potential influence by nearby residential activities, and the likelihood that the well would not be constructed ideally for groundwater sampling of the uppermost strata of the aquifer. For these reasons, the City proposes to install three (3) dedicated monitoring wells with associated sampling equipment.

The locations of the proposed monitoring wells are shown on Figure 1. Sites were chosen to be representative of up-gradient conditions (one well), and down-gradient conditions (two wells). Tentative verbal approval from the Gooding Highway District has been obtained for MW-1 and MW-2 locations. MW-3 is located within City right-of-way in the Gooding industrial park and therefore no outside approval is needed.

Monitoring wells will be constructed in accordance with generally accepted engineering practices for dedicated wells and will adhere to IDWR well construction standards. Important features of the wells will include:

- Total depth 30 feet below the lowest anticipated water level in order to allow for aquifer declines while still ensuring that the uppermost strata of the aquifer will be sampled.
- 6-inch diameter borehole in the basalt, a 10-inch overbore to 38 feet for surface seal placement, and 6-inch steel permanent surface casing.
- Lockable cap.
- Concrete pad at the surface with steel bollards to protect the wellhead.

- Dedicated sampling pump that can be operated using power at the site (if available), or by portable generator.

A typical schematic of the proposed monitoring wells is attached as Figure 2.

Water quality monitoring

Baseline establishment

It is proposed to install the dedicated monitoring wells in the fall of 2014. The wells will be flushed and sampled after construction, and baseline information will be established by sampling and testing on a monthly basis for a period of six (6) months prior to the potential first recharge being accomplished in May 2015. Parameters to be tested monthly during the baseline period are shown in Table 2.

Table 2. Constituents included in monthly baseline groundwater testing.

	Constituent	Units	Alert Level	Analysis Method
Field parameters	Depth to water	Feet	--	Probe
	Temperature	°F	--	Probe
	Conductivity	mmho	__	Probe
	pH	S.U.	--	Probe
Nutrients	Nitrate-nitrogen	mg/l	5	EPA 353.2
	Total nitrogen	mg/l	--	EPA 353.2
	Total phosphorous	mg/l	Above bkgrd	EPA 365.1
	Ortho phosphorous	mg/l	--	EPA 365.1
Anions	Bicarbonate	mg/l	--	EPA 310.1
	Chloride	mg/l	125	EPA 300.0
	Sulfate	mg/l	125	EPA 300.0
Cations	Calcium	mg/l	--	EPA 200.7
	Magnesium	mg/l	0.025	EPA 200.7
	Potassium	mg/l	--	EPA 200.7
	Sodium	mg/l	--	EPA 200.7
Metals	Arsenic	mg/l	0.025	
	Cadmium	mg/l	0.0025	
	Selenium	mg/l	0.0025	
Bacteriological	E. coli	cfu/100ml	Detection	SM 9223B
	Fecal coliform	cfu/100ml	Detection	SM 9222B
	Total coliform	cfu/100ml	Detection	SM 9221B
Other	Total dissolved solids	mg/l	--	
	Conductivity	mmho	--	

Bacteriological parameters include the common health-based coliform indicators. Cryptosporidium and giardia were not included due to the unreasonable costs and long wait times and for these tests, given their limited benefit.

In addition to the monthly testing for the above parameters, it is proposed to sample and test each monitoring well once during the baseline period for the full suite of IOCs, VOCs, and SOCs as required for a new public water system source.

IDEQ will be provided with all test reports derived from the baseline period.

Ongoing monitoring parameters and frequency

After the baseline period, it is proposed to continue groundwater monitoring at the dedicated groundwater wells for the parameters listed in Table 3. The wells would be sampled twice per year, once near the beginning of the irrigation season (April – May) and once near the end of the irrigation season (September – October).

It is proposed to sample and test surface water diverted from the Little Wood River during periods when recharge is occurring. A sample would be taken once approximately at the midpoint of the recharge activity, approximately mid-July. It is proposed to test surface water for the parameters listed in Table 4.

Table 3. Constituents included in semi-annual groundwater testing.

	Constituent	Units	Alert Level	Analysis Method
Field parameters	Depth to water	Feet	--	Probe
	Temperature	°F	--	Probe
	Conductivity	mmho	--	Probe
	pH	S.U.	--	Probe
Nutrients	Nitrate-nitrogen	mg/l	5	EPA 353.2
	Total nitrogen	mg/l	--	EPA 353.2
	Total phosphorous	mg/l	Above bkgrd	EPA 365.1
	Ortho phosphorous	mg/l	--	EPA 365.1
Anions	Bicarbonate	mg/l	--	EPA 310.1
	Chloride	mg/l	125	EPA 300.0
	Sulfate	mg/l	125	EPA 300.0
Cations	Calcium	mg/l	--	EPA 200.7
	Magnesium	mg/l	0.025	EPA 200.7
	Potassium	mg/l	--	EPA 200.7
	Sodium	mg/l	--	EPA 200.7
Bacteriological	E. coli	cfu/100ml	Detection	SM 9223B
	Fecal coliform	cfu/100ml	Detection	SM 9222B
	Total coliform	cfu/100ml	Detection	SM 9221B
Other	Total dissolved solids	mg/l	--	
	Conductivity	mmho	--	
Pesticides/Herbicides	Atrazine-desethyl	μg/l	Detection	
	Bromacil	μg/l	Detection	
	Diuron	μg/l	Detection	

Table 4. Constituents included in annual surface water testing.

	Constituent	Units	Alert Level	Analysis Method
Field parameters	Depth to water	Feet	--	Probe
	Temperature	°F	--	Probe
	Conductivity	mmho	--	Probe
	pH	S.U.	--	Probe
Nutrients	Nitrate-nitrogen	mg/l	5	EPA 353.2
	Total nitrogen	mg/l	--	EPA 353.2
	Total phosphorous	mg/l	Above bkgrd	EPA 365.1
	Ortho phosphorous	mg/l	--	EPA 365.1
Anions	Bicarbonate	mg/l	--	EPA 310.1
	Chloride	mg/l	125	EPA 300.0
	Sulfate	mg/l	125	EPA 300.0
Cations	Calcium	mg/l	--	EPA 200.7
	Magnesium	mg/l	0.025	EPA 200.7
	Potassium	mg/l	--	EPA 200.7
	Sodium	mg/l	--	EPA 200.7
Bacteriological	E. coli	cfu/100ml	Detection	SM 9223B
	Fecal coliform	cfu/100ml	Detection	SM 9222B
	Total coliform	cfu/100ml	Detection	SM 9221B
Other	Total dissolved solids	mg/l	--	
	Conductivity	mmho	--	

The testing will include important inorganic and bacteriological parameters, including those needed to perform evaluations with Stiff or Piper diagram to assess commonality of waters. VOCs are not proposed to be included as there is no evidence in any data that a detection of a VOC has occurred. Three pesticides/herbicides are proposed to be included based on detections evident in the recent 2007 ISDA testing program for the Gooding area. The laboratory procedure for these three pesticides/herbicides may yield results for additional constituents without additional cost; if so, these will be reported as well. If any other SOC, or any VOC, is detected in the one-time baseline sampling described above, IDEQ will be consulted for potential modifications to Table 3 parameters.

If any alert levels are exceeded, IDEQ will be notified within three (3) days after the testing report is received. A confirmatory sample will be taken within seven (7) days after the testing report is received. If the confirmatory sample also indicates exceedance of the alert level, a meeting with appropriate IDEQ staff will be held to assess the situation and determine whether the situation warrants further confirmatory samples, changes in the recharge program, or changes in the monitoring program.

Groundwater samples will be taken utilizing the dedicated well pumps, following the standard protocol of ensuring that three well bore volumes are evacuated prior to taking samples. Surface water samples will be collected at the point of diversion from the Little Wood River. The sample collection point will be one foot below the water surface in the river. Samples will be collected in containers provided by the laboratory, specific to the parameters being tested, including trip blanks if VOCs are being tested.

All samples will be submitted under chain of custody to a state-certified water quality testing laboratory.

MPA Testing

It is proposed to conduct a microscopic particulate analysis (MPA) on MW-2 only according to the following schedule:

1. Once after monitoring wells are constructed but before recharge activities commence.
2. Once near the end of the fourth year of recharge, and every four years thereafter. For example, if recharge commences in 2015, an MPA analysis will be performed on MW-2 in September or October of 2018, 2022, 2026, etc.
3. If any MPA test result is greater than or equal to 9, IDEQ will be informed and consulted.

Water treatment

The water diverted will receive no treatment prior to recharge.

Contingency plan

In the event of a critical event such as a spill of a pesticide or petroleum product into the Little Wood River, the headgate serving the recharge area will be closed and IDEQ will be notified. City of Gooding staff has access and authorization to operate the diversion facility, and can reach the site within 20 minutes of receiving a notification. The headgate will remain closed until authorization is provided by IDEQ that the recharge activities may resume.

Plan review and updates

Changes to the procedures outlined in this plan, including monitoring parameters and frequency, may be modified if upon consultation with IDWR and IDEQ those constituents are not considered to be a threat to groundwater quality. The City may recommend changes to the plan based on result of previous monitoring. All changes will require written approval from IDEQ prior to implementation of the changes.

It is proposed to conduct recharge activities and collect water quality data for the constituents in Tables 3 and 4 for three (3) full seasons. After this time, the data will be analyzed and reviewed by the City and IDEQ staff. Upon consultation with IDEQ, the monitoring requirements may be reduced if it appears the activity is not degrading the water quality in the aquifer.

Reporting

Annual reports of the recharge project activities will be filed with IDEQ by December 31 each year, except in those instances where immediate notification is required. The annual report will contain, at a minimum, the volume diverted to recharge on a daily or weekly basis, all water quality field and laboratory results, description of field observations and inspections of the project, and a description of any anomalous conditions or noteworthy occurrences.

Contacts

As of the date of this plan, contacts for the City of Gooding relative to the recharge project are as follows:

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Public Works Superintendent
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Gooding, ID 83330
(208) 934-5669

Charles G. Brockway, P.E.
Project Engineer
2016 Washington St. North, Ste. 4
Twin Falls, ID 83301
(208) 736-8543

Path: F:\Projects\Gooding, City of\Arcview Maps\FIGURE 1 GWMP.mxd

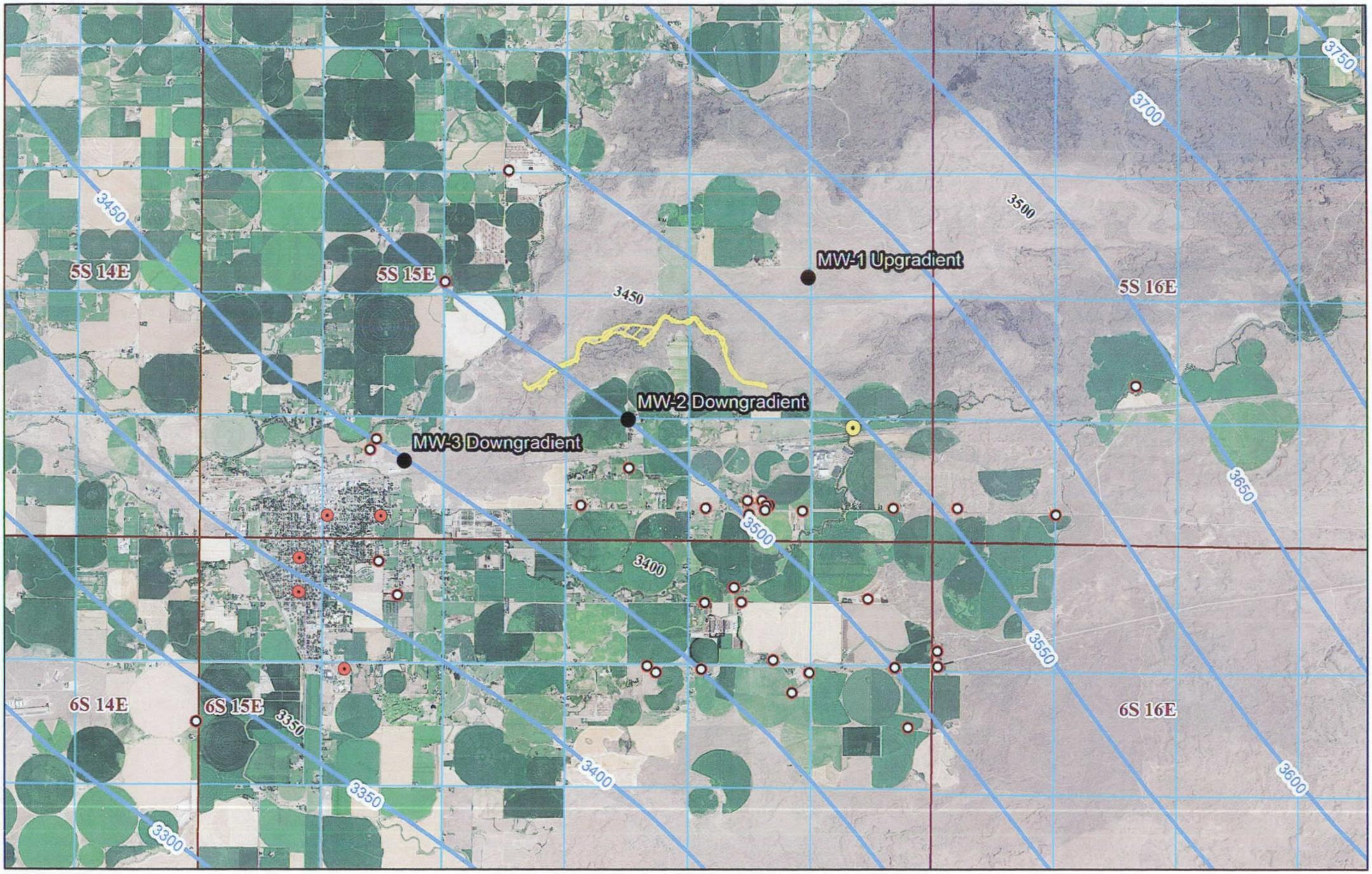


FIGURE 1 - CITY OF GOODING

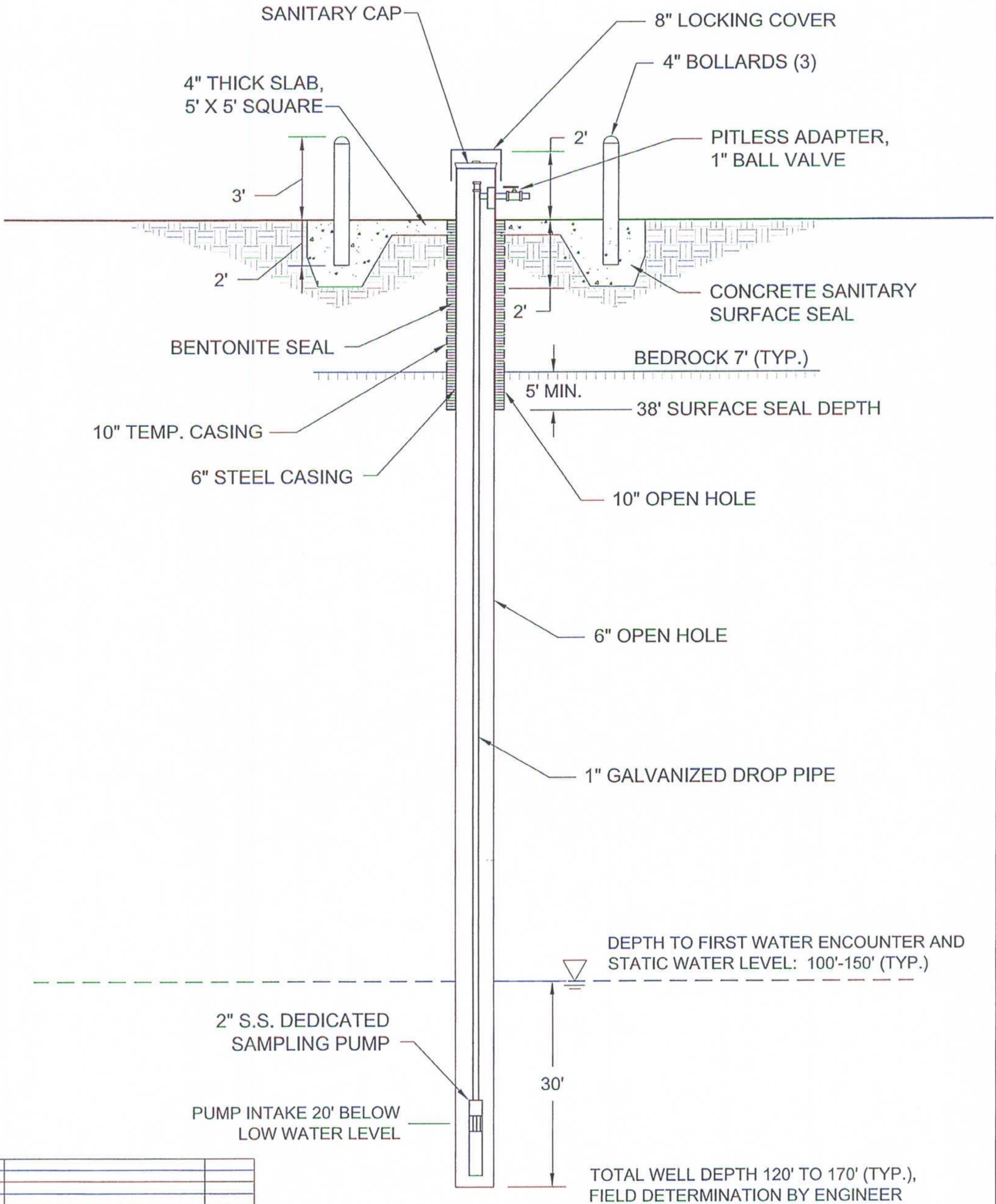
GROUNDWATER MONITORING PLAN

NAIP 2013 AERIAL

Legend

- City of Gooding Groundwater POD
- Proposed Monitoring Wells
- Proposed Recharge Div POD
- Baseline Water Quality Sampling Points
- ESPAM2_1_contours_arcs
- Proposed Recharge Area
- twnshp
- Section Lines

BROCKWAY ENGINEERING, PLLC.
ALR Date: 9/17/2014



REV	DESCRIPTION	DATE
A	PRELIMINARY FOR MONITORING REPORT	7/31/2014

THIS DRAWING HAS BEEN PREPARED BY BROCKWAY ENGINEERING, PLLC FOR A SPECIFIC PROJECT TAKING INTO ACCOUNT THE SPECIFIC AND UNIQUE REQUIREMENTS OF THE PROJECT. REUSE OF THIS DRAWING FOR ANY PURPOSE IS PROHIBITED UNLESS WRITTEN PERMISSION FROM BOTH BROCKWAY ENGINEERING & THE CLIENT IS GRANTED.

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HYDRAULICS - HYDROLOGY - WATER RESOURCES
2016 NORTH WASHINGTON, SUITE 4
WTIN FALLS, ID 83301
(208) 736-8543

FIGURE 2

CITY OF GOODING
TYPICAL MONITORING WELL DETAIL

PROJECT #
1176-02-2013

DWG# 1

REV A

Appendix A
Well Drilling Records in Immediate Vicinity of Recharge Site

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Resources

WELL DRILLER'S REPORT

RECEIVED MAR 7 1978
Department of Water Resources
Southern District Office

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name HAROLD SHELINE

Address N.E. OF CITY, GOODING, IDA 83330

Owner's Permit No. ______

2. NATURE OF WORK

[X] New well [ ] Deepened [ ] Replacement

[ ] Abandoned (describe method of abandoning) ______

3. PROPOSED USE

[ ] Domestic [X] Irrigation [ ] Test [ ] Other (specify type)

[ ] Municipal [ ] Industrial [ ] Stock [ ] Waste Disposal or Injection

4. METHOD DRILLED

[X] Cable [ ] Rotory [ ] Dug [ ] Other

5. WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 186 feet

Casing schedule: [X] Steel [ ] Concrete

Thickness	Diameter	From	To
.280 inches	7 inches	+1 feet	11 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was casing drive shoe used? [ ] Yes [X] No
Was a packer or seal used? [ ] Yes [X] No
Perforated? [ ] Yes [X] No
How perforated? [ ] Factory [ ] Knife [ ] Torch
Size of perforation ______ inches by ______ inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? [ ] Yes [X] No
Manufacturer's name ______
Type ______ Model No. ______
Diameter ___ Slot size ___ Set from ______ feet to ______ feet
Diameter ___ Slot size ___ Set from ______ feet to ______ feet

Gravel packed? [ ] Yes [X] No Size of gravel ______
Placed from ______ feet to ______ feet

WAIVER
Surface seal depth 10' Material used in seal [X] Cement grout [ ] Puddling clay [ ] Well cuttings
Sealing procedure used [ ] Slurry pit [ ] Temporary surface casing [X] Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location.

(37)

Subdivision Name ______

Lot No. ______ Block No. ______

County GOODING

SW ¼ SE ¼ Sec. 27, T. 5 N/S, R. 15 E/W

7. WATER LEVEL

Static water level 126 feet below land surface
Flowing? [ ] Yes [X] No G.P.M. flow ______
Temperature ______ °F. Quality ______
Artesian closed-in pressure ______ p.s.i.
Controlled by [ ] Valve [ ] Cap [ ] Plug

8. WELL TEST DATA

[ ] Pump [ ] Bailer [ ] Other

Discharge G.P.M.	Draw Down	Hours Pumped
UNTESTED		

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8"	0	1	BROWN TOP SOIL		
"	1	3½	LOOSE LAVA ROCK		
"	3½	15	GREY LAVA		
"	15	40	" " SCORIA		
"	40	50	BROWN LAVA		
"	50	52	" " FINE SAND-SCORIA		
"	52	73	BROWN LAVA		
"	73	75	" " SCORIA		
"	75	79	BROWN LAVA		
"	79	81	" " SCORIA		
"	81	90	BROWN LAVA		
"	90	91	" " SCORIA		
"	91	111	GREY LAVA		
"	111	114	POROUS BROWN LAVA W/APP 1' YELLOW CLAY		
"	114	124	BROWN LAVA		
"	124	125	" " SCORIA		
"	125	127	GREY LAVA		
"	127	132	BROWN CLAY & LAVA		
"	132	147	GREY LAVA		
"	147	148	" " SCORIA	X	
"	148	167	BROWN LAVA		
"	167	168	" " SCORIA	X	
"	168	183	BLACK LAVA		
"	183	184	" " SCORIA	X	
"	184	186	BLACK LAVA		

— 2'
— 1'
— 5'

10.

Work started 3 FEB 78 finished 2 MAR 1978

11. DRILLERS CERTIFICATION

Firm Name RAY ROESSLER WELL DRILLING Firm No. 262
Address 129 5TH AVE E. GOODING, IDAHO 83330 Date ______
Signed by (Firm Official) Ray Roessler
and
(Operator) Ray Roessler

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE COPY TO THE DEPARTMENT

Received 7-7-69
Dep't of Reclamation

REPORT OF WELL DRILLER
State of Idaho

State law requires that this report shall be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

WELL OWNER:
Name Ralph Faulkner
Address Gooding Ida.

Owner's Permit No. 37-7056
NATURE OF WORK (check): Replacement well ☐ New well ☒ Deepened ☐ Abandoned ☐
Water is to be used for: irrigation
METHOD OF CONSTRUCTION: Rotary ☐ Cable ☒ Dug ☐ Other ________ (explain)
CASING SCHEDULE: Threaded __ Welded __
15 "Diam. from 0 ft. to 374 ft.
"Diam. from ft. to ft.
"Diam. from ft. to ft.
"Diam. from ft. to ft.
Thickness of casing: ________ Material: Steel ☒ concrete ☐ wood ☐ other ☐ (explain)
PERFORATED? Yes ☐ No ☒ Type of perforator used:
Size of perforations: " by "
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
WAS SCREEN INSTALLED? Yes ☐ No ☒
Manufacturer's name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.
CONSTRUCTION: Well gravel packed? Yes ☐ No. ☒ size of gravel ________ Gravel placed from ft. to ft. Surface seal provided? Yes ☐ No ☐ To what depth? ft. Material used in seal:
Did any strata contain unusable water? Yes ☐ No. ☐ Type of water: Depth of strata ft. Method of sealing strata off:
Surface casing used? Yes ☒ No. ☐
Cemented in place? Yes ☒ No ☐

Locate well in section

Sec.

LOCATION OF WELL: County Gooding
NE¼ SW¼ Sec. 27 T. 5 N/S R. 15 E/W

Size of drilled hole: 14 Total depth of well: 508 Standing water level below ground: 320 Temp. Fahr. ° Test delivery: 818 gpm or cfs Pump? ☐ Bail ☐
Size of pump and motor used to make test: two 671 G M C Diesel
Length of time of test: Hrs. 1 Min. 30
Drawdown: 450 ft. Artesian pressure: ft. above land surface ____ Give flow ____ cfs or ____ gpm. Shutoff pressure:
Controlled by: Valve ☐ Cap ☐ Plug ☐ No control ☐ Does well leak around casing? Yes ☐ No ☒

39380

DEPTH FROM (FEET)	DEPTH TO (FEET)	MATERIAL	WATER YES OR NO
1	32	Clay	
32	55	Gray Lava	
55	67	Brown Lava	
67	92	Gray Lava	
92	94	Cinders	
94	101	Brown Lava	
101	105	Cinders	
105	175	Brown Clay	
175	374	Blue Clay	
374	475	Gray Lava	
475	483	Loose Black Lava	
483	486	Sand Stone	
486	491	Blue Clay	
491	500	Coarse Sand	
500	508	Brown Clay	

Work started:
Work finished: Tested on 10-14-61
Well Driller's Statement: This well was drilled under my supervision and this report is true to the best of my knowledge.
Name: C Eaton & Sons
Address: Wendell Ida.
Signed by: James Eaton
License No. [illegible] Date: June 13, 1969

Use other side for additional remarks

37

USGS

copied

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Resources

WELL DRILLER'S REPORT

RECEIVED

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name A.J. HARMS

Address Wendell, IDAHO

Owner's Permit No. ______

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☐ Test ☐ Other (specify type)

☐ Municipal ☐ Industrial ☒ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☐ Cable ☒ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 130 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+1 feet	18 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was casing drive shoe used? ☐ Yes ☒ No

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation ______ inches by ______ inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name ______

Type ______ Model No. ______

Diameter ___ Slot size ___ Set from ______ feet to ______ feet

Diameter ___ Slot size ___ Set from ______ feet to ______ feet

Gravel packed? ☐ Yes ☒ No Size of gravel ______

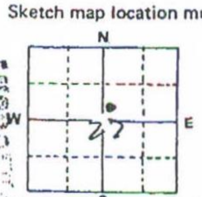
Placed from ______ feet to ______ feet

Surface seal depth 18' Material used in seal ☐ Cement grout ☒ Puddling clay ☒ Well cuttings

Sealing procedure used ☐ Slurry pit ☐ Temporary surface casing ☒ Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location. 27



Subdivision Name ______

Lot No. ______ Block No. ______

County Gooding

SW ¼ NE ¼ Sec. 27, T. 5 N/S R. 15 E/W

7. WATER LEVEL

MAY 18 1978
Department of Water Resources
Southern District Office

Static water level 103 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow ______

Temperature ______ °F. Quality ______

Artesian closed-in pressure ______ p.s.i.

Controlled by ☐ Valve ☒ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	18	GRAY LAVA		✓
6	18	24	GRAY LAVA		✓
	24	27	Red LAVA		✓
	27	30	Brown Clay		✓ — 3'
	30	60	GRAY LAVA		✓
	60	65	Red SAND		✓ — 5'
	65	85	GRAY LAVA		✓
	85	93	Red LAVA		✓
	93	126	GRAY LAVA	✓	
	126	130	CINDERS	✓	

10. Work started Oct 6 1977 finished Oct 6 1977

11. DRILLERS CERTIFICATION

Firm Name C B EATON & SONS Firm No. 26

Address Wendell, IDAHO Date Oct 6 1977

Signed by (Firm Official) [signature]

and

(Operator) [signature]

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE COPY TO THE DEPARTMENT

Form 238-7
1/78

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name R CZaPlicki

Address Gooding

Owner's Permit No. ____

2. NATURE OF WORK

☐ New well ☐ Deepened ☒ Replacement
☐ Abandoned (describe method of abandoning) ____

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other ____ (specify type)

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other ____

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other ____

Thickness	Diameter	From	To
250 inches	6 inches +	1 feet	175 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation ____ inches by ____ inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☒ No
Manufacturer's name ____
Type ____ Model No. ____
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel ____
Placed from ____ feet to ____ feet
Surface seal depth 175 Material used in seal: ☐ Cement grout ☐ Puddling clay ☒ Well cuttings
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port ____

6. LOCATION OF WELL

Sketch map location must agree with written location.

N
W 26 E
o
S

Subdivision Name ____

Lot No. ____ Block No. ____

County Gooding

SE ¼ SW ¼ Sec. 26, T. 5 N/S, R. 15 E/W.

7. WATER LEVEL

Static water level 135 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow ____
Artesian closed-in pressure ____ p.s.i.
Controlled by: ☐ Valve ☒ Cap ☐ Plug
Temperature ____ °F. Quality ____

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Air ☐ Other ____

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	3	top Soil		✓
	3	73	Gray lava		✓
	73	180	No Returns		✓
	73	86	Soft		✓
	140	145	Soft	✓	
	167	170	Soft	✓	
	180	205	Gray lava	✓	

RECEIVED 051671
JUN 29 1979
Department of Water Resources

RECEIVED
JUL 5 1979
Department of Water Resources
Southern District Office

10.

Work started June 5 finished June 7-79

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name CB Eaton Firm No. 26

Address Wendell Ida Date June 8-79

Signed by (Firm Official) [signature]

and

(Operator) [signature]

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Resources

WELL DRILLER'S REPORT

RECEIVED

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name: L P Edwards

Address: Gooding

Owner's Permit No. ______

2. NATURE OF WORK

[X] New well [ ] Deepened [ ] Replacement

[ ] Abandoned (describe method of abandoning)

3. PROPOSED USE

[X] Domestic [ ] Irrigation [ ] Test [ ] Other (specify type)

[ ] Municipal [ ] Industrial [ ] Stock [ ] Waste Disposal or Injection

4. METHOD DRILLED

[ ] Cable [X] Rotory [ ] Dug [ ] Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 135 feet

Casing schedule: [X] Steel [ ] Concrete

Thickness	Diameter	From	To
.260 inches	6 inches	+ 1 feet	19 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was casing drive shoe used? [ ] Yes [X] No

Was a packer or seal used? [ ] Yes [X] No

Perforated? [ ] Yes [X] No

How perforated? [ ] Factory [ ] Knife [ ] Torch

Size of perforation ____ inches by ____ inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? [ ] Yes [X] No

Manufacturer's name ______

Type ______ Model No. ______

Diameter ___ Slot size ___ Set from ___ feet to ___ feet

Diameter ___ Slot size ___ Set from ___ feet to ___ feet

Gravel packed? [ ] Yes [X] No Size of gravel ______

Placed from ______ feet to ______ feet

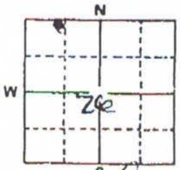
Surface seal depth 19 Material used in seal [ ] Cement grout [X] Puddling clay [X] Well cuttings

Sealing procedure used [ ] Slurry pit [ ] Temporary surface casing [X] Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location. 37

N



W E S

Subdivision Name ______

Lot No. ______ Block No. ______

County Gooding

NW ¼ NW ¼ Sec. 26, T. 5 S, R. 15 E

7. WATER LEVEL

Department of Water Resources Southern District Office

Static water level 105 feet below land surface

Flowing? [ ] Yes [ ] No G.P.M. flow ______

Temperature ____ °F. Quality ______

Artesian closed-in pressure ______ p.s.i.

Controlled by [ ] Valve [X] Cap [ ] Plug

8. WELL TEST DATA

[X] Pump [ ] Bailer [ ] Other

Discharge G.P.M.	Draw Down	Hours Pumped

045639

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	3	top soil		✓
	3	45	Gray Lava		✓
	45	65	Red Lava		✓
	65	105	Gray Lava		✓
	105	110	Red Lava	✓	
	110	135	Gray Lava	✓	
	135		Clay	✓	

10.

Work started ______ finished Dec. 4

11. DRILLERS CERTIFICATION

Firm Name C B Eaton + Sons Firm No. 26

Address Wendell Ida. Date Feb

Signed by (Firm Official) James Eaton

and

(Operator) James Eaton

USE ADDITIONAL SHEETS IF NECESSARY   FORWARD THE WHITE COPY TO THE DEPARTMENT

Correction TJO — Phil Park — HK

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. ______
Inspected by ______
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0036447
DRILLING PERMIT NO. 832339
Water Right or Injection Well No. ______

2. OWNER:
Name Bill Polocio
Address 2155 E 1775 S
City Gooding State Id Zip 83330

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 5 North ☐ or South ☒
Rge. 15 East ☒ or West ☐
Sec. 28, SW 1/4 (10 acres), NW 1/4 (40 acres), SW 1/4 (160 acres)
Gov't Lot ____ County Gooding
Lat: : : Long: : :
Address of Well Site 2000 Merrick Road
City Gooding
(Give at least name of road + Distance to Road or Landmark)
Lt. ____ Blk. ____ Sub. Name ______

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other ______

5. TYPE OF WORK check all that apply (Replacement etc.)
☐ New Well ☐ Modify ☐ Abandonment ☒ Other Replacement

6. DRILL METHOD:
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other ______

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Bentonite Chips	-1	-20	6 Bags	Pour

Was drive shoe used? ☒Y ☐N Shoe Depth(s) 158
Was drive shoe seal tested? ☐Y ☐N How? ______

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6 5/8	+2	158	.250	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe ______ Length of Tailpipe ______
Packer ☐Y ☐N Type ______

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method ______
Screen Type & Method of Installation ______

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
140 ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices: ______

12. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
20		235	1hr

Water Temp. ______ Bottom hole temp. ______
Water Quality test or comments: ______
Depth first Water Encounter 174

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
8	0	2	Top Soil		X
	2	47	Gray Lava Hard		X
	47	54	Red Lava Medium		X
	54	103	Gray Lava		X
	103	125	Red Lava		X
	125	143	Gray Lava		X
	143	148	Red Cinders		X
	148	158	Gray Lava - Hard		X
6	158	174	Gray Lava - Hard		X
	174	183	Red Lava - Fractured	X	
	183	217	Gray Lava - Hard		X
	217	233	Red Lava w/ Fractures	X	
	233	240	Gray Lava Hard		X

RECEIVED
JAN 19 2006
Department of Water Resources
Southern Region

RECEIVED
JAN 24 2006
Department of Water Resources
Southern Region

Completed Depth 240 (Measurable)
Date: Started 4-8-05 Completed 4-9-05

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name AK Drilling Firm No. 611
Principal Driller Robt A Slane Date 4-9-05
and
Driller or Operator II ______ Date ______
Operator I ______ Date ______
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
4/92

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

APR 23 1993

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name: Mrs. Lloyd Rickey

Address: 1999 East 1650 South Gooding, ID 83330

Drilling Permit No. 37-93-S-0050-000

Water Right Permit No. ______

2. NATURE OF WORK

☐ New well ☐ Deepened ☒ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other ______ (specify type)

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Auger ☐ Reverse rotary
☐ Cable ☐ Mud ☐ Other ______ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other ______

Thickness	Diameter	From	To
.250 inches	6-5/8 inches	+ 1 feet	19 feet
inches	inches	feet	feet
inches	inches	feet	feet

Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? ______ inches by ______ inches

Number		From	To
	perforations	feet	feet
	perforations	feet	feet
	perforations	feet	feet

Well screen installed? ☐ Yes ☒ No
Manufacturer ______ Type ______
Top Packer or Headpipe ______
Bottom of Tailpipe ______

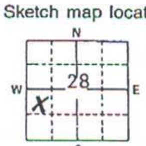
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel ______
Placed from ______ feet to ______ feet

Surface seal depth 19' Material used in seal: ☐ Cement grout ☒ Bentonite ☐ Puddling clay ☐ ______
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☐ Welded ☐ Solvent Weld ☐ Cemented between strata

Describe access port: Well cap

6. LOCATION OF WELL

Sketch map location **must** agree with written location.



Subdivision Name ______
Lot No. ______ Block No. ______
County: Gooding
Address of Well Site ______ (give at least name of road)

NW ¼ SW ¼ Sec. 28, T. 5 N ☐ or S ☒, R. 15 E ☒ or W ☐

7. WATER LEVEL

Static water level 85 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow ______
Artesian closed-in pressure ______ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature ______ °F. Quality ______
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Air ☐ Other ______

Discharge G.P.M.	Pumping Level	Hours Pumped

103761

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8"	0	7	Sand & clay		x
	7	19	Basalt		x
6"	19	72	Basalt		x
	72	76	Cinders		x
	76	90	Basalt		x
	90	94	Cinders & brown clay		x
	94	102	Broken basalt		x
	102	105	Cinders	x	
	105	112	Basalt		x
	112	119	Cinders & Brown Clay	x	
	119	146	Basalt		x
	146	150	Cinders	x	
	150	171	Basalt		x
	171	175	Red cinders	x	
	175	180	Basalt		x

RECEIVED
APR 06 1993
Department of Water Resources
Southern Region Office

10.

Work started 4-2-93 finished 4-2-93

11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name: Elsing Drilling Firm No. 31
Address: P.O. Box 919 Twin Falls, ID 83303 Date 4-3-93

Signed by Drilling Supervisor: Arnold Elsing
and
(Operator) Mark Eckert
(If different than the Drilling Supervisor)

MICROFILMED AUG 09 1993

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

2N - 2E

Form 238-7
1/78

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

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JUN 18 1980
Department of Water Resources
Southern District Office

1. WELL OWNER

Name Bud Watt

Address Gooding

Owner's Permit No. ______

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning) ______

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other ______ (specify type)

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other ______

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other ______

Thickness	Diameter	From	To
.260 inches	6 inches +	1 feet	130 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation ______ inches by ______ inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☒ No
Manufacturer's name ______
Type ______ Model No. ______
Diameter ___ Slot size ___ Set from ___ feet to ___ feet
Diameter ___ Slot size ___ Set from ___ feet to ___ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel ______
Placed from ______ feet to ______ feet
Surface seal depth 130 Material used in seal: ☐ Cement grout ☐ Puddling clay ☒ Well cuttings
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☐ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port ______

6. LOCATION OF WELL

Sketch map location must agree with written location.

N
W 28 E
S

Subdivision Name ______

Lot No. ______ Block No. ______

County Gooding

NE ¼ NW ¼ Sec. 28, T. 5 N/S, R. 15 E/W.

7. WATER LEVEL

Static water level 116 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow ______
Artesian closed-in pressure ______ p.s.i.
Controlled by: ☐ Valve ☒ Cap ☐ Plug
Temperature ______ °F. Quality ______

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Air ☐ Other ______

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	2	top Soil		X
	2	82	Gray lava		X
	82	88	Brown Clay + lava		X
	88	106	Red lava		X
	106	121	Red Sand + lava	X	
	121	170	Gray lava	X	

052281

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Department of Water Resources

10.

Work started 4-7 finished 4-9-50 (80?)

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name CB Eaton + Son Firm No. 26

Address Wendell Idaho Date 5-1-80

Signed by (Firm Official) [signature]

and

(Operator) [signature]

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App 888192

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No.
Inspected by
Twp ___ Rge ___ Sec ___
___ 1/4 ___ 1/4 ___ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0036475
DRILLING PERMIT NO. 832886
Water Right or Injection Well No.

2. OWNER:
Name Thomas A. Woodland
Address 1666 S 2000 E
City Gooding State Id Zip 83330

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub, or Directions to well.
Twp. 5 North ☐ or South ☒
Rge. 15 East ☒ or West ☐
Sec. 28, ___ 1/4 (10 acres) NW 1/4 (40 acres) NW 1/4 (160 acres)
Gov't Lot ___ County Gooding
Lat: : : Long: : :
Address of Well Site 1606 S 2000 E
City Gooding
(Give at least name of road + Distance to Road or Landmark)
Lt. ___ Blk. ___ Sub. Name ___

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other ___

5. TYPE OF WORK check all that apply (Replacement etc.)
☐ New Well ☐ Modify ☐ Abandonment ☒ Other Replacement

6. DRILL METHOD:
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other ___ OR

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Bentonite chips	0	18	5	pour

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) ___
Was drive shoe seal tested? ☐ Y ☐ N How? ___

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6 5/8	+2	178	.250	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe ___ Length of Tailpipe ___
Packer ☐ Y ☐ N Type ___

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method ___
Screen Type & Method of Installation ___

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
149 ft. below ground Artesian pressure ___ lb.
Depth flow encountered ___ ft. Describe access port or control devices: ___

12. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
30		250	1 1/2 hr

Water Temp. ___ Bottom hole temp. ___
Water Quality test or comments: ___
Depth first Water Encounter 183

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
8	0	3	Top Soil		X
	3	9	Sticky Brown Clay		X
	9	26	Grey Basalt		X
	26	29	Fracture - Lost Circ		X
	29	33	Hard		X
	33	36	Fractured		X
	36	87	Hard		X
	87	92	Fractured		X
	92	97	Hard		X
	97	103	Fractured		X
	103	131	Hard		X
	131	142	Fractured		X
	142	147	Hard		X
	147	150	Fractured		X
	150	162	Hard		X
	162	168	Fractured		X
	168	178	Hard		X
8	178	214	Red Basalt w/ Fractures	X	
	214	235	Red Basalt - Hard		X
	235	241	Red Basalt w/ Fractures	X	
	241	251	Cinders w/ talc - Brown	X	
	251	260	Red Basalt		X

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MAY 10 2005
Department of Water Resources
Southern Region

Completed Depth 260 (Measurable)
Date: Started 4-27-05 Completed 4-29-05

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name AK Drilling Firm No. 611
Principal Driller Robt A Shane Date 5-3-05
and
Driller or Operator II ___ Date ___
Operator I ___ Date ___

Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

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Appendix B
Groundwater Quality Data

Groundwater Quality Data - Sorted by Type, then by Name

Agency	VellNumbe	WellName	SampleDate	SampleDate2	Type	Name	Value	Units
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Biol	3-beta-Coprostanol	<2	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Biol	beta-Sitosterol	<2	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Biol	beta-Stigmastanol	<2	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Biol	Cholesterol	<2	ug/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Biol	Estradiol	ND	ug/L
INL	MV-37	MV-37	20080618	6/18/2008	Biol	Estradiol	<0.0025	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Biol	Fecal Coliform	<1	col/100 ml
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Biol	Fecal Coliform	<1	col/100 ml
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Biol	Fecal Coliform	<1	col/100 ml
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Biol	Fecal Coliform	<1	col/100 ml
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Biol	Fecal Coliform	<1	col/100 ml
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Biol	Fecal Coliform	<1	col/100 ml
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Biol	Fecal Coliform	<1	col/100 ml
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Biol	Fecal Coliform	<1	col/100 ml
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Biol	Fecal Coliform	<1	col/100 ml
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Biol	Fecal Coliform	<1	col/100 ml
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Biol	Fecal Coliform	<1	col/100 ml
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Biol	Fecal Coliform	<1	col/100 ml
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Biol	Fecal Coliform	<1	col/100 ml
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Biol	Fecal Coliform	<1	col/100 ml
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Biol	Fecal Coliform	<1	col/100 ml
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Biol	Fecal Coliform	<1	col/100 ml
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Biol	Fecal Coliform	<1	col/100 ml
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Biol	Fecal Coliform	<1	col/100 ml
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Biol	Fecal Coliform	<1	col/100 ml
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Biol	Fecal Coliform	<1	col/100 ml
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Biol	Fecal Coliform	<1	col/100 ml
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Alkalinity as (CaCO3)	164	mg/l as CaCO3
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Alkalinity as (CaCO3)	150	mg/l as CaCO3
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Alkalinity as (CaCO3)	198	mg/l as CaCO3
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Alkalinity as (CaCO3)	216	mg/l as CaCO3
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Alkalinity as (CaCO3)	214	mg/l as CaCO3
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Alkalinity as (CaCO3)	187	mg/l as CaCO3
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Alkalinity as (CaCO3)	244	mg/l as CaCO3
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Alkalinity as (CaCO3)	245	mg/l as CaCO3
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Alkalinity as (CaCO3)	271	mg/l as CaCO3
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Alkalinity as (CaCO3)	289	mg/l as CaCO3
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Alkalinity as (CaCO3)	248	mg/l as CaCO3
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Alkalinity as (CaCO3)	232	mg/l as CaCO3
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Alkalinity as (CaCO3)	242	mg/l as CaCO3
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Alkalinity as (CaCO3)	236	mg/l as CaCO3
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Alkalinity as (CaCO3)	242	mg/l as CaCO3
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Alkalinity as (CaCO3)	246	mg/l as CaCO3
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Alkalinity as (CaCO3)	248	mg/l as CaCO3
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Alkalinity as (CaCO3)	251	mg/l as CaCO3
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Alkalinity as (CaCO3)	214	mg/l as CaCO3
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Alkalinity as (CaCO3)	181	mg/L as CaCO3
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Alkalinity as (CaCO3)	183	mg/L as CaCO3
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Alkalinity as (CaCO3)	177	mg/L as CaCO3
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Arsenic	1	ug/L

IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Arsenic	1	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Arsenic	3	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Arsenic	2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Arsenic	<1	ug/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Arsenic	1.7	ug/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Arsenic	2	ug/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Arsenic	1	ug/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Arsenic	2	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Arsenic	<1	ug/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Arsenic	1	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Arsenic	1.1	ug/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Arsenic	1.1	ug/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Arsenic	1.06	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Arsenic	1.1	ug/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Arsenic	1	ug/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Arsenic	1.1	ug/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Arsenic	1.1	ug/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Arsenic	1	ug/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Arsenic	0.84	ug/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Arsenic	<0.2	ug/L
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Arsenic	<5	ug/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Arsenic	<5	ug/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Arsenic	<5	ug/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Barium	44	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Barium	84	ug/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Barium	90	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Barium	72.5	ug/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Barium	83.3	ug/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Barium	77.2	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Barium	79.7	ug/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Barium	87.5	ug/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Barium	86.9	ug/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Barium	59.1	ug/L
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Barium	48	ug/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Barium	47	ug/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Barium	44	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Bicarbonate	200	mg/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Bicarbonate	180	mg/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Bicarbonate	241	mg/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Bicarbonate	263	mg/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Bicarbonate	262	mg/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Bicarbonate	230	mg/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Bicarbonate	298	mg/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Bicarbonate	300	mg/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Bicarbonate	330	mg/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Bicarbonate	350	mg/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Bicarbonate	300	mg/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Bicarbonate	280	mg/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Bicarbonate	296	mg/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Bicarbonate	288	mg/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Bicarbonate	295	mg/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Bicarbonate	301	mg/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Bicarbonate	299	mg/l

IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Bicarbonate	302	mg/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Bicarbonate	333	mg/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Bicarbonate	306	mg/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Bicarbonate	260	mg/L
ISDA	7504601	ISDA-7504601	19990713	7/13/1999	Inorg	Bromide	ND	mg/l
ISDA	7504601	ISDA-7504601	20020626	6/26/2002	Inorg	Bromide	ND	mg/l
ISDA	7504601	ISDA-7504601	20030707	7/7/2003	Inorg	Bromide	BDL	mg/l
ISDA	7504601	ISDA-7504601	20040701	7/1/2004	Inorg	Bromide	ND	mg/l
ISDA	7504601	ISDA-7504601	20050630	6/30/2005	Inorg	Bromide	ND	mg/l
ISDA	7504601	ISDA-7504601	20060613	6/13/2006	Inorg	Bromide	ND	mg/l
ISDA	7504601	ISDA-7504601	20070614	6/14/2007	Inorg	Bromide	ND	mg/l
ISDA	7504601	ISDA-7504601	20080619	6/19/2008	Inorg	Bromide	ND	mg/l
ISDA	7505701	ISDA-7505701	19990713	7/13/1999	Inorg	Bromide	ND	mg/l
ISDA	7505701	ISDA-7505701	20020530	5/30/2002	Inorg	Bromide	BDL	mg/l
ISDA	7505701	ISDA-7505701	20030626	6/26/2003	Inorg	Bromide	BDL	mg/l
ISDA	7505701	ISDA-7505701	20040701	7/1/2004	Inorg	Bromide	BDL	mg/l
ISDA	7505701	ISDA-7505701	20050630	6/30/2005	Inorg	Bromide	BDL	mg/l
ISDA	7505701	ISDA-7505701	20060613	6/13/2006	Inorg	Bromide	ND	mg/l
ISDA	7505701	ISDA-7505701	20070619	6/19/2007	Inorg	Bromide	ND	mg/l
ISDA	7505701	ISDA-7505701	20080618	6/18/2008	Inorg	Bromide	ND	mg/l
ISDA	7505801	ISDA-7505801	19990713	7/13/1999	Inorg	Bromide	ND	mg/l
ISDA	7505801	ISDA-7505801	20020530	5/30/2002	Inorg	Bromide	ND	mg/l
ISDA	7505801	ISDA-7505801	20030626	6/26/2003	Inorg	Bromide	ND	mg/l
ISDA	7505801	ISDA-7505801	20040701	7/1/2004	Inorg	Bromide	BDL	mg/l
ISDA	7505801	ISDA-7505801	20050630	6/30/2005	Inorg	Bromide	BDL	mg/l
ISDA	7505801	ISDA-7505801	20060613	6/13/2006	Inorg	Bromide	ND	mg/l
ISDA	7505801	ISDA-7505801	20070626	6/26/2007	Inorg	Bromide	ND	mg/l
ISDA	7505801	ISDA-7505801	20080618	6/18/2008	Inorg	Bromide	ND	mg/l
ISDA	7505901	ISDA-7505901	19990713	7/13/1999	Inorg	Bromide	ND	mg/l
ISDA	7505901	ISDA-7505901	20020530	5/30/2002	Inorg	Bromide	ND	mg/l
ISDA	7505901	ISDA-7505901	20030626	6/26/2003	Inorg	Bromide	ND	mg/l
ISDA	7505901	ISDA-7505901	20040701	7/1/2004	Inorg	Bromide	ND	mg/l
ISDA	7505901	ISDA-7505901	20050630	6/30/2005	Inorg	Bromide	ND	mg/l
ISDA	7505901	ISDA-7505901	20060613	6/13/2006	Inorg	Bromide	ND	mg/l
ISDA	7505901	ISDA-7505901	20070626	6/26/2007	Inorg	Bromide	ND	mg/l
ISDA	7505901	ISDA-7505901	20080618	6/18/2008	Inorg	Bromide	ND	mg/l
ISDA	9200101	ISDA-9200101	20000906	9/6/2000	Inorg	Bromide	ND	mg/l
ISDA	9200201	ISDA-9200201	20000906	9/6/2000	Inorg	Bromide	ND	mg/l
ISDA	9200301	ISDA-9200301	20000906	9/6/2000	Inorg	Bromide	ND	mg/l
ISDA	9200401	ISDA-9200401	20000907	9/7/2000	Inorg	Bromide	ND	mg/l
ISDA	9200501	ISDA-9200501	20000907	9/7/2000	Inorg	Bromide	ND	mg/l
ISDA	9200601	ISDA-9200601	20000907	9/7/2000	Inorg	Bromide	ND	mg/l
ISDA	9200701	ISDA-9200701	20000907	9/7/2000	Inorg	Bromide	ND	mg/l
ISDA	9200801	ISDA-9200801	20000906	9/6/2000	Inorg	Bromide	ND	mg/l
ISDA	9201001	ISDA-9201001	20000906	9/6/2000	Inorg	Bromide	ND	mg/l
ISDA	9201101	ISDA-9201101	20000906	9/6/2000	Inorg	Bromide	ND	mg/l
ISDA	9202101	ISDA-9202101	20000912	9/12/2000	Inorg	Bromide	ND	mg/l
ISDA	9202201	ISDA-9202201	20000912	9/12/2000	Inorg	Bromide	ND	mg/l
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Cadmium	<1.0	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Cadmium	<1.0	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Cadmium	<1.0	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Cadmium	<1.0	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Cadmium	<1.0	ug/L

IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Cadmium	<1.0	ug/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Cadmium	<1.0	ug/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Cadmium	<1.0	ug/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Cadmium	<1.0	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Cadmium	<1.0	ug/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Cadmium	<1.0	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Cadmium	<0.04	ug/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Cadmium	<0.04	ug/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Cadmium	<0.037	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Cadmium	<0.04	ug/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Cadmium	<0.04	ug/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Inorg	Cadmium	0.07	ug/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Cadmium	E0.03	ug/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Cadmium	0.14	ug/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Cadmium	E0.01	ug/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Cadmium	<0.02	ug/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Cadmium	0.04	ug/L
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Inorg	Cadmium	<0.04	ug/L
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Cadmium	<1	ug/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Cadmium	<1	ug/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Cadmium	<1	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Calcium	44	mg/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Calcium	44	mg/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Calcium	60	mg/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Calcium	56	mg/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Calcium	56	mg/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Calcium	44.8	mg/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Calcium	82	mg/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Calcium	92	mg/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Calcium	95	mg/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Calcium	110	mg/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Calcium	87.7	mg/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Calcium	73.5	mg/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Calcium	84.4	mg/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Calcium	81	mg/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Calcium	83.9	mg/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Calcium	104	mg/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Inorg	Calcium	80.1	mg/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Calcium	90.8	mg/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Calcium	91.7	mg/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Calcium	112	mg/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Calcium	90.6	mg/l
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Inorg	Calcium	56.5	mg/l
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Inorg	Calcium	44.6	mg/l
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Inorg	Calcium	50.4	mg/l
IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Inorg	Calcium	40	mg/l
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Inorg	Calcium	42.4	mg/l
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Inorg	Calcium	39.9	mg/l
IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Inorg	Calcium	44.3	mg/l
IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Inorg	Calcium	44.4	mg/l
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Inorg	Calcium	48.1	mg/l
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Inorg	Calcium	51.4	mg/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Calcium	55.9	mg/L

INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Calcium	51	mg/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Calcium	48	mg/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Calcium	50	mg/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Carbon Dioxide	47	mg/l
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Carbonate	0	mg/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Carbonate	0	mg/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Carbonate	0	mg/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Carbonate	0	mg/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Carbonate	0	mg/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Carbonate	0	mg/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Carbonate	0	mg/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Carbonate	0	mg/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Carbonate	0	mg/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Carbonate	0	mg/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Carbonate	0	mg/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Carbonate	0	mg/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Carbonate	0	mg/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Carbonate	0	mg/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Carbonate	0	mg/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Carbonate	0	mg/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Carbonate	1	mg/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Carbonate	1	mg/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Carbonate	0	mg/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Carbonate	0	mg/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Carbonate	0	mg/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Chloride	6.8	mg/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Chloride	9.4	mg/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Chloride	23	mg/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Chloride	27	mg/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Chloride	22	mg/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Chloride	11.7	mg/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Chloride	37	mg/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Chloride	43	mg/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Chloride	46	mg/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Chloride	54	mg/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Chloride	36.6	mg/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Chloride	29.4	mg/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Chloride	36.6	mg/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Chloride	33.9	mg/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Chloride	36.8	mg/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Chloride	44.2	mg/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Inorg	Chloride	34.9	mg/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Chloride	44.1	mg/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Chloride	42.9	mg/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Chloride	53.2	mg/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Chloride	40.2	mg/l
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Inorg	Chloride	20	mg/l
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Inorg	Chloride	11	mg/l
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Inorg	Chloride	17	mg/l
IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Inorg	Chloride	9	mg/l
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Inorg	Chloride	11	mg/l
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Inorg	Chloride	9	mg/l
IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Inorg	Chloride	11	mg/l

IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Inorg	Chloride	12	mg/l
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Inorg	Chloride	15	mg/l
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Inorg	Chloride	17	mg/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Chloride	19.2	mg/L
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Inorg	Chloride	20.6	mg/L
ISDA	7504601	ISDA-7504601	19970818	8/18/1997	Inorg	Chloride	26	mg/l
ISDA	7504601	ISDA-7504601	19980911	9/11/1998	Inorg	Chloride	14	mg/l
ISDA	7504601	ISDA-7504601	19990713	7/13/1999	Inorg	Chloride	15	mg/l
ISDA	7504601	ISDA-7504601	20000619	6/19/2000	Inorg	Chloride	6	mg/l
ISDA	7504601	ISDA-7504601	20010613	6/13/2001	Inorg	Chloride	1	mg/l
ISDA	7504601	ISDA-7504601	20020626	6/26/2002	Inorg	Chloride	18	mg/l
ISDA	7504601	ISDA-7504601	20030707	7/7/2003	Inorg	Chloride	21	mg/l
ISDA	7504601	ISDA-7504601	20040701	7/1/2004	Inorg	Chloride	22	mg/l
ISDA	7504601	ISDA-7504601	20050630	6/30/2005	Inorg	Chloride	22	mg/l
ISDA	7504601	ISDA-7504601	20060613	6/13/2006	Inorg	Chloride	16	mg/l
ISDA	7504601	ISDA-7504601	20070614	6/14/2007	Inorg	Chloride	21	mg/l
ISDA	7504601	ISDA-7504601	20080619	6/19/2008	Inorg	Chloride	17	mg/l
ISDA	7505701	ISDA-7505701	19970819	8/19/1997	Inorg	Chloride	26	mg/l
ISDA	7505701	ISDA-7505701	19980909	9/9/1998	Inorg	Chloride	16	mg/l
ISDA	7505701	ISDA-7505701	19990713	7/13/1999	Inorg	Chloride	23	mg/l
ISDA	7505701	ISDA-7505701	20000619	6/19/2000	Inorg	Chloride	20	mg/l
ISDA	7505701	ISDA-7505701	20010613	6/13/2001	Inorg	Chloride	2	mg/l
ISDA	7505701	ISDA-7505701	20020530	5/30/2002	Inorg	Chloride	24	mg/l
ISDA	7505701	ISDA-7505701	20030626	6/26/2003	Inorg	Chloride	24	mg/l
ISDA	7505701	ISDA-7505701	20040701	7/1/2004	Inorg	Chloride	24	mg/l
ISDA	7505701	ISDA-7505701	20050630	6/30/2005	Inorg	Chloride	21	mg/l
ISDA	7505701	ISDA-7505701	20060613	6/13/2006	Inorg	Chloride	24	mg/l
ISDA	7505701	ISDA-7505701	20070619	6/19/2007	Inorg	Chloride	27	mg/l
ISDA	7505701	ISDA-7505701	20080618	6/18/2008	Inorg	Chloride	25	mg/l
ISDA	7505801	ISDA-7505801	19970819	8/19/1997	Inorg	Chloride	18	mg/l
ISDA	7505801	ISDA-7505801	19980922	9/22/1998	Inorg	Chloride	15	mg/l
ISDA	7505801	ISDA-7505801	19990713	7/13/1999	Inorg	Chloride	19	mg/l
ISDA	7505801	ISDA-7505801	20000607	6/7/2000	Inorg	Chloride	13	mg/l
ISDA	7505801	ISDA-7505801	20010613	6/13/2001	Inorg	Chloride	1	mg/l
ISDA	7505801	ISDA-7505801	20020530	5/30/2002	Inorg	Chloride	25	mg/l
ISDA	7505801	ISDA-7505801	20030626	6/26/2003	Inorg	Chloride	27	mg/l
ISDA	7505801	ISDA-7505801	20040701	7/1/2004	Inorg	Chloride	29	mg/l
ISDA	7505801	ISDA-7505801	20050630	6/30/2005	Inorg	Chloride	26	mg/l
ISDA	7505801	ISDA-7505801	20060613	6/13/2006	Inorg	Chloride	23	mg/l
ISDA	7505801	ISDA-7505801	20070626	6/26/2007	Inorg	Chloride	28	mg/l
ISDA	7505801	ISDA-7505801	20080618	6/18/2008	Inorg	Chloride	29	mg/l
ISDA	7505901	ISDA-7505901	19970819	8/19/1997	Inorg	Chloride	21	mg/l
ISDA	7505901	ISDA-7505901	19980930	9/30/1998	Inorg	Chloride	10	mg/l
ISDA	7505901	ISDA-7505901	19990713	7/13/1999	Inorg	Chloride	15	mg/l
ISDA	7505901	ISDA-7505901	20000619	6/19/2000	Inorg	Chloride	10	mg/l
ISDA	7505901	ISDA-7505901	20010613	6/13/2001	Inorg	Chloride	2	mg/l
ISDA	7505901	ISDA-7505901	20020530	5/30/2002	Inorg	Chloride	18	mg/l
ISDA	7505901	ISDA-7505901	20030626	6/26/2003	Inorg	Chloride	20	mg/l
ISDA	7505901	ISDA-7505901	20040701	7/1/2004	Inorg	Chloride	21	mg/l
ISDA	7505901	ISDA-7505901	20050630	6/30/2005	Inorg	Chloride	22	mg/l
ISDA	7505901	ISDA-7505901	20060613	6/13/2006	Inorg	Chloride	18	mg/l
ISDA	7505901	ISDA-7505901	20070626	6/26/2007	Inorg	Chloride	22	mg/l
ISDA	7505901	ISDA-7505901	20080618	6/18/2008	Inorg	Chloride	25	mg/l

ISDA	8800801	ISDA-8800801	20000814	8/14/2000	Inorg	Chloride	20	mg/l
ISDA	9200101	ISDA-9200101	20000906	9/6/2000	Inorg	Chloride	16	mg/l
ISDA	9200201	ISDA-9200201	20000906	9/6/2000	Inorg	Chloride	15	mg/l
ISDA	9200301	ISDA-9200301	20000906	9/6/2000	Inorg	Chloride	37	mg/l
ISDA	9200401	ISDA-9200401	20000907	9/7/2000	Inorg	Chloride	15	mg/l
ISDA	9200501	ISDA-9200501	20000907	9/7/2000	Inorg	Chloride	14	mg/l
ISDA	9200601	ISDA-9200601	20000907	9/7/2000	Inorg	Chloride	21	mg/l
ISDA	9200701	ISDA-9200701	20000907	9/7/2000	Inorg	Chloride	10	mg/l
ISDA	9200801	ISDA-9200801	20000906	9/6/2000	Inorg	Chloride	32	mg/l
ISDA	9201001	ISDA-9201001	20000906	9/6/2000	Inorg	Chloride	39	mg/l
ISDA	9201101	ISDA-9201101	20000906	9/6/2000	Inorg	Chloride	13	mg/l
ISDA	9202101	ISDA-9202101	20000912	9/12/2000	Inorg	Chloride	16	mg/l
ISDA	9202201	ISDA-9202201	20000912	9/12/2000	Inorg	Chloride	14	mg/l
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Chloride	14.7	mg/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Chloride	13.7	mg/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Chloride	14.3	mg/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Chromium	2	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Chromium	1.4	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Chromium	<1	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Chromium	<1	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Chromium	<1	ug/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Chromium	<1	ug/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Chromium	<1.0	ug/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Chromium	<1.0	ug/L
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Chromium	<5	ug/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Chromium	<5	ug/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Chromium	<5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Copper	2	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Copper	3.1	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Copper	3	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Copper	1	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Copper	2	ug/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Copper	8	ug/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Copper	11	ug/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Copper	11	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Copper	5.8	ug/L
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Copper	2.3	ug/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Copper	5.2	ug/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Copper	2.9	ug/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Copper	<0.2	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Cyanide	<0.01	mg/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Cyanide	<0.01	mg/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Cyanide	<0.01	mg/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Cyanide	<0.01	mg/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Dissolved Oxygen	5.9	mg/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Dissolved Oxygen	6.3	mg/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Dissolved Oxygen	4.7	mg/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Dissolved Oxygen	5.7	mg/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Dissolved Oxygen	6.1	mg/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Dissolved Oxygen	6.5	mg/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Dissolved Oxygen	5.8	mg/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Inorg	Dissolved Oxygen	6.2	mg/L
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Dissolved Oxygen	8.1	mg/l

IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Dissolved Oxygen	7.5	mg/l
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Inorg	Dissolved Oxygen	76	%
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Inorg	Dissolved Oxygen	7.7	mg/l
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Inorg	Dissolved Oxygen	90.7	%
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Inorg	Dissolved Oxygen	8.27	mg/l
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Inorg	Dissolved Oxygen	8.44	mg/l
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Inorg	Dissolved Oxygen	81.5	%
IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Inorg	Dissolved Oxygen	80.4	%
IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Inorg	Dissolved Oxygen	7.95	mg/l
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Inorg	Dissolved Oxygen	82.6	%
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Inorg	Dissolved Oxygen	8.1	mg/l
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Inorg	Dissolved Oxygen	75.7	%
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Inorg	Dissolved Oxygen	7.65	mg/l
IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Inorg	Dissolved Oxygen	75.2	%
IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Inorg	Dissolved Oxygen	7.81	mg/l
IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Inorg	Dissolved Oxygen	81.5	%
IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Inorg	Dissolved Oxygen	8.38	mg/l
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Inorg	Dissolved Oxygen	9.25	mg/l
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Inorg	Dissolved Oxygen	84.9	%
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Inorg	Dissolved Oxygen	78.8	%
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Inorg	Dissolved Oxygen	7.87	mg/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Dissolved Oxygen	5.5	mg/L
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Inorg	Dissolved Oxygen	6.2	mg/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Fluoride	0.3	mg/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Fluoride	0.27	mg/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Fluoride	0.5	mg/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Fluoride	0.2	mg/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Fluoride	0.3	mg/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Fluoride	0.3	mg/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Fluoride	0.5	mg/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Fluoride	0.39	mg/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Fluoride	0.38	mg/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Fluoride	0.35	mg/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Fluoride	0.3	mg/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Fluoride	0.4	mg/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Fluoride	0.3	mg/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Fluoride	0.33	mg/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Fluoride	0.3	mg/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Fluoride	0.4	mg/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Inorg	Fluoride	0.34	mg/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Fluoride	0.38	mg/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Fluoride	0.35	mg/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Fluoride	0.33	mg/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Fluoride	0.34	mg/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Fluoride	0.3	mg/L
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Inorg	Fluoride	0.33	mg/L
ISDA	7504601	ISDA-7504601	19990713	7/13/1999	Inorg	Fluoride	0.31	mg/l
ISDA	7504601	ISDA-7504601	20020626	6/26/2002	Inorg	Fluoride	0.3	mg/l
ISDA	7504601	ISDA-7504601	20030707	7/7/2003	Inorg	Fluoride	0.27	mg/l
ISDA	7504601	ISDA-7504601	20040701	7/1/2004	Inorg	Fluoride	0.34	mg/l
ISDA	7504601	ISDA-7504601	20050630	6/30/2005	Inorg	Fluoride	0.24	mg/l
ISDA	7504601	ISDA-7504601	20060613	6/13/2006	Inorg	Fluoride	0.24	mg/l
ISDA	7504601	ISDA-7504601	20070614	6/14/2007	Inorg	Fluoride	0.21	mg/l

ISDA	7504601	ISDA-7504601	20080619	6/19/2008	Inorg	Fluoride	0.24	mg/l
ISDA	7505701	ISDA-7505701	19990713	7/13/1999	Inorg	Fluoride	0.25	mg/l
ISDA	7505701	ISDA-7505701	20020530	5/30/2002	Inorg	Fluoride	0.25	mg/l
ISDA	7505701	ISDA-7505701	20030626	6/26/2003	Inorg	Fluoride	0.22	mg/l
ISDA	7505701	ISDA-7505701	20040701	7/1/2004	Inorg	Fluoride	0.31	mg/l
ISDA	7505701	ISDA-7505701	20050630	6/30/2005	Inorg	Fluoride	0.2	mg/l
ISDA	7505701	ISDA-7505701	20060613	6/13/2006	Inorg	Fluoride	0.3	mg/l
ISDA	7505701	ISDA-7505701	20070619	6/19/2007	Inorg	Fluoride	0.22	mg/l
ISDA	7505701	ISDA-7505701	20080618	6/18/2008	Inorg	Fluoride	0.27	mg/l
ISDA	7505801	ISDA-7505801	19990713	7/13/1999	Inorg	Fluoride	0.41	mg/l
ISDA	7505801	ISDA-7505801	20020530	5/30/2002	Inorg	Fluoride	0.41	mg/l
ISDA	7505801	ISDA-7505801	20030626	6/26/2003	Inorg	Fluoride	0.4	mg/l
ISDA	7505801	ISDA-7505801	20040701	7/1/2004	Inorg	Fluoride	0.44	mg/l
ISDA	7505801	ISDA-7505801	20050630	6/30/2005	Inorg	Fluoride	0.33	mg/l
ISDA	7505801	ISDA-7505801	20060613	6/13/2006	Inorg	Fluoride	0.38	mg/l
ISDA	7505801	ISDA-7505801	20070626	6/26/2007	Inorg	Fluoride	0.26	mg/l
ISDA	7505801	ISDA-7505801	20080618	6/18/2008	Inorg	Fluoride	0.35	mg/l
ISDA	7505901	ISDA-7505901	19990713	7/13/1999	Inorg	Fluoride	0.34	mg/l
ISDA	7505901	ISDA-7505901	20020530	5/30/2002	Inorg	Fluoride	0.45	mg/l
ISDA	7505901	ISDA-7505901	20030626	6/26/2003	Inorg	Fluoride	0.3	mg/l
ISDA	7505901	ISDA-7505901	20040701	7/1/2004	Inorg	Fluoride	0.36	mg/l
ISDA	7505901	ISDA-7505901	20050630	6/30/2005	Inorg	Fluoride	0.3	mg/l
ISDA	7505901	ISDA-7505901	20060613	6/13/2006	Inorg	Fluoride	0.3	mg/l
ISDA	7505901	ISDA-7505901	20070626	6/26/2007	Inorg	Fluoride	0.23	mg/l
ISDA	7505901	ISDA-7505901	20080618	6/18/2008	Inorg	Fluoride	0.33	mg/l
ISDA	9200101	ISDA-9200101	20000906	9/6/2000	Inorg	Fluoride	0.27	mg/l
ISDA	9200201	ISDA-9200201	20000906	9/6/2000	Inorg	Fluoride	0.3	mg/l
ISDA	9200301	ISDA-9200301	20000906	9/6/2000	Inorg	Fluoride	0.36	mg/l
ISDA	9200401	ISDA-9200401	20000907	9/7/2000	Inorg	Fluoride	0.29	mg/l
ISDA	9200501	ISDA-9200501	20000907	9/7/2000	Inorg	Fluoride	0.21	mg/l
ISDA	9200601	ISDA-9200601	20000907	9/7/2000	Inorg	Fluoride	0.23	mg/l
ISDA	9200701	ISDA-9200701	20000907	9/7/2000	Inorg	Fluoride	0.3	mg/l
ISDA	9200801	ISDA-9200801	20000906	9/6/2000	Inorg	Fluoride	0.27	mg/l
ISDA	9201001	ISDA-9201001	20000906	9/6/2000	Inorg	Fluoride	0.19	mg/l
ISDA	9201101	ISDA-9201101	20000906	9/6/2000	Inorg	Fluoride	0.24	mg/l
ISDA	9202101	ISDA-9202101	20000912	9/12/2000	Inorg	Fluoride	0.27	mg/l
ISDA	9202201	ISDA-9202201	20000912	9/12/2000	Inorg	Fluoride	0.25	mg/l
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Fluoride	0.46	mg/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Fluoride	0.306	mg/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Fluoride	0.301	mg/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Hardness	168	mg/L as CaCO3
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Hardness	160	mg/L as CaCO3
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Hardness	236	mg/L as CaCO3
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Hardness	222	mg/L as CaCO3
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Hardness	226	mg/L as CaCO3
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Hardness	190	mg/L as CaCO3
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Hardness	312	mg/L as CaCO3
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Hardness	350	mg/L as CaCO3
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Hardness	370	mg/L as CaCO3
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Hardness	400	mg/L as CaCO3
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Hardness	330	mg/L as CaCO3
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Hardness	280	mg/L as CaCO3
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Hardness	320	mg/L as CaCO3

IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Hardness	300	mg/L as CaCO3
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Hardness	320	mg/L as CaCO3
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Inorg	Hardness	310	mg/L as CaCO3
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Hardness	350	mg/L as CaCO3
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Hardness	350	mg/l as CaCO3
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Hardness	420	mg/l as CaCO3
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Hardness	334	mg/l as CaCO3
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Hardness	220	mg/L as CaCO3
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Iron	<3	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Iron	<3.0	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Iron	4	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Iron	<3	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Iron	<3	ug/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Iron	<10	ug/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Iron	6	ug/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Iron	<3.0	ug/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Iron	<10	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Iron	<10	ug/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Iron	<10	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Iron	<10	ug/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Iron	<10	ug/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Iron	<8	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Iron	<6	ug/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Iron	10	ug/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Inorg	Iron	<6	ug/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Iron	<6	ug/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Iron	10	ug/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Iron	E2	ug/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Iron	8	ug/l
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Inorg	Iron	<0.05	mg/l
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Inorg	Iron	<0.05	mg/l
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Inorg	Iron	<0.05	mg/l
IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Inorg	Iron	<0.05	mg/l
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Inorg	Iron	<0.05	mg/l
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Inorg	Iron	<0.05	mg/l
IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Inorg	Iron	<0.05	mg/l
IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Inorg	Iron	<0.05	mg/l
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Inorg	Iron	<0.05	mg/l
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Inorg	Iron	0.09	mg/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Iron	<10	ug/L
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Inorg	Iron	<6	ug/L
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Iron	<10	ug/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Iron	<10	ug/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Iron	<10	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Lead	2	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Lead	1.7	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Lead	<1	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Lead	<1	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Lead	<1	ug/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Lead	<1	ug/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Lead	<1.0	ug/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Lead	<1.0	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Lead	<1.0	ug/L

IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Lead	<0.08	ug/L
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Lead	<5	ug/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Lead	<5	ug/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Lead	<5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Magnesium	14	mg/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Magnesium	13	mg/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Magnesium	21	mg/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Magnesium	20	mg/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Magnesium	21	mg/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Magnesium	19	mg/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Magnesium	26	mg/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Magnesium	28	mg/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Magnesium	33	mg/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Magnesium	33	mg/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Magnesium	27	mg/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Magnesium	24	mg/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Magnesium	27	mg/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Magnesium	24.6	mg/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Magnesium	26.9	mg/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Magnesium	30.6	mg/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Inorg	Magnesium	26.2	mg/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Magnesium	28.7	mg/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Magnesium	28.4	mg/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Magnesium	34.2	mg/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Magnesium	26.2	mg/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Magnesium	20.2	mg/L
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Magnesium	16	mg/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Magnesium	16	mg/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Magnesium	17	mg/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Manganese	<1	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Manganese	<1.0	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Manganese	<1	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Manganese	<1	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Manganese	<1	ug/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Manganese	<2	ug/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Manganese	<1	ug/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Manganese	1.4	ug/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Manganese	<4.0	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Manganese	<3.0	ug/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Manganese	<2	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Manganese	<3	ug/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Manganese	<2	ug/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Manganese	E0.2	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Manganese	E0.4	ug/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Manganese	E0.6	ug/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Inorg	Manganese	E0.3	ug/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Manganese	E0.2	ug/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Manganese	<0.4	ug/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Manganese	E0.1	ug/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Manganese	<0.2	ug/l
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Inorg	Manganese	<0.05	mg/l
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Inorg	Manganese	<0.05	mg/l
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Inorg	Manganese	<0.05	mg/l

IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Inorg	Manganese	<0.05	mg/l
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Inorg	Manganese	<0.05	mg/l
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Inorg	Manganese	<0.05	mg/l
IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Inorg	Manganese	<0.05	mg/l
IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Inorg	Manganese	<0.05	mg/l
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Inorg	Manganese	<0.05	mg/l
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Inorg	Manganese	<0.05	mg/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Manganese	<3	ug/L
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Inorg	Manganese	<0.6	ug/L
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Manganese	<2	ug/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Manganese	<2	ug/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Manganese	<2	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Mercury	<0.1	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Mercury	<0.1	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Mercury	<0.1	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Mercury	<0.1	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Potassium	2.9	mg/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Potassium	2.7	mg/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Potassium	3.9	mg/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Potassium	4.4	mg/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Potassium	4.3	mg/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Potassium	7.2	mg/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Potassium	9.4	mg/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Potassium	11	mg/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Potassium	13	mg/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Potassium	8.2	mg/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Potassium	5.4	mg/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Potassium	5.36	mg/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Potassium	5.54	mg/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Potassium	5.5	mg/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Potassium	5.25	mg/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Potassium	6.61	mg/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Inorg	Potassium	5.65	mg/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Potassium	5.94	mg/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Potassium	5.55	mg/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Potassium	5.71	mg/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Potassium	5.2	mg/l
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Inorg	Potassium	4.6	mg/l
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Inorg	Potassium	3.4	mg/l
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Inorg	Potassium	3.7	mg/l
IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Inorg	Potassium	2.7	mg/l
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Inorg	Potassium	2.9	mg/l
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Inorg	Potassium	3.1	mg/l
IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Inorg	Potassium	3.3	mg/l
IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Inorg	Potassium	3.1	mg/l
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Inorg	Potassium	3.3	mg/l
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Inorg	Potassium	3.6	mg/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Potassium	4.2	mg/L
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Potassium	3.6	mg/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Potassium	3.6	mg/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Potassium	3.7	mg/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Selenium	<1	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Selenium	<1	ug/L

IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Selenium	<1	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Selenium	1	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Selenium	<1	ug/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Selenium	E.6	ug/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Selenium	<1	ug/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Selenium	<1	ug/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Selenium	<1	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Selenium	<1	ug/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Selenium	E.6	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Selenium	0.3	ug/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Selenium	E0.3	ug/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Selenium	E0.48	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Selenium	0.4	ug/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Selenium	0.7	ug/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Inorg	Selenium	0.53	ug/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Selenium	0.49	ug/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Selenium	0.49	ug/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Selenium	0.52	ug/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Selenium	0.46	ug/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Selenium	<0.3	ug/L
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Inorg	Selenium	0.57	ug/L
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Selenium	<10	ug/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Selenium	<10	ug/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Selenium	<10	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Silica	29	mg/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Silica	31	mg/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Silica	36	mg/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Silica	34	mg/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Silica	35	mg/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Silica	37	mg/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Silica	39	mg/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Silica	39	mg/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Silica	40	mg/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Silica	36	mg/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Silica	38.2	mg/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Silica	37	mg/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Silica	36.8	mg/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Silica	38	mg/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Silica	36.7	mg/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Silica	37.9	mg/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Inorg	Silica	37.4	mg/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Silica	37.3	mg/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Silica	39.4	mg/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Silica	38.5	mg/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Silica	37.3	mg/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Silica	34.7	mg/L
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Inorg	Silica	37.6	mg/L
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Silica	31.5	mg/L as SiO2
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Silica	34	mg/L as SiO2
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Silica	33	mg/L as SiO2
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Silica	33	mg/L as SiO2
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Sodium	15	mg/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Sodium	14	mg/L

IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Sodium	29	mg/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Sodium	29	mg/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Sodium	30	mg/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Sodium	25.5	mg/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Sodium	28	mg/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Sodium	28.8	mg/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Sodium	32	mg/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Sodium	32	mg/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Sodium	29	mg/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Sodium	27.1	mg/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Sodium	29.9	mg/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Sodium	28.2	mg/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Sodium	29.7	mg/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Sodium	30.1	mg/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Inorg	Sodium	28.9	mg/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Sodium	31.1	mg/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Sodium	30	mg/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Sodium	33.1	mg/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Sodium	28.1	mg/l
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Inorg	Sodium	26.1	mg/l
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Inorg	Sodium	16.9	mg/l
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Inorg	Sodium	19	mg/l
IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Inorg	Sodium	13.9	mg/l
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Inorg	Sodium	15.4	mg/l
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Inorg	Sodium	14	mg/l
IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Inorg	Sodium	15.8	mg/l
IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Inorg	Sodium	16	mg/l
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Inorg	Sodium	17.8	mg/l
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Inorg	Sodium	21.3	mg/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Sodium	29.9	mg/L
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Sodium	19	mg/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Sodium	20	mg/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Sodium	21	mg/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Sulfate	19	mg/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Sulfate	20	mg/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Sulfate	53	mg/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Sulfate	41	mg/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Sulfate	44	mg/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Inorg	Sulfate	28.9	mg/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Sulfate	53	mg/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Sulfate	54	mg/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Sulfate	60	mg/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Sulfate	61	mg/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Inorg	Sulfate	50.6	mg/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Inorg	Sulfate	44.9	mg/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Inorg	Sulfate	51	mg/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Inorg	Sulfate	50.1	mg/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Inorg	Sulfate	55	mg/L
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Inorg	Sulfate	60.1	mg/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Inorg	Sulfate	53	mg/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Inorg	Sulfate	63	mg/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Inorg	Sulfate	59.3	mg/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Inorg	Sulfate	75	mg/l

IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Inorg	Sulfate	56.6	mg/l
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Inorg	Sulfate	41	mg/l
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Inorg	Sulfate	26	mg/l
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Inorg	Sulfate	30	mg/l
IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Inorg	Sulfate	21	mg/l
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Inorg	Sulfate	23	mg/l
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Inorg	Sulfate	21	mg/l
IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Inorg	Sulfate	24	mg/l
IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Inorg	Sulfate	24	mg/l
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Inorg	Sulfate	28	mg/l
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Inorg	Sulfate	33	mg/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Sulfate	43.4	mg/L
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Inorg	Sulfate	46.9	mg/L
ISDA	7504601	ISDA-7504601	19980911	9/11/1998	Inorg	Sulfate	48	mg/l
ISDA	7504601	ISDA-7504601	19990713	7/13/1999	Inorg	Sulfate	38	mg/l
ISDA	7504601	ISDA-7504601	20000619	6/19/2000	Inorg	Sulfate	40	mg/l
ISDA	7504601	ISDA-7504601	20010613	6/13/2001	Inorg	Sulfate	24	mg/l
ISDA	7504601	ISDA-7504601	20020626	6/26/2002	Inorg	Sulfate	41	mg/l
ISDA	7504601	ISDA-7504601	20030707	7/7/2003	Inorg	Sulfate	51	mg/l
ISDA	7504601	ISDA-7504601	20040701	7/1/2004	Inorg	Sulfate	58	mg/l
ISDA	7504601	ISDA-7504601	20050630	6/30/2005	Inorg	Sulfate	56	mg/l
ISDA	7504601	ISDA-7504601	20060613	6/13/2006	Inorg	Sulfate	40	mg/l
ISDA	7504601	ISDA-7504601	20070614	6/14/2007	Inorg	Sulfate	50	mg/l
ISDA	7504601	ISDA-7504601	20080619	6/19/2008	Inorg	Sulfate	41	mg/l
ISDA	7505701	ISDA-7505701	19980909	9/9/1998	Inorg	Sulfate	78	mg/l
ISDA	7505701	ISDA-7505701	19990713	7/13/1999	Inorg	Sulfate	63	mg/l
ISDA	7505701	ISDA-7505701	20000619	6/19/2000	Inorg	Sulfate	78	mg/l
ISDA	7505701	ISDA-7505701	20010613	6/13/2001	Inorg	Sulfate	110	mg/l
ISDA	7505701	ISDA-7505701	20020530	5/30/2002	Inorg	Sulfate	66	mg/l
ISDA	7505701	ISDA-7505701	20030626	6/26/2003	Inorg	Sulfate	61	mg/l
ISDA	7505701	ISDA-7505701	20040701	7/1/2004	Inorg	Sulfate	58	mg/l
ISDA	7505701	ISDA-7505701	20050630	6/30/2005	Inorg	Sulfate	48	mg/l
ISDA	7505701	ISDA-7505701	20060613	6/13/2006	Inorg	Sulfate	53	mg/l
ISDA	7505701	ISDA-7505701	20070619	6/19/2007	Inorg	Sulfate	60	mg/l
ISDA	7505701	ISDA-7505701	20080618	6/18/2008	Inorg	Sulfate	58	mg/l
ISDA	7505801	ISDA-7505801	19980922	9/22/1998	Inorg	Sulfate	54	mg/l
ISDA	7505801	ISDA-7505801	19990713	7/13/1999	Inorg	Sulfate	49	mg/l
ISDA	7505801	ISDA-7505801	20000607	6/7/2000	Inorg	Sulfate	70	mg/l
ISDA	7505801	ISDA-7505801	20010613	6/13/2001	Inorg	Sulfate	38	mg/l
ISDA	7505801	ISDA-7505801	20020530	5/30/2002	Inorg	Sulfate	56	mg/l
ISDA	7505801	ISDA-7505801	20030626	6/26/2003	Inorg	Sulfate	50	mg/l
ISDA	7505801	ISDA-7505801	20040701	7/1/2004	Inorg	Sulfate	60	mg/l
ISDA	7505801	ISDA-7505801	20050630	6/30/2005	Inorg	Sulfate	57	mg/l
ISDA	7505801	ISDA-7505801	20060613	6/13/2006	Inorg	Sulfate	48	mg/l
ISDA	7505801	ISDA-7505801	20070626	6/26/2007	Inorg	Sulfate	62	mg/l
ISDA	7505801	ISDA-7505801	20080618	6/18/2008	Inorg	Sulfate	66	mg/l
ISDA	7505901	ISDA-7505901	19980930	9/30/1998	Inorg	Sulfate	32	mg/l
ISDA	7505901	ISDA-7505901	19990713	7/13/1999	Inorg	Sulfate	38	mg/l
ISDA	7505901	ISDA-7505901	20000619	6/19/2000	Inorg	Sulfate	46	mg/l
ISDA	7505901	ISDA-7505901	20010613	6/13/2001	Inorg	Sulfate	21	mg/l
ISDA	7505901	ISDA-7505901	20020530	5/30/2002	Inorg	Sulfate	87	mg/l
ISDA	7505901	ISDA-7505901	20030626	6/26/2003	Inorg	Sulfate	53	mg/l
ISDA	7505901	ISDA-7505901	20040701	7/1/2004	Inorg	Sulfate	55	mg/l

ISDA	7505901	ISDA-7505901	20050630	6/30/2005	Inorg	Sulfate	56	mg/l
ISDA	7505901	ISDA-7505901	20060613	6/13/2006	Inorg	Sulfate	48	mg/l
ISDA	7505901	ISDA-7505901	20070626	6/26/2007	Inorg	Sulfate	56	mg/l
ISDA	7505901	ISDA-7505901	20080618	6/18/2008	Inorg	Sulfate	59	mg/l
ISDA	8800801	ISDA-8800801	20000814	8/14/2000	Inorg	Sulfate	210	mg/l
ISDA	9200101	ISDA-9200101	20000906	9/6/2000	Inorg	Sulfate	36	mg/l
ISDA	9200201	ISDA-9200201	20000906	9/6/2000	Inorg	Sulfate	38	mg/l
ISDA	9200301	ISDA-9200301	20000906	9/6/2000	Inorg	Sulfate	47	mg/l
ISDA	9200401	ISDA-9200401	20000907	9/7/2000	Inorg	Sulfate	35	mg/l
ISDA	9200501	ISDA-9200501	20000907	9/7/2000	Inorg	Sulfate	31	mg/l
ISDA	9200601	ISDA-9200601	20000907	9/7/2000	Inorg	Sulfate	40	mg/l
ISDA	9200701	ISDA-9200701	20000907	9/7/2000	Inorg	Sulfate	22	mg/l
ISDA	9200801	ISDA-9200801	20000906	9/6/2000	Inorg	Sulfate	26	mg/l
ISDA	9201001	ISDA-9201001	20000906	9/6/2000	Inorg	Sulfate	50	mg/l
ISDA	9201101	ISDA-9201101	20000906	9/6/2000	Inorg	Sulfate	38	mg/l
ISDA	9202101	ISDA-9202101	20000912	9/12/2000	Inorg	Sulfate	27	mg/l
ISDA	9202201	ISDA-9202201	20000912	9/12/2000	Inorg	Sulfate	31	mg/l
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Sulfate	29.1	mg/L as SO4
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Sulfate	27	mg/L as SO4
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Sulfate	28.9	mg/L as SO4
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Inorg	Zinc	120	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Inorg	Zinc	151	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Inorg	Zinc	14	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Inorg	Zinc	6	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Inorg	Zinc	6	ug/L
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Inorg	Zinc	340	ug/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Inorg	Zinc	127	ug/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Inorg	Zinc	75	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Inorg	Zinc	45	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Inorg	Zinc	<1	ug/L
INL	MV-37	MV-37	20050721	7/21/2005	Inorg	Zinc	70	ug/L
INL	MV-37	MV-37	20080618	6/18/2008	Inorg	Zinc	13	ug/L
INL	MV-37	MV-37	20110622	6/22/2011	Inorg	Zinc	6.9	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Nutr	Ammonia	<0.010	mg/l as N
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Nutr	Ammonia	<0.015	mg/l as N
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Nutr	Ammonia	0.01	mg/l as N
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Nutr	Ammonia	0.02	mg/l as N
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Nutr	Ammonia	<0.010	mg/l as N
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Nutr	Ammonia	<0.020	mg/l as N
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Nutr	Ammonia	0.04	mg/l as N
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Nutr	Ammonia	<0.015	mg/l as N
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Nutr	Ammonia	<0.020	mg/l as N
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Nutr	Ammonia	<.020	mg/l as N
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Nutr	Ammonia	<0.020	mg/l as N
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Nutr	Ammonia	<0.04	mg/l as N
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Nutr	Ammonia	<0.04	mg/l as N
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Nutr	Ammonia	<0.04	mg/l as N
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Nutr	Ammonia	<0.04	mg/l as N
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Nutr	Ammonia	<0.04	mg/l as N
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Nutr	Ammonia	<0.01	mg/l as N
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Nutr	Ammonia	<0.02	mg/l as N
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Nutr	Ammonia	<0.02	mg/l as N
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Nutr	Ammonia	<0.02	mg/l as N

IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Nutr	Ammonia	E0.013	mg/l	as N
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Nutr	Ammonia	<0.04	mg/l	
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Nutr	Ammonia	<0.04	mg/l	
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Nutr	Ammonia	<0.04	mg/l	
IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Nutr	Ammonia	<0.04	mg/l	
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Nutr	Ammonia	<0.04	mg/l	
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Nutr	Ammonia	<0.04	mg/l	
IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Nutr	Ammonia	<0.04	mg/l	
IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Nutr	Ammonia	<0.04	mg/l	
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Nutr	Ammonia	<0.04	mg/l	
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Nutr	Ammonia	<0.04	mg/l	
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Nutr	Ammonia	E0.028	mg/l	as N
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Nutr	Ammonia	0.01	mg/l	as N
ISDA	7504601	ISDA-7504601	19970818	8/18/1997	Nutr	Ammonia	ND	mg/l	
ISDA	7504601	ISDA-7504601	19980911	9/11/1998	Nutr	Ammonia	0.12	mg/l	
ISDA	7504601	ISDA-7504601	19990713	7/13/1999	Nutr	Ammonia	ND	mg/l	
ISDA	7504601	ISDA-7504601	20000619	6/19/2000	Nutr	Ammonia	ND	mg/l	
ISDA	7504601	ISDA-7504601	20010613	6/13/2001	Nutr	Ammonia	ND	mg/l	
ISDA	7504601	ISDA-7504601	20020626	6/26/2002	Nutr	Ammonia	BDL	mg/l	
ISDA	7504601	ISDA-7504601	20030707	7/7/2003	Nutr	Ammonia	BDL	mg/l	
ISDA	7504601	ISDA-7504601	20040701	7/1/2004	Nutr	Ammonia	BDL	mg/l	
ISDA	7505701	ISDA-7505701	19970819	8/19/1997	Nutr	Ammonia	ND	mg/l	
ISDA	7505701	ISDA-7505701	19980909	9/9/1998	Nutr	Ammonia	ND	mg/l	
ISDA	7505701	ISDA-7505701	19990713	7/13/1999	Nutr	Ammonia	ND	mg/l	
ISDA	7505701	ISDA-7505701	20000619	6/19/2000	Nutr	Ammonia	ND	mg/l	
ISDA	7505701	ISDA-7505701	20010613	6/13/2001	Nutr	Ammonia	ND	mg/l	
ISDA	7505701	ISDA-7505701	20020530	5/30/2002	Nutr	Ammonia	BDL	mg/l	
ISDA	7505701	ISDA-7505701	20030626	6/26/2003	Nutr	Ammonia	BDL	mg/l	
ISDA	7505701	ISDA-7505701	20040701	7/1/2004	Nutr	Ammonia	BDL	mg/l	
ISDA	7505801	ISDA-7505801	19970819	8/19/1997	Nutr	Ammonia	ND	mg/l	
ISDA	7505801	ISDA-7505801	19980922	9/22/1998	Nutr	Ammonia	ND	mg/l	
ISDA	7505801	ISDA-7505801	19990713	7/13/1999	Nutr	Ammonia	0.1	mg/l	
ISDA	7505801	ISDA-7505801	20000607	6/7/2000	Nutr	Ammonia	ND	mg/l	
ISDA	7505801	ISDA-7505801	20010613	6/13/2001	Nutr	Ammonia	ND	mg/l	
ISDA	7505801	ISDA-7505801	20020530	5/30/2002	Nutr	Ammonia	BDL	mg/l	
ISDA	7505801	ISDA-7505801	20030626	6/26/2003	Nutr	Ammonia	BDL	mg/l	
ISDA	7505801	ISDA-7505801	20040701	7/1/2004	Nutr	Ammonia	BDL	mg/l	
ISDA	7505901	ISDA-7505901	19970819	8/19/1997	Nutr	Ammonia	ND	mg/l	
ISDA	7505901	ISDA-7505901	19980930	9/30/1998	Nutr	Ammonia	ND	mg/l	
ISDA	7505901	ISDA-7505901	19990713	7/13/1999	Nutr	Ammonia	ND	mg/l	
ISDA	7505901	ISDA-7505901	20000619	6/19/2000	Nutr	Ammonia	ND	mg/l	
ISDA	7505901	ISDA-7505901	20010613	6/13/2001	Nutr	Ammonia	ND	mg/l	
ISDA	7505901	ISDA-7505901	20020530	5/30/2002	Nutr	Ammonia	BDL	mg/l	
ISDA	7505901	ISDA-7505901	20030626	6/26/2003	Nutr	Ammonia	BDL	mg/l	
ISDA	7505901	ISDA-7505901	20040701	7/1/2004	Nutr	Ammonia	BDL	mg/l	
ISDA	8800801	ISDA-8800801	20000814	8/14/2000	Nutr	Ammonia	ND	mg/l	
ISDA	9200101	ISDA-9200101	20000906	9/6/2000	Nutr	Ammonia	ND	mg/l	
ISDA	9200201	ISDA-9200201	20000906	9/6/2000	Nutr	Ammonia	ND	mg/l	
ISDA	9200301	ISDA-9200301	20000906	9/6/2000	Nutr	Ammonia	ND	mg/l	
ISDA	9200401	ISDA-9200401	20000907	9/7/2000	Nutr	Ammonia	ND	mg/l	
ISDA	9200501	ISDA-9200501	20000907	9/7/2000	Nutr	Ammonia	ND	mg/l	
ISDA	9200601	ISDA-9200601	20000907	9/7/2000	Nutr	Ammonia	ND	mg/l	
ISDA	9200701	ISDA-9200701	20000907	9/7/2000	Nutr	Ammonia	ND	mg/l	

ISDA	9200801	ISDA-9200801	20000906	9/6/2000	Nutr	Ammonia	ND	mg/l
ISDA	9201001	ISDA-9201001	20000906	9/6/2000	Nutr	Ammonia	ND	mg/l
ISDA	9201101	ISDA-9201101	20000906	9/6/2000	Nutr	Ammonia	ND	mg/l
ISDA	9202101	ISDA-9202101	20000912	9/12/2000	Nutr	Ammonia	ND	mg/l
ISDA	9202201	ISDA-9202201	20000912	9/12/2000	Nutr	Ammonia	ND	mg/l
INL	MV-37	MV-37	20050721	7/21/2005	Nutr	Ammonia	<0.005	mg/L as N
INL	MV-37	MV-37	20080618	6/18/2008	Nutr	Ammonia	<0.01	mg/L as N
INL	MV-37	MV-37	20110622	6/22/2011	Nutr	Ammonia	0.011	mg/L as N
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Nutr	Nitrate	1.3	mg/l as N
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Nutr	Nitrate	1.56	mg/l as N
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Nutr	Nitrate	1.6	mg/l as N
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Nutr	Nitrate	2.2	mg/l as N
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Nutr	Nitrate	1.7	mg/l as N
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Nutr	Nitrate	1.89	mg/l as N
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Nutr	Nitrate	13	mg/l as N
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Nutr	Nitrate	14.5	mg/l as N
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Nutr	Nitrate	17.2	mg/l as N
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Nutr	Nitrate	20.6	mg/l as N
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Nutr	Nitrate	11.2	mg/l as N
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Nutr	Nitrate	6.88	mg/l as N
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Nutr	Nitrate	8.96	mg/l as N
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Nutr	Nitrate	6.61	mg/l as N
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Nutr	Nitrate	9.11	mg/l as N
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Nutr	Nitrate	10	mg/l as N
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Nutr	Nitrate	9.43	mg/l as N
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Nutr	Nitrate	11.8	mg/l as N
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Nutr	Nitrate	12.2	mg/l as N
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Nutr	Nitrate	17.9	mg/l as N
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Nutr	Nitrate	10.9	mg/l as N
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Nutr	Nitrate	2.34	mg/L as N
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Nutr	Nitrate	1.52	mg/L as N
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Nutr	Nitrate	1.72	mg/L as N
IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Nutr	Nitrate	1.21	mg/L as N
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Nutr	Nitrate	2.56	mg/L as N
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Nutr	Nitrate	1.38	mg/L as N
IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Nutr	Nitrate	1.62	mg/L as N
IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Nutr	Nitrate	1.7	mg/L as N
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Nutr	Nitrate	2.16	mg/L as N
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Nutr	Nitrate	1.91	mg/L as N
IDEQ	1130	IDEQ-GW-1130	20031022	10/22/2003	Nutr	Nitrate	9	mg/L as N
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Nutr	Nitrate	1.72	mg/l as N
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Nutr	Nitrate	2.18	mg/l as N
ISDA	7202201	ISDA-7202201	19970422	4/22/1997	Nutr	Nitrate	22	mg/l as N
ISDA	7504601	ISDA-7504601	19970818	8/18/1997	Nutr	Nitrate	2.7	mg/l as N
ISDA	7504601	ISDA-7504601	19980911	9/11/1998	Nutr	Nitrate	2.53	mg/l as N
ISDA	7504601	ISDA-7504601	19990713	7/13/1999	Nutr	Nitrate	1.8	mg/l as N
ISDA	7504601	ISDA-7504601	20000619	6/19/2000	Nutr	Nitrate	2.26	mg/l as N
ISDA	7504601	ISDA-7504601	20010613	6/13/2001	Nutr	Nitrate	3.17	mg/l as N
ISDA	7504601	ISDA-7504601	20020626	6/26/2002	Nutr	Nitrate	1.8	mg/l as N
ISDA	7504601	ISDA-7504601	20030707	7/7/2003	Nutr	Nitrate	2	mg/l as N
ISDA	7504601	ISDA-7504601	20040701	7/1/2004	Nutr	Nitrate	2	mg/l as N
ISDA	7504601	ISDA-7504601	20050630	6/30/2005	Nutr	Nitrate	2.1	mg/l as N
ISDA	7504601	ISDA-7504601	20060613	6/13/2006	Nutr	Nitrate	1.7	mg/l as N

ISDA	7504601	ISDA-7504601	20070614	6/14/2007	Nutr	Nitrate	2	mg/l as N
ISDA	7504601	ISDA-7504601	20080619	6/19/2008	Nutr	Nitrate	1.5	mg/l as N
ISDA	7505701	ISDA-7505701	19970819	8/19/1997	Nutr	Nitrate	3.1	mg/l as N
ISDA	7505701	ISDA-7505701	19980909	9/9/1998	Nutr	Nitrate	2.98	mg/l as N
ISDA	7505701	ISDA-7505701	19990713	7/13/1999	Nutr	Nitrate	1.9	mg/l as N
ISDA	7505701	ISDA-7505701	20000619	6/19/2000	Nutr	Nitrate	2.06	mg/l as N
ISDA	7505701	ISDA-7505701	20010613	6/13/2001	Nutr	Nitrate	2.75	mg/l as N
ISDA	7505701	ISDA-7505701	20020530	5/30/2002	Nutr	Nitrate	1.5	mg/l as N
ISDA	7505701	ISDA-7505701	20030626	6/26/2003	Nutr	Nitrate	1.6	mg/l as N
ISDA	7505701	ISDA-7505701	20040701	7/1/2004	Nutr	Nitrate	1.5	mg/l as N
ISDA	7505701	ISDA-7505701	20050630	6/30/2005	Nutr	Nitrate	1.5	mg/l as N
ISDA	7505701	ISDA-7505701	20060613	6/13/2006	Nutr	Nitrate	1.4	mg/l as N
ISDA	7505701	ISDA-7505701	20070619	6/19/2007	Nutr	Nitrate	1.7	mg/l as N
ISDA	7505701	ISDA-7505701	20080618	6/18/2008	Nutr	Nitrate	1.6	mg/l as N
ISDA	7505801	ISDA-7505801	19970819	8/19/1997	Nutr	Nitrate	3.2	mg/l as N
ISDA	7505801	ISDA-7505801	19980922	9/22/1998	Nutr	Nitrate	1.97	mg/l as N
ISDA	7505801	ISDA-7505801	19990713	7/13/1999	Nutr	Nitrate	1.8	mg/l as N
ISDA	7505801	ISDA-7505801	20000607	6/7/2000	Nutr	Nitrate	2.64	mg/l as N
ISDA	7505801	ISDA-7505801	20010613	6/13/2001	Nutr	Nitrate	3.25	mg/l as N
ISDA	7505801	ISDA-7505801	20020530	5/30/2002	Nutr	Nitrate	1.7	mg/l as N
ISDA	7505801	ISDA-7505801	20030626	6/26/2003	Nutr	Nitrate	1.1	mg/l as N
ISDA	7505801	ISDA-7505801	20040701	7/1/2004	Nutr	Nitrate	1.8	mg/l as N
ISDA	7505801	ISDA-7505801	20050630	6/30/2005	Nutr	Nitrate	1.6	mg/l as N
ISDA	7505801	ISDA-7505801	20060613	6/13/2006	Nutr	Nitrate	2.2	mg/l as N
ISDA	7505801	ISDA-7505801	20070626	6/26/2007	Nutr	Nitrate	2	mg/l as N
ISDA	7505801	ISDA-7505801	20080618	6/18/2008	Nutr	Nitrate	1.9	mg/l as N
ISDA	7505901	ISDA-7505901	19970819	8/19/1997	Nutr	Nitrate	2	mg/l as N
ISDA	7505901	ISDA-7505901	19980930	9/30/1998	Nutr	Nitrate	2.63	mg/l as N
ISDA	7505901	ISDA-7505901	19990713	7/13/1999	Nutr	Nitrate	2	mg/l as N
ISDA	7505901	ISDA-7505901	20000619	6/19/2000	Nutr	Nitrate	2.44	mg/l as N
ISDA	7505901	ISDA-7505901	20010613	6/13/2001	Nutr	Nitrate	3.06	mg/l as N
ISDA	7505901	ISDA-7505901	20020530	5/30/2002	Nutr	Nitrate	1.6	mg/l as N
ISDA	7505901	ISDA-7505901	20030626	6/26/2003	Nutr	Nitrate	1.9	mg/l as N
ISDA	7505901	ISDA-7505901	20040701	7/1/2004	Nutr	Nitrate	1.9	mg/l as N
ISDA	7505901	ISDA-7505901	20050630	6/30/2005	Nutr	Nitrate	1.8	mg/l as N
ISDA	7505901	ISDA-7505901	20060613	6/13/2006	Nutr	Nitrate	2	mg/l as N
ISDA	7505901	ISDA-7505901	20070626	6/26/2007	Nutr	Nitrate	2.2	mg/l as N
ISDA	7505901	ISDA-7505901	20080618	6/18/2008	Nutr	Nitrate	2	mg/l as N
ISDA	8800801	ISDA-8800801	20000814	8/14/2000	Nutr	Nitrate	2.36	mg/l as N
ISDA	9200101	ISDA-9200101	20000906	9/6/2000	Nutr	Nitrate	2.2	mg/l as N
ISDA	9200201	ISDA-9200201	20000906	9/6/2000	Nutr	Nitrate	1.9	mg/l as N
ISDA	9200301	ISDA-9200301	20000906	9/6/2000	Nutr	Nitrate	1.5	mg/l as N
ISDA	9200401	ISDA-9200401	20000907	9/7/2000	Nutr	Nitrate	2	mg/l as N
ISDA	9200501	ISDA-9200501	20000907	9/7/2000	Nutr	Nitrate	1.7	mg/l as N
ISDA	9200601	ISDA-9200601	20000907	9/7/2000	Nutr	Nitrate	6.3	mg/l as N
ISDA	9200701	ISDA-9200701	20000907	9/7/2000	Nutr	Nitrate	1.4	mg/l as N
ISDA	9200801	ISDA-9200801	20000906	9/6/2000	Nutr	Nitrate	3.4	mg/l as N
ISDA	9201001	ISDA-9201001	20000906	9/6/2000	Nutr	Nitrate	29	mg/l as N
ISDA	9201101	ISDA-9201101	20000906	9/6/2000	Nutr	Nitrate	1.7	mg/l as N
ISDA	9202101	ISDA-9202101	20000912	9/12/2000	Nutr	Nitrate	2.2	mg/l as N
ISDA	9202201	ISDA-9202201	20000912	9/12/2000	Nutr	Nitrate	1.9	mg/l as N
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Nutr	Nitrite	<0.010	mg/l as N
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Nutr	Nitrite	<0.010	mg/l as N

IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Nutr	Nitrite	<0.010	mg/l as N
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Nutr	Nitrite	<0.010	mg/l as N
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Nutr	Nitrite	<0.010	mg/l as N
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Nutr	Nitrite	<0.010	mg/l as N
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Nutr	Nitrite	<0.010	mg/l as N
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Nutr	Nitrite	<0.010	mg/l as N
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Nutr	Nitrite	<.010	mg/l as N
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Nutr	Nitrite	<0.010	mg/l as N
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Nutr	Nitrite	E0.004	mg/l as N
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Nutr	Nitrite	<0.008	mg/l as N
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Nutr	Nitrite	<0.008	mg/l as N
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Nutr	Nitrite	<0.008	mg/l as N
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Nutr	Nitrite	<0.008	mg/l as N
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Nutr	Nitrite	<0.002	mg/l as N
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Nutr	Nitrite	<0.002	mg/l as N
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Nutr	Nitrite	<0.002	mg/l as N
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Nutr	Nitrite	<0.002	mg/l as N
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Nutr	Nitrite	<0.002	mg/l as N
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Nutr	Nitrite	E0.003	mg/l as N
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Nutr	Nitrite	<0.002	mg/l as N
ISDA	7504601	ISDA-7504601	19970818	8/18/1997	Nutr	Nitrite	ND	mg/l as N
ISDA	7504601	ISDA-7504601	19980911	9/11/1998	Nutr	Nitrite	ND	mg/l as N
ISDA	7504601	ISDA-7504601	19990713	7/13/1999	Nutr	Nitrite	ND	mg/l as N
ISDA	7504601	ISDA-7504601	20000619	6/19/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	7504601	ISDA-7504601	20010613	6/13/2001	Nutr	Nitrite	ND	mg/l as N
ISDA	7504601	ISDA-7504601	20020626	6/26/2002	Nutr	Nitrite	ND	mg/l as N
ISDA	7504601	ISDA-7504601	20030707	7/7/2003	Nutr	Nitrite	ND	mg/l as N
ISDA	7504601	ISDA-7504601	20040701	7/1/2004	Nutr	Nitrite	ND	mg/l as N
ISDA	7504601	ISDA-7504601	20050630	6/30/2005	Nutr	Nitrite	ND	mg/l as N
ISDA	7504601	ISDA-7504601	20060613	6/13/2006	Nutr	Nitrite	ND	mg/l as N
ISDA	7504601	ISDA-7504601	20070614	6/14/2007	Nutr	Nitrite	ND	mg/l as N
ISDA	7504601	ISDA-7504601	20080619	6/19/2008	Nutr	Nitrite	ND	mg/l as N
ISDA	7505701	ISDA-7505701	19970819	8/19/1997	Nutr	Nitrite	ND	mg/l as N
ISDA	7505701	ISDA-7505701	19980909	9/9/1998	Nutr	Nitrite	ND	mg/l as N
ISDA	7505701	ISDA-7505701	19990713	7/13/1999	Nutr	Nitrite	ND	mg/l as N
ISDA	7505701	ISDA-7505701	20000619	6/19/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	7505701	ISDA-7505701	20010613	6/13/2001	Nutr	Nitrite	ND	mg/l as N
ISDA	7505701	ISDA-7505701	20020530	5/30/2002	Nutr	Nitrite	ND	mg/l as N
ISDA	7505701	ISDA-7505701	20030626	6/26/2003	Nutr	Nitrite	ND	mg/l as N
ISDA	7505701	ISDA-7505701	20040701	7/1/2004	Nutr	Nitrite	ND	mg/l as N
ISDA	7505701	ISDA-7505701	20050630	6/30/2005	Nutr	Nitrite	ND	mg/l as N
ISDA	7505701	ISDA-7505701	20060613	6/13/2006	Nutr	Nitrite	ND	mg/l as N
ISDA	7505701	ISDA-7505701	20070619	6/19/2007	Nutr	Nitrite	ND	mg/l as N
ISDA	7505701	ISDA-7505701	20080618	6/18/2008	Nutr	Nitrite	ND	mg/l as N
ISDA	7505801	ISDA-7505801	19970819	8/19/1997	Nutr	Nitrite	ND	mg/l as N
ISDA	7505801	ISDA-7505801	19980922	9/22/1998	Nutr	Nitrite	ND	mg/l as N
ISDA	7505801	ISDA-7505801	19990713	7/13/1999	Nutr	Nitrite	ND	mg/l as N
ISDA	7505801	ISDA-7505801	20000607	6/7/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	7505801	ISDA-7505801	20010613	6/13/2001	Nutr	Nitrite	ND	mg/l as N
ISDA	7505801	ISDA-7505801	20020530	5/30/2002	Nutr	Nitrite	ND	mg/l as N
ISDA	7505801	ISDA-7505801	20030626	6/26/2003	Nutr	Nitrite	ND	mg/l as N
ISDA	7505801	ISDA-7505801	20040701	7/1/2004	Nutr	Nitrite	ND	mg/l as N
ISDA	7505801	ISDA-7505801	20050630	6/30/2005	Nutr	Nitrite	ND	mg/l as N

ISDA	7505801	ISDA-7505801	20060613	6/13/2006	Nutr	Nitrite	ND	mg/l as N
ISDA	7505801	ISDA-7505801	20070626	6/26/2007	Nutr	Nitrite	ND	mg/l as N
ISDA	7505801	ISDA-7505801	20080618	6/18/2008	Nutr	Nitrite	ND	mg/l as N
ISDA	7505901	ISDA-7505901	19970819	8/19/1997	Nutr	Nitrite	ND	mg/l as N
ISDA	7505901	ISDA-7505901	19980930	9/30/1998	Nutr	Nitrite	ND	mg/l as N
ISDA	7505901	ISDA-7505901	19990713	7/13/1999	Nutr	Nitrite	ND	mg/l as N
ISDA	7505901	ISDA-7505901	20000619	6/19/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	7505901	ISDA-7505901	20010613	6/13/2001	Nutr	Nitrite	ND	mg/l as N
ISDA	7505901	ISDA-7505901	20020530	5/30/2002	Nutr	Nitrite	ND	mg/l as N
ISDA	7505901	ISDA-7505901	20030626	6/26/2003	Nutr	Nitrite	ND	mg/l as N
ISDA	7505901	ISDA-7505901	20040701	7/1/2004	Nutr	Nitrite	ND	mg/l as N
ISDA	7505901	ISDA-7505901	20050630	6/30/2005	Nutr	Nitrite	ND	mg/l as N
ISDA	7505901	ISDA-7505901	20060613	6/13/2006	Nutr	Nitrite	ND	mg/l as N
ISDA	7505901	ISDA-7505901	20070626	6/26/2007	Nutr	Nitrite	ND	mg/l as N
ISDA	7505901	ISDA-7505901	20080618	6/18/2008	Nutr	Nitrite	ND	mg/l as N
ISDA	8800801	ISDA-8800801	20000814	8/14/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	9200101	ISDA-9200101	20000906	9/6/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	9200201	ISDA-9200201	20000906	9/6/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	9200301	ISDA-9200301	20000906	9/6/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	9200401	ISDA-9200401	20000907	9/7/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	9200501	ISDA-9200501	20000907	9/7/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	9200601	ISDA-9200601	20000907	9/7/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	9200701	ISDA-9200701	20000907	9/7/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	9200801	ISDA-9200801	20000906	9/6/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	9201001	ISDA-9201001	20000906	9/6/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	9201101	ISDA-9201101	20000906	9/6/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	9202101	ISDA-9202101	20000912	9/12/2000	Nutr	Nitrite	ND	mg/l as N
ISDA	9202201	ISDA-9202201	20000912	9/12/2000	Nutr	Nitrite	ND	mg/l as N
INL	MV-37	MV-37	20050721	7/21/2005	Nutr	Nitrogen, Inorganic	1.55	mg/L as N
INL	MV-37	MV-37	20080618	6/18/2008	Nutr	Nitrogen, Inorganic	1.8	mg/L as N
INL	MV-37	MV-37	20110622	6/22/2011	Nutr	Nitrogen, Inorganic	1.8	mg/L as N
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Nutr	Phosphate, ortho	0.03	mg/l as P
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Nutr	Phosphate, ortho	0.031	mg/l as P
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Nutr	Phosphate, ortho	0.05	mg/l as P
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Nutr	Phosphate, ortho	0.05	mg/l as P
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Nutr	Phosphate, ortho	0.05	mg/l as P
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Nutr	Phosphate, ortho	0.047	mg/l as P
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Nutr	Phosphate, ortho	0.09	mg/l as P
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Nutr	Phosphate, ortho	0.093	mg/l as P
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Nutr	Phosphate, ortho	0.076	mg/l as P
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Nutr	Phosphate, ortho	0.072	mg/l as P
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Nutr	Phosphate, ortho	0.051	mg/l as P
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Nutr	Phosphate, ortho	0.044	mg/l as P
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Nutr	Phosphate, ortho	0.05	mg/l as P
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Nutr	Phosphate, ortho	0.05	mg/l as P
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Nutr	Phosphate, ortho	0.04	mg/l as P
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Nutr	Phosphate, ortho	0.05	mg/l as P
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Nutr	Phosphate, ortho	0.061	mg/l as P
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Nutr	Phosphate, ortho	0.063	mg/l as P
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Nutr	Phosphate, ortho	0.192	mg/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Nutr	Phosphate, ortho	0.17	mg/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Nutr	Phosphate, ortho	0.055	mg/l as P
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Nutr	Phosphate, ortho	0.186	mg/l

IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Nutr	Phosphate, ortho	0.061	mg/l as P
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Nutr	Phosphate, ortho	0.07	mg/l as P
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Nutr	Phosphate, ortho	0.05	mg/l as P
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Nutr	Phosphate, ortho	0.081	mg/l as P
ISDA	7504601	ISDA-7504601	19970818	8/18/1997	Nutr	Phosphate, ortho	0.23	mg/l as P
ISDA	7504601	ISDA-7504601	19980911	9/11/1998	Nutr	Phosphate, ortho	0.29	mg/l as P
ISDA	7504601	ISDA-7504601	19990713	7/13/1999	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7504601	ISDA-7504601	20000619	6/19/2000	Nutr	Phosphate, ortho	0.42	mg/l as P
ISDA	7504601	ISDA-7504601	20010613	6/13/2001	Nutr	Phosphate, ortho	0.39	mg/l as P
ISDA	7504601	ISDA-7504601	20020626	6/26/2002	Nutr	Phosphate, ortho	BDL	mg/l as P
ISDA	7504601	ISDA-7504601	20030707	7/7/2003	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7504601	ISDA-7504601	20040701	7/1/2004	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7504601	ISDA-7504601	20050630	6/30/2005	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7504601	ISDA-7504601	20060613	6/13/2006	Nutr	Phosphate, ortho	BDL	mg/l as P
ISDA	7504601	ISDA-7504601	20070614	6/14/2007	Nutr	Phosphate, ortho	BDL	mg/l as P
ISDA	7504601	ISDA-7504601	20080619	6/19/2008	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505701	ISDA-7505701	19970819	8/19/1997	Nutr	Phosphate, ortho	0.05	mg/l as P
ISDA	7505701	ISDA-7505701	19980909	9/9/1998	Nutr	Phosphate, ortho	0.32	mg/l as P
ISDA	7505701	ISDA-7505701	19990713	7/13/1999	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505701	ISDA-7505701	20000619	6/19/2000	Nutr	Phosphate, ortho	0.25	mg/l as P
ISDA	7505701	ISDA-7505701	20010613	6/13/2001	Nutr	Phosphate, ortho	0.37	mg/l as P
ISDA	7505701	ISDA-7505701	20020530	5/30/2002	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505701	ISDA-7505701	20030626	6/26/2003	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505701	ISDA-7505701	20040701	7/1/2004	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505701	ISDA-7505701	20050630	6/30/2005	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505701	ISDA-7505701	20060613	6/13/2006	Nutr	Phosphate, ortho	BDL	mg/l as P
ISDA	7505701	ISDA-7505701	20070619	6/19/2007	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505701	ISDA-7505701	20080618	6/18/2008	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505801	ISDA-7505801	19970819	8/19/1997	Nutr	Phosphate, ortho	0.19	mg/l as P
ISDA	7505801	ISDA-7505801	19980922	9/22/1998	Nutr	Phosphate, ortho	0.27	mg/l as P
ISDA	7505801	ISDA-7505801	19990713	7/13/1999	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505801	ISDA-7505801	20000607	6/7/2000	Nutr	Phosphate, ortho	0.18	mg/l as P
ISDA	7505801	ISDA-7505801	20010613	6/13/2001	Nutr	Phosphate, ortho	0.32	mg/l as P
ISDA	7505801	ISDA-7505801	20020530	5/30/2002	Nutr	Phosphate, ortho	BDL	mg/l as P
ISDA	7505801	ISDA-7505801	20030626	6/26/2003	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505801	ISDA-7505801	20040701	7/1/2004	Nutr	Phosphate, ortho	BDL	mg/l as P
ISDA	7505801	ISDA-7505801	20050630	6/30/2005	Nutr	Phosphate, ortho	BDL	mg/l as P
ISDA	7505801	ISDA-7505801	20060613	6/13/2006	Nutr	Phosphate, ortho	BDL	mg/l as P
ISDA	7505801	ISDA-7505801	20070626	6/26/2007	Nutr	Phosphate, ortho	BDL	mg/l as P
ISDA	7505801	ISDA-7505801	20080618	6/18/2008	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505901	ISDA-7505901	19970819	8/19/1997	Nutr	Phosphate, ortho	0.28	mg/l as P
ISDA	7505901	ISDA-7505901	19980930	9/30/1998	Nutr	Phosphate, ortho	0.2	mg/l as P
ISDA	7505901	ISDA-7505901	19990713	7/13/1999	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505901	ISDA-7505901	20000619	6/19/2000	Nutr	Phosphate, ortho	0.3	mg/l as P
ISDA	7505901	ISDA-7505901	20010613	6/13/2001	Nutr	Phosphate, ortho	0.32	mg/l as P
ISDA	7505901	ISDA-7505901	20020530	5/30/2002	Nutr	Phosphate, ortho	0.13	mg/l as P
ISDA	7505901	ISDA-7505901	20030626	6/26/2003	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505901	ISDA-7505901	20040701	7/1/2004	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505901	ISDA-7505901	20050630	6/30/2005	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505901	ISDA-7505901	20060613	6/13/2006	Nutr	Phosphate, ortho	BDL	mg/l as P
ISDA	7505901	ISDA-7505901	20070626	6/26/2007	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	7505901	ISDA-7505901	20080618	6/18/2008	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	8800801	ISDA-8800801	20000814	8/14/2000	Nutr	Phosphate, ortho	0.42	mg/l as P

ISDA	9200101	ISDA-9200101	20000906	9/6/2000	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	9200201	ISDA-9200201	20000906	9/6/2000	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	9200301	ISDA-9200301	20000906	9/6/2000	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	9200401	ISDA-9200401	20000907	9/7/2000	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	9200501	ISDA-9200501	20000907	9/7/2000	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	9200601	ISDA-9200601	20000907	9/7/2000	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	9200701	ISDA-9200701	20000907	9/7/2000	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	9200801	ISDA-9200801	20000906	9/6/2000	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	9201001	ISDA-9201001	20000906	9/6/2000	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	9201101	ISDA-9201101	20000906	9/6/2000	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	9202101	ISDA-9202101	20000912	9/12/2000	Nutr	Phosphate, ortho	ND	mg/l as P
ISDA	9202201	ISDA-9202201	20000912	9/12/2000	Nutr	Phosphate, ortho	ND	mg/l as P
INL	MV-37	MV-37	20050721	7/21/2005	Nutr	Phosphorus	0.058	mg/L as P
INL	MV-37	MV-37	20080618	6/18/2008	Nutr	Phosphorus	0.06	mg/L as P
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	1-Methylnaphthalene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	2,6-Dimethylnaphthalene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	2-Methylnaphthalene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	3-Methyl-1H-indole	<1	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	3-tert-Butyl-4-hydroxyanis	<5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	4-Cumylphenol	<1	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	4-Nonylphenol	<5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	4-Octylphenol	<1	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	4-tert-Octylphenol	<1	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	5-Methyl-1H-benzotriazole	<2	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	9,10-Anthraquinone	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Acetophenone	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Acetyl hexamethyl tetrahy	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Anthracene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Benzo[a]pyrene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Benzophenone	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Bisphenol A	<1	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Caffeine	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Camphor	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Carbazole	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Cotinine	<1	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Diethoxynonylphenol	<5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Diethoxyoctylphenol	<1	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	D-Limonene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Ethoxyoctylphenol	<1	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Fluoranthene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Hexahydrohexamethyl cyc	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Indole	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Isoborneol	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Isophorone	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Isoquinoline	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Menthol	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Methyl salicylate	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	p-Cresol	<1	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Phenanthrene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Phenol	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Pyrene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Tributyl phosphate	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Triclosan	<1	ug/L

IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Triethyl citrate	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Triphenyl phosphate	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Tris(2-butoxyethyl) phospl	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Tris(2-chloroethyl) phosph	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Org	Tris(dichloroisopropyl) phc	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	2,4-D	ND	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Pest	2,4-D	ND	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	2,4-D	ND	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Pest	2,4-D	ND	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Pest	2,4-D	ND	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	2,4-D	ND	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	Pest	2,4-D	ND	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	Pest	2,4-D	ND	ug/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Pest	2,4-D	ND	ug/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Pest	2,4-D	ND	ug/L
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Pest	2,4-D	ND	ug/l
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Pest	2,4-D	ND	ug/L
INL	MV-37	MV-37	20050721	7/21/2005	Pest	2,4-D	<0.7	ug/L
INL	MV-37	MV-37	20080618	6/18/2008	Pest	2,4-D	<1	ug/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Pest	Acetochlor	ND	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Pest	Acetochlor	ND	ug/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Pest	Acetochlor	ND	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	Alachlor	<0.4	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	Alachlor	ND	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Pest	Alachlor	ND	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	Alachlor	<0.4	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	Alachlor	ND	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Alachlor	<0.002	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Alachlor	ND	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	Pest	Alachlor	0.1	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	Pest	Alachlor	0.08	ug/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Pest	Alachlor	ND	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Pest	Alachlor	ND	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Pest	Alachlor	ND	ug/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Pest	Alachlor	ND	ug/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Pest	Alachlor	ND	ug/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Pest	Alachlor	ND	ug/L
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Pest	Alachlor	ND	ug/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Pest	Alachlor	ND	ug/L
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Pest	Alachlor	ND	ug/L
INL	MV-37	MV-37	20050721	7/21/2005	Pest	Alachlor	<0.042	ug/L
INL	MV-37	MV-37	20080618	6/18/2008	Pest	Alachlor	<0.1	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	Aldicarb	ND	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Pest	Aldicarb	ND	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	Aldicarb	ND	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Pest	Aldicarb	ND	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Pest	Aldicarb	ND	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Aldicarb	ND	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	Pest	Aldicarb	ND	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	Pest	Aldicarb	ND	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Pest	Aldicarb	ND	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Pest	Aldicarb	ND	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Pest	Aldicarb	ND	ug/L

IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	Atrazine	<0.2	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	Atrazine	ND	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Pest	Atrazine	ND	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	Atrazine	<0.2	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	Atrazine	ND	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Pest	Atrazine	ND	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Pest	Atrazine	0.11	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Atrazine	0.108	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Atrazine	0.4	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	Pest	Atrazine	0.126	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	Pest	Atrazine	0.36	ug/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Pest	Atrazine	ND	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Pest	Atrazine	0.22	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Pest	Atrazine	0.07	ug/L
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Pest	Atrazine	ND	ug/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Pest	Atrazine	0.07	ug/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Pest	Atrazine	0.14	ug/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Pest	Atrazine	0.1	ug/L
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Pest	Atrazine	0.1	ug/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Pest	Atrazine	ND	ug/L
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Pest	Atrazine	ND	ug/L
ISDA	7202201	ISDA-7202201	19970422	4/22/1997	Pest	Atrazine	0.018	ug/l
ISDA	7504601	ISDA-7504601	19970818	8/18/1997	Pest	Atrazine	0.004	ug/l
ISDA	7505701	ISDA-7505701	19970819	8/19/1997	Pest	Atrazine	0.004	ug/l
ISDA	7505801	ISDA-7505801	19970819	8/19/1997	Pest	Atrazine	0.009	ug/l
ISDA	7505901	ISDA-7505901	19970819	8/19/1997	Pest	Atrazine	0.008	ug/l
INL	MV-37	MV-37	20050721	7/21/2005	Pest	Atrazine	<0.05	ug/L
INL	MV-37	MV-37	20080618	6/18/2008	Pest	Atrazine	<0.1	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Atrazine, desethyl	0.287	ug/L
ISDA	7202201	ISDA-7202201	19970422	4/22/1997	Pest	Atrazine, desethyl	0.021	ug/l
ISDA	7504601	ISDA-7504601	19970818	8/18/1997	Pest	Atrazine, desethyl	0.011	ug/l
ISDA	7504601	ISDA-7504601	20030707	7/7/2003	Pest	Atrazine, desethyl	0.027	ug/l
ISDA	7505701	ISDA-7505701	19970819	8/19/1997	Pest	Atrazine, desethyl	0.023	ug/l
ISDA	7505701	ISDA-7505701	20030626	6/26/2003	Pest	Atrazine, desethyl	0.029	ug/l
ISDA	7505701	ISDA-7505701	20070619	6/19/2007	Pest	Atrazine, desethyl	0.026	ug/l
ISDA	7505801	ISDA-7505801	19970819	8/19/1997	Pest	Atrazine, desethyl	0.025	ug/l
ISDA	7505801	ISDA-7505801	20070626	6/26/2007	Pest	Atrazine, desethyl	0.041	ug/l
ISDA	7505801	ISDA-7505801	20100624	6/24/2010	Pest	Atrazine, desethyl	0.04	ug/l
ISDA	7505901	ISDA-7505901	19970819	8/19/1997	Pest	Atrazine, desethyl	0.019	ug/l
ISDA	7505901	ISDA-7505901	20030626	6/26/2003	Pest	Atrazine, desethyl	0.027	ug/l
ISDA	7505901	ISDA-7505901	20070626	6/26/2007	Pest	Atrazine, desethyl	0.036	ug/l
ISDA	7505901	ISDA-7505901	20100630	6/30/2010	Pest	Atrazine, desethyl	0.035	ug/l
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Benefin	<0.002	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	BHC, alpha-	<0.002	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	BHC, gamma- (Lindane)	<0.004	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	Bromacil	<2.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	Bromacil	<2.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Pest	Bromacil	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Carbaryl (Sevin)	<0.003	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Pest	Carbaryl (Sevin)	<1	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	Carbofuran	ND	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Pest	Carbofuran	ND	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	Carbofuran	ND	ug/L

IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Carbofuran	<0.003	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Carbofuran	ND	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	Pest	Carbofuran	ND	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	Pest	Carbofuran	ND	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Pest	Carbofuran	ND	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Pest	Carbofuran	ND	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Pest	Carbofuran	ND	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Chlorpyrifos	<0.004	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	Pest	Chlorpyrifos	ND	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Pest	Chlorpyrifos	ND	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Pest	Chlorpyrifos	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Pest	Cyanazine	ND	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Cyanazine	<0.004	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Cyanazine	ND	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	Pest	Cyanazine	ND	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	Pest	Cyanazine	ND	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Pest	Cyanazine	ND	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Dacthal (DCPA)	<0.002	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	DDE,4,4'-	<0.006	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Pest	DEET	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Diazinon	<0.002	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Pest	Diazinon	<0.5	ug/L
ISDA	7505801	ISDA-7505801	19990713	7/13/1999	Pest	Diazinon	0.81	ug/l
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Pest	Dichlorvos	<1	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Dieldrin	<0.001	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Diethylaniline,2,6-	<0.003	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	Disulfoton	<0.3	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	Disulfoton	<0.3	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Disulfoton	<0.017	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Dyfonate	<0.003	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	EPTC	<0.3	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	EPTC	<0.3	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	EPTC	<0.002	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Ethalfluralin	<0.004	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	Ethoprop	<0.2	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	Ethoprop	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Ethoprop	<0.003	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Guthion	<0.001	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Linuron	<0.002	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Malathion	<0.005	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Pest	Metalaxyl	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	Metolachlor	<0.8	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	Metolachlor	ND	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Pest	Metolachlor	ND	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	Metolachlor	<0.8	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	Metolachlor	ND	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Metolachlor	<0.002	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Metolachlor	ND	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	Pest	Metolachlor	ND	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	Pest	Metolachlor	ND	ug/L
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Pest	Metolachlor	ND	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Pest	Metolachlor	ND	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Pest	Metolachlor	ND	ug/L

IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Pest	Metolachlor	ND	ug/L
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Pest	Metolachlor	ND	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Pest	Metolachlor	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Pest	Metolachlor	ND	ug/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Pest	Metolachlor	ND	ug/L
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Pest	Metolachlor	ND	ug/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Pest	Metolachlor	ND	ug/L
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Pest	Metolachlor	ND	ug/L
INL	MV-37	MV-37	20050721	7/21/2005	Pest	Metolachlor	<0.074	ug/L
INL	MV-37	MV-37	20080618	6/18/2008	Pest	Metolachlor	<0.1	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	Metribuzin	<0.2	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Pest	Metribuzin	ND	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	Metribuzin	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Metribuzin	<0.004	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Metribuzin	ND	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	Pest	Metribuzin	ND	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	Pest	Metribuzin	ND	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Pest	Metribuzin	ND	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Pest	Metribuzin	ND	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Pest	Metribuzin	ND	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Molinate	<0.004	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Napropamide	<0.003	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Parathion	<0.004	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Parathion-methyl	<0.006	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Pebulate	<0.004	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Penoxalin	<0.004	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Pest	Pentachlorophenol (PCP)	<2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Permethrin	<0.005	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Phorate	<0.002	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Pest	Prometon	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Pronamide	<0.003	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Propachlor	<0.007	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Propanil	<0.004	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Propargite	<0.013	ug/L
ISDA	7202201	ISDA-7202201	19970422	4/22/1997	Pest	Propazine	0.004	ug/l
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Pest	Simazine	ND	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Simazine	ND	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Simazine	0.004	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	Pest	Simazine	0.06	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	Pest	Simazine	0.15	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Tebuthiuron	<0.010	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Terbacil	<0.007	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Pest	Terbufos	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Pest	Terbufos	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Terbufos	<0.013	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Thiobencarb	<0.002	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Triallate	<0.001	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	Pest	Trifluralin	<0.002	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Phys	Air Temperature	23.5	Â°C
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Phys	Air Temperature	15	Â°C
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Phys	Air Temperature	29	Â°C
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Phys	Air Temperature	19.5	Â°C
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Phys	Air Temperature	24	Â°C

IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Phys	Air Temperature	24	Â°C
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Phys	Air Temperature	22	Â°C
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Phys	Air Temperature	29	Â°C
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Phys	Air Temperature	21.5	Â°C
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Phys	Air Temperature	32	Â°C
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Phys	Air Temperature	29	Â°C
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Phys	Air Temperature	24	Â°C
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Phys	Air Temperature	29	Â°C
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Phys	Air Temperature	26	Â°C
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Phys	Air Temperature	19	Â°C
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Phys	Air Temperature	26	Â°C
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Phys	Air Temperature	28	Â°C
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Phys	Air Temperature	27	Â°C
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Phys	Depth to Water	198.18	ft
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Phys	Depth to Water	125.19	ft
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Phys	Depth to Water	127.89	ft
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Phys	Depth to Water	133.8	ft
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Phys	Depth to Water	129	ft
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Phys	pH	7.9	pH
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Phys	pH	7.4	pH
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Phys	pH	7.2	pH
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Phys	pH	7.62	pH
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Phys	pH	7.55	pH
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Phys	pH	7.4	pH
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Phys	pH	7.27	pH
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Phys	pH	7.1	pH
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Phys	pH	7.1	pH
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Phys	pH	7.2	pH
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Phys	pH	7	pH
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Phys	pH	7.2	pH
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Phys	pH	7	ph
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Phys	pH	7.2	pH
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Phys	pH	7.2	pH
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Phys	pH	7.2	pH
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Phys	pH	7.7	pH
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Phys	pH	7	pH
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Phys	pH	7.1	pH
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Phys	pH	7	pH
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Phys	pH	7	pH
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Phys	pH	7.43	pH
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Phys	pH	10.56	pH
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Phys	pH	7.62	pH
IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Phys	pH	7.52	pH
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Phys	pH	7.59	pH
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Phys	pH	7.73	pH
IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Phys	pH	7.61	pH
IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Phys	pH	8.07	pH
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Phys	pH	8.65	pH
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Phys	pH	7.68	pH
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Phys	pH	7.2	pH
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Phys	pH	7.1	pH
ISDA	7202201	ISDA-7202201	19970422	4/22/1997	Phys	pH	7.29	pH
ISDA	7504601	ISDA-7504601	19970818	8/18/1997	Phys	pH	7.44	pH

ISDA	7504601	ISDA-7504601	19980911	9/11/1998	Phys	pH	7.64	pH
ISDA	7504601	ISDA-7504601	19990713	7/13/1999	Phys	pH	7.38	pH
ISDA	7504601	ISDA-7504601	20000619	6/19/2000	Phys	pH	7.29	pH
ISDA	7504601	ISDA-7504601	20010613	6/13/2001	Phys	pH	7.6	pH
ISDA	7504601	ISDA-7504601	20020626	6/26/2002	Phys	pH	7.06	pH
ISDA	7504601	ISDA-7504601	20030707	7/7/2003	Phys	pH	6.93	pH
ISDA	7504601	ISDA-7504601	20040701	7/1/2004	Phys	pH	7.36	pH
ISDA	7504601	ISDA-7504601	20050630	6/30/2005	Phys	pH	7.44	pH
ISDA	7504601	ISDA-7504601	20060613	6/13/2006	Phys	pH	7.79	pH
ISDA	7504601	ISDA-7504601	20070614	6/14/2007	Phys	pH	7.65	pH
ISDA	7504601	ISDA-7504601	20080619	6/19/2008	Phys	pH	7.82	pH
ISDA	7505701	ISDA-7505701	19970819	8/19/1997	Phys	pH	7.54	pH
ISDA	7505701	ISDA-7505701	19980909	9/9/1998	Phys	pH	7.64	pH
ISDA	7505701	ISDA-7505701	19990713	7/13/1999	Phys	pH	7.42	pH
ISDA	7505701	ISDA-7505701	20000619	6/19/2000	Phys	pH	7.35	pH
ISDA	7505701	ISDA-7505701	20010613	6/13/2001	Phys	pH	7.91	pH
ISDA	7505701	ISDA-7505701	20020530	5/30/2002	Phys	pH	6.81	pH
ISDA	7505701	ISDA-7505701	20030626	6/26/2003	Phys	pH	7.26	pH
ISDA	7505701	ISDA-7505701	20040701	7/1/2004	Phys	pH	7.43	pH
ISDA	7505701	ISDA-7505701	20050630	6/30/2005	Phys	pH	7.54	pH
ISDA	7505701	ISDA-7505701	20060613	6/13/2006	Phys	pH	7.37	pH
ISDA	7505701	ISDA-7505701	20070619	6/19/2007	Phys	pH	7.39	pH
ISDA	7505701	ISDA-7505701	20080618	6/18/2008	Phys	pH	7.42	pH
ISDA	7505801	ISDA-7505801	19970819	8/19/1997	Phys	pH	7.46	pH
ISDA	7505801	ISDA-7505801	19980922	9/22/1998	Phys	pH	7.62	pH
ISDA	7505801	ISDA-7505801	19990713	7/13/1999	Phys	pH	7.34	pH
ISDA	7505801	ISDA-7505801	20000607	6/7/2000	Phys	pH	7	pH
ISDA	7505801	ISDA-7505801	20010613	6/13/2001	Phys	pH	7.3	pH
ISDA	7505801	ISDA-7505801	20020530	5/30/2002	Phys	pH	6.7	pH
ISDA	7505801	ISDA-7505801	20030626	6/26/2003	Phys	pH	7.13	pH
ISDA	7505801	ISDA-7505801	20040701	7/1/2004	Phys	pH	7.29	pH
ISDA	7505801	ISDA-7505801	20050630	6/30/2005	Phys	pH	7.42	pH
ISDA	7505801	ISDA-7505801	20060613	6/13/2006	Phys	pH	7.25	pH
ISDA	7505801	ISDA-7505801	20070626	6/26/2007	Phys	pH	7.25	pH
ISDA	7505801	ISDA-7505801	20080618	6/18/2008	Phys	pH	7.25	pH
ISDA	7505801	ISDA-7505801	20100624	6/24/2010	Phys	pH	6.93	pH
ISDA	7505901	ISDA-7505901	19970819	8/19/1997	Phys	pH	7.69	pH
ISDA	7505901	ISDA-7505901	19980930	9/30/1998	Phys	pH	7.71	pH
ISDA	7505901	ISDA-7505901	19990713	7/13/1999	Phys	pH	7.44	pH
ISDA	7505901	ISDA-7505901	20000619	6/19/2000	Phys	pH	7.41	pH
ISDA	7505901	ISDA-7505901	20010613	6/13/2001	Phys	pH	7.94	pH
ISDA	7505901	ISDA-7505901	20020530	5/30/2002	Phys	pH	6.99	pH
ISDA	7505901	ISDA-7505901	20030626	6/26/2003	Phys	pH	7.26	pH
ISDA	7505901	ISDA-7505901	20040701	7/1/2004	Phys	pH	7.42	pH
ISDA	7505901	ISDA-7505901	20050630	6/30/2005	Phys	pH	7.49	pH
ISDA	7505901	ISDA-7505901	20060613	6/13/2006	Phys	pH	7.34	pH
ISDA	7505901	ISDA-7505901	20070626	6/26/2007	Phys	pH	7.43	pH
ISDA	7505901	ISDA-7505901	20080618	6/18/2008	Phys	pH	7.47	pH
ISDA	7505901	ISDA-7505901	20100630	6/30/2010	Phys	pH	7.17	pH
ISDA	8800801	ISDA-8800801	20000814	8/14/2000	Phys	pH	7.59	pH
ISDA	9200101	ISDA-9200101	20000906	9/6/2000	Phys	pH	7.08	pH
ISDA	9200201	ISDA-9200201	20000906	9/6/2000	Phys	pH	6.99	pH
ISDA	9200301	ISDA-9200301	20000906	9/6/2000	Phys	pH	7.07	pH

ISDA	9200401	ISDA-9200401	20000907	9/7/2000	Phys	pH	7.29	pH
ISDA	9200501	ISDA-9200501	20000907	9/7/2000	Phys	pH	7.42	pH
ISDA	9200601	ISDA-9200601	20000907	9/7/2000	Phys	pH	7.25	pH
ISDA	9200701	ISDA-9200701	20000907	9/7/2000	Phys	pH	7.51	pH
ISDA	9200801	ISDA-9200801	20000906	9/6/2000	Phys	pH	7.53	pH
ISDA	9201001	ISDA-9201001	20000906	9/6/2000	Phys	pH	7.3	pH
ISDA	9201101	ISDA-9201101	20000906	9/6/2000	Phys	pH	7.67	pH
ISDA	9202101	ISDA-9202101	20000912	9/12/2000	Phys	pH	7.22	pH
ISDA	9202201	ISDA-9202201	20000912	9/12/2000	Phys	pH	7.41	pH
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Phys	Specific Conductance	390	uS/cm
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Phys	Specific Conductance	381	uS/cm
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Phys	Specific Conductance	589	uS/cm
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Phys	Specific Conductance	585	uS/cm
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Phys	Specific Conductance	570	uS/cm
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Phys	Specific Conductance	482	uS/cm
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Phys	Specific Conductance	768	uS/cm
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Phys	Specific Conductance	821	uS/cm
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Phys	Specific Conductance	894	uS/cm
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Phys	Specific Conductance	968	uS/cm
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Phys	Specific Conductance	780	uS/cm
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Phys	Specific Conductance	683	uS/cm
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Phys	Specific Conductance	742	uS/cm
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Phys	Specific Conductance	704	uS/cm
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Phys	Specific Conductance	733	uS/cm
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Phys	Specific Conductance	732	uS/cm
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Phys	Specific Conductance	810	uS/cm
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Phys	Specific Conductance	835	uS/cm
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Phys	Specific Conductance	809	uS/cm
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Phys	Specific Conductance	954	uS/cm
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Phys	Specific Conductance	783	uS/cm
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Phys	Specific Conductance	523	uS/cm
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Phys	Specific Conductance	394	uS/cm
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Phys	Specific Conductance	441	uS/cm
IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Phys	Specific Conductance	341	uS/cm
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Phys	Specific Conductance	369	uS/cm
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Phys	Specific Conductance	34.1	uS/cm
IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Phys	Specific Conductance	386	uS/cm
IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Phys	Specific Conductance	386	uS/cm
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Phys	Specific Conductance	425	uS/cm
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Phys	Specific Conductance	466	uS/cm
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Phys	Specific Conductance	562	uS/cm
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Phys	Specific Conductance	626	uS/cm
ISDA	7202201	ISDA-7202201	19970422	4/22/1997	Phys	Specific Conductance	813	uS/cm
ISDA	7504601	ISDA-7504601	19970818	8/18/1997	Phys	Specific Conductance	566	uS/cm
ISDA	7504601	ISDA-7504601	19990713	7/13/1999	Phys	Specific Conductance	503	uS/cm
ISDA	7504601	ISDA-7504601	20000619	6/19/2000	Phys	Specific Conductance	487	uS/cm
ISDA	7504601	ISDA-7504601	20010613	6/13/2001	Phys	Specific Conductance	512	uS/cm
ISDA	7504601	ISDA-7504601	20020626	6/26/2002	Phys	Specific Conductance	514	uS/cm
ISDA	7504601	ISDA-7504601	20030707	7/7/2003	Phys	Specific Conductance	605	uS/cm
ISDA	7504601	ISDA-7504601	20040701	7/1/2004	Phys	Specific Conductance	662	uS/cm
ISDA	7504601	ISDA-7504601	20050630	6/30/2005	Phys	Specific Conductance	569	uS/cm
ISDA	7504601	ISDA-7504601	20060613	6/13/2006	Phys	Specific Conductance	330	uS/cm
ISDA	7504601	ISDA-7504601	20070614	6/14/2007	Phys	Specific Conductance	432	uS/cm

ISDA	7504601	ISDA-7504601	20080619	6/19/2008	Phys	Specific Conductance	383	uS/cm
ISDA	7505701	ISDA-7505701	19970819	8/19/1997	Phys	Specific Conductance	708	uS/cm
ISDA	7505701	ISDA-7505701	19990713	7/13/1999	Phys	Specific Conductance	640	uS/cm
ISDA	7505701	ISDA-7505701	20000619	6/19/2000	Phys	Specific Conductance	584	uS/cm
ISDA	7505701	ISDA-7505701	20010613	6/13/2001	Phys	Specific Conductance	678	uS/cm
ISDA	7505701	ISDA-7505701	20020530	5/30/2002	Phys	Specific Conductance	559	uS/cm
ISDA	7505701	ISDA-7505701	20030626	6/26/2003	Phys	Specific Conductance	593	uS/cm
ISDA	7505701	ISDA-7505701	20040701	7/1/2004	Phys	Specific Conductance	612	uS/cm
ISDA	7505701	ISDA-7505701	20060613	6/13/2006	Phys	Specific Conductance	450	uS/cm
ISDA	7505701	ISDA-7505701	20070619	6/19/2007	Phys	Specific Conductance	477	uS/cm
ISDA	7505701	ISDA-7505701	20080618	6/18/2008	Phys	Specific Conductance	574	uS/cm
ISDA	7505801	ISDA-7505801	19970819	8/19/1997	Phys	Specific Conductance	591	uS/cm
ISDA	7505801	ISDA-7505801	19990713	7/13/1999	Phys	Specific Conductance	562	uS/cm
ISDA	7505801	ISDA-7505801	20000607	6/7/2000	Phys	Specific Conductance	567	uS/cm
ISDA	7505801	ISDA-7505801	20010613	6/13/2001	Phys	Specific Conductance	648	uS/cm
ISDA	7505801	ISDA-7505801	20020530	5/30/2002	Phys	Specific Conductance	555	uS/cm
ISDA	7505801	ISDA-7505801	20030626	6/26/2003	Phys	Specific Conductance	582	uS/cm
ISDA	7505801	ISDA-7505801	20040701	7/1/2004	Phys	Specific Conductance	682	uS/cm
ISDA	7505801	ISDA-7505801	20050630	6/30/2005	Phys	Specific Conductance	594	uS/cm
ISDA	7505801	ISDA-7505801	20060613	6/13/2006	Phys	Specific Conductance	414	uS/cm
ISDA	7505801	ISDA-7505801	20070626	6/26/2007	Phys	Specific Conductance	647	uS/cm
ISDA	7505801	ISDA-7505801	20080618	6/18/2008	Phys	Specific Conductance	624	uS/cm
ISDA	7505801	ISDA-7505801	20100624	6/24/2010	Phys	Specific Conductance	570	uS/cm
ISDA	7505901	ISDA-7505901	19970819	8/19/1997	Phys	Specific Conductance	558	uS/cm
ISDA	7505901	ISDA-7505901	19990713	7/13/1999	Phys	Specific Conductance	513	uS/cm
ISDA	7505901	ISDA-7505901	20000619	6/19/2000	Phys	Specific Conductance	490	uS/cm
ISDA	7505901	ISDA-7505901	20010613	6/13/2001	Phys	Specific Conductance	550	uS/cm
ISDA	7505901	ISDA-7505901	20020530	5/30/2002	Phys	Specific Conductance	481	uS/cm
ISDA	7505901	ISDA-7505901	20030626	6/26/2003	Phys	Specific Conductance	548	uS/cm
ISDA	7505901	ISDA-7505901	20040701	7/1/2004	Phys	Specific Conductance	603	uS/cm
ISDA	7505901	ISDA-7505901	20050630	6/30/2005	Phys	Specific Conductance	565	uS/cm
ISDA	7505901	ISDA-7505901	20060613	6/13/2006	Phys	Specific Conductance	402	uS/cm
ISDA	7505901	ISDA-7505901	20070626	6/26/2007	Phys	Specific Conductance	560	uS/cm
ISDA	7505901	ISDA-7505901	20080618	6/18/2008	Phys	Specific Conductance	547	uS/cm
ISDA	7505901	ISDA-7505901	20100630	6/30/2010	Phys	Specific Conductance	496	uS/cm
ISDA	8800801	ISDA-8800801	20000814	8/14/2000	Phys	Specific Conductance	581	uS/cm
ISDA	9200101	ISDA-9200101	20000906	9/6/2000	Phys	Specific Conductance	545	uS/cm
ISDA	9200201	ISDA-9200201	20000906	9/6/2000	Phys	Specific Conductance	555	uS/cm
ISDA	9200301	ISDA-9200301	20000906	9/6/2000	Phys	Specific Conductance	574	uS/cm
ISDA	9200401	ISDA-9200401	20000907	9/7/2000	Phys	Specific Conductance	534	uS/cm
ISDA	9200501	ISDA-9200501	20000907	9/7/2000	Phys	Specific Conductance	502	uS/cm
ISDA	9200601	ISDA-9200601	20000907	9/7/2000	Phys	Specific Conductance	599	uS/cm
ISDA	9200701	ISDA-9200701	20000907	9/7/2000	Phys	Specific Conductance	359	uS/cm
ISDA	9200801	ISDA-9200801	20000906	9/6/2000	Phys	Specific Conductance	519	uS/cm
ISDA	9201001	ISDA-9201001	20000906	9/6/2000	Phys	Specific Conductance	776	uS/cm
ISDA	9201101	ISDA-9201101	20000906	9/6/2000	Phys	Specific Conductance	447	uS/cm
ISDA	9202101	ISDA-9202101	20000912	9/12/2000	Phys	Specific Conductance	485	uS/cm
ISDA	9202201	ISDA-9202201	20000912	9/12/2000	Phys	Specific Conductance	505	uS/cm
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Phys	Total Dissolved Solids	235	mg/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Phys	Total Dissolved Solids	231	mg/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Phys	Total Dissolved Solids	352	mg/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Phys	Total Dissolved Solids	351	mg/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Phys	Total Dissolved Solids	349	mg/L

IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Phys	Total Dissolved Solids	294	mg/l
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Phys	Total Dissolved Solids	480	mg/L
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Phys	Total Dissolved Solids	508	mg/L
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Phys	Total Dissolved Solids	558	mg/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Phys	Total Dissolved Solids	596	mg/L
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Phys	Total Dissolved Solids	471	mg/l
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Phys	Total Dissolved Solids	412	mg/l
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Phys	Total Dissolved Solids	456	mg/l
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Phys	Total Dissolved Solids	434	mg/l
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Phys	Total Dissolved Solids	463	mg/l
IDWR	436	05S 15E 35DBD3	20050627	6/27/2005	Phys	Total Dissolved Solids	507	mg/l
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Phys	Total Dissolved Solids	454	mg/L
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Phys	Total Dissolved Solids	503	mg/l
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Phys	Total Dissolved Solids	502	mg/l
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Phys	Total Dissolved Solids	E595	mg/l
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Phys	Total Dissolved Solids	E484	mg/l
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Phys	Total Dissolved Solids	334	mg/l
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Phys	Total Dissolved Solids	251	mg/l
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Phys	Total Dissolved Solids	282	mg/l
IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Phys	Total Dissolved Solids	219	mg/l
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Phys	Total Dissolved Solids	236	mg/l
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Phys	Total Dissolved Solids	218	mg/l
IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Phys	Total Dissolved Solids	247	mg/l
IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Phys	Total Dissolved Solids	247	mg/l
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Phys	Total Dissolved Solids	272	mg/l
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Phys	Total Dissolved Solids	98	mg/l
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Phys	Total Dissolved Solids	346	mg/l
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	Phys	Water Temperature	14.3	Â°C
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	Phys	Water Temperature	13.8	Â°C
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	Phys	Water Temperature	15.8	Â°C
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	Phys	Water Temperature	14.5	Â°C
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	Phys	Water Temperature	15	Â°C
IDWR	435	05S 15E 35DBD2	20000816	8/16/2000	Phys	Water Temperature	14.6	Â°C
IDWR	436	05S 15E 35DBD3	19960710	7/10/1996	Phys	Water Temperature	17.4	Â°C
IDWR	436	05S 15E 35DBD3	19970729	7/29/1997	Phys	Water Temperature	16.5	Â°C
IDWR	436	05S 15E 35DBD3	19980722	7/22/1998	Phys	Water Temperature	18.3	Â°C
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	Phys	Water Temperature	17.1	Â°C
IDWR	436	05S 15E 35DBD3	20000816	8/16/2000	Phys	Water Temperature	14.4	Â°C
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	Phys	Water Temperature	14.3	Â°C
IDWR	436	05S 15E 35DBD3	20020812	8/12/2002	Phys	Water Temperature	14.7	Â°C
IDWR	436	05S 15E 35DBD3	20030717	7/17/2003	Phys	Water Temperature	14.8	Â°C
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	Phys	Water Temperature	14.7	Â°C
IDWR	436	05S 15E 35DBD3	20060619	6/19/2006	Phys	Water Temperature	14.7	Â°C
IDWR	436	05S 15E 35DBD3	20070626	6/26/2007	Phys	Water Temperature	14.5	Â°C
IDWR	436	05S 15E 35DBD3	20080808	8/8/2008	Phys	Water Temperature	14.8	Â°C
IDWR	436	05S 15E 35DBD3	20090611	6/11/2009	Phys	Water Temperature	15.2	Â°C
IDWR	436	05S 15E 35DBD3	20100810	8/10/2010	Phys	Water Temperature	14.5	Â°C
IDEQ	1120	IDEQ-GW-1120	20031029	10/29/2003	Phys	Water Temperature	13.82	Â°C
IDEQ	1121	IDEQ-GW-1121	20031022	10/22/2003	Phys	Water Temperature	13.2	Â°C
IDEQ	1122	IDEQ-GW-1122	20031022	10/22/2003	Phys	Water Temperature	13.29	Â°C
IDEQ	1123	IDEQ-GW-1123	20031022	10/22/2003	Phys	Water Temperature	14.75	Â°C
IDEQ	1124	IDEQ-GW-1124	20031022	10/22/2003	Phys	Water Temperature	13.8	Â°C
IDEQ	1125	IDEQ-GW-1125	20031022	10/22/2003	Phys	Water Temperature	13.38	Â°C

IDEQ	1126	IDEQ-GW-1126	20031022	10/22/2003	Phys	Water Temperature	14.3	Â°C
IDEQ	1127	IDEQ-GW-1127	20031022	10/22/2003	Phys	Water Temperature	13.74	Â°C
IDEQ	1128	IDEQ-GW-1128	20031022	10/22/2003	Phys	Water Temperature	15.6	Â°C
IDEQ	1129	IDEQ-GW-1129	20031022	10/22/2003	Phys	Water Temperature	13.91	Â°C
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	Phys	Water Temperature	14.5	Â°C
IDWR	1736	06S 15E 05BAD1	20060810	8/10/2006	Phys	Water Temperature	15	Â°C
ISDA	7202201	ISDA-7202201	19970422	4/22/1997	Phys	Water Temperature	12.4	Â°C
ISDA	7504601	ISDA-7504601	19970818	8/18/1997	Phys	Water Temperature	15.2	Â°C
ISDA	7504601	ISDA-7504601	19980911	9/11/1998	Phys	Water Temperature	14.6	Â°C
ISDA	7504601	ISDA-7504601	19990713	7/13/1999	Phys	Water Temperature	17.4	Â°C
ISDA	7504601	ISDA-7504601	20000619	6/19/2000	Phys	Water Temperature	14.4	Â°C
ISDA	7504601	ISDA-7504601	20010613	6/13/2001	Phys	Water Temperature	14.5	Â°C
ISDA	7504601	ISDA-7504601	20020626	6/26/2002	Phys	Water Temperature	14.5	Â°C
ISDA	7504601	ISDA-7504601	20030707	7/7/2003	Phys	Water Temperature	14	Â°C
ISDA	7504601	ISDA-7504601	20040701	7/1/2004	Phys	Water Temperature	14.8	Â°C
ISDA	7504601	ISDA-7504601	20050630	6/30/2005	Phys	Water Temperature	14.7	Â°C
ISDA	7504601	ISDA-7504601	20060613	6/13/2006	Phys	Water Temperature	15.6	Â°C
ISDA	7504601	ISDA-7504601	20070614	6/14/2007	Phys	Water Temperature	15.7	Â°C
ISDA	7504601	ISDA-7504601	20080619	6/19/2008	Phys	Water Temperature	15.3	Â°C
ISDA	7505701	ISDA-7505701	19970819	8/19/1997	Phys	Water Temperature	15.8	Â°C
ISDA	7505701	ISDA-7505701	19980909	9/9/1998	Phys	Water Temperature	15	Â°C
ISDA	7505701	ISDA-7505701	19990713	7/13/1999	Phys	Water Temperature	16.7	Â°C
ISDA	7505701	ISDA-7505701	20000619	6/19/2000	Phys	Water Temperature	14.8	Â°C
ISDA	7505701	ISDA-7505701	20010613	6/13/2001	Phys	Water Temperature	15	Â°C
ISDA	7505701	ISDA-7505701	20020530	5/30/2002	Phys	Water Temperature	15.7	Â°C
ISDA	7505701	ISDA-7505701	20030626	6/26/2003	Phys	Water Temperature	16.2	Â°C
ISDA	7505701	ISDA-7505701	20040701	7/1/2004	Phys	Water Temperature	16.7	Â°C
ISDA	7505701	ISDA-7505701	20050630	6/30/2005	Phys	Water Temperature	16	Â°C
ISDA	7505701	ISDA-7505701	20060613	6/13/2006	Phys	Water Temperature	16.4	Â°C
ISDA	7505701	ISDA-7505701	20070619	6/19/2007	Phys	Water Temperature	16.8	Â°C
ISDA	7505701	ISDA-7505701	20080618	6/18/2008	Phys	Water Temperature	16.7	Â°C
ISDA	7505801	ISDA-7505801	19970819	8/19/1997	Phys	Water Temperature	15.5	Â°C
ISDA	7505801	ISDA-7505801	19980922	9/22/1998	Phys	Water Temperature	14.4	Â°C
ISDA	7505801	ISDA-7505801	19990713	7/13/1999	Phys	Water Temperature	14.3	Â°C
ISDA	7505801	ISDA-7505801	20000607	6/7/2000	Phys	Water Temperature	14.4	Â°C
ISDA	7505801	ISDA-7505801	20010613	6/13/2001	Phys	Water Temperature	14.2	Â°C
ISDA	7505801	ISDA-7505801	20020530	5/30/2002	Phys	Water Temperature	14.5	Â°C
ISDA	7505801	ISDA-7505801	20030626	6/26/2003	Phys	Water Temperature	14.8	Â°C
ISDA	7505801	ISDA-7505801	20040701	7/1/2004	Phys	Water Temperature	14.7	Â°C
ISDA	7505801	ISDA-7505801	20050630	6/30/2005	Phys	Water Temperature	14.8	Â°C
ISDA	7505801	ISDA-7505801	20060613	6/13/2006	Phys	Water Temperature	15.1	Â°C
ISDA	7505801	ISDA-7505801	20070626	6/26/2007	Phys	Water Temperature	15.6	Â°C
ISDA	7505801	ISDA-7505801	20080618	6/18/2008	Phys	Water Temperature	15.6	Â°C
ISDA	7505801	ISDA-7505801	20100624	6/24/2010	Phys	Water Temperature	15	Â°C
ISDA	7505901	ISDA-7505901	19970819	8/19/1997	Phys	Water Temperature	16.6	Â°C
ISDA	7505901	ISDA-7505901	19980930	9/30/1998	Phys	Water Temperature	15.6	Â°C
ISDA	7505901	ISDA-7505901	19990713	7/13/1999	Phys	Water Temperature	15.1	Â°C
ISDA	7505901	ISDA-7505901	20000619	6/19/2000	Phys	Water Temperature	14.9	Â°C
ISDA	7505901	ISDA-7505901	20010613	6/13/2001	Phys	Water Temperature	15	Â°C
ISDA	7505901	ISDA-7505901	20020530	5/30/2002	Phys	Water Temperature	15.4	Â°C
ISDA	7505901	ISDA-7505901	20030626	6/26/2003	Phys	Water Temperature	15.8	Â°C
ISDA	7505901	ISDA-7505901	20040701	7/1/2004	Phys	Water Temperature	15.8	Â°C
ISDA	7505901	ISDA-7505901	20050630	6/30/2005	Phys	Water Temperature	15.2	Â°C

ISDA	7505901	ISDA-7505901	20060613	6/13/2006	Phys	Water Temperature	15.3	Â°C
ISDA	7505901	ISDA-7505901	20070626	6/26/2007	Phys	Water Temperature	15.8	Â°C
ISDA	7505901	ISDA-7505901	20080618	6/18/2008	Phys	Water Temperature	15.5	Â°C
ISDA	7505901	ISDA-7505901	20100630	6/30/2010	Phys	Water Temperature	15.4	Â°C
ISDA	8800801	ISDA-8800801	20000814	8/14/2000	Phys	Water Temperature	15.1	Â°C
ISDA	9200101	ISDA-9200101	20000906	9/6/2000	Phys	Water Temperature	14.6	Â°C
ISDA	9200201	ISDA-9200201	20000906	9/6/2000	Phys	Water Temperature	14.9	Â°C
ISDA	9200301	ISDA-9200301	20000906	9/6/2000	Phys	Water Temperature	14.6	Â°C
ISDA	9200401	ISDA-9200401	20000907	9/7/2000	Phys	Water Temperature	15.2	Â°C
ISDA	9200501	ISDA-9200501	20000907	9/7/2000	Phys	Water Temperature	14.8	Â°C
ISDA	9200601	ISDA-9200601	20000907	9/7/2000	Phys	Water Temperature	13.4	Â°C
ISDA	9200701	ISDA-9200701	20000907	9/7/2000	Phys	Water Temperature	14	Â°C
ISDA	9200801	ISDA-9200801	20000906	9/6/2000	Phys	Water Temperature	14.2	Â°C
ISDA	9201001	ISDA-9201001	20000906	9/6/2000	Phys	Water Temperature	14.6	Â°C
ISDA	9201101	ISDA-9201101	20000906	9/6/2000	Phys	Water Temperature	14.8	Â°C
ISDA	9202101	ISDA-9202101	20000912	9/12/2000	Phys	Water Temperature	14.3	Â°C
ISDA	9202201	ISDA-9202201	20000912	9/12/2000	Phys	Water Temperature	14.8	Â°C
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	1,4-Dichlorobenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	1,4-Dichlorobenzene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	1,4-Dichlorobenzene	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	1,4-Dichlorobenzene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	1,4-Dichlorobenzene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	1,4-Dichlorobenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	1,4-Dichlorobenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	1,4-Dichlorobenzene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	1,4-Dichlorobenzene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	1,4-Dichlorobenzene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	VOC	1,4-Dichlorobenzene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	1,4-Dichlorobenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Benzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Benzene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Benzene	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Benzene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Benzene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Benzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Benzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Benzene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Benzene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Benzene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Benzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Bromobenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Bromobenzene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Bromobenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Bromobenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Bromobenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Bromobenzene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Bromobenzene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Bromobenzene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Bromobenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Bromochloromethane	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Bromochloromethane	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Bromochloromethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Bromochloromethane	<0.5	ug/L

IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Bromochloromethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Bromochloromethane	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Bromochloromethane	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Bromochloromethane	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Bromochloromethane	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Bromoform	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Bromoform	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Bromoform	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Bromoform	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Bromoform	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Bromoform	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Bromoform	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Bromoform	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Bromoform	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Bromoform	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	VOC	Bromoform	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Bromoform	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Bromomethane	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Bromomethane	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Bromomethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Bromomethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Bromomethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Bromomethane	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Bromomethane	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Bromomethane	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Bromomethane	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Carbon Tetrachloride	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Carbon Tetrachloride	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Carbon Tetrachloride	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Carbon Tetrachloride	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Carbon Tetrachloride	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Carbon Tetrachloride	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Carbon Tetrachloride	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Carbon Tetrachloride	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Carbon Tetrachloride	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Carbon Tetrachloride	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Carbon Tetrachloride	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	CFC-11	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	CFC-11	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	CFC-11	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	CFC-11	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	CFC-11	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	CFC-11	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	CFC-11	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	CFC-11	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	CFC-11	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	CFC-11	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	CFC-11	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	CFC-113	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	CFC-113	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	CFC-12	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	CFC-12	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	CFC-12	<0.5	ug/L

IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	CFC-12	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	CFC-12	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	CFC-12	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	CFC-12	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	CFC-12	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	CFC-12	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	CFC-12	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	CFC-12	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Chlorobenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Chlorobenzene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Chlorobenzene	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Chlorobenzene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Chlorobenzene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Chlorobenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Chlorobenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Chlorobenzene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Chlorobenzene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Chlorobenzene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Chlorobenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Chloroethane	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Chloroethane	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Chloroethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Chloroethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Chloroethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Chloroethane	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Chloroethane	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Chloroethane	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Chloroethane	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Chloroform	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Chloroform	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Chloroform	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Chloroform	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Chloroform	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Chloroform	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Chloroform	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Chloroform	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Chloroform	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Chloroform	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Chloroform	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Chloromethane	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Chloromethane	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Chloromethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Chloromethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Chloromethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Chloromethane	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Chloromethane	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Chloromethane	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Chloromethane	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Chlorotoluene-p	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Chlorotoluene-p	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Chlorotoluene-p	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Chlorotoluene-p	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Chlorotoluene-p	<0.5	ug/L

IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Chlorotoluene-p	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Chlorotoluene-p	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Chlorotoluene-p	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Chlorotoluene-p	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dibromochloromethane	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dibromochloromethane	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dibromochloromethane	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Dibromochloromethane	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Dibromochloromethane	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dibromochloromethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dibromochloromethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dibromochloromethane	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dibromochloromethane	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dibromochloromethane	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dibromochloromethane	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dibromochloropropane (D	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dibromochloropropane (D	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dibromochloropropane (D	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dibromochloropropane (D	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dibromochloropropane (D	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dibromochloropropane (D	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dibromochloropropane (D	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dibromochloropropane (D	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dibromochloropropane (D	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dibromoethane,1,2- (EDB)	<0.2	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dibromoethane,1,2- (EDB)	<0.2	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dibromoethane,1,2- (EDB)	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dibromoethane,1,2- (EDB)	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dibromoethane,1,2- (EDB)	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dibromoethane,1,2- (EDB)	<0.2	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dibromoethane,1,2- (EDB)	<0.20	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dibromoethane,1,2- (EDB)	<0.2	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dibromoethane,1,2- (EDB)	<0.2	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dibromomethane	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dibromomethane	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dibromomethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dibromomethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dibromomethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dibromomethane	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dibromomethane	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dibromomethane	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dibromomethane	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dichlorobenzene,1,2-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dichlorobenzene,1,2-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dichlorobenzene,1,2-	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Dichlorobenzene,1,2-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Dichlorobenzene,1,2-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dichlorobenzene,1,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dichlorobenzene,1,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dichlorobenzene,1,2-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dichlorobenzene,1,2-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dichlorobenzene,1,2-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dichlorobenzene,1,2-	<0.5	ug/L

IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dichlorobenzene,1,3-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dichlorobenzene,1,3-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dichlorobenzene,1,3-	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Dichlorobenzene,1,3-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Dichlorobenzene,1,3-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dichlorobenzene,1,3-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dichlorobenzene,1,3-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dichlorobenzene,1,3-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dichlorobenzene,1,3-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dichlorobenzene,1,3-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dichlorobenzene,1,3-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dichlorobromomethane	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dichlorobromomethane	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dichlorobromomethane	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Dichlorobromomethane	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Dichlorobromomethane	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dichlorobromomethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dichlorobromomethane	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dichlorobromomethane	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dichlorobromomethane	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dichlorobromomethane	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dichlorobromomethane	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dichloroethane,1,1-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dichloroethane,1,1-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dichloroethane,1,1-	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Dichloroethane,1,1-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Dichloroethane,1,1-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dichloroethane,1,1-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dichloroethane,1,1-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dichloroethane,1,1-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dichloroethane,1,1-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dichloroethane,1,1-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dichloroethane,1,1-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dichloroethane,1,2-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dichloroethane,1,2-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dichloroethane,1,2-	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Dichloroethane,1,2-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Dichloroethane,1,2-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dichloroethane,1,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dichloroethane,1,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dichloroethane,1,2-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dichloroethane,1,2-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dichloroethane,1,2-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dichloroethane,1,2-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dichloroethene,1,1-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dichloroethene,1,1-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dichloroethene,1,1-	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Dichloroethene,1,1-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Dichloroethene,1,1-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dichloroethene,1,1-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dichloroethene,1,1-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dichloroethene,1,1-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dichloroethene,1,1-	<0.50	ug/L

IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dichloroethene,1,1-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dichloroethene,1,1-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dichloroethene,1,2,cis-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dichloroethene,1,2,cis-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dichloroethene,1,2,cis-	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Dichloroethene,1,2,cis-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Dichloroethene,1,2,cis-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dichloroethene,1,2,cis-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dichloroethene,1,2,cis-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dichloroethene,1,2,cis-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dichloroethene,1,2,cis-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dichloroethene,1,2,cis-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dichloroethene,1,2,cis-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dichloroethene,1,2,trans-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dichloroethene,1,2,trans-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dichloroethene,1,2,trans-	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Dichloroethene,1,2,trans-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Dichloroethene,1,2,trans-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dichloroethene,1,2,trans-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dichloroethene,1,2,trans-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dichloroethene,1,2,trans-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dichloroethene,1,2,trans-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dichloroethene,1,2,trans-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dichloroethene,1,2,trans-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dichloropropane,1,2-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dichloropropane,1,2-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dichloropropane,1,2-	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Dichloropropane,1,2-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Dichloropropane,1,2-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dichloropropane,1,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dichloropropane,1,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dichloropropane,1,2-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dichloropropane,1,2-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dichloropropane,1,2-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dichloropropane,1,2-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dichloropropane,1,3-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dichloropropane,1,3-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dichloropropane,1,3-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dichloropropane,1,3-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dichloropropane,1,3-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dichloropropane,1,3-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dichloropropane,1,3-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dichloropropane,1,3-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dichloropropane,1,3-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dichloropropane,1,3-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dichloropropane,1,3-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dichloropropane,2,2-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dichloropropane,2,2-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dichloropropane,2,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dichloropropane,2,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dichloropropane,2,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dichloropropane,2,2-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dichloropropane,2,2-	<0.50	ug/L

IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dichloropropane,2,2-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dichloropropane,2,2-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dichloropropene,1,1-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dichloropropene,1,1-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dichloropropene,1,1-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dichloropropene,1,1-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dichloropropene,1,1-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Dichloropropene,1,1-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Dichloropropene,1,1-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dichloropropene,1,1-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dichloropropene,1,1-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dichloropropene,1,3 cis-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Dichloropropene,1,3 cis-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dichloropropene,1,3 cis-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Dichloropropene,1,3 cis-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Dichloropropene,1,3 cis-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Dichloropropene,1,3 trans	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Dichloropropene,1,3 trans	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Dichloropropene,e,z-1,3-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Dichloropropene,e,z-1,3-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Ethylbenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Ethylbenzene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Ethylbenzene	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Ethylbenzene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Ethylbenzene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Ethylbenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Ethylbenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Ethylbenzene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Ethylbenzene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Ethylbenzene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Ethylbenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Hexachlorobutadiene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Hexachlorobutadiene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Hexachlorobutadiene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Hexachlorobutadiene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Hexachlorobutadiene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Hexachlorobutadiene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Hexachlorobutadiene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Hexachlorobutadiene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Hexachlorobutadiene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Isopropylbenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Isopropylbenzene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Isopropylbenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Isopropylbenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Isopropylbenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Isopropylbenzene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Isopropylbenzene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Isopropylbenzene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	VOC	Isopropylbenzene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Isopropylbenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Methyl tertiary butyl ether	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Methyl tertiary butyl ether	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Methyl tertiary butyl ether	<0.5	ug/L

IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Methyl tertiary butyl ether	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Methyl tertiary butyl ether	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Methyl tertiary butyl ether	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Methyl tertiary butyl ether	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Methylene chloride	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Methylene chloride	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Methylene chloride	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Methylene chloride	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Methylene chloride	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Methylene chloride	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Methylene chloride	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Methylene chloride	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Methylene chloride	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Methylene chloride	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Methylene chloride	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Naphthalene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Naphthalene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Naphthalene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Naphthalene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Naphthalene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Naphthalene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Naphthalene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Naphthalene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	VOC	Naphthalene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Naphthalene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	n-Butylbenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	n-Butylbenzene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	n-Butylbenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	n-Butylbenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	n-Butylbenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	n-Butylbenzene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	n-Butylbenzene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	n-Butylbenzene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	n-Butylbenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	n-Propylbenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	n-Propylbenzene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	n-Propylbenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	n-Propylbenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	n-Propylbenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	n-Propylbenzene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	n-Propylbenzene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	n-Propylbenzene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	n-Propylbenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	o-Chlorotoluene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	o-Chlorotoluene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	o-Chlorotoluene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	o-Chlorotoluene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	o-Chlorotoluene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	o-Chlorotoluene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	o-Chlorotoluene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	o-Chlorotoluene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	o-Chlorotoluene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Paraldehyde	<0.5	ug/L

IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Paraldehyde	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Paraldehyde	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Paraldehyde	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Paraldehyde	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Paraldehyde	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Paraldehyde	<0.50	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	p-Isopropyltoluene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	p-Isopropyltoluene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	p-Isopropyltoluene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	p-Isopropyltoluene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	p-Isopropyltoluene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	p-Isopropyltoluene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	p-Isopropyltoluene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	p-Isopropyltoluene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	p-Isopropyltoluene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	sec-Butylbenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	sec-Butylbenzene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	sec-Butylbenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	sec-Butylbenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	sec-Butylbenzene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	sec-Butylbenzene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	sec-Butylbenzene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	sec-Butylbenzene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	sec-Butylbenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Styrene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Styrene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Styrene	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Styrene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Styrene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Styrene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Styrene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Styrene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Styrene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Styrene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Styrene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	tert-Butylbenzene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	tert-Butylbenzene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Tetrachloroethane,1,1,1,2-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Tetrachloroethane,1,1,1,2-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Tetrachloroethane,1,1,1,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Tetrachloroethane,1,1,1,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Tetrachloroethane,1,1,1,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Tetrachloroethane,1,1,1,2-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Tetrachloroethane,1,1,1,2-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Tetrachloroethane,1,1,1,2-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Tetrachloroethane,1,1,1,2-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Tetrachloroethane,1,1,2,2-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Tetrachloroethane,1,1,2,2-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Tetrachloroethane,1,1,2,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Tetrachloroethane,1,1,2,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Tetrachloroethane,1,1,2,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Tetrachloroethane,1,1,2,2-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Tetrachloroethane,1,1,2,2-	<0.50	ug/L

IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Tetrachloroethane,1,1,2,2-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Tetrachloroethane,1,1,2,2-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Tetrachloroethylene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Tetrachloroethylene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Tetrachloroethylene	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Tetrachloroethylene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Tetrachloroethylene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Tetrachloroethylene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Tetrachloroethylene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Tetrachloroethylene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Tetrachloroethylene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Tetrachloroethylene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	20040707	7/7/2004	VOC	Tetrachloroethylene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Tetrachloroethylene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Toluene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Toluene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Toluene	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Toluene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Toluene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Toluene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Toluene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Toluene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Toluene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Toluene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Toluene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Trichlorobenzene,1,2,3-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Trichlorobenzene,1,2,3-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Trichlorobenzene,1,2,3-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Trichlorobenzene,1,2,3-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Trichlorobenzene,1,2,3-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Trichlorobenzene,1,2,3-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Trichlorobenzene,1,2,3-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Trichlorobenzene,1,2,3-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Trichlorobenzene,1,2,3-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Trichlorobenzene,1,2,4-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Trichlorobenzene,1,2,4-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Trichlorobenzene,1,2,4-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Trichlorobenzene,1,2,4-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Trichlorobenzene,1,2,4-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Trichlorobenzene,1,2,4-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Trichlorobenzene,1,2,4-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Trichlorobenzene,1,2,4-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Trichlorobenzene,1,2,4-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Trichloroethane,1,1,1-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Trichloroethane,1,1,1-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Trichloroethane,1,1,1-	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Trichloroethane,1,1,1-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Trichloroethane,1,1,1-	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Trichloroethane,1,1,1-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Trichloroethane,1,1,1-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Trichloroethane,1,1,1-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Trichloroethane,1,1,1-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Trichloroethane,1,1,1-	<0.5	ug/L

IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Trichloroethane,1,1,1-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Trichloroethane,1,1,2-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Trichloroethane,1,1,2-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Trichloroethane,1,1,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Trichloroethane,1,1,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Trichloroethane,1,1,2-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Trichloroethane,1,1,2-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Trichloroethane,1,1,2-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Trichloroethane,1,1,2-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Trichloroethane,1,1,2-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Trichloroethylene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Trichloroethylene	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Trichloroethylene	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Trichloroethylene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Trichloroethylene	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Trichloroethylene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Trichloroethylene	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Trichloroethylene	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Trichloroethylene	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Trichloroethylene	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Trichloroethylene	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Trichloropropane,1,2,3-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Trichloropropane,1,2,3-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Trichloropropane,1,2,3-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Trichloropropane,1,2,3-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Trichloropropane,1,2,3-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Trichloropropane,1,2,3-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Trichloropropane,1,2,3-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Trichloropropane,1,2,3-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Trichloropropane,1,2,3-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Trimethylbenzene,1,2,4-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Trimethylbenzene,1,2,4-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Trimethylbenzene,1,2,4-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Trimethylbenzene,1,2,4-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Trimethylbenzene,1,2,4-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Trimethylbenzene,1,2,4-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Trimethylbenzene,1,2,4-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Trimethylbenzene,1,2,4-	<0.5	ug/L
IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Trimethylbenzene,1,2,4-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Trimethylbenzene,1,3,5-	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Trimethylbenzene,1,3,5-	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Trimethylbenzene,1,3,5-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Trimethylbenzene,1,3,5-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Trimethylbenzene,1,3,5-	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19980722	7/22/1998	VOC	Trimethylbenzene,1,3,5-	<0.5	ug/L
IDWR	436	05S 15E 35DBD3	19990623	6/23/1999	VOC	Trimethylbenzene,1,3,5-	<0.50	ug/L
IDWR	436	05S 15E 35DBD3	20010718	7/18/2001	VOC	Trimethylbenzene,1,3,5-	<0.5	ug/L
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IDWR	412	06S 15E 12DAB1	19930804	8/4/1993	VOC	Vinyl chloride	<0.5	ug/L
IDWR	412	06S 15E 12DAB1	19970730	7/30/1997	VOC	Vinyl chloride	<0.5	ug/L
IDWR	413	06S 14E 12ADD2	19930913	9/13/1993	VOC	Vinyl chloride	<0.5	ug/L
IDWR	421	06S 15E 02BDB1	19920702	7/2/1992	VOC	Vinyl chloride	<0.2	ug/L
IDWR	435	05S 15E 35DBD2	19920813	8/13/1992	VOC	Vinyl chloride	<0.2	ug/L

IDWR	435	05S 15E 35DBD2	19960710	7/10/1996	VOC	Vinyl chloride	<0.5	ug/L
IDWR	435	05S 15E 35DBD2	19970729	7/29/1997	VOC	Vinyl chloride	<0.5	ug/L
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IDWR	1736	06S 15E 05BAD1	20010703	7/3/2001	VOC	Xylenes	<0.5	ug/L

Appendix C

City of Gooding CCR Reports

CCR 2009

Spanish (Espanol)

Este informe contiene informacion muy importante sobre la calidad de su agua potable. Por favor lea este informe o comuniquese con alguien que pueda traducir la informacion.

Is my water safe?

Last year, as in years past, your tap water met all U.S. Environmental Protection Agency (EPA) and state drinking water health standards. Local Water vigilantly safeguards its water supplies and once again we are proud to report that our system has not violated a maximum contaminant level or any other water quality standard.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

Your drinking water originates from ground water wells.

Source water assessment and its availability

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Why are there contaminants in my drinking water?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity: microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How can I get involved?

By contacting Gooding City Hall at 934-5669.

Additional Information for Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. City of Gooding is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Water Quality Data Table

The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range Low	Range High	Sample Date	Violation	Typical Source
Disinfectants & Disinfectant By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
TTHMs [Total Trihalomethanes] (ppb)	NA	80	9.4	1.17	9.4	2009	No	By-product of drinking water disinfection

Chlorine (as Cl2) (ppm)	4	4	0.85	NA		2009	No	Water additive used to control microbes
Inorganic Contaminants								
Arsenic (ppb)	0	10	0.01	ND	0.01	2003	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Fluoride (ppm)	4	4	0.3	NA		2005	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate [measured as Nitrogen] (ppm)	10	10	1.91	1.43	1.91	2009	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Microbiological Contaminants								
Total Coliform (positive samples/month)	0	1	0	NA		2009	No	Naturally present in the environment
Radioactive Contaminants								
Beta/photon emitters (pCi/L)	0	50	7.8	4.6	7.8	2001	No	Decay of natural and man-made deposits. The EPA considers 50 pCi/L to be the level of concern for Beta particles.
Alpha emitters (pCi/L)	0	15	13.5	5.5	13.5	2001	No	Erosion of natural deposits

Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source
Inorganic Contaminants							
Copper - action level at consumer taps (ppm)	1.3	1.3	0.32	2005	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Unit Descriptions	
Term	**Definition**
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
positive samples/month	positive samples/month: Number of samples taken monthly that were found to be positive
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions	
Term	**Definition**

MCLG	MCLG: Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
MCL	MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

For more information please contact:

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CCR 2010

Spanish (Espanol)

Este informe contiene informacion muy importante sobre la calidad de su agua potable. Por favor lea este informe o comuniquese con alguien que pueda traducir la informacion.

Is my water safe?

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

Your drinking water originates from ground water wells.

Source water assessment and its availability

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Why are there contaminants in my drinking water?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity: microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How can I get involved?

By contacting Gooding City Hall at 934-5669.

Description of Water Treatment Process

Your water is treated by disinfection. Disinfection involves the addition of chlorine or other disinfectant to kill dangerous bacteria and microorganisims that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century.

Additional Information for Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. City of Gooding is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range Low	Range High	Sample Date	Violation	Typical Source
Disinfectants & Disinfectant By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
TTHMs [Total Trihalomethanes] (ppb)	NA	80	4	1.72	4	2010	No	By-product of drinking water disinfection
Chlorine (as Cl2) (ppm)	4	4	0.775	NA		2010	No	Water additive used to control microbes
Inorganic Contaminants								
Arsenic (ppb)	0	10	1.6	1.05	1.6	2010	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Nitrate [measured as Nitrogen] (ppm)	10	10	2.07	1.75	2.07	2010	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Microbiological Contaminants								
Total Coliform (positive samples/month)	0	1	0	NA		2010	No	Naturally present in the environment
Radioactive Contaminants								
Radium (combined 226/228) (pCi/L)	0	5	0.46	NA		2010	No	Erosion of natural deposits

Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source
Inorganic Contaminants							
Copper - action level at consumer taps (ppm)	1.3	1.3	0.1	2010	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Lead - action level at consumer taps (ppb)	0	15	0.005	2010	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Undetected Contaminants

The following contaminants were monitored for, but not detected, in your water.

Contaminants	MCLG or MRDLG	MCL or MRDL	Your Water	Violation	Typical Source
Xylenes (ppm)	10	10	ND	No	Discharge from petroleum factories; Discharge from chemical factories
Vinyl Chloride (ppb)	0	2	ND	No	Leaching from PVC piping; Discharge from plastics factories

Unit Descriptions	
Term	**Definition**
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ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
positive samples/month	positive samples/month: Number of samples taken monthly that were found to be positive
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AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
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MRDLG	MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MNR	MNR: Monitored Not Regulated
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CCR 2011

Spanish (Espanol)

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microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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Disinfectants & Disinfectant By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
Haloacetic Acids (HAA5) (ppb)	NA	60	2	0.002	0.0024	2010	No	By-product of drinking water chlorination
Chlorine (as Cl2) (ppm)	4	4	0.1	0.1	1	2011	No	Water additive used to control microbes
TTHMs [Total Trihalomethanes] (ppb)	NA	80	8.6	7.63	8.66	2010	No	By-product of drinking water disinfection
Inorganic Contaminants								
Nitrate [measured as Nitrogen] (ppm)	10	10	2.07	1.75	2.07	2010	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Arsenic (ppb)	0	10	1.05	1.05	1.6	2010	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Microbiological Contaminants								
Total Coliform (positive samples/month)	0	1	0	NA		2011	No	Naturally present in the environment
Radioactive Contaminants								
Uranium (ug/L)	0	30	5.42	4.36	5.42	2011	No	Erosion of natural deposits

Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source
Inorganic Contaminants							
Copper - action level at consumer taps (ppm)	1.3	1.3	0.26	2010	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead - action level at consumer taps (ppb)	0	15	3.02	2010	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Unit Descriptions	
Term	**Definition**
ug/L	ug/L : Number of micrograms of substance in one liter of water
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
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NA	NA: not applicable
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Important Drinking Water Definitions	
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MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

For more information please contact:

Contact Name: Todd Bunn
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Fax: 208-934-5425
E-Mail: tbunn@goodingidaho.org

CCR 2012

Spanish (Espanol)

Este informe contiene informacion muy importante sobre la calidad de su agua potable. Por favor lea este informe o comuniquese con alguien que pueda traducir la informacion.

Is my water safe?

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

Your drinking water originates from ground water wells.

Source water assessment and its availability

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Why are there contaminants in my drinking water?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity: microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How can I get involved?

By contacting Gooding City Hall at 934-5669.

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference – try one today and soon it will become second nature.

- Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit www.epa.gov/watersense for more information.

Source Water Protection Tips

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides – they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

Additional Information for Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. City of Gooding is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range Low	Range High	Sample Date	Violation	Typical Source
Disinfectants & Disinfectant By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
TTHMs [Total Trihalomethanes] (ppb)	NA	80	12.4	6.57	12.4	2012	No	By-product of drinking water disinfection
Chlorine (as Cl2) (ppm)	4	4	0.5	NA		2012	No	Water additive used to control microbes
Haloacetic Acids (HAA5) (ppb)	NA	60	2.8	1.4	2.8	2012	No	By-product of drinking water chlorination
Inorganic Contaminants								
Arsenic (ppb)	0	10	2.19	1.82	2.19	2011	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes

Nitrate [measured as Nitrogen] (ppm)	10	10	1.8	1.49	1.8	2012	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Microbiological Contaminants								
Total Coliform (positive samples/month)	0	1	0	NA		2012	No	Naturally present in the environment
Radioactive Contaminants								
Alpha emitters (pCi/L)	0	15	6.85	0.14	6.85	2011	No	Erosion of natural deposits
Radium (combined 226/228) (pCi/L)	0	5	0.63	NA		2011	No	Erosion of natural deposits

Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source
Inorganic Contaminants							
Copper - action level at consumer taps (ppm)	1.3	1.3	0.26	2010	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead - action level at consumer taps (ppb)	0	15	3	2010	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Undetected Contaminants

The following contaminants were monitored for, but not detected, in your water.

Contaminants	MCLG or MRDLG	MCL or MRDL	Your Water	Violation	Typical Source
1,1,1-Trichloroethane (ppb)	200	200	ND	No	Discharge from metal degreasing sites and other factories

Unit Descriptions	
Term	**Definition**
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
positive samples/month	positive samples/month: Number of samples taken monthly that were found to be positive
NA	NA: not applicable
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NR	NR: Monitoring not required, but recommended.

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CCR 2013

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Haloacetic Acids (HAA5) (ppb)	NA	60	2.2	2.1	2.2	2013	No	By-product of drinking water chlorination
Inorganic Contaminants								
Arsenic (ppb)	0	10	1.6	1.05	1.6	2010	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Nitrate [measured as Nitrogen] (ppm)	10	10	1.65	1.64	1.65	2013	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Microbiological Contaminants								
Total Coliform (positive samples/month)	0	1	0	NA		2013	No	Naturally present in the environment

Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source
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Copper - action level at consumer taps (ppm)	1.3	1.3	0.23	2013	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
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Unit Descriptions

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Appendix D
Little Wood River Water Quality Data – 1977 Study

LITTLE WOOD RIVER STUDY

Gooding, Lincoln, and Blaine Counties, Idaho

Data Collected 1977

Final Summary October 1980

Department of Health and Welfare
Division of Environment
Statehouse
Boise, Idaho 83720

Water Quality Summary
No. 18

2060040
42 56 00.0 114 43 00.0 5
LITTLE WOOD R AT GOODING HWY 46
16047 IDAHO
PACIFIC NORTHWEST
UPPER SNAKE RIVER BASIN
21IDSURV 760517
0000 CLASS 00

/TYPA/AMBNT/STREAM

INDEX 1310001 002740 08090 0180
MILES 0324.30 0571.20 011.60 005.00

PARAMETER				NUMBER	MEAN	VARIANCE	STAN DEV	COEF VAR	STAND ER	MAXIMUM	MINIMUM	BEG DATE	END DATE
00010	WATER	TEMP	CENT	2	14.5000	.500000	.707107	.048766	.500000	15.0000	14.0000	75/09/18	76/05/19
00070	TURB	JKSN	JTU	1	24.0000					24.0000	24.0000	76/05/19	76/05/19
00095	CNDUCTVY	AT 25C	MICROMHO	1	343.000					343.000	343.000	76/05/19	76/05/19
00300	DO		MG/L	2	8.25000	.125000	.353553	.042855	.250000	8.50000	8.00000	75/09/18	76/05/19
00310	BOD	5 DAY	MG/L	2	2.70000	.180000	.424264	.157135	.300000	3.00000	2.40000	75/09/18	76/05/19
00335	COD	LOWLEVEL	MG/L	1	16.3000					16.3000	16.3000	76/05/19	76/05/19
00400	PH		SU	2	7.90000	.320007	.565692	.071606	.400005	8.30000	7.50000	75/09/18	76/05/19
00403	LAB	PH	SU	2	7.95000	.125000	.353553	.044472	.250000	8.20000	7.70000	75/09/18	76/05/19
00410	T ALK	CACO3	MG/L	2	150.000	392.000	19.7990	.131993	14.0000	164.000	136.000	75/09/18	76/05/19
00500	RESIDUE	TOTAL	MG/L	1	289.000					289.000	289.000	76/05/19	76/05/19
00530	RESIDUE	TOT NFLT	MG/L	2	61.0000	3042.00	55.1543	.904169	39.0000	100.000	22.0000	75/09/18	76/05/19
00535	RESIDUE	VOL NFLT	MG/L	1	2.00000					2.00000	2.00000	76/05/19	76/05/19
00610	NH3+NH4-	N TOTAL	MG/L	2	.050438	.000756	.027489	.545013	.019438	.069876	.031000	75/09/18	76/05/19
00615	NO2-N	TOTAL	MG/L	2	.001912	.155E-07	.000125	.065203	.000088	.002000	.001824	75/09/18	76/05/19
00620	NO3-N	TOTAL	MG/L	2	.052919	.005185	.072010	1.36076	.050919	.103838	.002000	75/09/18	76/05/19
00625	TOT KJEL	N	MG/L	1	1.50000					1.50000	1.50000	76/05/19	76/05/19
00650	T PO4	PO4	MG/L	2	.350000	.000800	.028283	.080810	.019999	.370000	.330000	75/09/18	76/05/19
00665	PHOS-TOT		MG/L P	2	.190000	.000200	.014141	.074427	.009999	.200000	.180000	75/09/18	76/05/19
31501	TOT COLI	MFIMENDO	/100ML	2	195.000	4050.00	63.6396	.326357	45.0000	240.000	150.000	75/09/18	76/05/19
31616	FEC COLI	MFM-FCBR	/100ML	2	60.0000	5000.00	70.7107	1.17851	50.0000	110.000	10.0000	75/09/18	76/05/19
70507	PHOS-T	ORTHO	MG/L P	2	.044250	.002775	.052679	1.19050	.037250	.081500	.007000	75/09/18	76/05/19

6004
42 56 00.0 114 44 00.0 5
LITTLE WOOD R AB GOODING STP
16047 IDAHO
PACIFIC NORTHWEST
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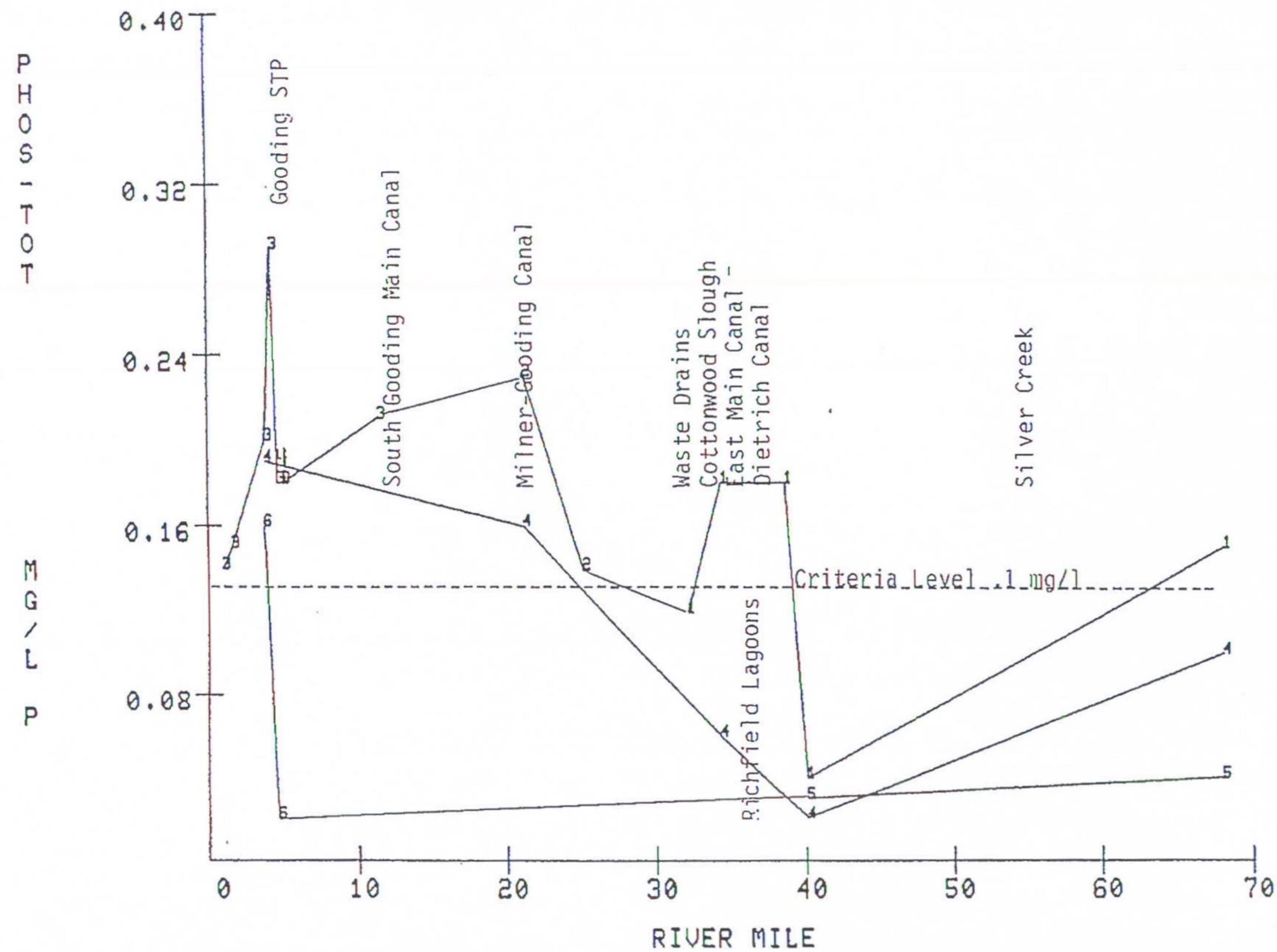
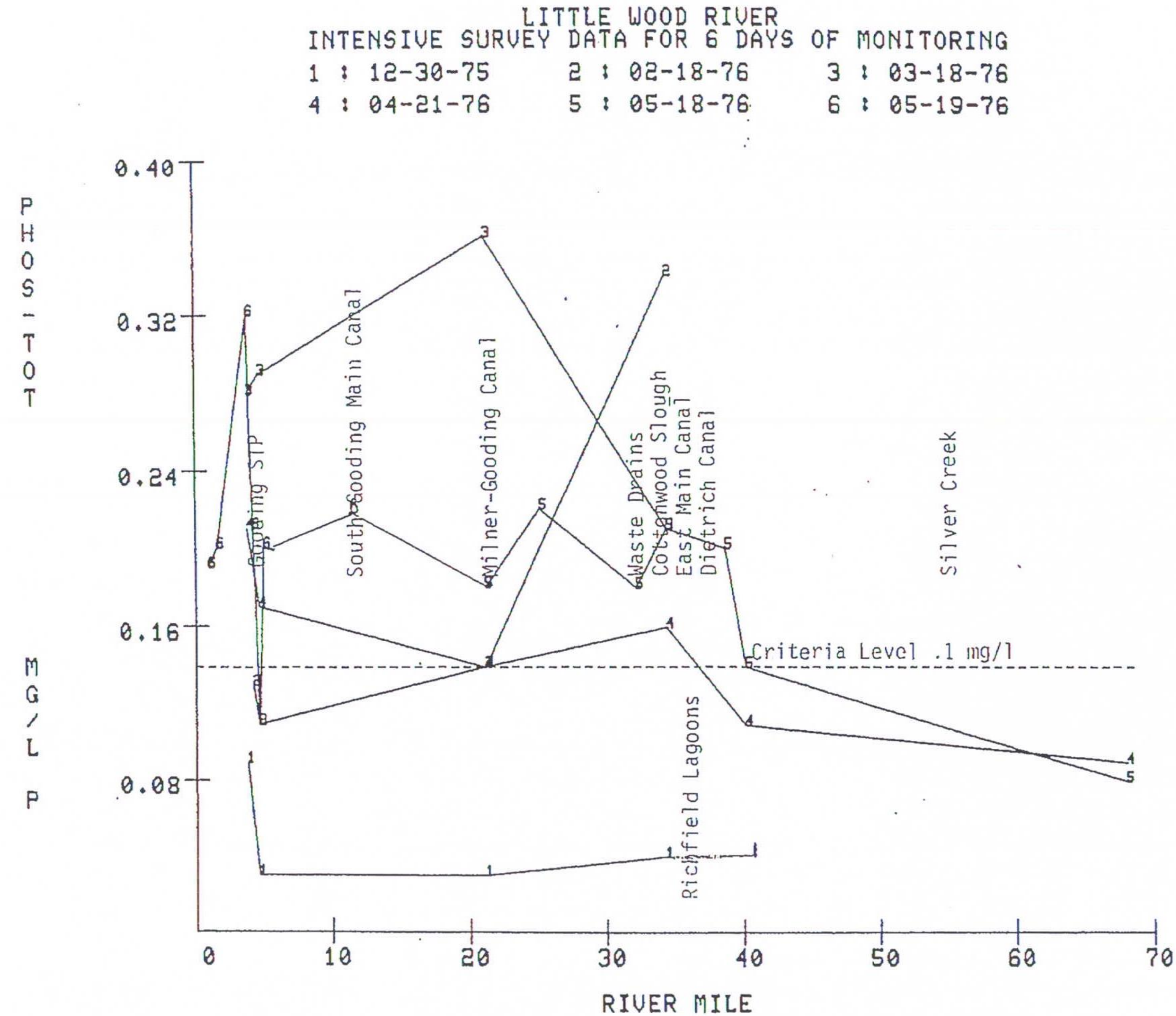
INDEX 1310001 002740 08090 0180
MILES 0324.30 0571.20 011.60 004.60

PARAMETER				NUMBER	MEAN	VARIANCE	STAN DEV	COEF VAR	STAND ER	MAXIMUM	MINIMUM	BEG DATE	END DATE
00010	WATER	TEMP	CENT	8	6.62500	40.2678	6.34570	.957841	2.24354	16.0000	.000000	75/09/18	76/05/19
00070	TURB	JKSN	JTU	6	15.1667	235.095	15.3328	1.01095	6.25959	42.0000	3.40000	75/10/09	76/04/21
00095	CNDUCTVY	AT 25C	MICROMHO	6	370.666	2132.41	46.1781	.124581	18.8521	410.000	279.000	75/10/09	76/04/21
00300	DO		MG/L	8	10.7250	2.77361	1.66542	.155284	.588813	13.2000	8.50000	75/09/18	76/05/19
00310	BOD	5 DAY	MG/L	7	3.00000	.850016	.921963	.307321	.348469	4.10000	1.40000	75/09/18	76/05/19
00335	COD	LOWLEVEL	MG/L	6	13.7833	162.974	12.7661	.926200	5.21174	30.3000	4.10000	75/10/09	76/04/21
00400	PH		SU	6	8.24999	.031104	.176362	.021377	.071999	8.40000	7.90000	75/09/18	76/05/19
00403	LAB	PH	SU	8	8.03750	.082659	.287505	.035770	.101648	8.40000	7.50000	75/09/18	76/05/19
00410	T ALK	CACO3	MG/L	8	169.750	686.214	26.1957	.154319	9.26158	204.000	138.000	75/09/18	76/05/19
00500	RESIDUE	TOTAL	MG/L	7	308.143	2470.51	49.7042	.161302	18.7864	386.000	250.000	75/10/09	76/05/19
00505	RESIDUE	TOT VOL	MG/L	1	44.0000					44.0000	44.0000	76/02/18	76/02/18
00530	RESIDUE	TOT NFLT	MG/L	8	64.8750	5240.98	72.3946	1.11591	25.5953	228.000	11.0000	75/09/18	76/05/19
00535	RESIDUE	VOL NFLT	MG/L	1	2.00000					2.00000	2.00000	76/05/19	76/05/19
00610	NH3+NH4-	N TOTAL	MG/L	8	.051495	.002078	.045586	.885238	.016117	.139751	.007764	75/09/18	76/05/19
00615	NO2-N	TOTAL	MG/L	8	.002633	.000001	.001209	.459109	.000427	.004863	.001000	75/09/18	76/05/19
00620	NO3-N	TOTAL	MG/L	8	.336593	.089014	.298353	.886389	.105484	.702033	.002000	75/09/18	76/05/19
00625	TOT KJEL	N	MG/L	6	1.35000	.067001	.258845	.191737	.105673	1.70000	1.00000	75/10/09	76/04/21
00650	T PO4	PO4	MG/L	8	.313750	.057627	.240056	.765119	.084872	.790000	.050000	75/09/18	76/05/19
00665	PHOS-TOT		MG/L P	8	.137500	.007964	.089243	.649039	.031552	.290000	.020000	75/09/18	76/05/19
00940	CHLORIDE	CL	MG/L	1	2.00000					2.00000	2.00000	75/10/09	75/10/09
31501	TOT COLI	MFIMENDO	/100ML	8	296.250	21798.2	147.642	.498370	52.1994	520.000	90.0000	75/09/18	76/05/19
31616	FEC COLI	MFM-FCBR	/100ML	8	94.0000	32049.1	179.023	1.90450	63.2941	500.000	2.00000	75/09/18	76/05/19
31679	FECSTREP	MF M-ENT	/100ML	4	108.000	1762.67	41.9841	.388742	20.9920	160.000	62.0000	75/11/26	76/04/21
70507	PHOS-T	ORTHO	MG/L P	8	.026455	.000586	.024209	.915091	.008559	.065200	.003000	75/09/18	76/05/19

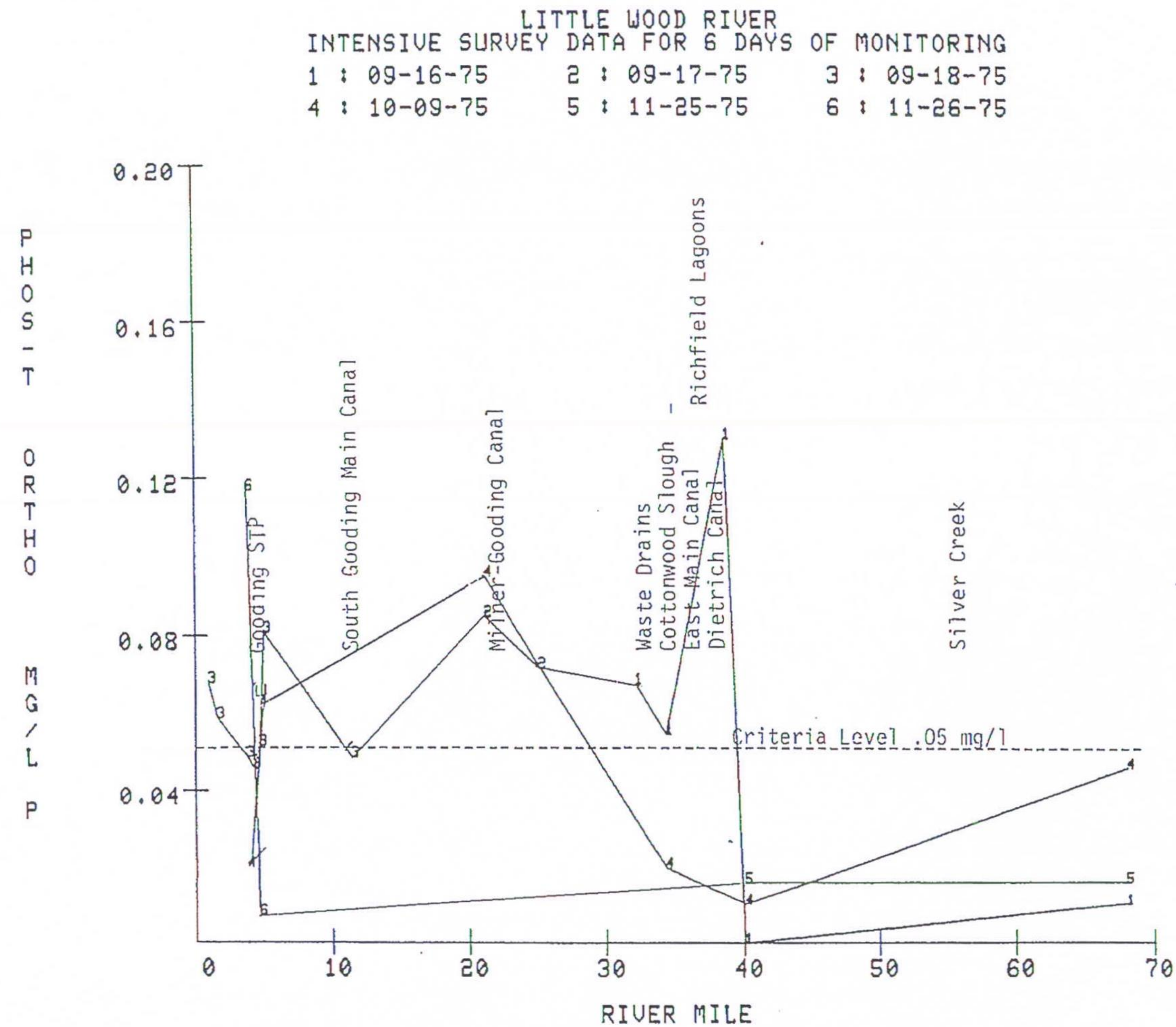
LITTLE WOOD RIVER
INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING

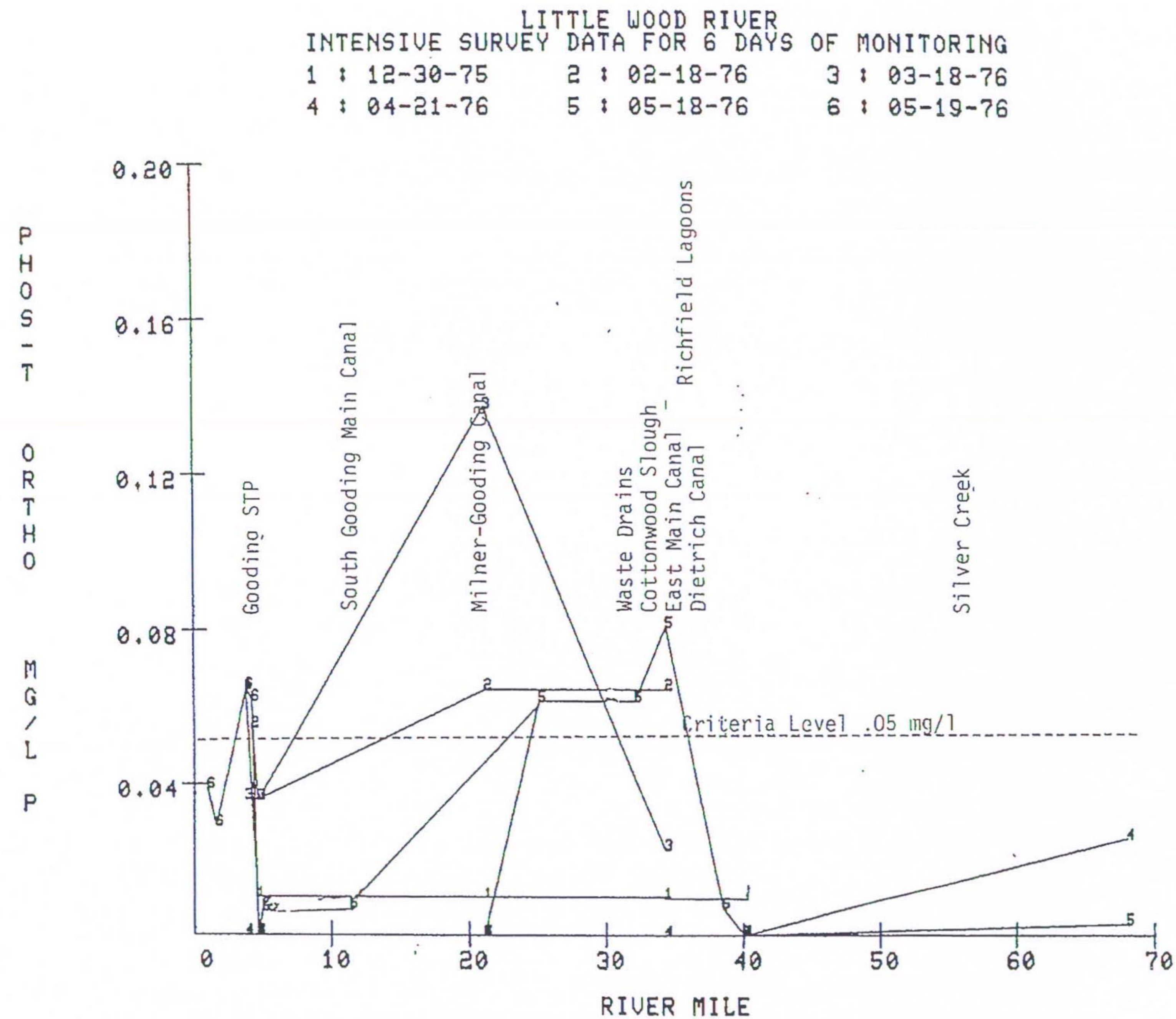
1 : 09-16-75   2 : 09-17-75   3 : 09-18-75
4 : 10-09-75   5 : 11-25-75   6 : 11-26-75

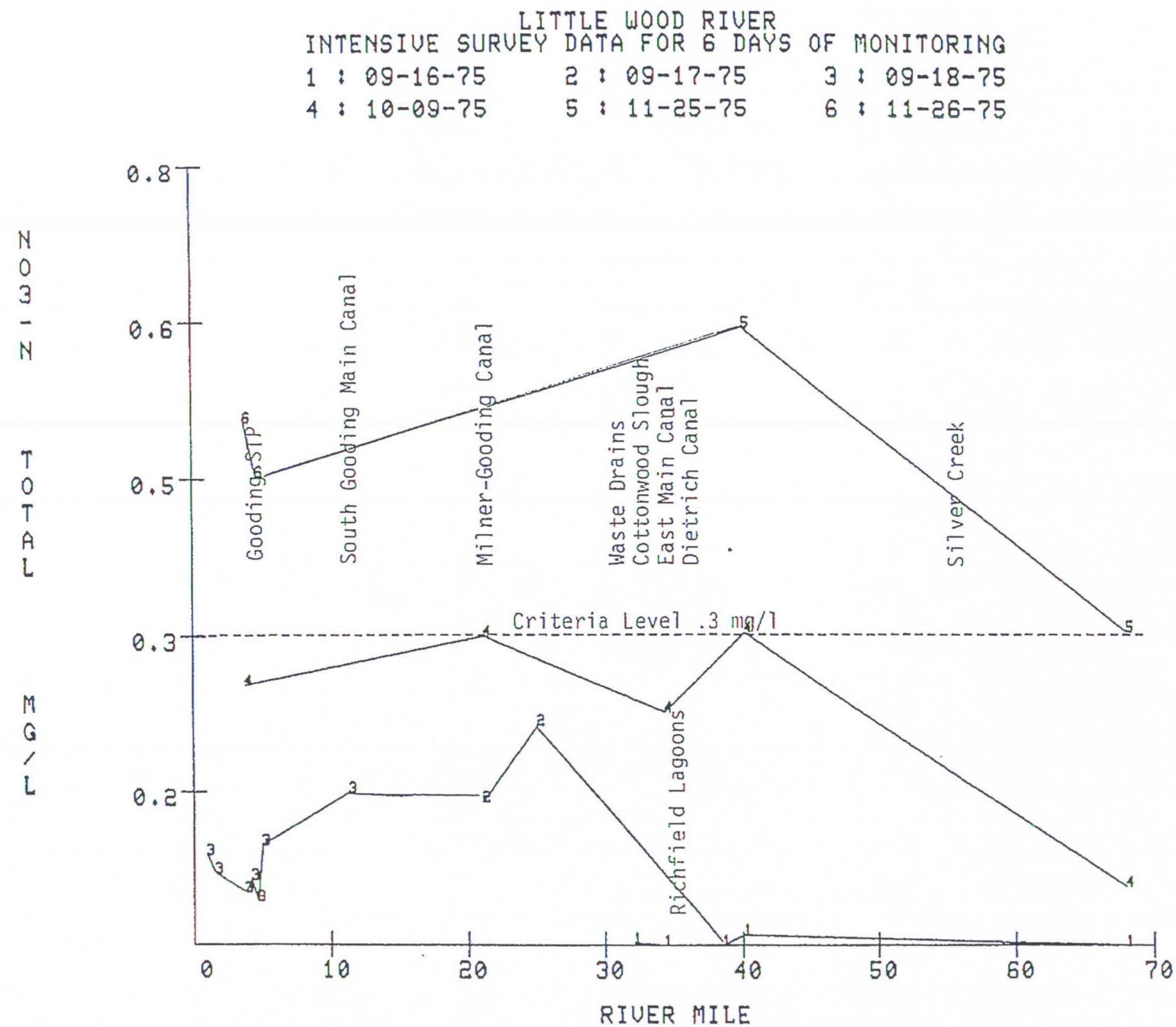


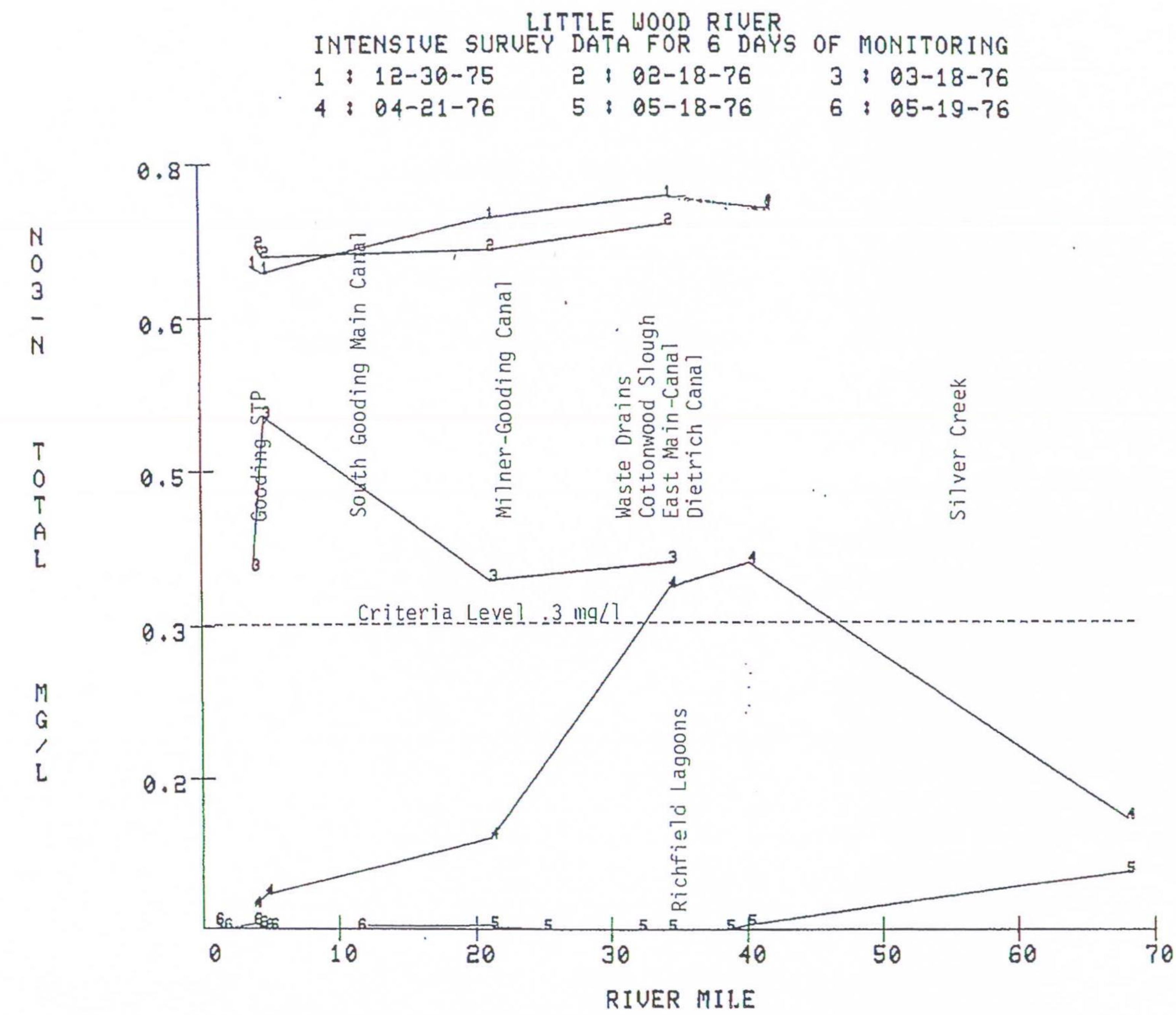


LITTLE WOOD RIVER
INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING
1 : 12-30-75 2 : 02-18-76 3 : 03-18-76
4 : 04-21-76 5 : 05-18-76 6 : 05-19-76
PHOS-TOT MG/L P
0.40
0.32
0.24
0.16
0.08
Gooding STP
South Gooding Main Canal
Milner-Gooding Canal
Waste Drains
Cottonwood Slough
East Main Canal
Dietrich Canal
Silver Creek
Criteria Level .1 mg/l
Richfield Lagoons
0
10
20
30
40
50
60
70
RIVER MILE

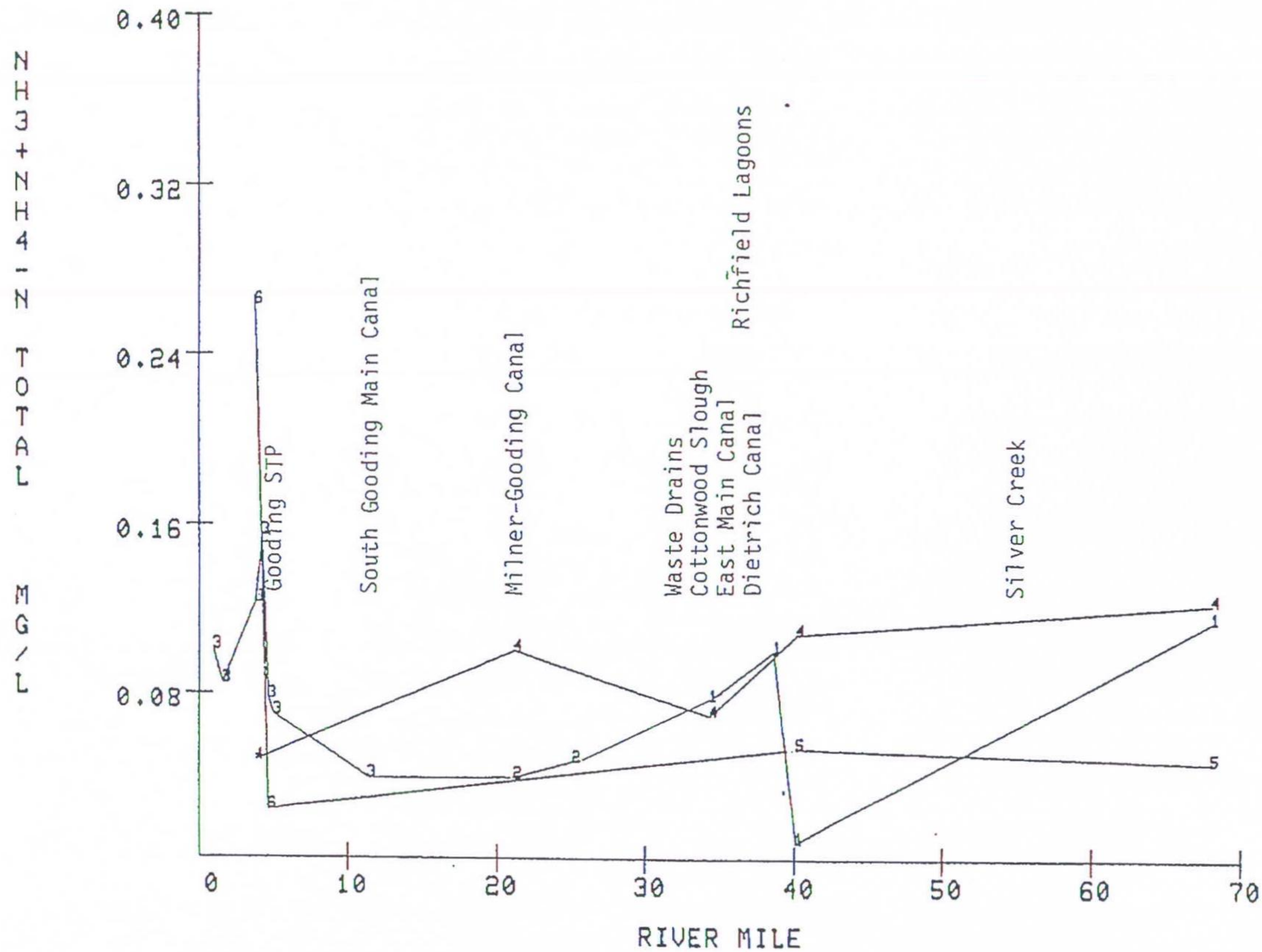

LITTLE WOOD RIVER
INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING
1 : 09-16-75
2 : 09-17-75
3 : 09-18-75
4 : 10-09-75
5 : 11-25-75
6 : 11-26-75
PHOS-T ORTHO MG/L P
0.20
0.16
0.12
0.08
0.04
Gooding STP
South Gooding Main Canal
Milner-Gooding Canal
Waste Drains
Cottonwood Slough
East Main Canal
Dietrich Canal
Richfield Lagoons
Silver Creek
Criteria Level .05 mg/l
0
10
20
30
40
50
60
70
RIVER MILE

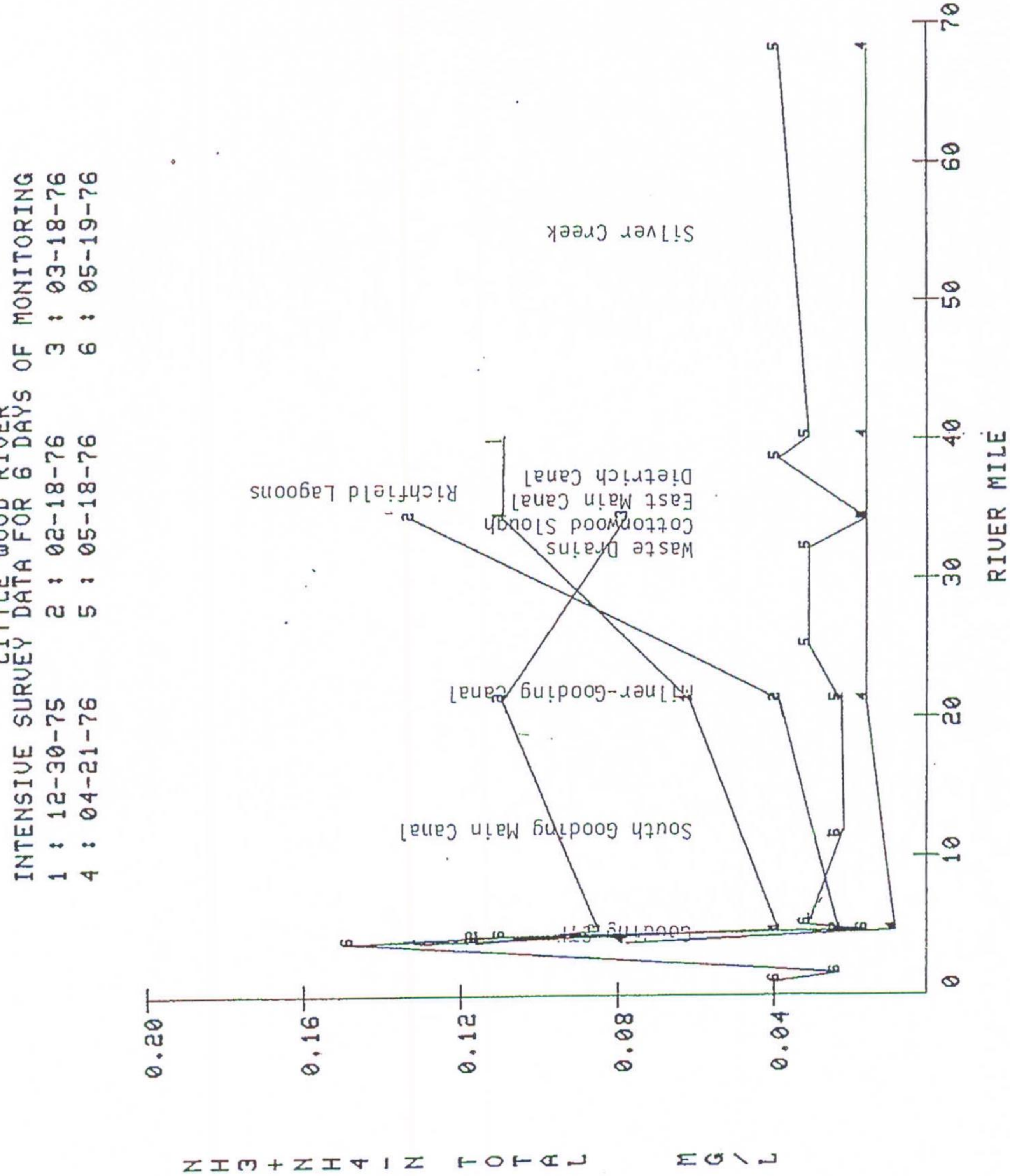

LITTLE WOOD RIVER
INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING
1 : 12-30-75 2 : 02-18-76 3 : 03-18-76
4 : 04-21-76 5 : 05-18-76 6 : 05-19-76
PHOS-T ORTHO MG/L P
0.20
0.16
0.12
0.08
0.04
Gooding STP
South Gooding Main Canal
Milner-Gooding Canal
Waste Drains
Cottonwood Slough
East Main Canal
Dietrich Canal
Richfield Lagoons
Silver Creek
Criteria Level .05 mg/l
0
10
20
30
40
50
60
70
RIVER MILE


LITTLE WOOD RIVER
INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING
1 : 09-16-75 2 : 09-17-75 3 : 09-18-75
4 : 10-09-75 5 : 11-25-75 6 : 11-26-75
NO3-N TOTAL MG/L
0.8
0.6
0.5
0.3
0.2
Gooding STP
South Gooding Main Canal
Milner-Gooding Canal
Waste Drains
Cottonwood Slough
East Main Canal
Dietrich Canal
Silver Creek
Criteria Level .3 mg/l
Richfield Lagoons
0
10
20
30
40
50
60
70
RIVER MILE


LITTLE WOOD RIVER
INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING
1 : 12-30-75 2 : 02-18-76 3 : 03-18-76
4 : 04-21-76 5 : 05-18-76 6 : 05-19-76
NO3-N TOTAL MG/L
0.8
0.6
0.5
0.3
0.2
Gooding STP
South Gooding Main Canal
Milner-Gooding Canal
Waste Drains
Cottonwood Slough
East Main-Canal
Dietrich Canal
Silver Creek
Richfield Lagoons
Criteria Level .3 mg/l
0
10
20
30
40
50
60
70
RIVER MILE

LITTLE WOOD RIVER
INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING
1 : 09-16-75 2 : 09-17-75 3 : 09-18-75
4 : 10-09-75 5 : 11-25-75 6 : 11-26-75




LITTLE WOOD RIVER
INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING
1 : 12-30-75 2 : 02-18-76 3 : 03-18-76
4 : 04-21-76 5 : 05-18-76 6 : 05-19-76
NH3+NH4-N TOTAL MG/L
RIVER MILE
South Gooding Main Canal
Milner-Gooding Canal
Waste Drains
Cottonwood Slough
East Main Canal
Dietrich Canal
Richfield Lagoons
Silver Creek
0.20
0.16
0.12
0.08
0.04
0
10
20
30
40
50
60
70

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

650 Addison Avenue West, Suite 110 • Twin Falls, Idaho 83301 • (208) 736-2190
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September 3, 2014

The Honorable Walter Nelson
Mayor, City of Gooding
308 5th Avenue West
Gooding, Idaho 83330-1205

Re: **City of Gooding Little Wood River Groundwater Recharge Proposal Review**, Gooding County

Dear Mayor Nelson:

Please be aware that Chuck Brockway, with Brockway Engineering has submitted the above referenced draft ground water recharge proposal to this office for our use, review and comment.

We have reviewed the proposal and we have the following comments.

- License Sealing of Ground Water Recharge Monitoring Proposal. Technical Comment. It was determined from our review of the submittal that the proposal was not license sealed by the project engineer prior to submittal. Resultantly, we respectfully request that Chuck Brockway include his seal on the amended proposal prior to submittal.

- Unavailable Reference Documents. General Comment. It was determined from our review that documents referenced in the narrative have not been incorporated as indicated. Please review the following instances and amend the proposal as needed.

    A. Background Water Quality: "*Ground Water Section*". Page Five. It was determined from our review of the narrative that the last bullet item contained in the listing suggests all six existing wells were previously tested for Volatile Organic Chemicals (VOC's), however only the monitoring results for source 05S-15E-35DBD3 is included. With this in mind, please incorporate the additional five source monitoring results into the appendix for present and future reference. We also recommend that consideration be made toward adding one or two VOC parameter indicators in the semi-annual monitoring schedule or a brief discussion be included suggesting why VOC monitoring may not be a necessary parameter to monitor.

    B. Background Water Quality: "*Ground Water Section*". Page Five. It was determined from our review that the last sentence contained in the second to last paragraph indicates the city of Gooding Consumer Confidence Report is incorporated into the proposal however isn't. Please check and amend the proposal as needed.

    C. Background Water Quality: "*Surface Water Section*". Page Five. It was determined from our review of the fourth sentence contained in the first paragraph that surface water quality data should be available in Appendix X, but isn't. Please check and amend the document as needed.

D. Proposed Dedicated Monitoring Wells Section. Page Seven. It was determined from our review of the last sentence contained in this part that a typical ground water monitoring well rendering is attached, but isn't. Please check and amend the document as needed.

- Under Water Quality Monitoring Section. Page Seven. General Comment. After reviewing the proposed water quality parameter listing, we respectfully request that the following water quality parameters be included: conductivity, Cryptosporidium and Giardia. Please also clarify in the narrative why the presented Synthetic Organic Chemical (SOC) parameters were selected? The DEQ recharge guidance, which has been enclosed for your convenience suggests on page seventeen that individuals proposing to recharge surface water to ground water consult with the Idaho Department of Agriculture to determine which types of pesticides are used in the recharge area. Resultantly, we recommend that the proposed monitoring plan parameters be based on those consultations.

- Figure One – "*City of Gooding Groundwater Monitoring Plan*". Page Eleven. General Comment. After reviewing the rendering, it appears that proposing a triangle monitoring orientation may produce more accurate and representative groundwater water quality, flow capacity and velocity data. Resultantly, is it possible to position the up gradient monitoring well (MW-1), a half mile to the west north west of the current location or is the proposed configuration based on land ownership, availability or right to access considerations? Please clarify.

- Proposed Monitoring Schedule. General Comment. Be aware at this time that DEQ may ask the city of Gooding to include additional water quality parameters in the future based on adjacent land use, contamination events, water quality monitoring history and localized ground water conditions.

Please submit two final amended copies of the report to this office for our use, review and acceptance at the city of Gooding's earliest convenience.

If you have any questions, do not hesitate to contact this office at 736-2190.

Sincerely,

Brian A. Reed, PE
Technical Engineer I

BAR:gl

Enclosure: DEQ Recharge Guidance: Narrative without Appendices

cc: Chuck Brockway, Ph.D, PE, Brockway Engineering, Twin Falls w/o enc.
Todd Bunn, City of Gooding w/o enc.
Rob Lanford, USDA-RD, Twin Falls w/o enc.
Alan Merrit, PE, IDWR, Twin Falls w/o enc.
Oksana Roth, E.I, Keller & Associates, Pocatello w/o enc.

ec: Irene Nautch, DEQ-Twin Falls Regional Office w/ enc.
David Anderson, DEQ-Twin Falls Regional Office w/ enc.
Toni Mitchell, DEQ-State Office w/ enc.
MaryAnna Peavey, DEQ-State Office w/ enc.
Ester Ceja, DEQ-State Office w/ enc.

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September 24, 2014

The Honorable Walter Nelson
Mayor, City of Gooding
308 5th Avenue West
Gooding, Idaho 83330-1205

Re: **Ground Water Quality Monitoring Program for the City of Gooding Recharge Site,** Gooding County

Dear Mayor Nelson:

Please be aware that Chuck Brockway, with Brockway Engineering has submitted the above referenced final ground water recharge ground water quality monitoring program to this office for our use, review and comment.

We have reviewed the ground water quality monitoring program and we have the following comments.

- On-going Monitoring Parameters and Frequency. MPA Testing. Page Number Ten. General Comment. It was determined from our review of the document that the city of Gooding will perform micro particulate analysis (MPA) testing on monitoring well number MW-2. The proposed frequency is once after the monitoring well is constructed and once every four years thereafter. The plan suggests DEQ would only be notified if the analysis indicates a high risk for surface water influence (Analysis Result of Nine). With this in mind, please understand that MPA testing is an important tool and could alert us to adverse surface water recharge impacts and we respectfully request formal notification each time a MPA analysis is completed and the MPA result be provided.

- Figure One – City of Gooding GW Monitoring Plan Map. General Comment. After reviewing the proposed monitoring well placement strategy, we respectfully request that monitoring well MW-1 be constructed further north or further west to produce a more equilateral triangle orientation with respect to monitoring wells MW-2 and MW-3.

- The City of Gooding must report any result reaching an alert level within 24 hours of receipt of laboratory results. Routine samples and field parameters must be submitted within 10 days of receipt of laboratory results.

- The City of Gooding must develop, submit and implement a contingency plan to address potential emergency situations at the recharge area and in the recharge water delivery system. Examples of emergency situations to be addressed in the contingency plan may include the following:
    - Misapplication of pesticides or herbicides to either the recharge basin or the water delivery system during a period of recharge.
    - An accident involving a vehicle along the delivery system.
    - Aerial application of pesticides or herbicides to the recharge basin or along the delivery system.
    - Basin stability, such as sinkhole development.

A notification procedure and plan of action must be included in the contingency plan.

It was determined from our review of the Ground Water Quality Monitoring Program for the City of Gooding Recharge Site that the recharge project has been suitably overviewed and defined; the monitoring well strategy with respect to number and orientation of monitoring wells is acceptable; the proposal incorporates a multi-parameter ground water and surface water monitoring strategy which should alert the city of any groundwater impacts; and a suitable immediate and annual DEQ notification protocol will be provided. At this time, we hereby accept the city of Gooding groundwater recharge proposal for planning, design and implementation.

We have enclosed one stamped groundwater recharge proposal bearing DEQ acceptance for city use, review and project record. Please retain this document with state drinking water SRF loan project records as well as ground water recharge records. We are also enclosing one DEQ Monitoring Program Agreement for Managed Recharge by Land Application for your review and authorization. We respectfully request that the agreement be returned to us upon its acceptance and that the associated U.S. Bureau of Land Management environmental information document (EID) determination be forwarded to this office upon its issuance.

Please understand that unauthorized deviation or failure to comply with the conditions contained in the agreement and recharge program document may result in enforcement, additional monitoring or disallowed use of the recharge site.

If you have any questions, please do not hesitate to contact this office at 736-2190.

Sincerely,

Brian A. Reed, PE
Technical Engineer I

BAR:gl

Enclosure: One stamped, accepted ground water recharge proposal and DEQ Recharge Agreement

cc: Chuck Brockway, Ph.D, PE, Brockway Engineering, Twin Falls w/o enc.
Todd Bunn, City of Gooding w/o enc.
Rob Lanford, USDA-RD, Twin Falls w/o enc.
Holly Crawford, BLM Field Office, Shoshone w/o enc.
Alan Merrit, PE, IDWR, Twin Falls w/o enc.
Oksana Roth, E.I, Keller & Associates, Pocatello w/o enc.

ec: Irene Nautch, DEQ-Twin Falls Regional Office w/ enc.
Tonia Mitchell, DEQ-State Office w/ enc.
David Anderson, DEQ-Twin Falls Regional Office w/ enc.
MaryAnna Peavey, DEQ-State Office w/ enc.
Ester Ceja, DEQ-State Office w/ enc.

Monitoring Program Agreement for Managed Recharge by Land Application

Project: City of Gooding Managed Recharge Project

Location: 4.5 miles NE of the City of Gooding

Project Purpose: Divert a maximum of 7.21 cfs from the Little Wood River for recharge to the Eastern Snake Plain Aquifer as mitigation for additional ground water withdrawal.

Project Duration: Annually from March 15 through November 15 beginning in 2015

Property Owner: USDI, Bureau of Land Management

Operator: City of Gooding

Responsible Party: City of Gooding

The ground water quality monitoring program for the City of Gooding recharge project is hereby approved by the Department of Environmental Quality (Department) pursuant to IDAPA 58.01.16.600, *Wastewater Rules, Land Application of Wastewater(s) or Recharge Waters.*

The number of sample sites, constituents, frequency, and reporting schedule are defined and described in the program. DEQ has determined the monitoring program to be protective of ground water quality for beneficial uses when adhered to as described. Failure to comply with the monitoring program is a violation of the Department's rules and the responsible party may be subject to enforcement action.

DEQ Regional Office Administrator   Date

Responsible Party   Date

City of Gooding Contingency Plan for Groundwater Recharge Site

Risk assessment: The following events have been identified as possible sources of contamination and or detrimental to the recharge area.

1. Chemical or petroleum spill in the Little Wood River upstream from the diversion gate.
2. Chemical or petroleum spill in the diversion channel.
3. Misapplication of pesticides or herbicides to the diversion channel or to the recharge basin.
4. Aerial application of pesticides or herbicides to the diversion channel or recharge basin.
5. Basin stability, such as sinkhole development.
6. Vehicle or farm equipment accident along the diversion channel resulting in a chemical or petroleum spill.

Plan of Action:

1. Upon notification to the City of Gooding there has been a chemical or petroleum spill upstream from the recharge headgate city personnel shall proceed immediately to diversion structure and close the recharge headgate. Headgate shall remain closed and no water shall be diverted to recharge basin until approval from DEQ has been given.
2. Upon notification to the City of Gooding there has been a chemical or petroleum spill into the recharge channel city personnel shall proceed immediately to diversion structure and close the recharge headgate. Headgate shall remain closed and no water shall be diverted into recharge basin until approval from DEQ has been given.
3. In the event a vehicle or farm equipment accident occurs along the recharge channel and results in a chemical or petroleum spill city personnel shall proceed immediately to diversion structure and close the recharge headgate. Headgate shall remain closed and no water shall be diverted until spill has been properly removed and DEQ has given approval.
4. Upon notification to the City of Gooding there has been a misapplication of pesticides or herbicides into the recharge channel city personnel shall proceed immediately to diversion structure and close the recharge headgate. Headgate shall remain closed and no water shall be diverted until approval from DEQ has been given.
5. Upon notification to the City of Gooding there has been aerial application of pesticides to either the recharge basin or the recharge channel city personnel shall proceed immediately to the diversion structure and close the recharge headgate. Headgate shall remain closed and no water shall be diverted until approval from DEQ has been given.
6. The city shall perform weekly inspections of the recharge basin and recharge channel. Upon discovery of a sinkhole city personnel shall close the recharge headate. No water shall be diverted into recharge basin until sink hole has been properly plugged and approval from DEQ is given.

APPROVED
PE
ENVIRONMENTAL ENGINEER
DATE 10/9/14

RECEIVED
OCT - 8 2014
DEQ - TFRO

TRFO# 2014AGD3658

Notification Procedure:

If events 1-3 as outlined above occur please use the following notification procedure.

- Call 911 and report the incident
- Notify the Public Works Director
- Notify the Street Department Forman
- Notify Mayor
- Notify DEQ within 24 hours of incident

If events 4-6 as outlined above occur please use the following notification procedure.

- Notify Public Works Director
- Notify Street Department Forman
- Notify Mayor
- Notify DEQ within 24 hours of incident

Contact List:

1) Mayor of Gooding:
   Office......208-934-5669
   Home......208-934-1672
   Cell.........208-539-1672

2) Public Works Director:
   Office......208-934-5669
   Cell 208-539-5669

3) Street Department Forman:
   Office......208-934-4791
   Cell..........208-539-4648

4) Water Department Forman:
   Office........208-934-4791
   Cell...........208-539-5880

5) DEQ Twin Falls Office:
   208-736-2190

City of Gooding

'Gateway to a Good Life
308 5th Ave West
Gooding, ID 83330-1205
208 934-5669 Phone
208 934-5425 Fax

Incorporated November 21, 1910

Mayor: Walter C Nelson
Clerk: Hollye Lierman

City Council
Michael 'Mitch' Arkoosh
Vern France
Diane Houser
Mel Magnelli

RECEIVED
OCT - 8 2014
DEQ - TFRO

Brian Reed
IDEQ
650 Addison Ave West, Suite 110
Twin Falls Idaho, 83301

October 7, 2014

Dear Mr. Reed,

Please find enclosed a copy of the City of Gooding's Water Monitoring Contingency Plan. We are submitting for your review and approval.

Sincerely,

Todd Bunn

Todd Bunn
Public Works Director
City of Gooding
208-934-5669

SCANNED

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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October 9, 2014

The Honorable Walter Nelson
City of Gooding
308 5th Avenue West
Gooding, Idaho 83330-1205

Re: **City of Gooding Recharge Site Ground Water Quality Monitoring Program Associated Contingency Plan**, Gooding County

Dear Mayor Nelson:

Please be aware that Todd Bunn has submitted the above referenced ground water recharge contingency plan to this office for our use, review and comment.

We have reviewed the plan and determined that the minimum requirements outlined in our "*Developing a Ground Water Quality Monitoring Program for Managed Recharge Projects by Land Application*" guidance is satisfied and the plan should be sufficient to ensure operational personnel will appropriately respond to a up gradient surface water chemical spill or a similar contamination event occurs, which could adversely affect ground water quality.

At this time, we hereby accept the above referenced contingency plan for use by the city of Gooding. If the city seeks city council approval for the plan, please forward council minutes and acceptance for our project record. We are forwarding one stamped ground water quality contingency plan bearing DEQ acceptance to Todd Bunn for city use, review and project record. Please retain this document with general water system records and retain a second copy with drinking water SRF loan project records.

Please understand that this contingency plan is living document and the plan should be reviewed and updated at least annually or when operational procedures or protocols need to be modified.

If you have any questions, do not hesitate to contact this office at 736-2190.

Sincerely,

Brian A. Reed, PE
Technical Engineer I

BAR:gl

cc: Todd Bunn, City of Gooding w/ reviewed, accepted contingency plan
Rob Lanford, USDA-RD, Twin Falls
Holly Crawford, BLM Field Office, Shoshone
Alan Merrit, PE, IDWR, Twin Falls
Oksana Roth, E.I, Keller & Associates, Pocatello

ec: Irene Nautch, DEQ-Twin Falls Regional Office
David Anderson, DEQ-Twin Falls Regional Office
Tonia Mitchell, DEQ-State Office
MaryAnna Peavey, DEQ-State Office
Ester Ceja, DEQ-State Office

City of Gooding

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Incorporated November 21, 1910

Mayor: Walter C Nelson
Clerk: Hollye Lierman

City Council
Michael 'Mitch' Arkoosh
Vern France
Diane Houser
Mel Magnelli

Brian Reed
IDEQ
650 Addison Ave West, Suite 110
Twin Falls Idaho, 83301

APPROVED
ENVIRONMENTAL ENGINEER
DATE 11/13/14

November 6, 2014

Dear Mr. Reed,

The City of Gooding would like to request the following changes with our Groundwater Quality Monitoring Program dated September 17, 2014.

1. We would like to move the location of monitoring well #1. This would place the monitoring well North and West from the initial location. Please refer to attachment "A".
2. We would also like to use the current residential well located at the proposed location for sampling purposes. We have included copies of the well log and pump maintenance log.
3. As discussed in our meeting we would like to change the allowed depth of the monitoring well. Figure 2 from the Monitoring Program allows 30' of well depth below the static water level. We are requesting this be changed to 60'. We have included a revised drawing.

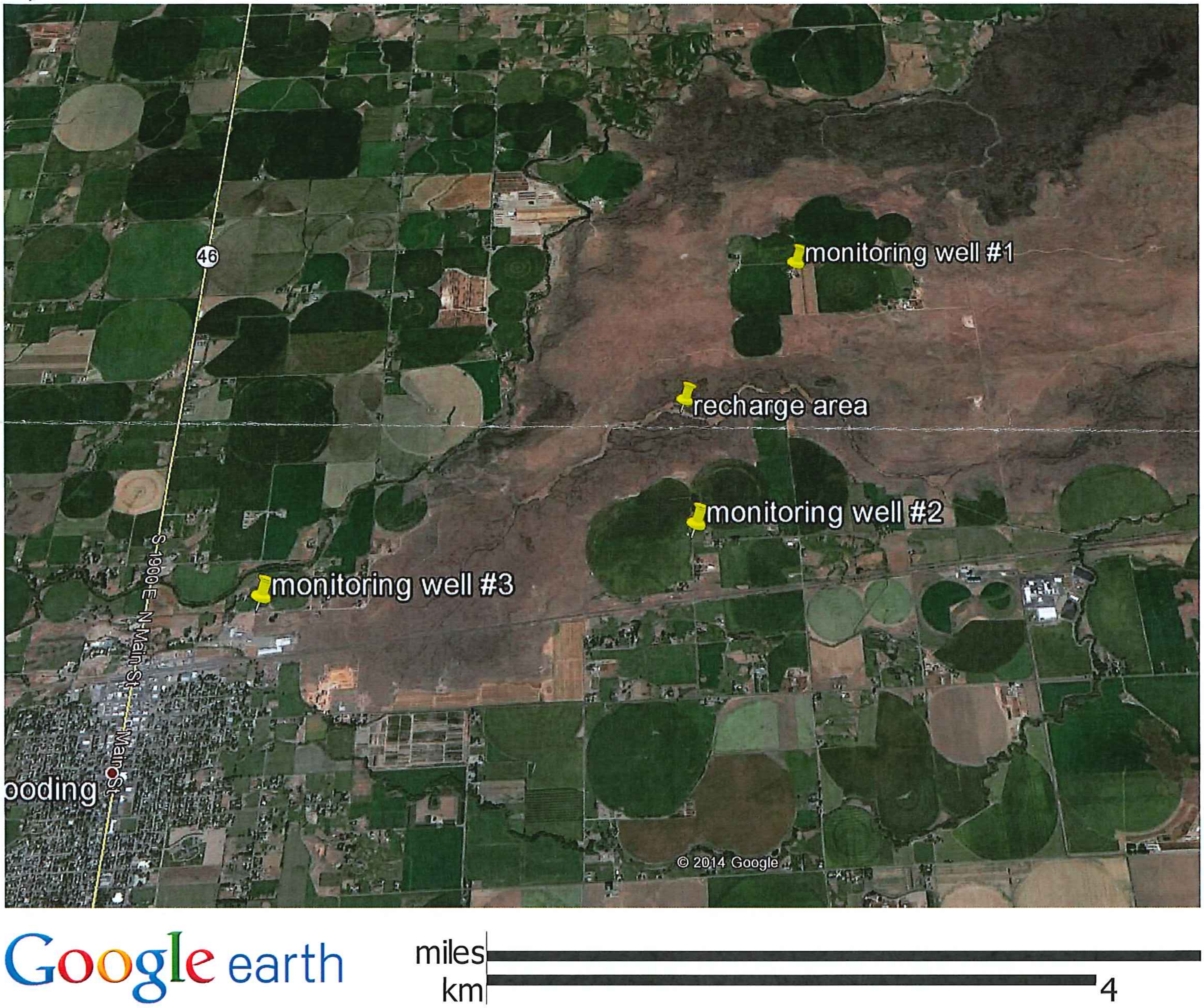
We are currently working with the same land owner for easements for Monitoring Well #1 and Monitoring Well #2. We have verbal agreements for both locations. Our City attorney is working on the written agreements and will forward copies to DEQ staff as soon as they have been signed and recorded.

Please let us know if you need additional information or have questions.

Sincerely,

Todd Bunn
Public Works Director
208-934-5669

Attachment "A"



USE TYPEWRITER OR
BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

Received 7-30-73
DWR

1. WELL OWNER

Name: Victor O Bingham

Address: Gooding Ida RFD

Owner's Permit No. ______

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 170 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+20 ~~ft~~	19' 4" feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation ______ inches by ______ inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name ______

Type ______ Model No. ______

Diameter ___ Slot size ___ Set from ______ feet to ______ feet

Diameter ___ Slot size ___ Set from ______ feet to ______ feet

Gravel packed? ☐ Yes ☒ No Size of gravel ______

Placed from ______ feet to ______ feet

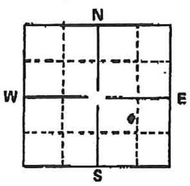
Surface seal? ☒ Yes ☐ No To what depth 18 feet

Material used in seal ☒ Cement grout ☐ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.

1 WS
31



County GOODING

NW ¼ SE ¼ Sec. 27, T. 5 N/S, R. 15 E/W

7. WATER LEVEL

Static water level 81 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow ______

Temperature ______ °F. Quality ______

Artesian closed-in pressure ______ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

9. LITHOLOGIC LOG

045640

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
10"	0	3	BROWN TOP SOIL		
10"	3	18	DARK GREY LAVA		
6"	18	20	" " "		
"	20	30	HARD LIGHT GREY LAVA		
"	30	50	BROWN LAVA		
"	50	72	LIGHT GREY LAVA		
"	72	77	SOFT BROWN LAVA		
"	77	80	BROWN LAVA		
"	80	81	" " SCORIA	X	
"	81	84	LIGHT GREY LAVA		
"	84	85	" " " SCORIA		
"	85	105	LIGHT GREY LAVA		
"	105	107	" " " SCORIA		
"	107	125	LIGHT GREY LAVA		
"	125	136	RED LAVA		
"	136	138	BLACK LAVA	X	
"	138	167	" "		
"	167	169	" " SCORIA	X	
"	169	170	BLACK LAVA		

10.

Work started 30 MAY 73 finished 5 JUN 73

CC

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

ROESSLER WELL DRILLING — 19
Driller's or Firm's Name — Number

SHOSHONE IDA.
Address

Ray Roessler — 20 Jun 73
Signed By — Date

USE ADDITIONAL SHEETS IF NECESSARY (28) FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

PUMP & TANK RECORD

OWNER: Ankeny, Gordon	DATE: 6/15/10
ADDRESS: 1944 Wood River Rd Gooding	LOCATION OF WELL: East of house

WELL DEPTH: 200'	PUMP MODEL #: 15SQE15290	SERIAL #: P10922
PUMPING WATER LEVEL: 149'	MOTOR:	SERIAL #:
PUMP SETTING: 193' prox	WARRANTY #: PPRLS	
PIPE SIZE: GPIPE114 147' PVCP11480 40'	TANK SIZE:	SERIAL #:
CASING SIZE: 6"	NOTES:	
SCREEN ☐ SHROUD ☒	3"x5'	

PUMP & TANK RECORD

OWNER: Reed, Ron	DATE: 7/30/05
ADDRESS:	LOCATION OF WELL: East of wellhouse

WELL DEPTH:	PUMP MODEL #: 16S15-14	SERIAL #: P10578US
PUMPING WATER LEVEL: 148'	MOTOR: GE UPWP3W	SERIAL #: GD573
PUMP SETTING: 236' TOC BOP	WARRANTY #:	
PIPE SIZE: GPIPE 114	TANK SIZE: WM25WB	SERIAL #:
CASING SIZE: 6"	NOTES:	
SCREEN ☐ SHROUD ☐		

PUMP & TANK RECORD

OWNER: Tolbert, Patricia	DATE: 12/2/10
ADDRESS: 1987 Wood River Rd Gooding (Original under Cassidy)	LOCATION OF WELL: S of house controls in craw

WELL DEPTH:	PUMP MODEL #: 15SQE10250	SERIAL #: P
PUMPING WATER LEVEL: 128'	MOTOR:	SERIAL #:
PUMP SETTING: 167' TOC BOS	WARRANTY #: PPRLS	
PIPE SIZE: PVCP114 80	TANK SIZE: WX101	SERIAL #:
CASING SIZE: 6"	NOTES:	
SCREEN ☐ SHROUD ☒		

Tom Bingham — Trailer Hou[se]

BERKELEY PUMP COMPANY — **Serial No. 822**

Name: Packet Ranch — Date Installed: 2/8/83

Address: Rt #2 — c/o Job No. E192[...]

Pump at Double wide Trailer — Inv. No. 926[...]

Pump Model No. ~~[illegible]~~ B4BL-15

STATIC – 94'   6" hole

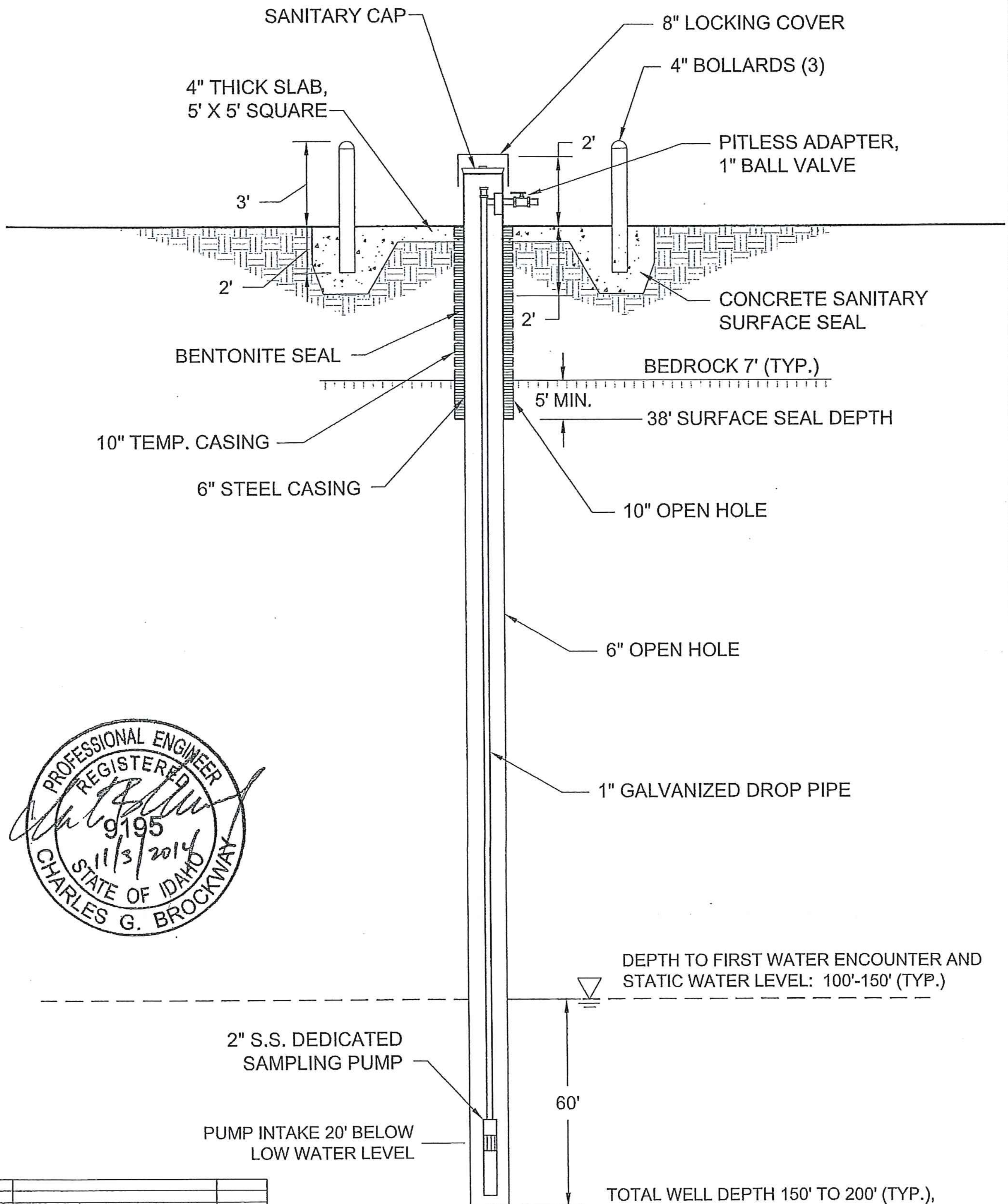
Pumpset 153'

1¼" Riser

Motor Make ______ HP 1 RPM 3450 Ph[...]

Engine Make ______ Type ______ Model ______

(Dealer Copy)



PROFESSIONAL ENGINEER REGISTERED 9195 11/3/2014 STATE OF IDAHO CHARLES G. BROCKWAY

REV	DESCRIPTION	DATE
B	INCREASED WELL DEPTH	11/3/2014
A	PRELIMINARY FOR MONITORING REPORT	7/31/2014

THIS DRAWING HAS BEEN PREPARED BY BROCKWAY ENGINEERING, PLLC FOR A SPECIFIC PROJECT TAKING INTO ACCOUNT THE SPECIFIC AND UNIQUE REQUIREMENTS OF THE PROJECT. REUSE OF THIS DRAWING FOR ANY PURPOSE IS PROHIBITED UNLESS WRITTEN PERMISSION FROM BOTH BROCKWAY ENGINEERING & THE CLIENT IS GRANTED.	SCALE: NONE (8.5"X11" DWG ONLY) DESIGNED CGB DRAFTED ALR	BROCKWAY ENGINEERING, PLLC HYDRAULICS - HYDROLOGY - WATER RESOURCES 2016 NORTH WASHINGTON, SUITE 4 TWIN FALLS, ID 83301 (208) 736-8543	FIGURE 2 CITY OF GOODING TYPICAL MONITORING WELL DETAIL	PROJECT # 1176-02-2013 DWG# 1 REV B

Nearby Well #1

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Resources

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water ... days after the completion or abandonment of the well.

Location Corrected by IDWR To:
T05S R15E Sec. 32 SWNWNE
By: mciscell 2012-12-26

Southern District Office

1. WELL OWNER

Name Mike Sitman

Address Gooding

Owner's Permit No. ______

2. NATURE OF WORK

☑ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☑ Domestic ☐ Irrigation ☐ Test ☐ Other (specify type)

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☐ Cable ☑ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 155 feet

Casing schedule: ☑ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+1 feet	114 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was casing drive shoe used? ☐ Yes ☑ No
Was a packer or seal used? ☐ Yes ☑ No
Perforated? ☐ Yes ☑ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation ______ inches by ______ inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☑ No
Manufacturer's name ______
Type ______ Model No. ______
Diameter ___ Slot size ___ Set from ______ feet to ______ feet
Diameter ___ Slot size ___ Set from ______ feet to ______ feet

Gravel packed? ☐ Yes ☑ No Size of gravel ______
Placed from ______ feet to ______ feet

Surface seal depth 114 Material used in seal ☐ Cement grout ☑ Puddling clay ☑ Well cuttings

Sealing procedure used ☐ Slurry pit ☐ Temporary surface casing ☐ Overbore to seal depth

7. WATER LEVEL

Static water level 115' feet below land surface
Flowing? ☐ Yes ☑ No G.P.M. flow ______
Temperature ______ °F. Quality ______
Artesian closed-in pressure ______ p.s.i.
Controlled by ☐ Valve ☑ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	4	Top Soil		✓
	4	57	Gray Lava		✓
	57	62	Red Lava		✓
	62	90	Gray Lava		✓
	90	102	Clay & Gravel		✓
	102	114	Gray Lava		✓
6	114	148	Gray Lava	✓	
	148	150	Red Lava	✓	
	150	155	Gray Lava	✓	

Form 238-7 6/93 Nearby Well #2 C

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ball Point Pen

RECEIVED JUL 07 1994 Department of Water Resources

55132

1. DRILLING PERMIT NO. 37-94-S-0067-000
Other IDWR No.

2. OWNER:
Name Dale Brown
Address 1806 E 1400 S
City Gooding State Id Zip 83330

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

T. 5 North ☐ or South ☒
R. 15 East ☒ or West ☐
Sec. 32, 1/4 SE 1/4 NW 1/4
Gov't Lot ____ County Gooding

Address of Well Site Wood River Road
(Give at least Direction + Distance to Road or Landmark)

Lot No. ____ Block No. ____ Subd. Name ____

4. PROPOSED USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other____

5. TYPE OF WORK
☒ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD
☐ Mud Rotary ☒ Air Rotary ☐ Cable ☐ Other____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bentonite	80	120	500	Poured Dry Into Annular

Was drive shoe seal tested? Y☐ N☒ How?____

8. CASING/LINER:

Diameter	From	To	Guage	Casing	Liner	Steel	Plastic	Welded	Threaded
6	2	144	250	*		☒	☐	☒	☐

Final location of shoes____
Top Packer or Headpipe____ Bottom Tailpipe____

9. PERFORATIONS/SCREENS
☐ Perforations Method____
☐ Screens Type____ Material____

From	To	Slot Size	Number	Diameter	Tele/Pipe Size	Casing	Liner
						☐	☐

10. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Depth	Time
35		160	1 hr.

Temperature of water 55 Was a water analysis done? Yes☐ No☐
By whom?____
Water Quality (odor, etc.) Minute Amt. of Silt / no odor
Bottom Hole Temperature____

11. STATIC WATER LEVEL:
125 ft. below surface Depth artesian flow found____
Artesian pressure____ lb. Describe access port____
Describe Controlling Devices:____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	GPM	SWL
8	0	2	Top Soil		
	4	6	Loose Rock & Brown Clay		
	6	42	Gray Clay		
	42	48	Red Sand		
	48	54	Gravel		
	54	57	Black Lava		
	57	60	Brown Rew Gravel		
	60	71	Black Lava		
	71	80	Gravel		
	80	110	Black Lava		
	110	124	Gray Clay		
	124	129	Black Lava		
	129	138	Loose Broken Black Lava		
8/6	138	140	Black Cinders		
	140	156	Black Lava		
	156	164	Black Cinders	35	
	164	180	Black Lava		
	180	185	Red Cinders		

RECEIVED JUN 09 1994 Department of Water Resources Southern Region Office

FEB 10 1995

Date: Started May 31/94 Completed June 1/94

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Elsing Drilling Firm No. 26
Firm Official [signature] Date 6-2-94
and
Supervisor or Operator [signature] Date June 2/94
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

650 Addison Avenue West, Suite 110 • Twin Falls, Idaho 83301 • (208) 736-2190
www.deq.idaho.gov

November 13, 2014

The Honorable Walter Nelson
Mayor, City of Gooding
308 5th Avenue West
Gooding, Idaho 83330-1205

Re: **City of Gooding Recharge Site Ground Water Quality Monitoring Program Plan – Drilling Depth and MW#1 Location Change Amendment Number One**, Gooding County

Dear Mayor Nelson:

Please be aware that Todd Bunn has submitted the above referenced ground water recharge monitoring plan amendment to this office for our use, review and comment.

We have reviewed the amendment and we have the following comments:

- Casing of the Well. General Comment. Please ascertain that the physical casing depth not go below the estimated / actual high ground water level resulting from ground water recharge activities.

- Mike Sliman / Dale Brown Post Submittal Acquired Well Logs. Gravel Layer @ 70-100 feet Depth Level. General Comment. It is our understanding that the gravel layer at the aforementioned geologic depth is located in an unsaturated zone and will remain dry during recharge activities. If this conclusion is incorrect, then the casing adjacent to the gravel layer should be perforated and or screened to capture ground water in this zone.

We have reviewed the monitoring plan and amendment and the plan meets the requirements set forth in Section 600, Land Application of Wastewater (d) or Recharge water in the Wastewater Rules (IDAPA 58.01.016) and complies with the Ground Water Quality Rule (IDAPA 58.01.11), described in DEQ Guidance for "Developing a Ground Water Quality Monitoring Program for Managed Recharge Projects by Land Application". The submitted recharge planning information including contingency plan should be sufficient to ensure that operational personnel will appropriately monitor the recharge area and respond properly if a chemical spill or similar contamination event occurs, which may adversely affect ground water quality.

At this time, we hereby accept the above referenced amendment for use by the city of Gooding.

If the city seeks city council approval for the plan, please forward council minutes and acceptance for our use and record. We are forwarding one stamped ground water quality monitoring plan amendment bearing DEQ acceptance to Todd Bunn for city use, review and project record. Please retain this document with general water system records and drinking water SRF loan project records.

Please understand that monitoring and contingency plans are living documents and such documents should be reviewed at least annually or when operational or managerial procedures change.

If you have any questions, do not hesitate to contact this office at 736-2190.

Sincerely,

Brian A. Reed, PE
Technical Engineer I

BAR:gl

cc: Todd Bunn, City of Gooding w/ reviewed, accepted contingency plan
Rob Lanford, USDA-RD, Twin Falls
Holly Crawford, BLM, Shoshone
Kasey Prestwich, BLM, Shoshone
Alan Merrit, PE, IDWR, Twin Falls
Oksana Roth, E.I, Keller & Associates, Pocatello

ec: Irene Nautch, DEQ-Twin Falls Regional Office
David Anderson, DEQ-Twin Falls Regional Office
Tonia Mitchell, DEQ-State Office
MaryAnna Peavey, DEQ-State Office
Ester Ceja, DEQ-State Office

BROCKWAY
ENGINEERING
P.L.L.C.

Hydraulics
Hydrology
Water Resources

December 16, 2014

Mr. Brian Reed
Idaho Department of Environmental Quality
650 Addison Avenue West, Suite 110
Twin Falls, ID 83301

Re: City of Gooding Monitoring Wells

Dear Brian:

Enclosed please find stamped record drawings for two (2) monitoring wells recently drilled and completed by the City of Gooding pursuant to the approved monitoring plan for the recharge project. Also enclosed is a map illustrating the locations of the new wells (MW-2 and MW-3) and the location of MW-1 which is a domestic well approved for use as a monitoring well. If you have any questions or concerns, please do not hesitate to call.

Cordially,

Charles G. Brockway, P.E.

Enc.
cc: Todd Bunn

Charles E. Brockway, Ph.D., P.E.

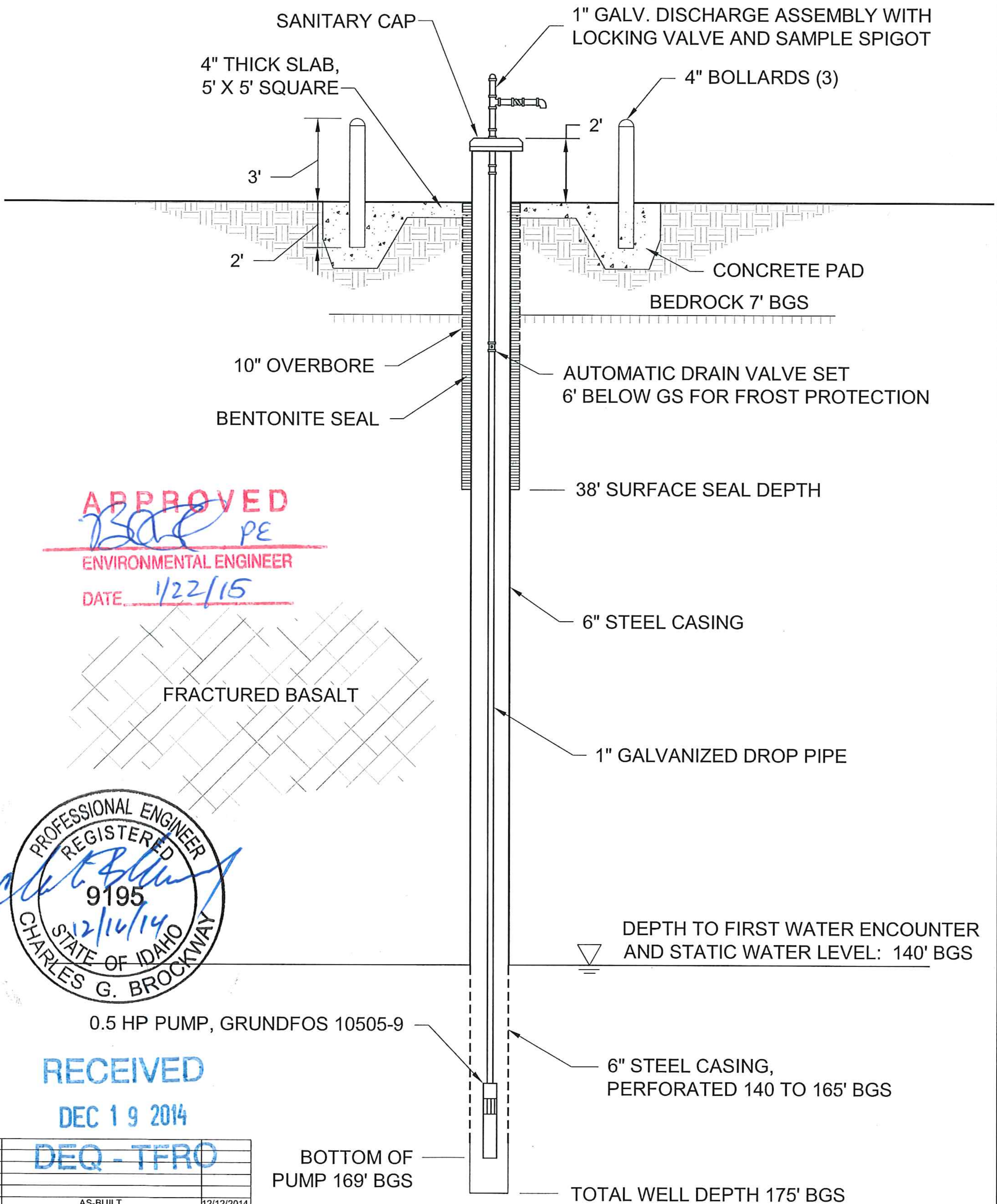
Charles G. Brockway, Ph.D., P.E.

2016 North Washington Street • Suite 4

Twin Falls, Idaho 83301

208•736•8543

fax: 736•8506



APPROVED
PE
ENVIRONMENTAL ENGINEER
DATE 1/22/15

PROFESSIONAL ENGINEER
REGISTERED
9195
12/16/14
STATE OF IDAHO
CHARLES G. BROCKWAY

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DEC 19 2014
DEQ - TFRO

REV	DESCRIPTION	DATE
A	AS-BUILT	12/12/2014

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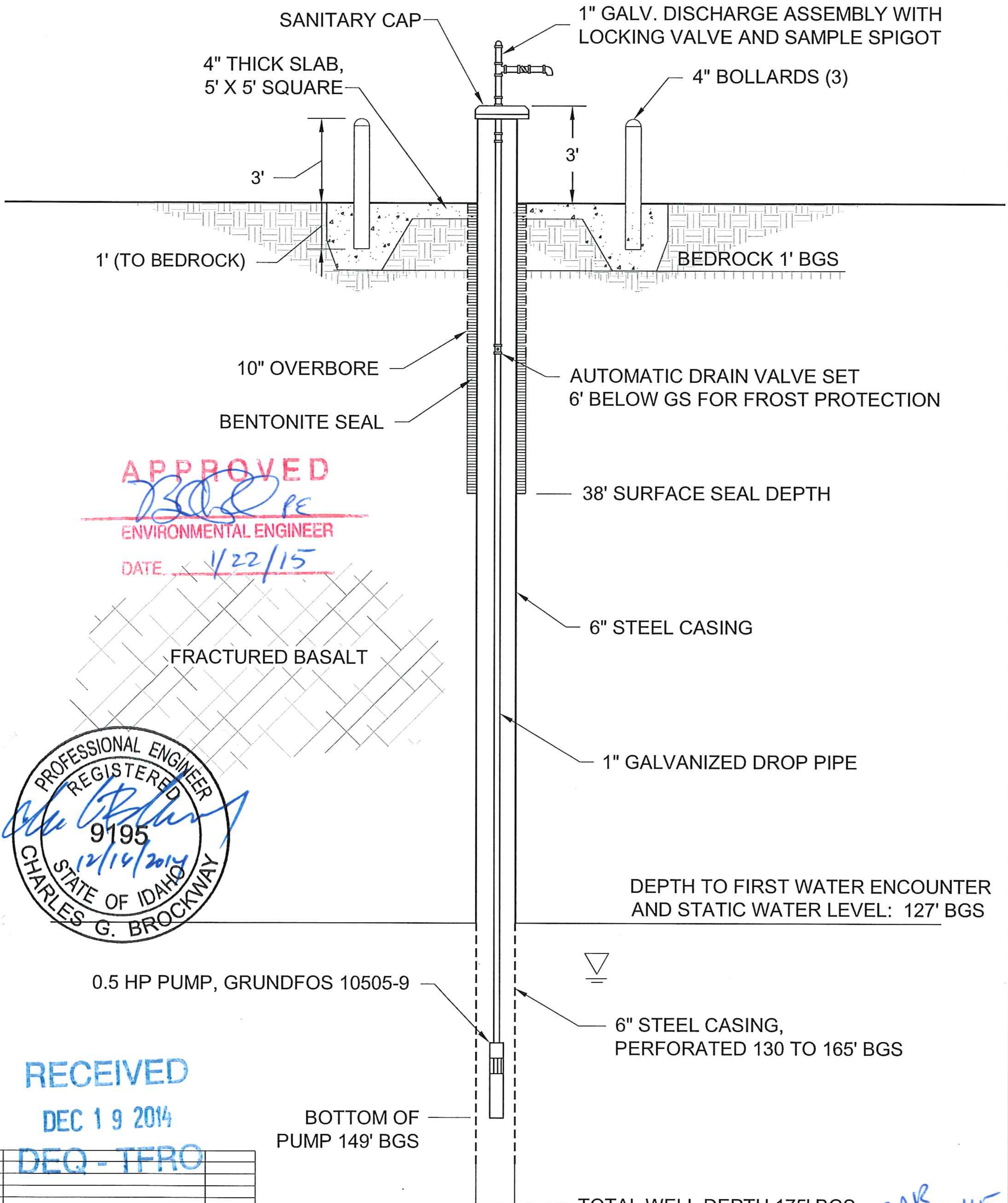
SCANNED

2014AGD4511



APPROVED
PE
ENVIRONMENTAL ENGINEER
DATE 1/22/15

PROFESSIONAL ENGINEER
REGISTERED
9195
12/14/2014
STATE OF IDAHO
CHARLES G. BROCKWAY

RECEIVED
DEC 19 2014
DEQ - TFRO

BAR 1/21/15

REV	DESCRIPTION	DATE
A	AS-BUILT	12/11/2014

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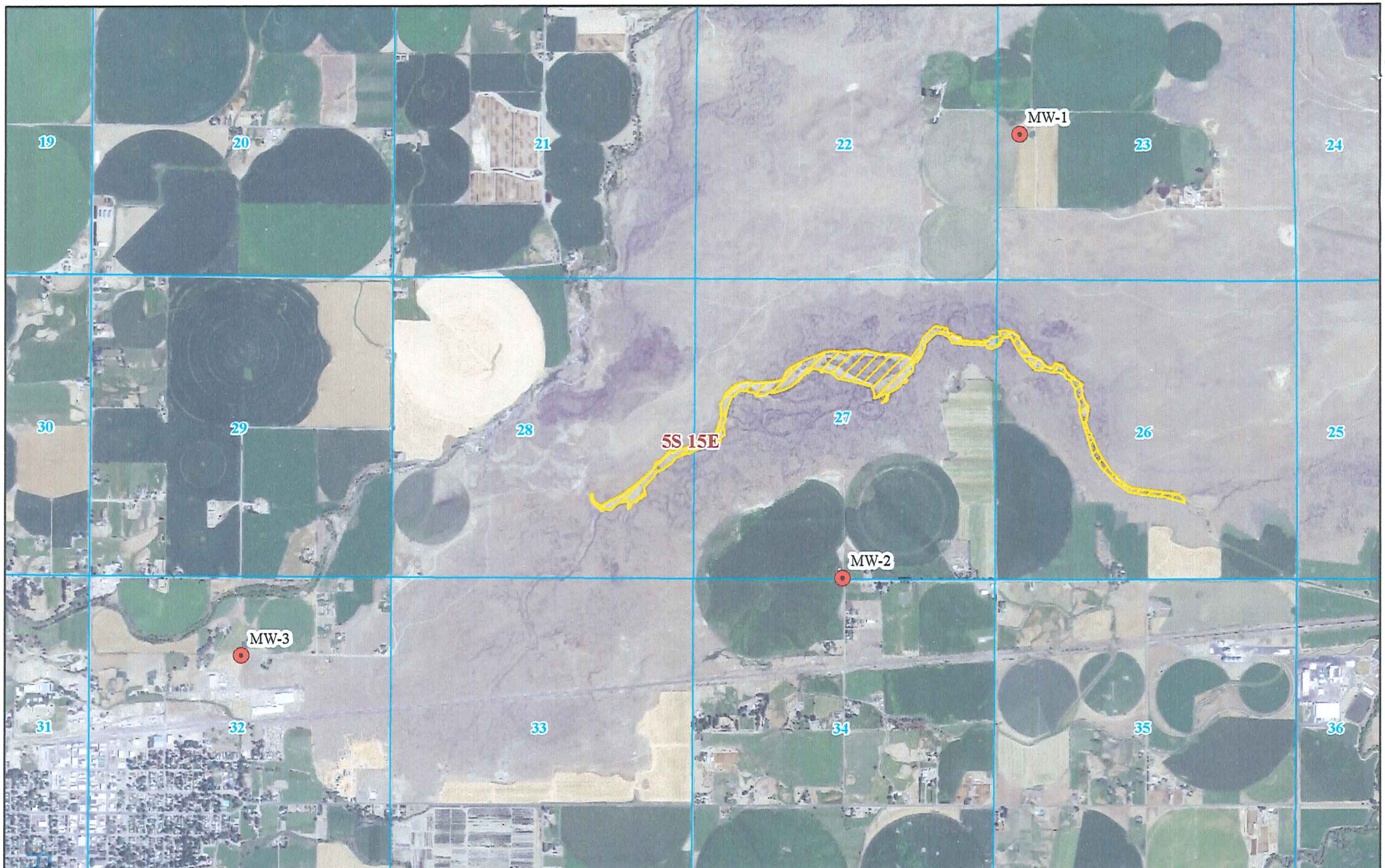
Path: F:\Projects\Gooding, City of\Arcview Maps\City of Gooding Monitoring Network.mxd



0 1,000 2,000 4,000 Feet

N

CITY OF GOODING

MONITORING WELLS NETWORK
NAIP 2013 AERIAL

Legend

- Monitoring Wells
- Proposed Recharge Area
- twnshp
- Section Lines

BROCKWAY ENGINEERING, PLLC.
ALR - Date: 12/15/2014

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

650 Addison Avenue West, Suite 110 • Twin Falls, Idaho 83301 • (208) 736-2190
www.deq.idaho.gov

January 22, 2015

The Honorable Walter Nelson
Mayor, City of Gooding
308 5th Avenue West
Gooding, Idaho 83330-1205

Re: "Record Drawing" Review, **City of Gooding Recharge Proposal - Groundwater Quality Program Monitoring Well MW-2 and MW-3 Post Construction Record Drawing Review**, Gooding Idaho

Dear Mayor Nelson:

Please be aware that Chuck Brockway, with Brockway Engineers has submitted record drawings for the above referenced ground water recharge project to this office for our review and certification.

This office has reviewed the submittal and we have the following comments:

- Post Construction Monitoring Well (MW) Drawings. Editorial Comment. Be aware it appears from a discussion with the project engineer that the monitoring well drawing with a pump illustrated at 149-feet meant to be identified as MW-3.

- Additional Data Requested Relative to MW-1, MW-2 and MW-3. General Comment. After reviewing the provided record drawings, we respectfully request that the ground surface elevation at each well head; private well static water level; and well head GPS information preferably set up using Decimal Degrees, Projection NAD-1983_Idaho_TM Geographic GCS North American_1983 standard be provided for our use and record.

- Monitoring Program Approval Condition. General Comment. Be reminded that the city of Gooding is required via DEQ approval of the ground water quality monitoring program to provide routine monitoring to DEQ within ten days of acquisition. At this time, it doesn't appear baseline or routine monitoring results have been submitted for our review and record. Resultantly, we respectfully request that this information be forwarded for our immediate use, review and record.

- Use of Private and Domestic Ground Water Sources. General Comment. Pursuant to deliverables outlined in the November 6, 2014 ground water quality monitoring program amendment, we respectfully request that the private well (MW-1) use easement and agreement be provided for our use and record.

At appears from our review of the drawings that both monitoring wells were constructed in accordance with the approved design and conditions imposed by this office at approval. We hereby certify both monitoring wells for operation.

We respectfully request that additional information be provided to this office for our use, review and project record at the city's earliest convenience.

If you have any questions, please do not hesitate to contact this office at (208) 736-2190.

Sincerely,

Brian A. Reed, PE
Technical Engineer 1

BAR:gl

cc: Todd Bunn, City of Gooding
Holly Crawford, BLM, Shoshone Field Office
Casey Prestwich, BLM, Shoshone Field Office
Alan Merrit, PE, IDWR, Twin Falls
Oksana Roth, EI, Keller & Associates, Pocatello

ec: Irene Nautch, DEQ-Twin Falls Regional Office
David Anderson, DEQ-Twin Falls Regional Office
Mike Brown, DEQ-Twin Falls Regional Office
Tonia Mitchell, DEQ-State Office
MaryAnna Peavey, DEQ-State Office

Monitoring Program Agreement for Managed Recharge by Land Application

Project: City of Gooding Managed Recharge Project

Location: 4.5 miles NE of the City of Gooding

Project Purpose: Divert a maximum of 7.21 cfs from the Little Wood River for recharge to the Eastern Snake Plain Aquifer as mitigation for additional ground water withdrawal.

Project Duration: Annually from March 15 through November 15 beginning in 2015

Property Owner: USDI, Bureau of Land Management

Operator: City of Gooding

Responsible Party: City of Gooding

The ground water quality monitoring program for the City of Gooding recharge project is hereby approved by the Department of Environmental Quality (Department) pursuant to IDAPA 58.01.16.600, *Wastewater Rules, Land Application of Wastewater(s) or Recharge Waters.*

The number of sample sites, constituents, frequency, and reporting schedule are defined and described in the program. DEQ has determined the monitoring program to be protective of ground water quality for beneficial uses when adhered to as described. Failure to comply with the monitoring program is a violation of the Department's rules and the responsible party may be subject to enforcement action.

DEQ Regional Office Administrator   Date 6/29/15

Responsible Party   Date 6/29/15

Todd Bunn
Public Works Director
City of Gooding

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Milepost 31 Recharge Site Ground Water Quality Monitoring Program

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Milepost 31 Recharge Site Ground Water Quality Monitoring Plan

1.1 PROJECT DESCRIPTION

1.1.1 Location

The Milepost 31 recharge site is located near the Milner Gooding canal, approximately 31 miles downstream of Milner Dam and approximately 10 miles north of Eden, Idaho (Figure 1). The site is located in sections 1, 2 and 3 of T8S R19E.

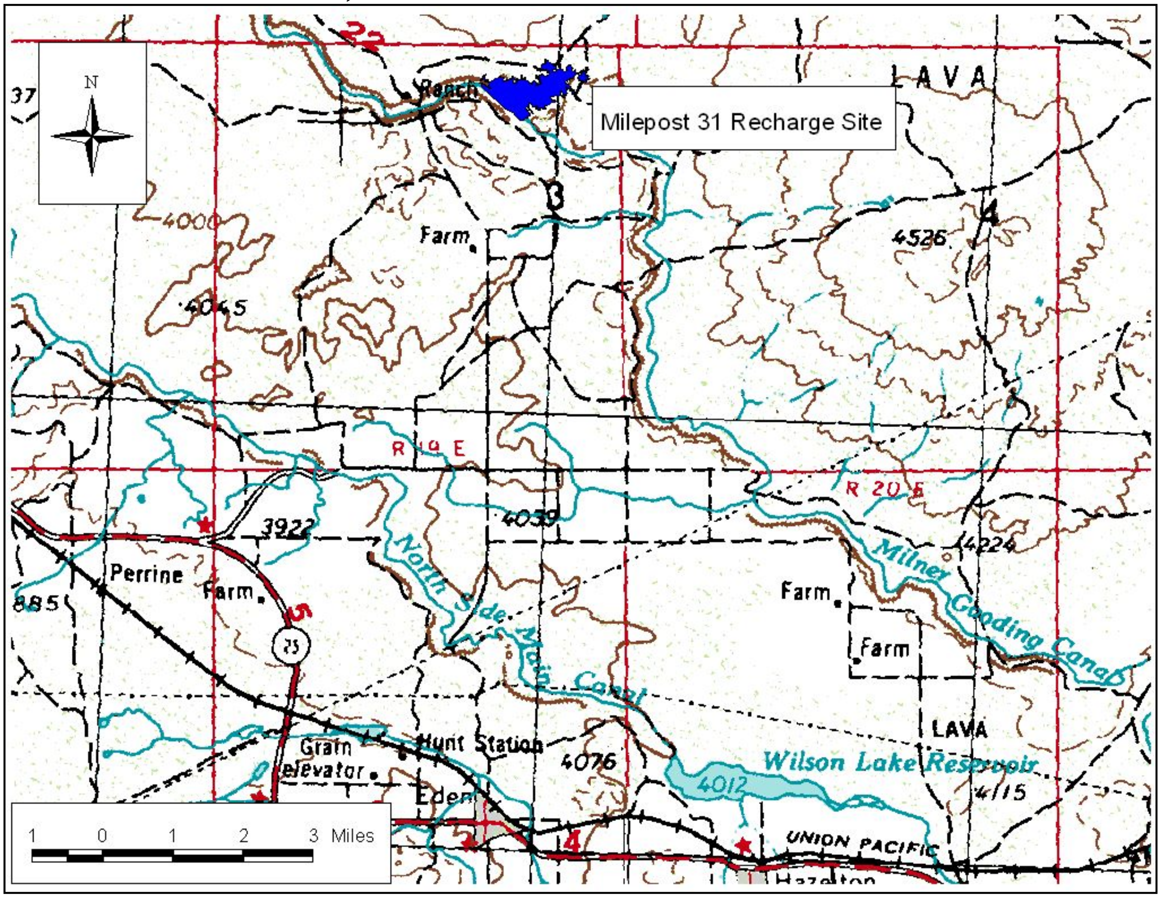

Figure 1: Location map for the Milepost 31 Recharge Site.

1.1.2 Physical Description

The proposed recharge basin lies north of the Milner Gooding Canal and would occupy 60 to 335 acres depending on discharge rates to the recharge site. The basin, as shown in Figure 1, is 335 acres.

1.1.3 Land Ownership

The recharge site is located on land owned and administered by the United States Department of the Interior, (USDI), Bureau of Land Management (BLM).

1.1.4 Project Purpose

The purpose of the project is to provide managed recharge to help maintain and/or restore ground water levels of the Eastern Snake Plain Aquifer (ESPA). The project is anticipated to be one of several coordinated projects implemented across the Eastern Snake River Plain (ESRP).

1.1.5 Expected Outcome

This project has the potential to recharge up to of 72,000 acre-feet/year. No negative impacts on ground water quality are expected from recharge at the site. According to recent modeling recharge at this site, at steady state conditions, would yield to the Snake River as follows:

Ashton to Rexburg	0.8%
Hiese to Shelley	0.9%
Shelley to Near Blackfoot	6.8%
Near Blackfoot to Neely	23.7%
Neely to Milner	6.4%
Devils Washbowl to Buhl	35.5%
Buhl to Thousand Springs	11.7%
Thousand Springs	7.2%
Thousand Springs to Malad	0.8%
Malad	6.1%
Malad to Bancroft	0.2%

1.1.6 Type and Source of Recharge Water

The water to be used for recharge will be diverted from the Snake River into the Milner Gooding Canal and transported to the site. Water will be diverted under water right 01-7054 currently held by the Idaho Water Resource Board. Water could also be secured from the water bank or other appropriate source.

1.1.7 Volume of Recharge Water

Recharge will occur at the recharge site during the time periods and amounts shown in Figure 2. The approximate time frame for recharge would occur between February 15 to May 1 and September 15 to November 31. The recharge rate will vary depending on water availability and the maximum expected recharge is as shown in Figure 2. Peak inflows to the basin are not likely to exceed 250 cubic feet per second (cfs). For the rates and time frame shown in Figure 2, the maximum annual recharge is 72,000 acre-feet.

1.1.8 Project Duration

The proposed project has a lifespan in excess of 20 years. The project will remain active as long as a source of water can be secured and site characteristics remain favorable for managed recharge activities.

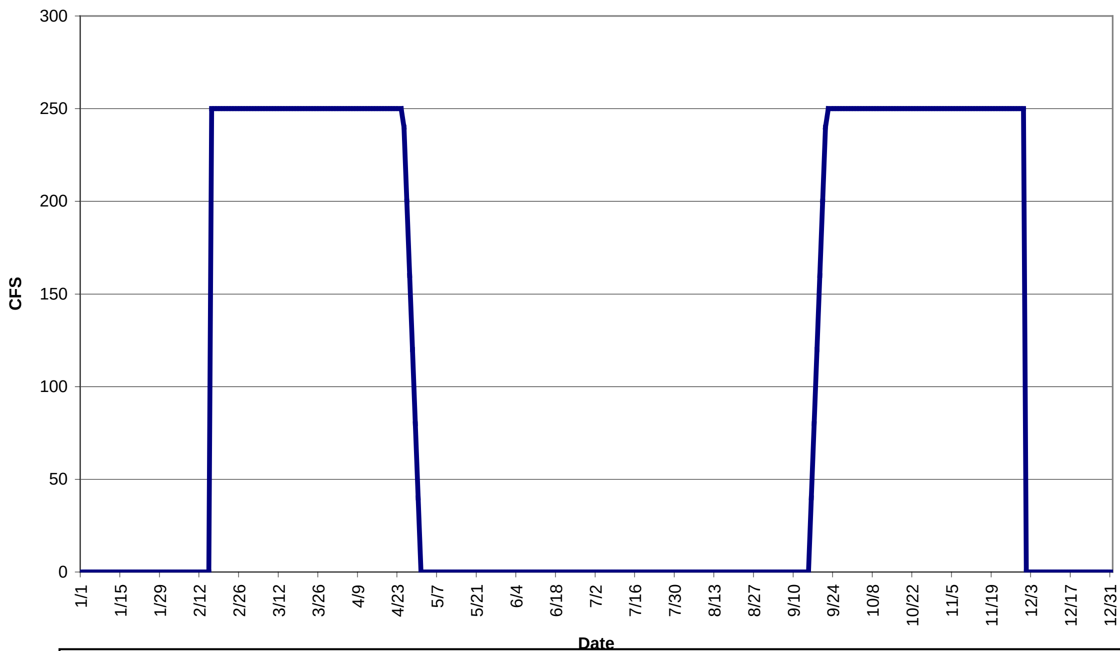

Figure 2: Projected season of use and maximum diversion rates for the Milepost 31 recharge site

1.2 RECHARGE AREA CHARACTERIZATION

1.2.1 Soil and Surficial Geology

1.2.1.a Soils

The majority of the soil map units (Figure 3) are Rock Outcrop-Banbury-Paulville Complex, (map unit symbol 107) with a 2 to 6 percent slope (Ames 1998), and occupy approximately 70 percent (Table 1) of the site. The remaining soil map units are the Power-McCain Complex, 1 to 6 percent slopes (map unit symbol 91).

Basalt outcrops compose up to 28 % of the area and consist of "sharp, angular to semirounded, long narrow ridges ranging to semiround outcroppings that extend 1 foot to 10 feet above the adjacent landscape." (Ames, 1998) Banbury, and McCain soils comprise 30% of the area and can be found on plane and convex areas. Depth to bedrock in the Banbury soils are 15 inches and the permeability is moderate. Banbury soils probably have the highest permeability due to their shallow depth. McCain soils are moderately deep and permeability is moderately slow.

Paulville and Power soils comprise 36 percent of the area and can be found on concave areas of terraces. Paulville soils are considered very deep with a rooting depth of 60 or more inches. Permeability of the Paulville soils is moderately slow due to a restricting layer from 8 to 31 inches where permeability ranges from 0.2 to 0.6 inches per hour (in/hr).

Power soils are deep soils and permeability is considered moderately slow. Contrasting inclusion comprise the remaining 16 percent of soils at the recharge site.

Soils investigation conducted on site indicate high clay content below 24 inches of soil depth in concave positions on the landscape. This high clay content will reduce soil permeability in these areas.

Water may pond over the Paulville, Power, McCain and contrasting inclusions found in the bottom and terraces of the basin but may infiltrate through rock outcrops depending on the level of water surface.

Basalt outcrops at the site are mostly at or near edges of the basin or on elevated land features. The permeability around and through the basalt outcroppings is not known.

Excluding the basalt outcroppings, the estimated recharge capacity at the site is approximately 250 cubic feet per second (cfs). This figure is based on an average permeability for each mapped soil type. Infiltration in and around basalt outcrops is likely to increase this figure but the extent is unknown (Ames 1998).

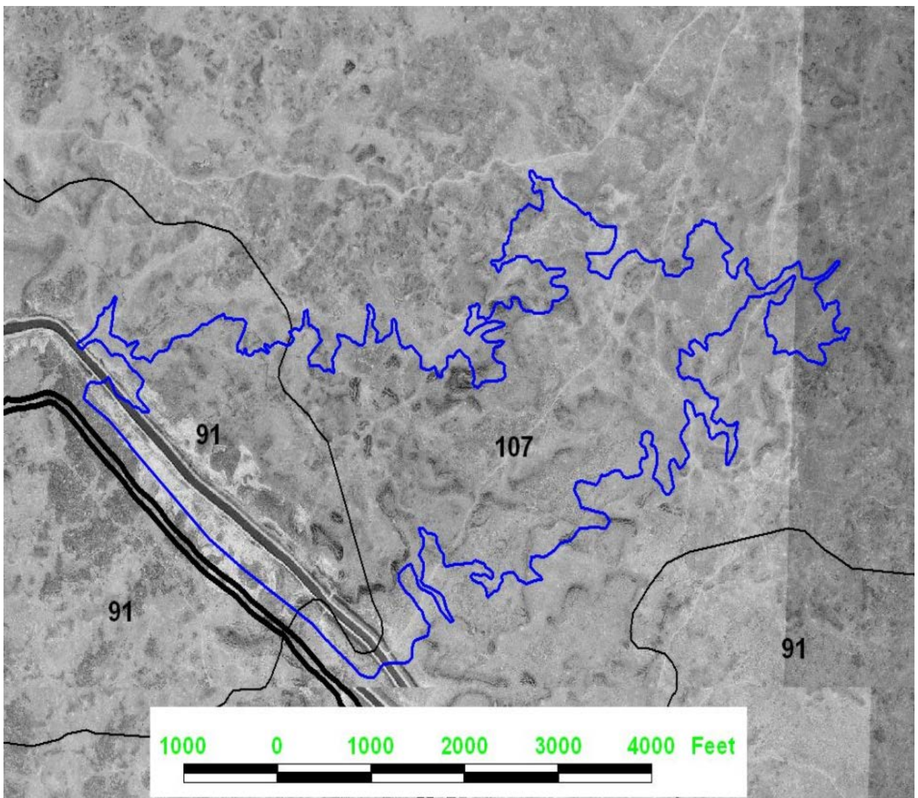

Figure 3: Soils map for the Milepost 31 recharge site, see Table 1 for symbol description

Table 1: Soil map units for the Milepost 31 recharge site

Soil Symbol	Major Map Unit	Acres	Depth (In)	Clay (Pct)	Permeability (In/hr)
91 Power-McCain, 1 to 4 percent slope	Power	50.0	0-14	18-22	0.6-2.0
			14-28	24-35	0.2-0.6
			28-72	15-20	0.6-2.0
	McCain	30.0	0-6	15-22	0.6-2.0
			6-16	18-30	0.2-0.6
			16-23	10-18	0.6-2.0
	Inclusions	20.0			0.6-2.0
107 Rock Outcrop-Banbury-Paulville, 2 to 6 percent slope	Banbury	70	0-5	10-15	0.6-2.0
			5-15	25-33	0.6-2.0
	Paulville	35.0	0-8	15-22	0.6-2.0
			8-31	24-31	0.2-0.6
			31-47	16-24	0.6-2.0
			47-60	10-15	0.6-2.0
	Rock	93.0	-	-	-
	Inclusions	35.0	-	-	2.0-6.0

1.2.1.b Geology

Surficial Geology

The Milepost 31 recharge site is a large natural basin lying on the north side of the Milner Gooding Canal. The canal bank could also act as a “dike” for the recharge basin if water levels were deep enough. The surficial geology is described as Upper Pleistocene Snake Plain Lava Flows. Basalt outcrops and pressure ridges are found throughout the area. Some basalt outcrops do occur within the recharge basin and may, if deemed necessary, require modification prior to recharge activities.

1.2.2.a Vadose Zone Characterization

Two monitoring wells located near the site (see Figure 11) were surveyed with a down-hole camera prior to the installation of the casing. The characterization of the vadose zone is made using the results of the two camera surveys.

Milepost 31 West Well Camera Survey

The camera survey was halted at 305 feet below top of casing (btoc) because of complete loss of visibility within the water-filled bore.

A single-point resistance log of the saturated portion of the borehole was performed. The steel surface casing was used as the ground for the mud-plug because of the lack of a good surface ground away from the wellhead. The log has been cut off above 270 feet because these logs require a fluid-filled borehole. The measured resistance appears to correlate directly to the enlarged fracture zones with the fractured areas showing decreased resistance. The relatively high resistance between 285 and 300 feet corresponds with the smooth, massive part of the basalt as evidenced by the caliper log.

The induction resistance log is nearly featureless. Except for a few slight excursions at the interflow zones, and a noticeable increase in conductivity below the water table, the log is of little value. The negligible difference in response above and below the water table may indicate tight formations and filled fractures because the air or water-filled porosity would otherwise be reflected in the log response. Increasing moisture content may be reflected by the log's general and gradual decrease in measured resistivity from top of casing to the water table, but this might also be instrument drift. The log does show a response to the interflow zones probably as a result of conductive clays and/or increased moisture content. The absence of a response at the flow top at 100 feet btoc may be due to low moisture content or the relatively thin nature of that unit.

The temperature log was calibrated on-site, just prior to the log, using a thermometer certified to an accuracy of 0.5^0 F. The log is probably only meaningful for bottom hole temperature (56.4^0 F). Variations within the vadose zone are difficult to interpret owing to the recently uncapped well and the wide temperature differential between the open borehole and the outside ambient temperature. The temperature increase at 190 feet resulted from the instrument hanging up on the irregular and rubbly flow top. The log clearly records the static water level at 274 feet btoc.

The upper 20-feet of the borehole is occluded from view behind the 8-inch casing. Approximately 80 percent of the bore is smooth and the same inside diameter as the 8-inch surface casing. The natural gamma-ray response is very low owing to the relative lack of radioactive minerals within basalt lavas. The log does delimit the contact zones between flows. The gamma counts range between 10 and 25 counts per second (cps), over most of the borehole.

From 20 to 62 feet btoc, the hole is relatively featureless massive basalt with few fractures, which appear to be in-filled with mineral or drill cuttings. From 62 to 65 feet btoc there is a rubble zone underlain by more basalt from 65 to 99 feet. These are interpreted as two separate flows based on the rubble zone and a slight change in gamma-ray response (15 to 20 cps and 15 to 30 cps respectively). A slow seep is evident at about 65 feet btoc.

At 99 feet btoc, there is a five-foot section of rubble, sand and clay. This zone is characterized by an enlargement of the borehole to 11.5 inches and a gamma response up to 35 cps. The camera log shows characteristic red oxidation.

From 104 to 170 feet btoc, there is a smooth massive section broken by a broken, blocky zone from 147 to 151 feet btoc. Gamma ray response is 25 to 30 cps.

The interval from 170 to 182 feet btoc is an interflow zone characterized by amygdaloidal (secondary mineralization in vesicles), rubbly basalt with hematite clay, soil, or infilling. The driller described this as broken lava, ash and clay. The caliper log shows an increase in bore diameter to about 14 inches. A pronounced increased radioactive activity is apparent with counts as high as 120 cps. A second slow seep is visible at about 176 feet btoc.

A third vesicular basalt section extends from 182 to 249 feet btoc. The driller described this as medium hard black basalt and the caliper log shows only slight variations in bore diameter, particularly at a cinder zone noted by the driller at 231 to 238 feet btoc. Radioactivity in this section was measured at 10 to 25 cps.

From 249 to 252 feet btoc, the driller reported a cinder zone. The caliper log shows an increase in bore diameter to 10 inches and there was a slight increase in natural gamma response to about 35 cps.

The lowest basalt section in the well consists of medium hard basalt with fractures from 252 to 325 feet btoc. The caliper log indicates some irregularity in the bore diameter corresponding with the fractures, with variances of about 2.5 inches. The water-saturated portion of the well begins at 274 feet btoc and is clearly visible in the point resistance and temperature logs. Natural gamma response is 15 to 25 cps.

Milepost 31 East Well Camera Survey

The camera survey was halted at 191 feet below top of casing (btoc) due to loose and broken, basalt partially blocking the bore. The upper 20 feet of the bore is occluded from view behind the 8-inch casing.

A single-point resistance log of the saturated portion of the borehole was performed. The steel surface casing was used as the electrical ground for the mud-plug because of the lack of a good surface ground away from the wellhead. The log has been cut off above 260 feet because these logs require a fluid-filled borehole. The point resistance decreases steadily below the water table at 269 feet btoc, which may indicate increasing fracture porosity.

The induction resistivity log is nearly featureless. Except for a few slight excursions at the interflow zones, and a noticeable decrease in resistivity below the water table, the log is of little value. The negligible difference in response above and below the water table may indicate tight formations and filled fractures because the air or water-filled porosity should be reflected in the log response. Increasing moisture content may be reflected by the log’s general and gradual decrease in measured resistivity from about 120 feet to the water table, but this might also be instrument drift. The log does show a response to the interflow zones probably as a result of conductive clays and/or increased moisture content.

The temperature log was calibrated on-site, just prior to the log, using a thermometer certified to an accuracy of .5^0 F. The log is probably only meaningful for bottom hole temperature (53.5^0 F). Variations within the vadose zone are difficult to interpret owing to the uncapped well and wide temperature differential between the open borehole and the outside ambient temperature. A steady upward air draft in the bore also adds an element of complexity to the temperature variations. A break in slope at 195 feet btoc may be reflective of the air draft and possibly air-filled permeability. The log clearly records the change in temperature at the static water level at 269 feet btoc.

Approximately 85 percent of the bore is smooth and the same inside diameter as the 8-inch surface casing. The natural gamma-ray response is very low owing to the relative lack of radioactive minerals within basalt lavas. The log does delimit the contact zones between flows. The gamma counts range between 5 and 35 counts per second (cps) over most of the borehole.

From 20 to 65 feet the hole is relatively featureless, massive basalt with few fractures, which appear to be in-filled with mineral or drill cuttings. Beginning at 65 feet btoc, and continuing to 129 feet btoc, the hole has considerable fracture traces with the exception of a smooth massive section from 110-to-114 feet btoc. Although the gamma-ray response is consistent at 10 to 40 cps for this entire interval, it is likely two separate flows similar to the West well.

The interval from 115 to 129 feet btoc is a vuggy, vesicular interflow zone characterized by amygdaloidal, rubbly basalt with hematite clay, soil, or infilling. The driller described this as broken lava, ash and cinders. The caliper log shows an increase in bore diameter to about 11 inches. A single, pronounced radioactive excursion (increased activity) is apparent between 110 and 120 feet btoc with counts as high as 80 cps.

At 129 feet, begins another massive basalt flow to 187 feet btoc. This featureless borehole wall is interrupted by a short (5-foot) and rough vesicular interval between 155 and 160 feet btoc.

At 188 feet btoc, a zone of loose, blocky, scoriacious, and vesicular basalt is present. Here, the hole is out of round and a larger slab of basalt has apparently moved downward (along a fracture plane) and into an enlarged (from drilling) portion of the borehole, partially blocking the hole. The driller described this zone as cinders and soft, broken basalt with a partial loss of cutting returns, extending to about 194 feet btoc. The caliper log shows a widening of the bore to about 18 inches.

A third basalt section extends from 195 to 253 feet btoc. The driller described this as hard basalt and the caliper log shows only very slight variations in bore diameter.

From 254 to 276 feet btoc, the driller reported two cinder zones separated by a medium hard basalt flow. The caliper log shows an increase in bore diameter to 16 inches at about 263 feet btoc. There was no significant natural gamma response in this zone.

The lowest basalt section in the well consists of broken basalt from 277 to 312 feet btoc. The caliper log indicates some irregularity in the bore diameter with variances of about 2 inches. This section also corresponds with the water-saturated portion of the well.

1.2.2.b Aquifer System Characterization

Two pressure transducers and data loggers were installed in the Milepost 31 West well and the Milepost 31 East well on April 24, 2001. The west well is located approximately 1.5 miles downstream of the east well. All water level elevations are measured in feet above sea level.

Milepost 31 West

The initial water table elevation on April 24, 2001 was 3811 and appeared to be on the rising limb of the hydrograph (Figure 4). The water table raised an average of 0.0218 ft/day until it reached a maximum elevation of 3813.9 on September 5, 2001 at which time the water table began to decline. The water table fell at a rate of 0.0275 ft/day and reached a minimum elevation of 3807.2 on May 5, 2002. The water table then rose at a rate of 0.0138 ft/day and until it reached an elevation of 3809.2 on September 29, 2002. The water table then began to fall at and average rate of 0.272 ft/day and the latest data indicated a water table elevation of 3803.478 on May 11, 2003. The water table then rose at an average rate of 0.0098 and peaked on September 8, 2003 at an elevation of 3805.84.

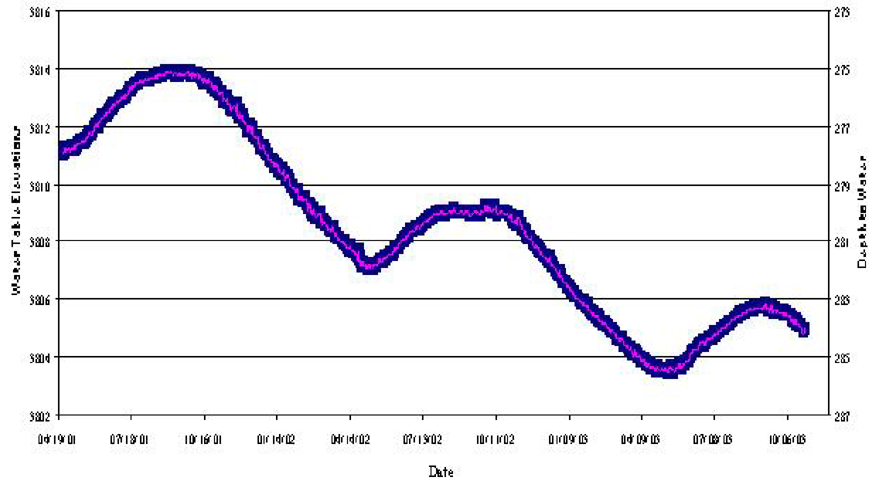

Figure 4: Water table elevations of the Milepost 31 west monitoring well.

There are several differences observed in the wells between water year 2001 and 2002. The maximum water table elevation in 2002 was 4.7 feet lower than 2001. Additionally, the ascension rate was 37 percent lower during the spring of 2002 compared to the spring of 2001. It also appears the water table in 2001 had already started rising when the pressure transducer water was installed on April 24, however, in 2002 the rise in the water table did not start until May 5. This difference if probably due to fact that canal diversions in 2001 began on April 5th and in 2002 did not begin until April 25th. In both years the canal was shut done in early October. It should also be noted that in the fall of 2001 and into the spring 2002 the water table fell faster than it rose in spring and summer of 2001 and spring and summer of 2002.

Milepost 31 East

The initial water table elevation was 3810.6 and appeared to be rising (Figure 5). The water table raised an average of 0.0234 ft/day until it reached a maximum elevation of 3813.7 on September 9, 2001 at which time the water table began to decline. The water table fell at a rate of 0.0264 ft/day and reached a minimum elevation of 3807.1 on May 12, 2002. The water table then rose at a rate of 0.0160 ft/day and until it reached an elevation of 3809.3 on September 29, 2002. The water table then began to fall and reached a minimum elevation of 3803.9 on May 11, 2003. The water table then rose at an average rate of 0.0097 ft/day and peaked at an elevation of 3806.4 on September 8. 2003.

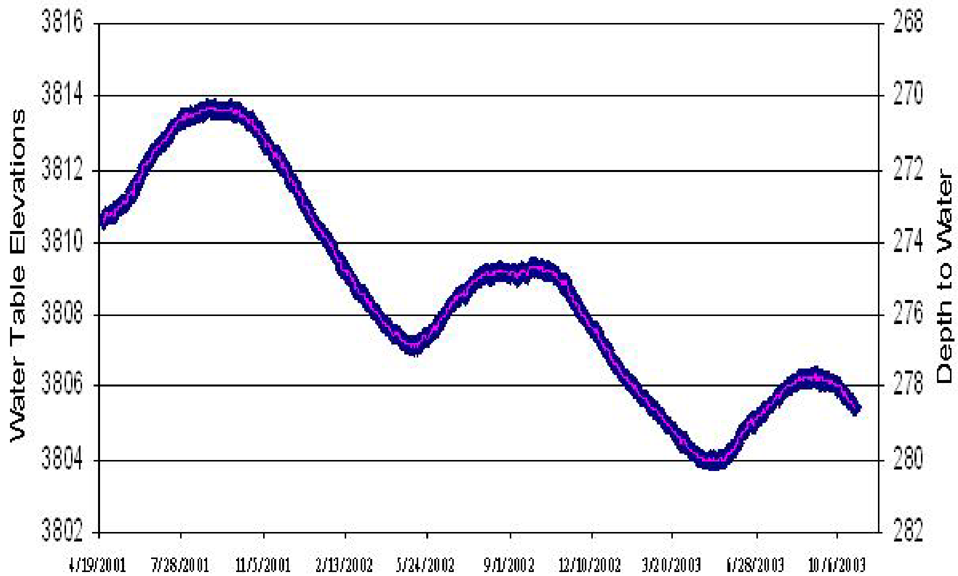

Figure 5: Water table elevations of the Milepost 31 east monitoring well.

There are several differences observed in the wells between water year 2001 and 2002 (Figure 6). The maximum water table elevation in 2002 was 4.4 feet lower than in 2001. Additionally, the ascension rate was 32 percent less during 2002 than 2001. It also appears that the ascension of the water table in 2001 had already started when the pressure transducer water installed on April 24, however, in 2002 the ascension did not start until May 5. This difference if probably due to fact that canal diversions in 2001 began on April 5th and in 2002 did not begin until April 25th. It should also be noted that the recession water in the in 2001 and early 2002 was 13 percent high than the ascension rate of 2001. The ascension rate of the water table in the spring and summer of 2003 was less than for the same time period the preceding year.

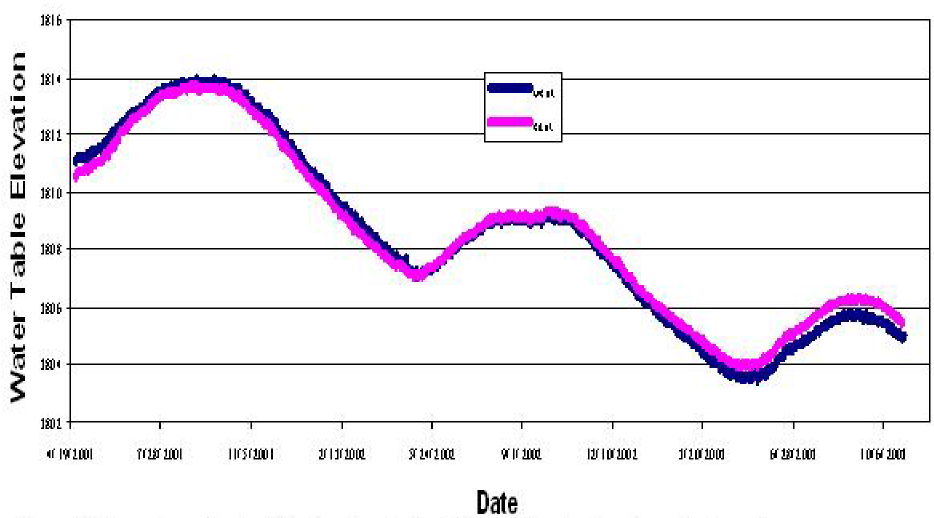

Figure 6: Comparison of water table elevations in the Milepost 31 east and west monitoring wells.

Schmidt and Salovich modeled ground water flow at the Milepost 31 Recharge site using an analytic element flow model. They modeled recharge under both a steady state and transient conditions. The steady state condition assumed an average recharge rate of 475 cfs. The transient condition assumed flows that ranged from zero cfs in the summer to 1400 cfs in the winter. The scenario was run for a maximum of two years. Hydraulic conductivity in the vicinity of the site ranges from 1000 to 11,000 ft/day.

Aquifer responses to the transient and steady state simulations were similar. The "expected distance of the two-year time of travel ranges from 2-5 miles down-gradient from the site depending on the starting point of pathlines" (Schmidt and Salovich 1998) (Figure 7). The expected change in the water level is small. The transient and steady state simulations show less than a five foot change in ground water elevations on the periphery of the basin. In most cases the change in elevation was less than two to three feet. The change in elevation would be imperceptible a few miles down-gradient of the recharge basin.

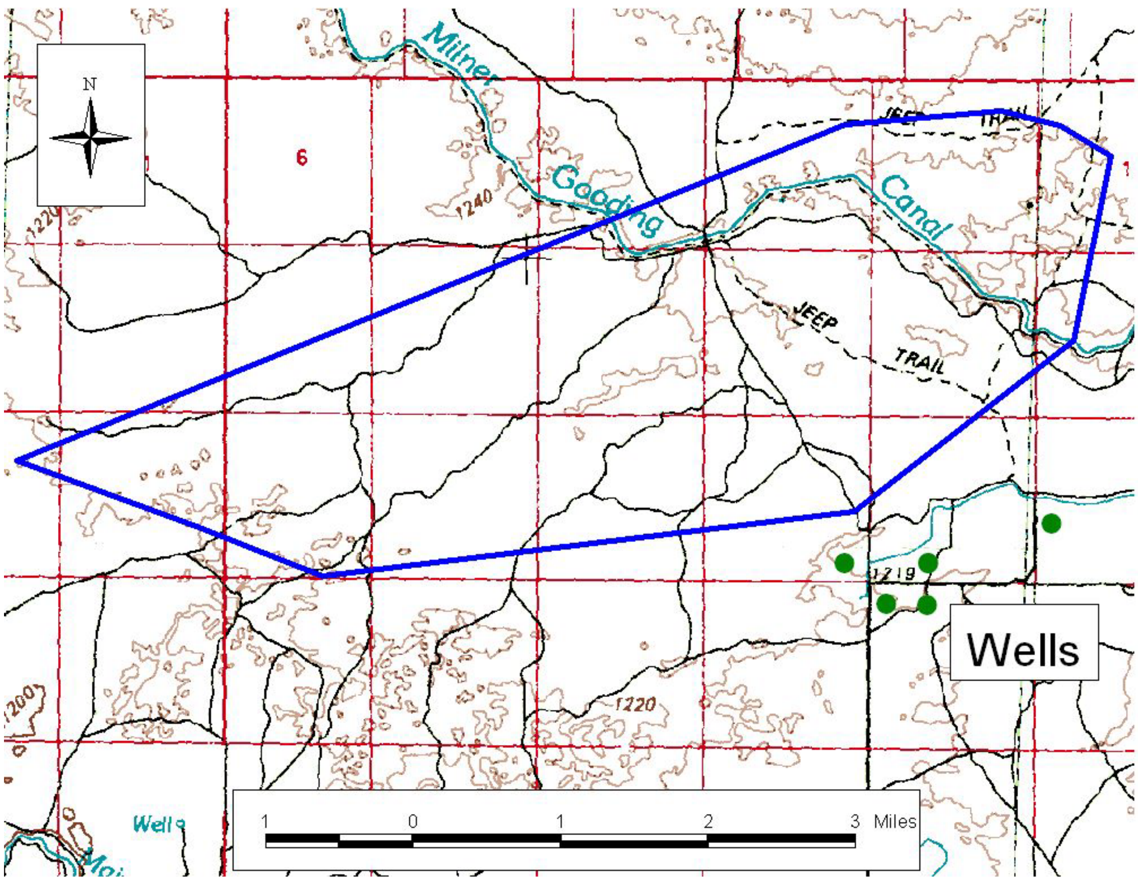

Figure 7: Area of influence after two years of recharge at the Milepost 31 recharge site.

Several wells are located close to the recharge site but are on the periphery of the predicted two-year time of travel. Schmidt and Salovich (1995) stated that these wells are not likely to be impacted by recharge at the Milepost 31 site.The closest down-gradient well is located approximately seven miles to the southwest of the recharge basin.

1.2.2.c Springs
There are no springs in the vicinity of Milepost 31 recharge site.

1.2.2.d Surface Water Features
The Milner Gooding Canal is the major surface water feature near the Milepost 31 recharge site. Also present in the vicinity of the recharge site are several small seasonal wetland areas (Figure 8). They are generally small closed basins that collect rainfall and snow melt. The operation of the recharge site should have no impacts on those seasonal wetlands.

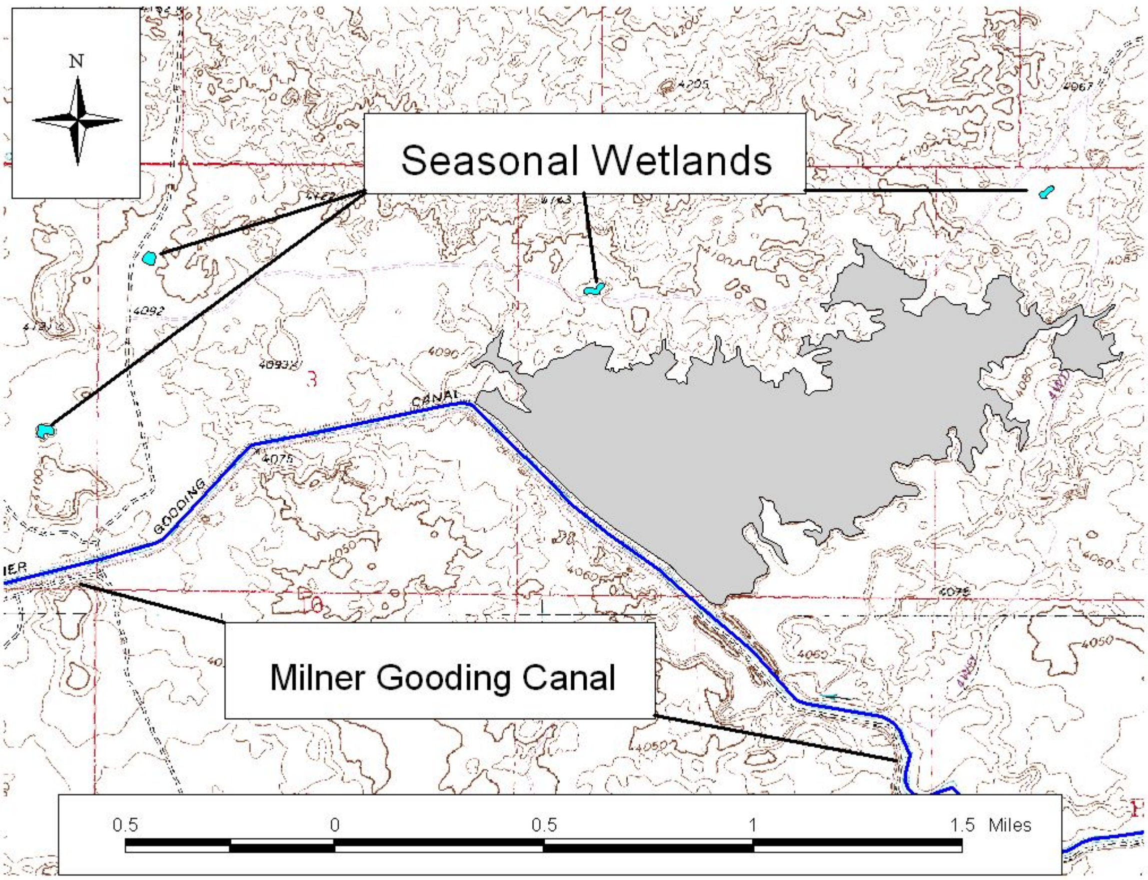

Figure 8: Surface water features near the Milepost 31 recharge site.

1.2.3 Contaminant Sources
There are several potential sources of contamination that could impact operations at the Milepost 31 recharge site (Figure 9). Livestock grazing is common along much of the Milner Gooding Canal. Livestock have access to the canal for approximately 15 miles upstream of the recharge site. In some places livestock access is restricted due to steep canal banks. It appears that while livestock can access the canal for water, the shape of the canal bank and swift current prevent livestock from entering the canal in most areas. Heavy concentrations of livestock near watering points could create a source of bacterial contamination, particularly after heavy rains.

One large dairy is located approximately 10 miles upstream of the recharge site. The dairy is situated down-gradient of the canal is not expected to have an impact on water quality in the canal.

Other potential sources of contamination include the introduction of deleterious material into the Milner Gooding Canal as the result of an accident. One rail line crosses the canal approximately 21 miles upstream of the recharge site. Additionally, Interstate 80 crosses the canal approximately 25 miles upstream of the recharge basin. An accident at either location or other smaller road crossings could result in a spill of hazardous material into the Milner Gooding Canal.

1.2.3.b Land Use

The site is currently owned and managed by the USDI Bureau of Land Management. The area has been used for livestock grazing (Figure 9).

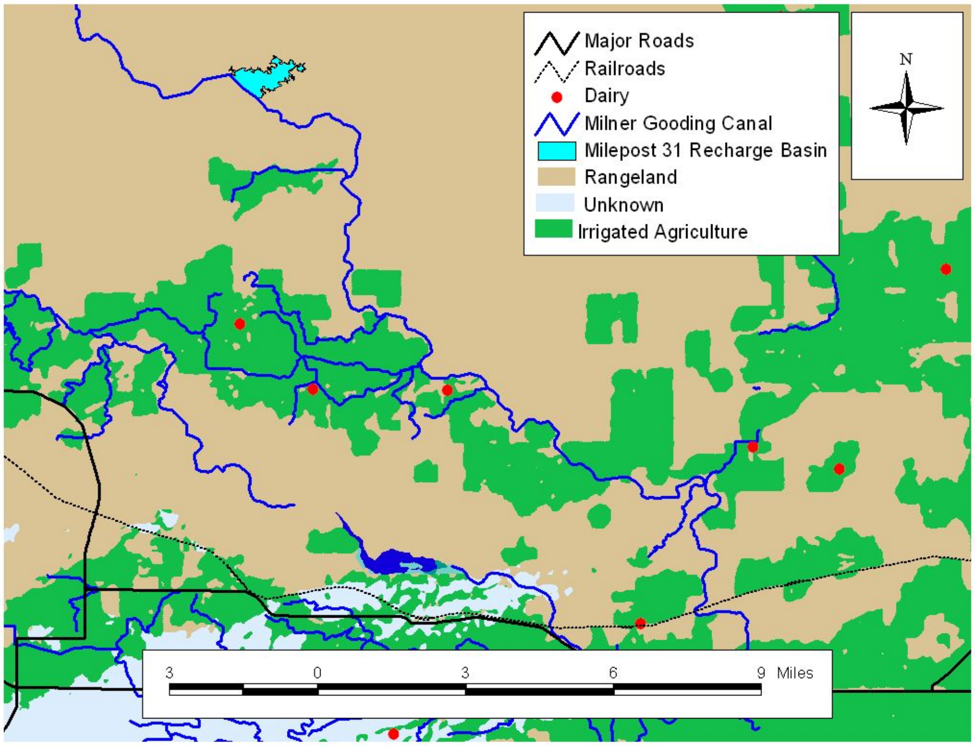

Figure 9: Land use and potential contaminate sources for the Milepost 31 recharge site.

1.2.3.c Vegetative Cover

Potential natural vegetation is bluebunch wheatgrass and Wyoming big sagebrush. Much of the native vegetation has been replaced by annual cheatgrass. Existing vegetation is likely to be replaced by annual communities after the commencement of recharge activities.

1.2.4 Recharge Water Confining Structures

No water confining structures will be needed for this project.

1.3 POTENTIAL IMPACTS

The proposed project is not expected to lower the current quality of ground water in the vicinity of the recharge basins. Current leakage from canals and laterals does not appear to have had a negative impact on water quality. The proposed recharge sites have adequate soil caps to remove most pathenogenic organisms.

Noxious weeds are a potential problem within the recharge basins. Appropriate weed control measures will be taken to insure noxious weeds are controlled. Control measures may include but are not be limited to:

- Mechanical Removal
- Grazing
- Herbicides

Only herbicides that are labeled for use in aquatic environments will be used and will be applied according to label instructions. DEQ will be notified prior to pesticide applications.

This monitoring plan is designed to demonstrate managed recharge does not degrade ground water quality. Surface water and ground water quality will be monitored before, during, and after recharge activities. Monitoring will focus primarily on those constituents that have been identified as potential pollutants of concern. Emphasis is placed on monitoring biological contaminants because these pose acute risks to human health.

1.4 WATER QUALITY MONITORING

1.4.1 Baseline Water Quality

Water quality in the Eastern Snake Plain Aquifer (ESPA) is generally quite good. Except for scattered incidences of elevated nitrates and organic compounds, the water is of suitable quality for domestic supplies without treatment. Because the historical record of water quality sampling is relatively short, it is difficult to determine how man's activities have impacted the aquifer over time.

Wood and Low (1988) estimated that about 5.6 billion cubic meters (m^3) of surface irrigation water entered the aquifer as incidental recharge in 1980. Over one hundred years of irrigation seem to have had little impact on the concentrations of major ions in the ground water. They attribute this lack of impact on the fact that the ion chemistry of the surface water is essentially the same as the ground water, and that even though the amount of water recharged seems large, it is still a small fraction of the total amount of water in the aquifer. Exacerbating the difficulty of identifying changes are the rapid flow rate in the aquifer, and natural variability in the water chemistry.

The basic chemistry does not vary a great deal in the ESPA. Wood and Low (1988) observed that generally the water becomes isotopically heavier with distance from the recharge areas as a result of evapotranspiration, and that carbon-13, calcium and bicarbonate increase with both distance and irrigation-induced carbonate dissolution. Mann and Low (1994) and Bartholomay, *et al* (1997) observed that tritium in the irrigated areas is also enriched as a result of recharge by surface water, while less-developed areas and those irrigated almost exclusively by ground water exhibit tritium values more closely regarded as background.

In order to evaluate the existing ground water quality at the Milepost 31 recharge site, two sets of samples were collected from the East and West monitor wells in 2001 and 2002 (Figure 10). The samples were collected using a 3-liter weighted polyethylene bailer connected to a stainless steel cable and hand-operated winch.

Water quality results for the East and West Monitoring Wells and 17 Statewide Monitoring Program (SMP) wells (Figure 10) located nearest to Milepost 31, and surface water quality data collected by the U.S. Geological Survey at the stream gauge below Milner Dam on the Snake River are summarized in this document. The surface water samples collected at the stream gauge are considered representative of water in the Milner pool since it is the only source of water in the Snake River at that point.

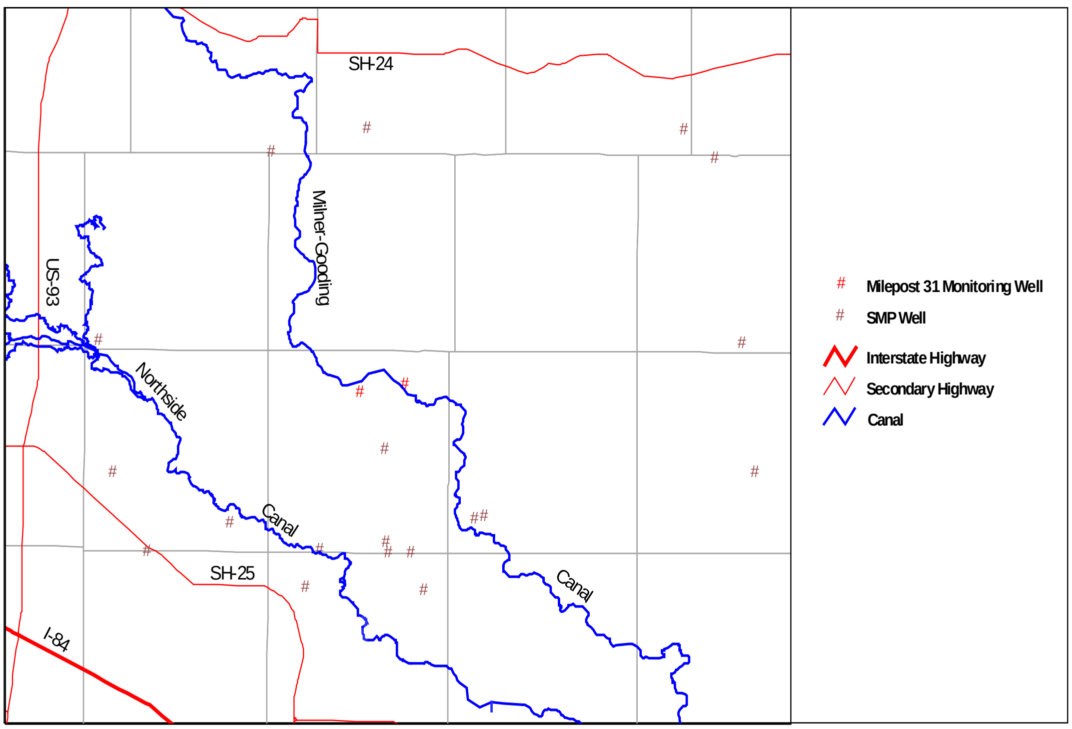

Figure 10: Monitoring and Statewide well locations near Milepost 31, Jerome County, Idaho

The different chemical constituents are compared to Primary and Secondary Constituent Standards for ground water established by the Idaho Department of Environmental Quality (DEQ) under the *Ground Water Quality Rule* (IDAPA 58.01.11).

1.4.1.a General Water Chemistry

Measurements of general water chemistry are summarized in Table 2. For the most part, measurements of constituents in the Milepost 31 monitoring wells, SMP wells and surface water are similar. Dissolved oxygen at one recharge monitoring well was slightly lower than SMP and surface water measurements at 5.2 mg/L. Some surface water samples exceeded the recommended ground-water standard for pH of 8.5 and generally the surface water samples had greater values for pH, dissolved oxygen and temperature (DEQ, 2003).

Table 2. Summary of general water chemistry at Milepost 31, Jerome County, Idaho.

[°C, degrees Celsius; $CaCO_3$, calcium carbonate; SCS, Secondary Constituent Standard; µs/cm, microsiemen per centimeter; mg/l, milligram per Liter; --, no value available]

General Water Chemistry	Milepost 31 Well Ranges	SMP Well Ranges	Surface Water Ranges	Ground-Water Standard	Standard Type
Alkalinity, mg/l as $CaCO_3$	123 - 141	115 - 434	123 - 198	--	--
Dissolved Oxygen, mg/l	5.2 - 7.5	5.8 - 9.0	8.0 - 14.6	--	--
Hardness, total, mg/l as $CaCO_3$	135 - 154	115 - 480	120 - 219	--	--
pH, standard units	7.7 - 7.9	7.5 - 8.2	7.3 - 9.0	6.5 - 8.5	SCS[1]
Specific Conductance, µs/cm at 25°C	387 - 396	302 - 1240	314 - 575	--	--
Water Temperature, °C	12.5 - 13.6	11.8 - 17.1	4.0 - 20.5	--	--

[1]IDAPA 58 Title 01 Chapter 11

Inorganic Constituents

The inorganic constituents detected in the Milepost 31 area include arsenic, barium, bicarbonate, boron, calcium, chloride, chromium, fluoride, lithium, magnesium, manganese, potassium, selenium, silica, sodium, and sulfate. Concentrations for constituents exceeding the reporting level in recharge monitoring wells are summarized in Table 3 along with established constituent standards.

The chemical composition of the monitoring wells, nearby SMP wells, and the surface water is generally similar and there have been no analyses that have exceeded established ground water quality standards. The surface water analyses frequently show a wider range in constituent concentrations and often have a greater maximum concentration.

Table 3. Summary of inorganic constituents detected in water at Milepost 31, Jerome County, Idaho

[E, estimated; mg/l, milligrams per liter; µg/l, micrograms per liter; PCS, Primary Constituent Standard; SCS, Secondary Constituent Standard; --, no value available]

Constituent	Milepost 31 Well Ranges	SMP Well Ranges	Surface Water Ranges	Ground-Water Standard	Standard Type
Arsenic, µg/l as As	E1.9 - 2.5	1.0 - 19.7	2.0 - 4.0	50	PCS[1]
Bicarbonate, mg/l as HCO_3	150 - 170	140 - 529	120 - 220	--	--
Barium, µg/l as Ba	20.8 - 41.8	14.0 - 17.7	49.0 - 82.0	2000	PCS[1]
Boron, µg/l as B	29 - 52	--	--	--	--
Calcium, mg/l as Ca	34 - 38	25 - 68	29 - 59	--	--
Chloride, mg/l as Cl	18.7 - 23.1	8.0 - 73.6	11.2 - 44.0	250	SCS[1]
Chromium, µg/l as Cr	2.6 - 3.1	1.0 - 4.0	<1	100	PCS[1]
Fluoride, mg/l as F	.6 - .7	.3 - .7	.5 - .9	4	PCS[1]
Lithium, µg/l as Li	25.2 - 31.0	--	--	--	--
Magnesium, mg/l as Mg	12.3 - 14.1	13.0 - 75.8	11.5 - 21.0	--	--
Manganese, µg/l as Mn	1.2 - 10.0	1.0 - 3.0	<1.0 - 10.0	50	SCS[1]
Potassium, mg/l as K	3.5 - 4.6	2.9 - 6.9	2.5 - 7.9	--	--
Selenium, µg/l as Se	0.4 - 0.8	0.6 - 4.4	<1	50	PCS[1]
Silica, mg/l as SiO_2	31/0 - 32.0	28.0 - 38.0	6.7 - 27.0	--	--
Sodium, mg/l as Na	13.8 - 18.4	14.0 - 91.1	11.5 - 21.0	--	--
Sulfate, mg/l as SO_4	31 - 32	19 - 116	24 - 64	250	SCS[1]

[1]IDAPA 58 Title 11 Chapter 11

Nutrient and Bacteria Constituents

Dissolved nitrite plus nitrate are collectively referred to as nitrate and result from a wide variety of natural and anthropogenic processes, although the natural processes are almost always a minor contributor to the overall nitrate levels. Nitrate levels in the analyses are below the maximum contaminant level for drinking water (MCL) of 10 mg/L, but often exhibit some impact from man's activities on the surface. Orr and others (1991) estimated that natural concentrations of nitrate in the ESRP range from 0 to 1.4 mg/l.

Phosphorus is an important nutrient in plants and its occurrence in ground water can again be attributed to a wide variety of natural processes and human activities. High concentrations can promote eutrophication of water bodies. Concentrations in all analyses are low and are more likely to be related to man's activities than natural dissolution of the aquifer matrix.

Coliform bacteria are an indicator of possible pollution by intestinal bacterial or viruses, while fecal coliform bacteria almost always indicate the presence of waste from warm-blooded organisms. The surface water samples frequently contained significant numbers of fecal coliform bacteria colonies up to 66 colonies per 100 milliliters (Table 4), and were observed in ground-water samples only twice.

The background level of Cryptosporidium and Giardia in ground water at the site is unknown.

Table 4. Summary of nutrient constituents detected in water at Milepost 31, Jerome County, Idaho.
[col/100 ml, colony forming unit per 100 milliliters; PCS, Primary Constituent Standard; mg/l, milligram per liter; --, no value available]

Constituent	Milepost 31 Well Ranges	SMP Well Ranges	Surface Water Ranges	Ground-Water Standard	Standard Type
Nitrate + Nitrite, mg/l as N	.531 - .740	.36 - 2.4	<.05 - 1.5	10	PCS[1]
Orthophosphorous, mg/l as P	<.02 - .025	<.01 - .05	--	--	--
Phosphorous, mg/l as P	.013 - .081	<.01 - .28	<.01 - .03	--	--
Total Coliform Bacteria, col/100 ml	<1	--	--	1	PCS[1]
Fecal Coliform Bacteria, col/100 ml	<1	<1 - 7	<1 - 66	--	--

[1]IDAPA 58 Title 01 Chapter 11

Radioactivity and Tritium

Gross alpha and gross beta radioactivity come from a wide variety of naturally-occurring and man-made radionuclides, but are reported as if it were all given off by one radionuclide, in this case Thorium-230 and Cesium-137 respectively. This is for reporting convenience only and does not imply that the radioactivity is attributed to these specific isotopes. The results are reported as a concentration plus or minus an uncertainty three standard deviations (3s). For these data, there is a 99-percent probability that the true concentration is in the range of the reported concentration plus or minus the uncertainty. Additionally, if the reported concentration is less than the uncertainty, it is considered to be below the reporting level.

Gross alpha and gross beta particle radioactivity was measured in samples from the recharge monitoring wells and SMP wells. Tritium was also measured in samples from recharge monitoring wells, selected USGS monitoring wells in Jerome County, and one surface water sample (Table 5). None of the samples exceeded the respective ground water quality standards.

Table 5. Summary of radioactivity and tritium detected in water at Milepost 31, Jerome County, Idaho.
[pCi/l, picocuries per liter; PCS, Primary Constituent Standard; --, no value available]

Constituent	Milepost 31 Well Ranges	SMP Well Ranges[1]	Surface Water Ranges	Ground-Water Standard	Standard Type
Gross Alpha Radioactivity, pCi/l as Thorium-230	5.4±4.1 - .9.3±6.9	.9±4.1 - 3.7±6.3	--	15	PCS[2]
Gross Beta Radioactivity, pCi/l as Cesium-137	6.3±2.3 - 8.3±3.6	3.1±2.3 - 8.9±4.7	--	[3]	PCS[2]
Tritium, pCi/l	1±6 - 9±9	1±1 - 110±7	43±3	20,000	PCS[2]

[1]Tritium data from U.S. Geological Survey monitoring wells in Jerome County, ID
[2]IDAPA 58 Title 01 Chapter 11
[32]4 millirems/year effective dose equivalent (Cesium-137 dose equivalent equals 120 pCi/l)

Volatile Organic Compounds and Pesticides

Volatile organic compounds (VOCs) and pesticides are not commonly found in ground water in the Eastern Snake River Plain aquifer. In samples collected from the Milepost 31 monitoring wells, no VOCs were identified in either year of sampling. Samples from three SMP wells near Milepost 31 were found to contain VOCs including benzene, chloromethane, dichlorodifluoromethane, ethylbenzene, isodurene, toluene, and xylenes. None of the surface water samples were analyzed for VOCs.

Table 6 lists the VOCs that were not detected in any samples.

Table 6. Volatile organic compounds not detected in water at Milepost 31, Jerome County, Idaho.

Volatile organic compounds not detected			
1,1-Dichloroethane	1,2,3-Trichlorobenzene	n-Butylbenzene	Dichloromethane
1,1-Dichloroethylene	1,2,3-Trichloropropane	sec-Butylbenzene	Hexachlorobutadiene
1,1-Dichloropropene	1,2,4-Trichlorobenzene	tert-Butylbenzene	Isopropylbenzene
1,1,1-Trichloroethane	1,2,4-Trimethylbenzene	Carbon Tetrachloride	p-Isopropyltoluene
1,1,1,2-Tetrachloroethane	1,3-Dichloropropane	Chlorodibromomethane	Methyl Tert Butyl Ether (MTBE)
1,1,2-Trichloroethane	e,z-1,3-Dichloropropene	Chloroethane	Monochlorobenzene
1,1,2,2-Tetrachloroethane	1,3,5-Trimethylbenzene	Chloroform	Naphthalene
1,2-Dibromoethane (EDB)	2,2-Dichloropropane	o-Chlorotoluene	n-Propylbenzene
1,2-Dichloroethane	Bromobenzene	p-Chlorotoluene	Styrene
cis-1,2-Dichloroethylene	Bromochloromethane	Dibromomethane	Tetrachloroethylene
trans-1,2-Dichloroethylene	Bromodichloromethane	m-Dichlorobenzene	Trichloroethylene
1,2-Dichloropropane	Bromoform	o-Dichlorobenzene	Trichlorofluoromethane
1,2-Dibromo-3-chloropropane (DBCP)	Bromomethane	p-Dichlorobenzene	Vinyl Chloride

Analyses of samples for pesticides were conducted in 2001 and 2002. Because the analyses were done by different laboratories, the list of pesticides varied slightly between the two years.

Table 7 lists the pesticides that were not detected in any samples. No samples for analyses from the Milepost 31 monitoring wells had identifiable concentrations of pesticides. Samples collected from three SMP wells near Milepost 31 contained pesticides identified as atrazine, desethylatrazine, s-ethyl-dipropylthiocarbamate (EPTC, also known as *Eptam*), and metolochlor. Atrazine, desethylatrazine, EPTC, dacthal, and simazine were found in three surface water samples.

Table 7. Pesticides and degradation products not detected in water at Milepost 31, Jerome County

Pesticides Not Detected			
2,3,4,5-Tetrachlorophenol	Carboxin	Ethoprop	Parathion
2,3,4,6-Tetrachlorophenol	Chloramben	Etridiazole	Pebulate
2,4-D	Chlordane-alpha	Fenamiphos	Pendamethalin
2,4-DB	Chlordane-gamma	Fenarimol	Pentachlorophenol
2,4-DCBA	Chlorneb	Fenuron	cis-Permethrin
2,4,5-T	Chlorobenzilate	Fluometuron	trans-Permethrin
2,4,5-TP (Silvex)	Chlorothalonil	Fonofos	Phorate
2,4,5-Trichlorophenol	Chlorpropham	Heptachlor	Picloram
2,4,6-Trichlorophenol	Chlorpyrifos	Heptachlor epoxide	Profluralin
2,6-Diethylaniline	Cyanazine	Hexachlorobenzene	Prometon
3,5-Dichlorobenzoic acid	Cycloate	Hexazinone	Prometryn
4,4-DDD	Dalapon	Ioxynil	Pronamide
4,4-DDE	DCPA	Lindane	Propachlor
4,4-DDT	Desisopropyl Atrazine	Linuron	Propanil
Acetachlor	Diallate	Malathion	Propargite
Acifluorfen	Diazinon	MCPA	Propazine
Alachlor	Dicamba	Metalaxyl	Propham
Aldrin	Dichlobenil	Methidathion	Siduron
Ametryn	Dichloroprop	Methoxychlor	Simetryn
Atraton	Dichlorvos	Methyl paraoxon	Stirofos
Azinphos methyl	Diclofop methyl	Methyl parathion	Tebuthiuron
Benfluralin	Dieldrin	Metribuzin	Terbacil
Benthiocarb	Dinoseb	Mevinphos	Terbufos
Bentatzn	Diphenamid	MGK 264	Terbutryn
BHC-alpha	Disulfoton	MGL 264	Tralkoxydim
BHC-beta	Endosulfan I	Molinate	Triademefon
BHC-delta	Endosulfan II	Monuron	Triallate
Bromacil	Endosulfan sulfate	Napropamide	Triclopyr
Bromoxynil	Endrin	trans-Nonochlor	Tricyclazole
Butachlor	Endrin aldehyde	Norflurazon	Trifluralin
Butylate	Ethalfluralin	Oxyfluorfen	Vernolate
Carbaryl			

Waste Water Contaminants

In 2001, the laboratory providing analyses for pesticides noted two tentatively identified compounds (TICs) in samples from both Milepost 31 wells. The greatest instrument response was attributed to tri(2-chloroethyl)phosphate, commonly known as Fyrol; a compound used as a flame retardant primarily in the manufacture of foam rubber products. A lesser response was attributed to an ultraviolet stabilizer used in plastics, 2-(2-hydroxy-5-methylphenyl)-benzotriazole, commonly known as Tinuvin-p. The laboratory was unable to quantify the concentrations of the compounds. In 2002, samples were collected and analyzed by an analytical protocol developed by the USGS for wastewater contaminants including hormones, pharmaceuticals, and other organic chemical compounds newly recognized as potential contaminants in surface water (Table 8).

While Tinuvin-p was not included in the wastewater analysis, the presence of Fyrol was confirmed in samples from both Milepost 31 wells at 94 and 610 micrograms per liter (μg/L). The presence of these compounds in the samples is not well understood. There appears to be no adequate explanation for the occurrence of Fyrol in the wells. Barnes and others (2002) noted that Fyrol is commonly found in surface water samples throughout the United States but there is little data with respect to its presence in ground water. The Tinuvin-p could be related to the use of plastic well liners or sampling devices, but the results from other wells using the same components and analyzed by the same labs/protocols are not consistent with that conclusion. None of the other wastewater compounds were detected in the samples.

Table 8. Waste water compounds analyzed in water at Milepost 31, Jerome County, Idaho

Waste Water Constituents		
1,4-Dichlorobenzene	Camphor	d-Limonene
1-Methylnaphthalene	Carbaryl	Menthol
17-beta-Estradiol	Carbazole	Metalaxyl
17a-beta-Estradiol	Chlorpyrifos	Methyl salicylate
2,6-Dimethylnaphthalene	Cholesterol	Metolachlor
2-Methylnaphthalene	Cotinine	Monoethoxyoctylphenol
3-beta-Coprostanol	p-Cresol	N,N-diethyl-meta-toluamide
3-Methyl-1(H)-indole (Skatole)	Diazinon	Naphthalene
3-tert-Butyl-4-hydroxy anisole (BHA)	Dichlorvos	para-Nonylphenol
4-Cumylphenol	Diethoxynonylphenol	Pentachlorophenol
4-n-Octylphenol	Diethoxyoctylphenol	Phenanthrene
4-tert-Octylphenol	Equilenin	Phenol
5-Methyl-1H-benzotriazle	Estrone	Prometon
Acetophenone	Fluoranthene	Pyrene
Acetyl hexamethyl tetrahydronaphthalene	Fyrol CEF	beta-Sitosterol
Anthracene	Fyrol PCF	beta-Stigmastanol
Anthraquinone	Hexadydrohexamethylcyclopentabenzopyran	Tetrachloroethylene
Benzo[a]pyrene	Indole	Tris (2-butoxyethyl) phosphate
Benzophenone	Isoborneol	Tributyl phosphate
Bisphenol A	Isophorone	Triclosan
Bromacil	Isopropylbenzene	Triethyl citrate
Bromoform	Isoquinoline	Triphenyl phosphate
Caffeine		

Water Quality Monitoring Locations

Two monitor wells (East and West) have been constructed to monitor ground water quality at the recharge site (Figure 11). The monitor wells should provide information on ground water quality at the recharge site, down-gradient from the recharge basin, and would allow ground water quality concerns to be identified as soon as possible. The downgradient well was placed between 180 and 270 days travel time downstream of the recharge basin (Schmidt and Salovich 1998). Surface water samples will be taken at the headgate for the recharge site to characterize surface water quality.

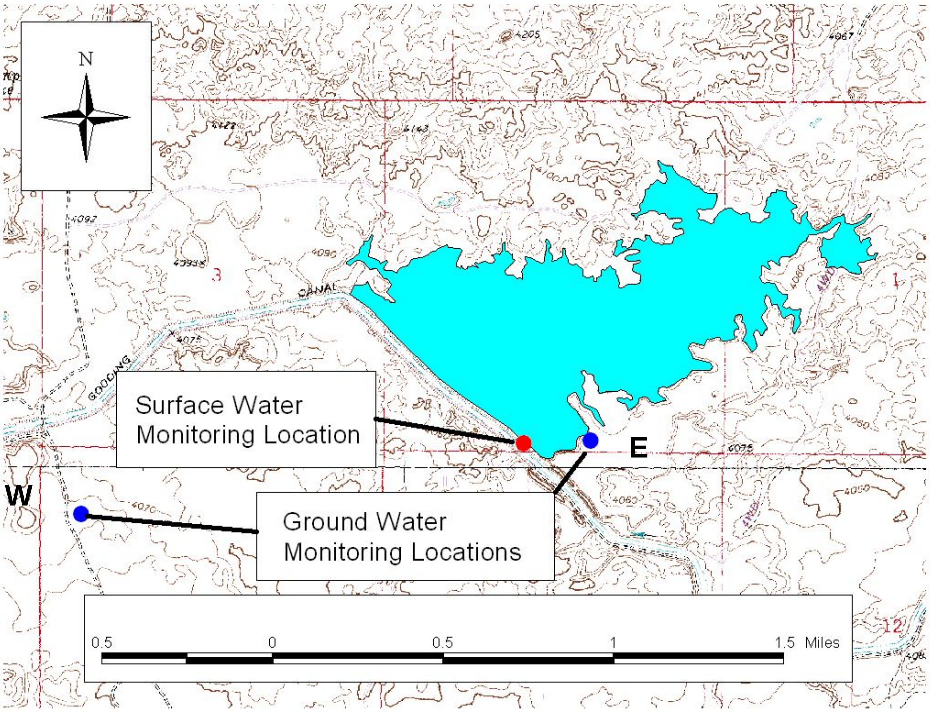

Figure 11: Locations of ground water and surface water monitoring sites for the Milepost 31 recharge site

Water Quality Monitoring Parameters and Frequency

Attachment 1 provides the monitoring parameters, analysis method, the Idaho Ground Water Quality Standard, alert level and frequency for surface and ground water monitoring for the Milepost 31 recharge site.

The operator shall keep appropriate records to determine the volume of water diverted into the recharge site. Those records should contain the amount of water diverted and any changes by date of the amount of water diverted into the recharge site, the yearly commencement date of recharge activities, the yearly termination date of recharge activities and the total volume (in acre-feet) of water diverted into the recharge site.

Surface water quality samples will be collected near the point of diversion into the recharge basin. A plastic disposable device will be used to collect a grab sample at an interval of zero (0) to two (2) feet from the surface of the canal. Sample bottles will be directly filled and appropriate preservatives will be added.

Ground water samples will be taken be taken from the monitoring well via bailing techniques.

Samples will be collected in a manner consistent with the Statewide Ambient Ground Water Quality Monitoring Program (Statewide Program). Samples will be submitted to the Idaho State Bureau of Laboratories in Boise for analysis. Samples will be shipped according to standard operating procedures with appropriate sample labels. If samples are collected for VOC analysis, a trip blank will be included with the sample for testing after shipment. Statewide Program SOPs are available from Idaho Department of Water Resources (IDWR).

1.5 MANAGEMENT PRACTICES

1.5.1 Reporting Schedule

The laboratory will notify the sampling entity as soon as possible if bacteria or pathogens are present in the ground water samples. If any constituent exceeds the alert values in the section entitled Alert Levels, the operator will suspend recharge and notify the IDWR and IDEQ immediately and a confirmatory sample will be collected within three (3) days receipt of the laboratory notification. IDWR and IDEQ will consult on contingency actions to include but not be limited to: immediate suspension of all recharge activities, request additional confirmatory sampling, require additional analysis to determine the probable source of contamination. If IDWR and IDEQ determine that recharge activities may continue, the operator may be required to do additional source water monitoring. Any sampling that exceeds alert levels will be noted in an annual monitoring report.

The operator of the recharge site will develop an annual report to be forwarded to the Idaho Department of Water Resources and the Idaho Department of Environmental Quality. The report will include the following elements in a format suitable to IDWR:

1. Records of the examination of the recharge basin for deleterious material prior to the commencement of recharge activities.
2. Records of the date recharge activities commence, the rate of diversion (in cfs) and the volume of water (in ac-ft) diverted into the recharge basin.
3. Date and time of each sample collected.
4. Data sheets containing the analysis of each sample.

1.5.2 CONTINGENCY PLAN

American Falls Reservoir District #2 (AFRD#2) does not treat this portion of the canal for in channel vegetation. The high velocity in the canal keeps unwanted vegetation to a minimum.

In the event of other critical events such as a herbicide, gas or diesel spill, the headgate to the recharge site will be closed and remain closed until authorization is provided by DEQ that recharge operations may resume. AFRD#2 will notify the operator of the recharge in the event of a spill into the canal system during periods of recharge. AFRD#2 has responded to accidents on the canal in past and works to prevent hazardous materials from entering private lands or public waters.

1.5.3 Recharge Water Treatment

The recharge water will receive no treatment prior to recharge

General Conditions

This plan will be adhered to during the operation of the managed recharge site. The operator of the site will carry all out monitoring activities and will follow reporting procedures required in the plan. Changes to monitoring constituents and monitoring frequency can be made if upon consultation with IDWR and IDEQ those constituents are not considered to be a threat to ground water quality. Changes to the monitoring plan can be recommended based upon the results of previous monitoring.

Any changes to this plan will require sixty (60) days written notice prior to the commencement of recharge activities by any signatory to this plan and must be agreed to by the other signatories to this plan.

Monitoring reports will be filed with IDWR and IDEQ on a yearly basis except in those instances where immediate notification of IDWR and IDEQ is required. Monitoring reports will be mailed to IDWR at:

Managed Recharge Coordinator
Idaho Department of Water Resources
PO Box 83720
Boise, ID 83720-0098

and with DEQ at:

Managed Recharge Coordinator
Idaho Department of Environmental Quality
650 Addison Ave. West, Suite 110
Twin Falls, ID 83301

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Attachment 1
Monitoring Parameters

Groundwater Sampling				
Constituent	Analysis Method	Idaho Ground Water Quality Standard (mg/l unless otherwise specified)	Alert Level (mg/l unless otherwise specified)	Sampling Frequency
Field Parameters				
Specific Conductance	Probe	none	na	Monthly*
pH	Probe	none	na	Monthly*
Temperature	Probe	none	na	Monthly*
Dissolved Oxygen	Probe	none	na	Monthly*
Depth to Water	Probe	none	na	Monthly*
Coliform Bacteria				
Total Coliform	SM 9221B	>0	Detection	Monthly*
Total Fecal Coliform	SM 9222B	>0	Detection	Monthly*
E.coli	SM 9223B	>0	Detection	Monthly*
CLPP		none	na	Upon Request
Giardia and Crytosporidium	EPA 1623	>0	Detection	Upon Request*
Common Ions				
Calcium	EPA 200.7	none	na	Bimonthly*
Sodium	EPA 200.7	none	na	Bimonthly*
Magnesium	EPA 200.7	none	na	Bimonthly*
Potassium	EPA 200.7	none	na	Bimonthly*
Chloride	EPA 300.0	250	125	Bimonthly*
Bicarbonate	EPA 310.1	none	na	Bimonthl

				y*
Sulfate	EPA 300.0	250	125	Bimonthly*
Nutrients				
Nitrate	EPA 353.2	10	5	Bimonthly*
Nitrite	EPA 353.2	1	1	Bimonthly*
Total Phosphorus	EPA 365.1	none	na	Bimonthly*
Pesticides				
2,4-D	immunoassay	0.7	Detection	Bimonthly*
Alachlor	immunoassay	0.02	Detection	Bimonthly*
Aldicarb	immunoassay	none	Detection	Bimonthly*
Atrazine	immunoassay	0.03	Detection	Bimonthly*
Carbofuran	immunoassay	0.4	Detection	Bimonthly*
Metolachlor	immunoassay	none	Detection	Bimonthly*
Magnacide (acrolein)	*immunoassay*	*none*	*Detection*	*After Application*

(continued)

Groundwater Sampling (cont)				
Constituent	***Analysis Method***	***Idaho Ground Water Quality Standard (mg/l unless otherwise specified)***	***Alert Level (mg/l unless otherwise specified)***	***Sampling Frequency***
VOCs				
Benzene	EPA 524.2	0.005	Detection	Quarterly ***
Bromobenzene	EPA 524.2	none	Detection	Quarterly ***
Bromochloromethane	EPA 524.2	none	Detection	Quarterly ***
Bromoform	EPA 524.2	none	Detection	Quarterly ***
Bromomethane	EPA 524.2	none	Detection	Quarterly ***
Butylbenzene, n-	EPA 524.2	none	Detection	Quarterly ***
Butylbenzene, -sec	EPA 524.2	none	Detection	Quarterly ***
Carbon Tetrachloride	EPA 524.2	0.005	Detection	Quarterly ***
Chlorobenzene	EPA 524.2	0.1	Detection	Quarterly ***
Chloroethane	EPA 524.2	none	Detection	Quarterly ***
Chloroform	EPA 524.2	none	Detection	Quarterly ***
Chloromethane	EPA 524.2	none	Detection	Quarterly ***
Chlorotoluene,-o	EPA 524.2	none	Detection	Quarterly ***
Chlorotoluene-p	EPA 524.2	none	Detection	Quarterly ***
Dibromochloromethane	EPA 524.2	none	Detection	Quarterly ***

Dibromochloropropane (DBCP)	EPA 524.2	0.0002	Detection	Quarterly ***
Dibromoethane,1,2- (EDB)	EPA 524.2	0.0005	Detection	Quarterly ***
Dibromomethane	EPA 524.2	none	Detection	Quarterly ***
Dichlorobenzene,1,2-	EPA 524.2	0.6	Detection	Quarterly ***
Dichlorobenzene,1,3-	EPA 524.2	none	Detection	Quarterly ***
Dichlorobenzene,1,4-	EPA 524.2	0.075	Detection	Quarterly ***
Dichlorobromomethane	EPA 524.2	none	Detection	Quarterly ***
Dichlorodifluoromethane	EPA 524.2	none	Detection	Quarterly ***
Dichloroethane,1,1-	EPA 524.2	none	Detection	Quarterly ***
Dichloroethane,1,2-	EPA 524.2	0.005	Detection	Quarterly ***
Dichloroethene,1,1-	EPA 524.2	0.007	Detection	Quarterly ***
Dichloroethene,1,2,cis-	EPA 524.2	0.07	Detection	Quarterly ***
Dichloroethene,1,2,trans-	EPA 524.2	0.1	Detection	Quarterly ***
Dichloropropane,1,2-	EPA 524.2	0.005	Detection	Quarterly ***
Dichloropropane,1,3-	EPA 524.2	none	Detection	Quarterly ***
Dichloropropane,2,2-	EPA 524.2	none	Detection	Quarterly ***
Dichloropropene,1,1-	EPA 524.2	none	Detection	Quarterly ***
Dichloropropene,1,3 cis-	EPA 524.2	none	Detection	Quarterly ***
Dichloropropene,1,3 trans-	EPA 524.2	none	Detection	Quarterly ***
Dichloropropene,e,z-1,3-	EPA 524.2	none	Detection	Quarterly ***
Ethylbenzene	EPA 524.2	0.7	Detection	Quarterly ***
Hexachlorobutadiene	EPA 524.2	none	Detection	Quarterly ***

Isodurene	EPA 524.2	none	Detection	Quarterly ***
Isopropylbenzene	EPA 524.2	none	Detection	Quarterly ***
Methyl tertiary butyl ether (MTBE)	EPA 524.2	none	Detection	Quarterly ***
Methylene chloride	EPA 524.2	none	Detection	Quarterly ***
Naphthalene	EPA 524.2	none	Detection	Quarterly ***
n-Butylbenzene	EPA 524.2	none	Detection	Quarterly ***
n-Propylbenzene	EPA 524.2	none	Detection	Quarterly ***
Paraldehyde	EPA 524.2	none	Detection	Quarterly ***
sec-Butylbenzene	EPA 524.2	none	Detection	Quarterly ***
Styrene	EPA 524.2	0.1	Detection	Quarterly ***
tert-Butylbenzene	EPA 524.2	none	Detection	Quarterly ***
Tetrachloroethane,1,1,1,2-	EPA 524.2	none	Detection	Quarterly ***
Tetrachloroethane,1,1,2,2-	EPA 524.2	none	Detection	Quarterly ***
Tetrachloroethylene	*EPA 524.2*	*0.005*	*Detection*	*Quarterly* ***

Groundwater Sampling (cont)				
Constituent	**Analysis Method**	**Idaho Ground Water Quality Standard (mg/l unless otherwise specified)**	**Alert Level (mg/l unless otherwise specified)**	**Sampling Frequency**
Tetralin	EPA 524.2	none	Detection	Quarterly ***
Toluene	EPA 524.2	1	Detection	Quarterly ***
Toluene, 2-Isopropyl-	EPA 524.2	none	Detection	Quarterly ***
Toluene, 4-Isopropyl-	EPA 524.2	none	Detection	Quarterly ***
Trichlorobenzene,1,2,3-	EPA 524.2	none	Detection	Quarterly ***
Trichlorobenzene,1,2,4-	EPA 524.2	none	Detection	Quarterly ***
Trichloroethane,1,1,1-	EPA 524.2	0.07	Detection	Quarterly ***
Trichloroethane,1,1,2-	EPA 524.2	0.005	Detection	Quarterly ***
Trichloroethylene	EPA 524.2	0.005	Detection	Quarterly ***
Trichlorofluoromethane	EPA 524.2	none	Detection	Quarterly ***
Trichloropropane	EPA 524.2	none	Detection	Quarterly ***
Trichloropropane,1,2,3-	EPA 524.2	none	Detection	Quarterly ***
Trimethylbenzene,1,2,4-	EPA 524.2	none	Detection	Quarterly ***
TRIMETHYLBENZENE,1,3,5-	EPA 524.2	none	Detection	Quarterly ***

'Vinyl chloride	EPA 524.2	0.002	Detection	Quarterly ***
Xylenes	EPA 524.2	10	Detection	Quarterly ***

Monthly* - Assumes one (1) sample prior to the commencement of recharge activities and once a month while recharge is occurring.

Bimonthly-** Assumes one (1) sample prior to the commencement of recharge activities and if upon consultation with DEQ it is deemed a pollutant of concern, continue monitoring every other month while recharge is occurring

Quarterly** Assumes one (1) sample prior to the commencement of recharge activities and every third month while recharge is occurring.

Surface Water Sampling				
Constituent	**Analysis Method**	**NAWQS (mg/l unless otherwise specified)**	**Alert Level (mg/l unless otherwise specified)**	**Sampling Frequency**
Field Parameters				
Specific Conductance	Probe	none	na	Monthly*
pH	Probe	none	na	Monthly*
Temperature	Probe	none	na	Monthly*
Dissolved Oxygen	Probe	none	na	Monthly*
Depth to Water	Probe	none	na	Monthly*
Coliform Bacteria				
Total Coliform	SM 9221B	>0	na	Monthly*
Total Fecal Coliform	SM 9222B	>0	na	Monthly*
E.coli	SM 9223B	>0	na	Monthly*
CLPP		none	na	Upon Request
Common Ions				
Calcium	EPA 200.7	none	na	Monthly*
Sodium	EPA 200.7	none	na	Monthly*
Magnesium	EPA 200.7	none	na	Monthly*
Potassium	EPA 200.7	none	na	Monthly*
Chloride	EPA 300.0	250	na	Monthly*
Bicarbonate	EPA 310.1	none	na	Monthly*
Sulfate	EPA 300.0	250	na	Monthly*
Nutrients				
Nitrate	EPA 353.2	10	na	Monthly*
Nitrite	EPA 353.2	1	na	Monthly*
Total Phosphorus	EPA 365.1	none	na	Monthly*
Herbicides				
2,4-D	immunoassay	0.7	Detection	Monthly*
Alachlor	immunoassay	0.02	Detection	Monthly*
Aldicarb	immunoassay	none	Detection	Monthly*
Atrazine	immunoassay	0.03	Detection	Monthly*
Carbofuran	immunoassay	0.4	Detection	Monthly*

Metolachlor	immunoassay	none	Detection	Monthly*

Monthly* - Assumes one (1) sample prior to the commencement of recharge activities and once a month while recharge is occurring.

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