

# Raft River Subbasin HUC 17040210

TMDL Five-Year Review

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**Draft**



**Department of Environmental Quality**

**April 2011**



**Raft River**  
**TMDL Five-Year Review**

**April 2011**

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## Acknowledgments

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The 5-Year TMDL review of the Raft River Subbasin Assessment and TMDL is the cumulative work of several individuals in the Twin Falls Regional Office and DEQ's Technical Services. These individuals include:

- Katie Shewmaker – Principle TMDL Writer of the Five-Year Review
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- Sean Coyle – GIS Analyst with DEQ Technical Services and GIS Map Developer

The Raft River Subbasin Assessment and TMDL were developed to comply with Idaho's Total Maximum Daily Load schedule from listings found on the §303(d) list. The original TMDL was written by Michael Etcheverry and Clyde Lay who submitted the final version to EPA and DEQ State Office in December 2003. Final approval was given by EPA in 2004.

The commencement of the Idaho TMDL process began in 1995 via House Bill 1284. Since that time, the Lake Walcott Watershed Advisory Group (Lake Walcott WAG) and Upper Snake Basin Advisory Group (Upper Snake BAG) have been actively engaged in the TMDL process by providing comments and suggestions to DEQ during the development of the original Raft River TMDL and the Five-Year Review.

# Table of Contents

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Acknowledgments.....	iv
Executive Summary .....	viii
Watershed At A Glance.....	ix
<b>Section 1: Introduction.....</b>	<b>1</b>
About Assessment Units .....	1
<b>Section 2: TMDL Review and Status.....</b>	<b>3</b>
Pollutant Targets .....	4
Control and Monitoring Points.....	4
Load Capacity .....	5
Load Allocations .....	5
Margin of Safety .....	6
Seasonal Variation .....	6
Reserve .....	6
<b>Section 3: Beneficial Use Status .....</b>	<b>7</b>
Beneficial Uses.....	7
Changes to Subbasin Characteristics .....	11
Summary and Analysis of Current Water Quality Data .....	11
Beneficial Uses.....	13
Recommendations .....	15
<b>Section 4: Review of Implementation Plan and Activities.....</b>	<b>18</b>
4.1 Development and Purpose.....	18
4.2 Responsible Parties .....	18
4.3 Planned Activities .....	19
4.4 Accomplished Activities.....	20
4.5 Future Strategy and Planned Time Frame.....	22
<b>Section 5: Summary of Five Year Review .....</b>	<b>23</b>
Review process .....	23
Changes in Subbasin .....	23
TMDL Analysis and Water Quality Criteria.....	23
Review of Beneficial Uses.....	23
Watershed Advisory Group Consultation .....	24
Recommendations for Further Action .....	24
References Cited .....	25

# List of Tables

---

Table 1. Existing TMDLs and General Status.....	viii
Table 2. Watershed at a Glance. ....	ix
Table 3. Load Capacities and Critical Periods.....	5
Table 4. Background and nonpoint source loads in the Raft River Subbasin. ....	5
Table 5. Beneficial uses of TMDL water bodies.....	7
Table 6. Common numeric criteria supportive of designated beneficial uses in Idaho water quality standards.....	9
Table 7 Summary of Water Quality Data Collected in 2010 .....	12
Table 8. <b>BURP condition ranking and support status for streams monitored in the Raft River</b> .....	14
Table 9. Summary of recommended changes for AUs evaluated. ....	16
Table 10. Responsible Parties.....	18
<b>Table 11 Implementation strategy goals and time frame for nonpoint sources</b> .....	19
<b>Table 12 Existing TMDLs and Implementation Status</b> .....	20
<b>Table 13 Section 404 Permitted Implementation Projects since 2000 in the Raft River HUC</b> .....	21
Table 14. Summary of recommendations.....	24

# List of Figures

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Figure 1. Location of subbasin.....	3
Figure 2. Determination Steps and Criteria for Determining Support Status of Beneficial Uses in Wadeable Streams: Water Body Assessment Guidance, Second Addition (Grafe et al. 2002).....	10

## Executive Summary

This document presents a five-year review of the Raft River SBA/TMDL(s). This review addresses the water bodies in the Raft River Subbasin that are in Idaho's current and most recent draft Section 4(a) of the Integrated Report. This five-year review has been developed to comply with Idaho Statute 39-3611 (7). The review describes current water quality status, pollutant sources, and recent pollution control efforts in the Raft River Subbasin, located in south eastern Idaho.

The TMDL(s) subject to five-year review are shown summarized in Table 1. Table 1 summarizes the existing approved TMDLs and their status relative to their specific assessment unit, pollutants-of-concern, and if an implementation plan exists.

**Table 1. Existing TMDLs and General Status.**

STREAM	SEGMENT	ASSESSMENT UNIT	POLLUTANT(S)	IMPLEMENTATION PLAN
Raft River	Cassia Creek to Heglar Canyon Creek	ID17040210SK002_05 ID17040210SK002_02	Bacteria, Sediment, Temperature	Yes
Raft River	Cottonwood Creek to Cassia Creek	ID17040210SK008_04	Bacteria, Sediment, Temperature	Yes
Raft River	Heglar Canyon Creek to mouth	ID17040210SK001_05	Bacteria, Sediment, Temperature	Yes
Raft River	Idaho/Utah border to Edwards Creek	ID17040210SK013_04	Bacteria, Sediment, Temperature	Yes
Sublett Creek	Sublett Reservoir Dam to mouth	ID17040210SK019_02	Nutrients	Yes
Cassia Creek	Clyde Creek to Conner Creek	ID17040210SK005_04	Bacteria, Sediment, Temperature	Yes
Cassia Creek	Conner Creek to mouth	ID17040210SK003_04 ID17040210SK007_05	Bacteria, Sediment, Temperature	Yes
Cassia Creek	Source to Clyde Creek	ID17040210SK007_02	Bacteria, Sediment,	Yes

			Nutrients	
Clyde Creek-	Source to mouth	ID17040210SK006_02	Bacteria	Yes
Fall Creek-	Headwaters to Lake Fork	ID17040210SK022_02	Nutrients, Bacteria	Yes
Lake Fork Creek	Source to Sublett Reservoir	ID17040210SK022_02	Nutrients	Yes
Sublett Reservoir	Reservoir	ID17040210SK020_OL	Nutrients	Yes
ALL TMDLs Approved in the Raft River 2004 TMDLs except Temperature TMDLs which are currently in progress				

## Watershed At A Glance

The watershed, at a glance, is as shown in Table 2.

**Table 2. Watershed at a Glance.**

Approved TMDLs	Pollutants Within Watershed
Raft River- Sediment, Bacteria, Temperature Sublett Creek- Nutrients Cassia Creek- Sediment, Bacteria, Nutrients Fall Creek- Nutrients Lake Fork Creek – Bacteria, Nutrients Sublett Reservoir- Nutrients	Bacteria Nutrients Sediment Temperature
Implementation Plans	Implementation Actions
Raft River Implementation Plan for Agriculture (ISCC, 2006) Raft River Subbasin Temperature TMDL (in progress) Raft River 8 Digit Hydrologic Unit Profile (NRCS, 2008) Public Lands – In Development Private Lands – In Development NPDES permits - none	Grazing management Brush management Fencing Wildlife/riparian habitat management Livestock water availability- pipelines, water supply and troughs Sediment catchment ponds

## Section 1: Introduction

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The federal Clean Water Act (CWA) requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters. States and tribes, pursuant to Section 303 of the CWA, are to adopt water quality standards necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the nation's waters whenever possible. Section 303(d) of the CWA establishes requirements for states and tribes to identify and prioritize water bodies that are water quality limited (i.e., water bodies that do not meet water quality standards). States and tribes must periodically publish a priority list (a "§303(d) list") of impaired waters. For waters identified on this list, states and tribes must develop a total maximum daily load (TMDL) for the pollutants, set at a level to achieve water quality standards.

Idaho Statute 39-3611(7) requires a five-year cyclic review process for Idaho TMDLs:

The director shall review and reevaluate each TMDL, supporting subbasin assessment, implementation plan(s) and all available data periodically at intervals of no greater than five (5) years. Such reviews shall include the assessments required by section 39-3607, Idaho Code, and an evaluation of the water quality criteria, instream targets, pollutant allocations, assumptions and analyses upon which the TMDL and subbasin assessment were based. If the members of the watershed advisory group, with the concurrence of the basin advisory group, advise the director that the water quality standards, the subbasin assessment, or the implementation plan(s) are not attainable or are inappropriate based upon supporting data, the director shall initiate the process or processes to determine whether to make recommended modifications. The director shall report to the legislature annually the results of such reviews.

This report is intended to meet the intent and purpose of Idaho Statute 39-3611(7). The report documents the review of an approved Idaho TMDL and implementation plan and provides consideration of the most current and applicable information in conformance with Idaho Statute 39-3607, evaluation of the appropriateness of the TMDL to current watershed conditions, implementation plan evaluation, and consultation with the Lake Walcott Watershed Advisory Group (WAG). An evaluation of the recommendations presented is provided. Final decisions for TMDL modifications are decided by the Department of Environmental Quality (DEQ) Director. Approval of TMDL modifications is decided by the U.S. EPA, with consultation by DEQ.

### About Assessment Units

Prior to 2002, impaired waters were defined as stream segments with geographical descriptive boundaries. In 2002, DEQ modified the structure and format of Idaho's 303(d) list by combining it with the 305(b) report, required by the CWA to inform Congress of the state of Idaho's waters. This modification included identifying stream segments by Assessment Units (AUs) instead of non-uniform stream segments, and defining the use support of stream AUs by five categories, published as Sections, in the Integrated Report. Assessment units (AUs) now define all the waters of the state of Idaho. These units and the methods used to describe them can be found in the WBAG II (Grafe, et al., 2002). AUs are groups of similar streams that have similar land use practices, ownership, or land management. Stream order, however, is the main basis for determining AUs— even if ownership and land use change significantly, an AU remains the same. Because AUs are an extension of water body identification numbers, there is now a direct tie to the WQS for each AU, so that beneficial uses defined in the WQS are clearly tied to streams on the landscape.

To facilitate comparisons between the 1998 303 (d) list and the 2002 Section 5 "impaired waters" category in the Integrated Report, a crosswalk from the 1998 303 (d) list to the new AUs was included in the 2002 Integrated Report. A copy of the report is available from the DEQ website at [http://www.deq.state.id.us/water/data\\_reports/surface\\_water/monitoring/2002.cfm#2002final](http://www.deq.state.id.us/water/data_reports/surface_water/monitoring/2002.cfm#2002final). The

boundaries from the 1998 303(d)-listed segments have been transferred to the new AU framework using an approach quite similar to how DEQ has been writing SBAs and TMDLs. All AUs contained in any listed segment were carried forward to the 2002 303(d) listings in Section 5 of the integrated report (DEQ, 2005). Any AU not wholly contained within a previously listed segment, but partially contained (even minimally), was also included on the 303(d) list. This was necessary to maintain the integrity of the 1998 303(d) list and continuity with the TMDL program. The Raft River subbasin water bodies listed on the 2002 303 (d) list are included in this report, but the review is focused on the draft 2008 status lists.

When assessing new data that indicate full support, only the AU that the monitoring data represents will be removed (de-listed) from the 303(d) list (Section 5 of the integrated report).

## Section 2: TMDL Review and Status

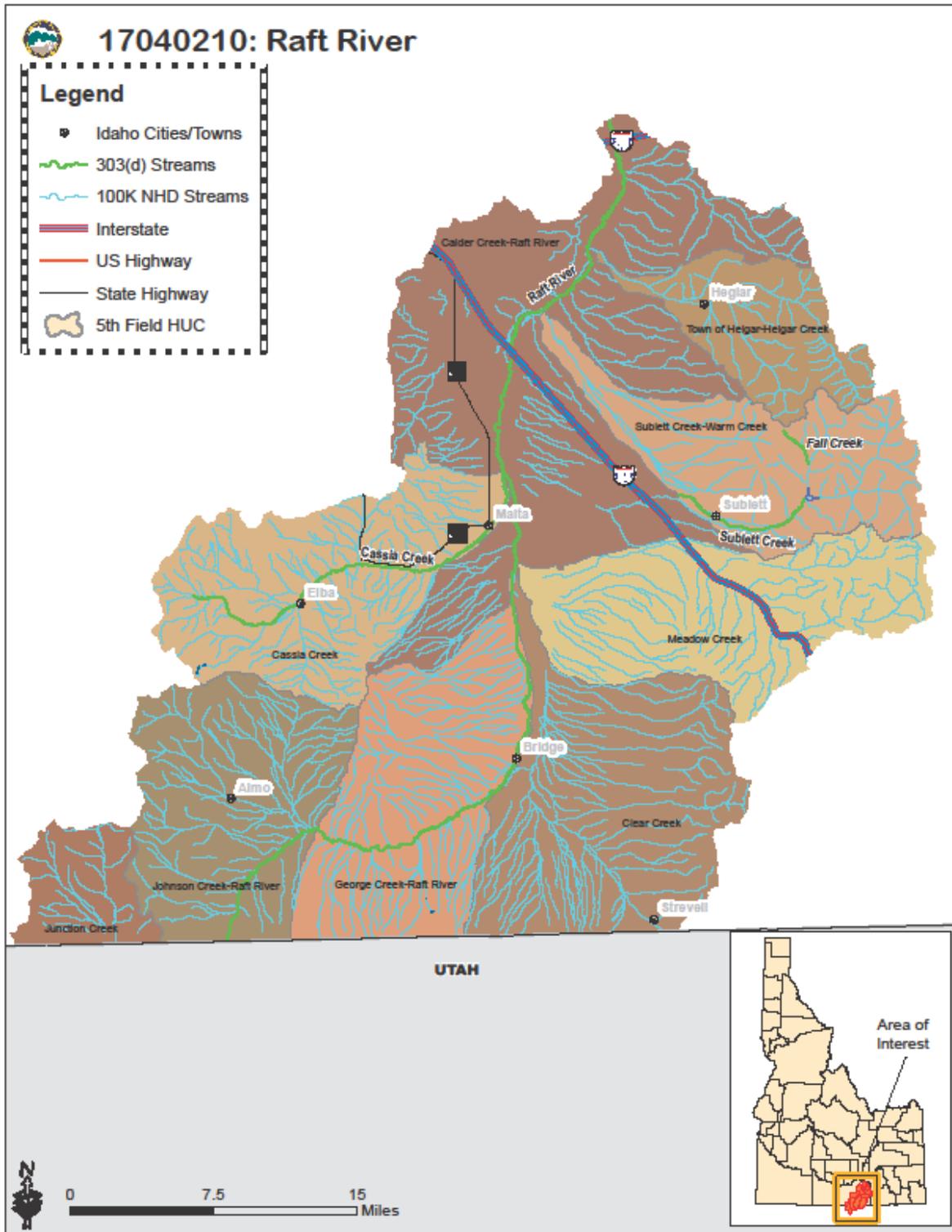


Figure 1. Location of subbasin.

The Raft River Subbasin of south eastern Idaho (Figure 1) is a watershed in the Columbia River Basin. This watershed encompasses an area of 967,150 acres; of which 81.6% is located in Idaho with the remaining acreage located in Box Elder County, Utah. Raft River is a tributary of the Snake River. Twenty nine percent of the basin is privately owned while 71 percent is public land. The basin is dominated by shrubland, rangeland, and forest, additional lands includes grass, pasture, hayland, and cropland. The remainder is water, wetlands, developed or barren. Headwaters of the Raft River begin in Northern Utah and are mostly on the east side of the Albion Mountains. The river flows generally north to join the Snake River in Cassia County, Idaho just above Lake Walcott and downstream from American Falls Reservoir. The City of Burley lies 35 miles to the west of the mouth of the Raft River with the City of Pocatello 47 miles to the east.

The TMDLs and implementation strategy for the Raft River Watershed can be found online at: [http://www.deq.idaho.gov/water/data\\_reports/surface\\_water/tmdls/sba\\_tmdl\\_master\\_list.cfm](http://www.deq.idaho.gov/water/data_reports/surface_water/tmdls/sba_tmdl_master_list.cfm). This includes the Subbasin Assessment and Total Maximum Daily Loads (DEQ 2004) for the Raft River Subbasin. These documents provide additional background on the watershed's physical and biological characteristics. Figure 1 illustrates the location of the subbasin in south central Idaho.

## Pollutant Targets

A component of a load capacity includes targets for each pollutant. Target selection is based upon numeric water quality standards if they exist. However, if the parameters fall under narrative standards, targets are based upon current usage within the DEQ TMDL program and TFRO-DEQ. For example, suspended sediment targets of 50 mg/L TSS were used, as presented from TMDLs developed from the Twin Falls region. Additionally, nutrient targets were adopted from guidelines and recommendations from EPA references. These targets are 0.05 mg/L total phosphorus (TP) with a daily maximum of 0.08 mg/L to allow for natural variability in Lake Fork Creek and Sublett Creek. This average monthly target falls within the identified EPA target range for supporting beneficial uses of water flowing into lakes and reservoirs. TP targets for Fall Creek and Cassia Creek were set at no more than 0.100 mg/L with a daily maximum of 0.160 mg/L TP to allow for natural variability in those streams. This average monthly target falls within the identified EPA target range for supporting beneficial uses of free flowing streams and rivers, which would also incorporate the other streams in the subbasin that do not flow into a lake or reservoir. The target number for E. coli for a single instantaneous sample is 576 col/100 mL and the geometric mean of five samples collected in a 30 day period is 126 col/100 mL. DEQ is proceeding with a Temperature TMDLs on Raft River, and the document is currently in process. The Temperature TMDLs were facilitated based upon solar pathfinder information, streams with fully supported beneficial uses and the average shade component of those streams, as measured by the solar pathfinder, will be used to develop TMDLs within the Raft River Subbasin. These reference streams will be used to set shade and thermal load components for the developed Temperature TMDLs.

## Control and Monitoring Points

Water quality samplings, containing a full suite of parameters for water bodies in the Raft River Subbasin are rare. Monitoring and data collections were done in the subbasin from 2000 to 2002 for the approved 2004 Raft River Subbasin Assessment and TMDLs. They included water chemistry sampling, flow, Wolman pebble counts, water temperature, bank erosion recession rates, and solar pathfinder studies. Monitoring for the Raft River Five-Year review includes limited water quality data sampling from July through November 2010, due to economic budget constraints.

## Load Capacity

Load Capacity (LC) and loading analysis models for the streams and pollutants in the Raft River Subbasin Assessment and TMDLs were derived from a mass balance approach of monitoring data, upstream and downstream monitoring, source monitoring and estimations of loads from data. Most of the pollutants that affect the subbasin do not have numeric water quality standards, only narrative standards. Due to these standards, load capacities were estimated from extrapolations from USGS or DEQ flow records and a variety of sources relating concentrations of pollutant to effects on beneficial uses and aquatic communities. Load capacities and critical periods are shown in Table 3 (see Raft River TMDL, p. 141, table 39).

**Table 3. Load Capacities and Critical Periods**

STREAM NAME	PARAMETER	CRITICAL PERIOD	LOAD CAPACITY
Raft River	Bacteria	June - August	576 col/100 mL
	Temperature		4.1 kwh/m <sup>2</sup> /day
Cassia Creek	Sediment	March – May	2,160 kg/day
	Bacteria	June – August	576 col/100 mL
	Nutrients	March - May	4.32 kg/day
Fall Creek	Bacteria	June - August	576 col/100 mL
	Nutrients	June – September	0.26 kg/day
Lake Fork Creek	Nutrients	June – September	0.17 kg/day
Sublett Creek Upper	Nutrients	June - September	0.48 kg/day
Bacteria = Escherichia coli, Nutrients = Total Phosphorus (TP), Sediment = Total Suspended Solids (TSS), col/100ml = colonies of bacteria per 100 milliliters of water, kwh/m <sup>2</sup> /day = kilowatt hours per square meter per day, kg/day = kilogram per day			

## Load Allocations

Load allocations for the Raft River Subbasin TMDL were calculated with margins of safety to meet water quality standards. A margin of safety (MOS) of 10 percent was taken into account for seasonal variability and uncertainty. Background load levels were determined for nutrients, temperature, bacteria, sediment and dissolved oxygen. There are no point sources within the watershed. Background and existing nonpoint source load allocations are shown in Table 4. (see Raft River TMDL, p. 143, table 40).

**Table 4. Background and nonpoint source loads in the Raft River Subbasin.**

STREAM NAME	POLLUTANT	NATURAL BACKGROUND	EXISTING NONPOINT SOURCE LOAD	EXISTING POINT SOURCE WASTELOAD
Raft River	Bacteria	69 col/100 ml	976 col/100 ml	0 col/100 ml
	Temperature	4.1 kwh/m <sup>2</sup> /day	6.9 kwh/m <sup>2</sup> /day	0 kwh/m <sup>2</sup> /day
	Sediment	951 Mg/year	5,626 Mg/year	0 Mg/year
Cassia Creek	Sediment	437 Mg/year	2,763 Mg/year	0 Mg/year
	Nutrient	0.86 kg/day	8.42 kg/day	0 kg/day
	Bacteria	41 col/100 ml	937 col/100 ml	0 col/100 ml
Fall Creek	Nutrients	0.05 kg/day	0.29 kg/day	0 kg/day
	Bacteria	84 col/100 ml	1,114 col/100 ml	0 col/100 ml

Lake Fork Creek	Nutrients	0.07 kg/day	0.27 kg/day	0 kg/day
Sublett Creek Upper	Nutrients	0.19 kg/day	0.39 kg/day	0 kg/day
Bacteria = Escherichia coli, Nutrients = Total Phosphorus (TP), Sediment = Total Suspended Solids (TSS), col/100ml = colonies of bacteria per 100 milliliters of water, kwh/m <sup>2</sup> /day = kilowatt hours per square meter per day, kg/day = kilogram per day				

## Margin of Safety

The Clean Water Act requires statutory requirements for a margin of safety (MOS) in a TMDL to account for uncertainty. In the Raft River TMDLs two types of MOS were used. The first was an explicit margin of 10 percent for all pollutant/water body combinations. The second was an implicit MOS for such aspects as conservative assumptions used in various calculations. Specifically those used for load calculations (LC), waste load allocations (WLAs) and load allocations (LA). It is often difficult to determine the MOS in other TMDLs and the explicit margin allows for greater freedom in other aspects of the process in that the implicit MOS can be assumed, rather than arduously declared every time. An example of this would be the bacteria TMDL's determination of background. The levels used may be slightly higher than actual background levels determined from other watersheds and may change if the actual background level is determined.

## Seasonal Variation

The Raft River Subbasin watershed is influenced by seasonal variations for nearly every pollutant addressed. For example, the summer growing season is when concentrations of bacteria, sediment, nutrients and temperatures are the highest. Seasonal variations are built into the load allocations and their development works by ensuring that loads are reduced during critical periods, when beneficial uses are impaired and loads are controllable.

## Reserve

No reserve for future growth was included in the Raft River Subbasin Assessment and TMDLs. Historically, little discussion with the local stakeholders has occurred in regards to a reserve load, and the Lake Walcott WAG has chosen to forgo the use of a reserve. Further discussion with the Raft River stakeholders is required, and if deemed feasible a reserve could be developed during the implementation of the TMDL.

## Section 3: Beneficial Use Status

Idaho water quality standards require that surface waters of the state be protected for beneficial uses, wherever attainable (IDAPA 58.01.02.050.02). These beneficial uses are interpreted as existing uses, designated uses, and presumed uses. The *Water Body Assessment Guidance*, second edition (Grafe et al. 2002) gives a detailed description of beneficial use identification for use assessment purposes.

Existing uses under the CWA are “those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards”. Designated uses are specifically listed for water bodies in Idaho in tables in the Idaho water quality standards (see IDAPA 58.01.02.003.27 and .02.109-.02.160 in addition to citations for existing and presumed uses).

Undesignated uses are to be designated. In the interim, and absent information on existing uses, DEQ presumes that most waters in the state will support cold water aquatic life and either primary or secondary contact recreation (IDAPA 58.01.02.101.01). To protect these so-called “presumed uses,” DEQ will apply the numeric cold water aquatic life criteria and primary or secondary contact recreation criteria to undesignated waters

### Beneficial Uses

Table 5 shows the beneficial use designations for water bodies in the Raft River Subbasin.

**Table 5. Beneficial uses of TMDL water bodies.**

WATER BODY	ASSESSMENT UNIT	BENEFICIAL USES	TYPE OF USE (DESIGNATED, EXISTING, PRESUMED)
Raft River -Cassia Creek to Heglar Canyon Creek	ID17040210SK002_05 ID17040210SK002_02	CWAL, SS, PCR	Designated
Raft River – Idaho/Utah border to Edwards Creek	ID17040210SK013_04	CWAL, SS, PCR	Designated
Raft River -Cottonwood Creek to Cassia Creek	ID17040210SK008_04	CWAL, SS, PCR	Designated
Raft River -Heglar Canyon Creek to mouth	ID17040210SK001_05	CWAL, SS, PCR	Designated
Sublett Creek –Sublett Reservoir to lower boundaries	ID17040210SK019_02	AWS	Existing
Sublett Reservoir	ID17040210SK020_OL	CWAL,SS,PCR, SCR, AWS	Existing
Fall Creek, Headwaters to Lake Fork	ID17040210SK022_02	CWAL,SS,PCR, SCR, AWS	Existing
Cassia Creek - Conner Creek to Raft River	ID17040210SK003_04 ID17040210SK007_05	CWAL,SS,PCR, SCR, AWS	Existing
CWAL- Cold Water Aquatic Life, SS- Salmonid Spawning, PCR- Primary Contact Recreation, SCR-Secondary Contact Recreation, AWS- Agricultural Water Supply,			

Beneficial uses are protected by a set of criteria, which include *narrative* criteria for pollutants such as sediment and nutrients and *numeric* criteria for pollutants such as bacteria, dissolved oxygen, pH, ammonia, temperature, and turbidity (IDAPA 58.01.02.250). Table 6 includes the most common numeric criteria used in TMDLs; Figure 2 provides an outline of the stream assessment process for determining support status of the beneficial uses of cold water aquatic life, salmonid spawning, and contact recreation.

**Table 6. Common numeric criteria supportive of designated beneficial uses in Idaho water quality standards.**

<b>Designated and Existing Beneficial Uses</b>				
Water Quality Parameter	Primary Contact Recreation	Secondary Contact Recreation	Cold Water Aquatic Life	Salmonid Spawning (During Spawning and Incubation Periods for Inhabiting Species)
<b>Water Quality Standards: IDAPA 58.01.02.250</b>				
Bacteria, ph, and Dissolved Oxygen	Less than 126 E. coli/100 ml <sup>a</sup> as a geometric mean of five samples over 30 days; no sample greater than 406 E. coli organisms/100 ml	Less than 126 E. coli/100 ml as a geometric mean of five samples over 30 days; no sample greater than 576 E. coli/100 ml	pH between 6.5 and 9.0 DO <sup>b</sup> exceeds 6.0 mg/L <sup>c</sup>	pH between 6.5 and 9.5 Water Column DO: DO exceeds 6.0 mg/L in water column or 90% saturation, whichever is greater Intergravel DO: DO exceeds 5.0 mg/L for a one day minimum and exceeds 6.0 mg/L for a seven day average
Temperature <sup>d</sup>			22 °C or less daily maximum; 19 °C or less daily average	13 °C or less daily maximum; 9 °C or less daily average Bull trout: not to exceed 13 °C maximum weekly maximum temperature over warmest 7-day period, June – August; not to exceed 9 °C daily average in September and October
			Seasonal Cold Water: Between summer solstice and autumn equinox: 26 °C or less daily maximum; 23 °C or less daily average	
Turbidity			Turbidity shall not exceed background by more than 50 NTU <sup>e</sup> instantaneously or more than 25 NTU for more than 10 consecutive days.	
Ammonia			Ammonia not to exceed calculated concentration based on pH and temperature.	
<b>EPA Bull Trout Temperature Criteria: Water Quality Standards for Idaho, 40 CFR Part 131</b>				
Temperature				7 day moving average of 10 °C or less maximum daily temperature for June - September

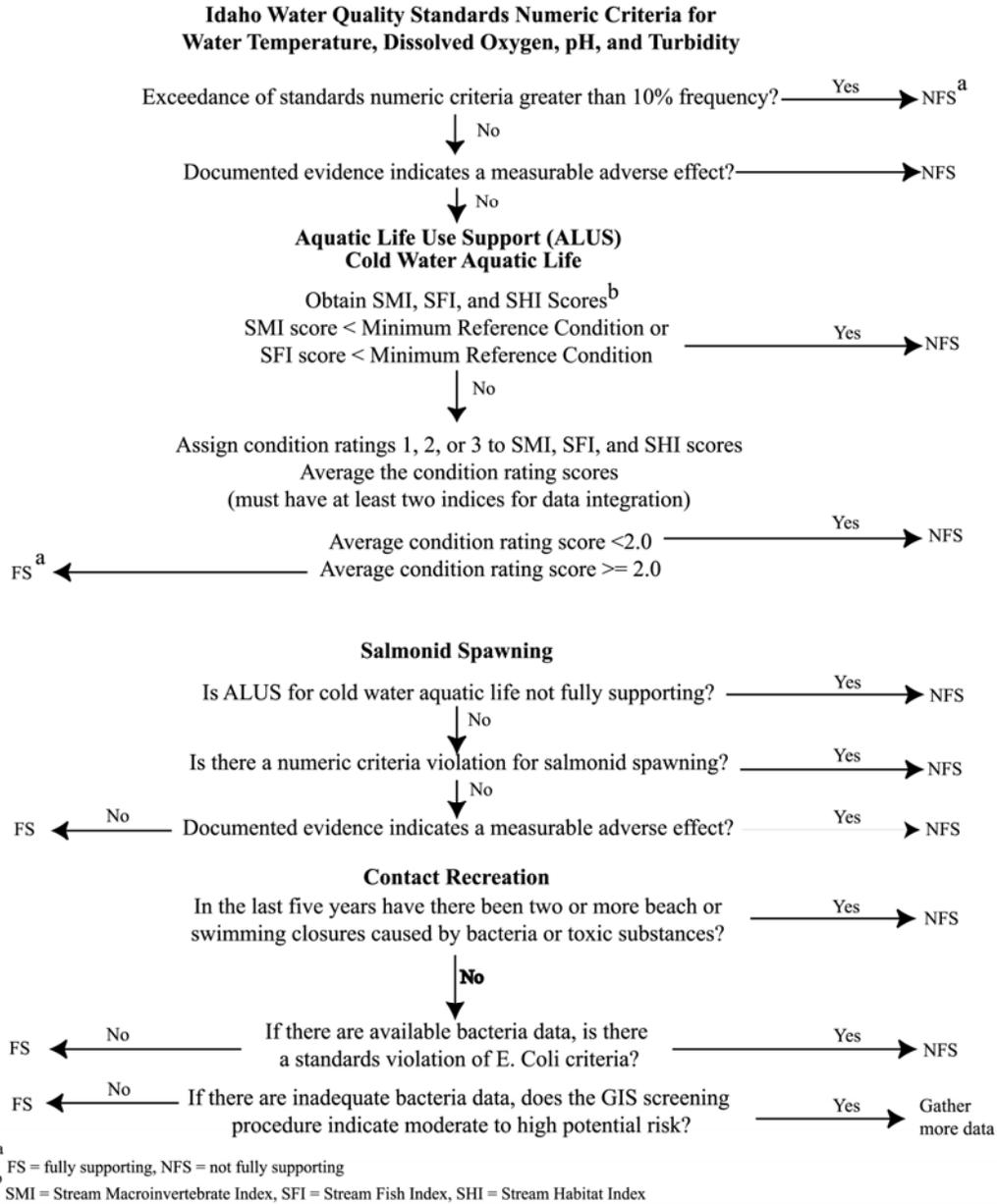
<sup>a</sup> *Escherichia coli* per 100 milliliters

<sup>b</sup> dissolved oxygen

<sup>c</sup> milligrams per liter

<sup>d</sup> Temperature Exemption - Exceeding the temperature criteria will not be considered a water quality standard violation when the air temperature exceeds the ninetieth percentile of the seven-day average daily maximum air temperature calculated in yearly series over the historic record measured at the nearest weather reporting station.

<sup>e</sup> Nephelometric turbidity units



**Figure 2. Determination Steps and Criteria for Determining Support Status of Beneficial Uses in Wadeable Streams: Water Body Assessment Guidance, Second Addition (Grafe et al. 2002)**

## Changes to Subbasin Characteristics

There have been no major changes in landuse, landownership, or population in the subbasin since the TMDL was approved in 2004 that would have either significantly improved or degraded water quality in the Raft River Subbasin. According to the US Census Bureau, the populations in both Cassia and Power Counties have changed little from the 2000 Census. There are still no known point sources that discharge to streams or rivers within the subbasin. There have been little changes to political boundaries or new industries moving into the area. The US Geothermal Raft River project began construction in 2006 in the Raft River Valley and the Raft River Unit 1 began commercial operations in January 2008. They do not discharge to Raft River, so there is no requirement for a NPDES permit. According to an NRCS study conducted in 2008, there are a total of 14 Confined Animal Feed Operations (CAFO) and Animal Feed Operations (AFOs) in the subbasin. However, these sources are allowed zero discharge to a receiving water body through current rules and regulations.

The basic general trend in land use changes focuses on increased recreational pressure, economic, urban, and rural development. Although that trend has essentially stabilized, attracting economic development is being heightened at county and city levels.

## Summary and Analysis of Current Water Quality Data

This section includes new data collected since the development of the TMDL (2004) along with data from the Beneficial Use Reconnaissance Program (BURP) for streams in the Raft River Subbasin. Table 7 summarizes the limited water quality data collected by DEQ from June through November in 2010. The table also specifies the level of confidence that DEQ has in the percent exceedances based on the number of samples (N) collected. If the N value is < 30 samples, then the confidence level is “Low”. If the N value is in the range of 30-50 samples, then the confidence level is “Moderate”. And, if the N value is > 50 samples, then the confidence level is “High”. In the case of the samples collected and analyzed in the Raft River Subbasin, the confidence level is “low” and constitutes a data gap, thus requiring future monitoring.

### **Bacteria**

*Escherichia coli* or *E. coli* is a species of fecal coliform bacteria used by the state of Idaho as an indicator for the presence of pathogenic microorganisms in surface water. Idaho’s Water Quality Standards (IDAPA §58.01.02.521) specify that *E. coli* levels should not exceed an instantaneous measurement of 406 colony forming units (cfu)/100 mL for primary contact recreation (PCR) and 576 cfu/100 mL for secondary contact recreation (SCR) or a monthly geometric mean of 126 cfu/100mL for both PCR and SCR. However, according to IDAPA §58.01.02.080.03 a single water sample exceeding an *E. coli* standard does not in itself constitute a violation of water quality standards; so additional samples must be taken for the purpose of comparing the results to the geometric mean criteria. An exceedance of the geometric mean criteria constitutes a water quality violation. Because the number of samples collected was “low”, the ability to figure geometric mean as defined in IDAPA regulations was not doable. Therefore, the percentage of exceedances from the instantaneous standard was used as a measure of compliance. Table 8 provides a list of the streams that were monitored in 2010 and the results of that monitoring. As shown in the chart below, three streams exceeded state water quality criteria for bacteria during the course of sampling events. These are Lake Fork Creek (25% exceedance), Sublett Creek above Sublett Reservoir (20% exceedance), and Cassia Creek (25% exceedance). This occurred once on each creek during separate monitoring collection dates over the course of four months.

## **Sediment**

One of the most common listed pollutants in the state and in the Raft River Subbasin is sediment. Total Suspended Solids (TSS) can impact a subbasin in a myriad of ways including smothering fish spawning and rearing grounds to reducing habitat and food accessibility. Beneficial uses may also be impaired due to suspended and bedload sediment. The IDAPA criteria for suspended sediment are narrative. This allows the TSS limit to be established using references from other sources that allow applicability to the specific watershed. Therefore, DEQ adopted TSS guidelines of 50 mg/L, which falls within the range identified by the European Inland Fisheries Advisory Commission (EIFAC 1965) and the Committee on Water Quality Criteria from the Environmental Studies Board of the National Academy of Science and National Academy of Engineers (NAS/NAE) as supporting a “moderate” fishery. Data listed in Table 7 indicates that no exceedances of water quality standards for TSS occurred for the DEQ samples collected in 2010.

## **Nutrients as Total Phosphorus, TP**

Idaho’s Water Standards (IDAPA §58.01.02.200.06) state that surface waters should be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses. Currently, there are no numeric standards for total phosphorus. However, EPA has suggested guidelines on a monthly average that should not exceed 0.05 mg/L in streams that enter into a lake or reservoir; and 0.1 mg/L in any stream or other free flowing water on a monthly average (EPA 1986). These targets are 0.05 mg/L total phosphorus (TP) with a daily maximum of 0.08 mg/L to allow for natural variability in Lake Fork Creek and Sublett Creek above Sublett Reservoir. This average monthly target falls within the identified EPA target range for supporting beneficial uses of water flowing into lakes and reservoirs. TP targets for Fall Creek and Cassia Creek were set at no more than 0.100 mg/L with a daily maximum of 0.160 mg/L TP to allow for natural variability in those streams. This would also include Sublett Creek below Sublett Reservoir; because this creek is not perennial due to historic irrigation usage and does not flow into another waterbody. This average monthly target falls within the identified EPA target range for supporting beneficial uses of free flowing streams and rivers, which would also incorporate the other streams in the subbasin that do not flow into a lake or reservoir.

Table 7 indicates that Lake Fork Creek (100% exceedance, Fall Creek (60% exceedance), and Sublett Creek above Sublett Reservoir (20% exceedance) all had exceedances of the monthly average during at least one sampling event. Raft River, Cassia Creek and Sublett Creek below Sublett Reservoir never exceeded the Idaho water quality standard guidelines for TP during the samples DEQ collected in 2010.

**Table 7 Summary of Water Quality Data Collected in 2010**

STREAM DESIGNATION	2010 SAMPLES		
	TSS	TP	E. COLI
<b>INSTREAM TARGET</b>	<b>50 MG/L</b>	<b>0.05 MG/L</b>	<b>576 CFU/100 ML</b>
<b>Van Camp Creek – no samples taken/ low or no flow</b>			
N	0	0	0
No. of Exceedances	0	0	0
% Exceedances	0	0	0
Level of Confidence	Low due to low N	Low due to low N	Low due to low N
<b>Lake Fork Creek</b>			
N	4	4	4
No. of Exceedances	0	4	1
% Exceedances	0	100	25
Level of Confidence	Low due to low N	Low due to low N	Low due to low N
<b>Sublett Creek above Sublett Reservoir</b>			

STREAM DESIGNATION	2010 SAMPLES		
	TSS	TP	E. COLI
<b>INSTREAM TARGET</b>	<b>50 MG/L</b>	<b>0.05 MG/L</b>	<b>576 CFU/100 ML</b>
N	5	5	5
No. of Exceedances	0	1	1
% Exceedances	0	20	20
Level of Confidence	Low due to low N	Low due to low N	Low due to low N
<b>Raft River</b>			
N	4	4	4
No. of Exceedances	0	0	0
% Exceedances	0	0	0
Level of Confidence	Low due to low N	Low due to low N	Low due to low N
<b>Fall Creek</b>			
N	5	5	5
No. of Exceedances	0	3	0
% Exceedances	0	60	0
Level of Confidence	Low due to low N	Low due to low N	Low due to low N
<b>Cassia Creek</b>			
N	4	4	4
No. of Exceedances	0	0	1
% Exceedances	0	0	25
Level of Confidence	Low due to low N	Low due to low N	Low due to low N
<b>Sublett Creek below Sublett Reservoir</b>			
N	3	3	3
No. of Exceedances	0	0	0
% Exceedances	0	0	0
Level of Confidence	Low due to low N	Low due to low N	Low due to low N
<b>N = Number of Samples, TSS = Total Suspended Solids, TP = Total Phosphorus, E. coli = Escherichia coli, mg/L = milligrams per liter, cfu/100 mL = colonies of bacteria per 100 milliliters of water</b>			

## Beneficial Uses

DEQ collected aquatic data through their Beneficial Use Reconnaissance Program (BURP) to determine support of beneficial uses in the Raft River Subbasin (Table 8). Evaluations of BURP data are based primarily on three facets of wadeable streams: macroinvertebrate community, stream habitat, and fish community. Individual metrics within each category are combined to create a multimetric index score for macroinvertebrate community, fish community, and stream habitat. The multimetric index scores are called stream macroinvertebrate index (SMI), stream habitat index (SHI), and stream fish index (SFI). From those scores, a condition ranking of 1, 2, or 3 is assigned to the site based on percentile categories of reference conditions. At least two scores are needed to evaluate a stream's support status; and those scores must average 2 or greater (on a scale of 0 to 3) for beneficial uses to be considered supported. DEQ's Water Body Assessment Guidance (WBAG) II (Grafe et al. 2002) further outlines the methodology behind SMI, SFI, and SHI development and calculations.

The Idaho Waterbody Assessment Guidance (WBAGII) considers data most relevant to support status determinations to be less than five years old. BURP condition ranking scores, from 2004 through 2009 on streams with existing TMDLs, show that portions of Raft River, Edwards Creek and Lake Fork Creek did not receive a score that supports beneficial uses as shown in Table 8. It is noted that some streams (i.e. portions of Raft River, Clear Creek, Meadow Creek, and Sublett Creek) are shown as “Dry” indicating that they are possibly non-perennial streams; and therefore a condition ranking and support status could not be made. For “Dry” streams further assessment is required. Thus, a data gap exists for “Dry” streams. “Inaccessible” streams indicate that the land had private ownership and access to the stream could not be made because permission could not be secured at the time of the sampling. Streams that were “Not Assessed” (NAssd) indicate that the BURP assessment could not be conducted due to very low flow conditions. A “Full Support” (FS) status denotes that the stream received an assessment score of 2 or higher, indicating support of beneficial uses.

Table 8. BURP condition ranking and support status for streams monitored in the Raft River Subbasin from 2004-2009.

BURP ID #	STREAM/LOCATION	SCORE			ASSESSMENT SCORE	SUPPORT STATUS
		SMI	SFI	SHI		
<b>ID17040210SK001_05: Raft River – Heglar Canyon Creek to mouth</b>						
<a href="#">2007STWFA003</a>	Raft River	NA	NA	NA	NA	Dry
<b>ID17040210SK002_02: Raft River – Cassia Creek To Heglar Canyon Creek</b>						
<a href="#">2008STWFA029</a>	Unnamed Stream	NA	NA	NA	NA	Dry
<a href="#">2008STWFA033</a>	Warm Creek	NA	NA	NA	NA	Dry
<b>ID17040210SK002_03: Raft River – Cassia Creek To Heglar Canyon Creek</b>						
<a href="#">2007STWFA008</a>	Shirley Creek	NA	NA	NA	NA	Dry
<a href="#">2008STWFA019</a>	Unnamed Stream	NA	NA	NA	NA	NAssd
<b>ID17040210SK003_04: Cassia Creek – Conner Creek to mouth</b>						
<a href="#">2008STWFA020</a>	Cassia Creek	NA	NA	NA	NA	NAssd
<b>ID17040210SK005_02: Cassia Creek – Clyde Creek to Conner Creek</b>						
<a href="#">2008STWFA022</a>	Unnamed Stream	NA	NA	NA	NA	NAssd
<b>ID17040210SK006_03: Clyde Creek – source to mouth</b>						
<a href="#">2007STWFA128</a>	Cottonwood Creek	NA	NA	NA	NA	NAssd
<b>ID17040210SK007_04: Cassia Creek – source to Clyde Creek</b>						
<a href="#">2008STWFA021</a>	Cassia Creek	NA	NA	NA	NA	NAssd
<b>ID17040210SK008_04: Raft River – Cottonwood Creek to Cassia Creek</b>						
<a href="#">2007STWFA049</a>	Raft River	NA	NA	NA	NA	NAssd
<a href="#">2004STWFA075</a>	Raft River	NA	NA	NA	NA	Dry
<b>ID17040210SK010_02: Raft River – Unnamed tributary</b>						
<a href="#">2004STWFA083</a>	Unnamed Tributary to Raft River	NA	NA	NA	NA	Dry
<a href="#">2005STWFA056</a>	Unnamed Tributary to Raft River	NA	NA	NA	NA	Dry
<b>ID17040210SK010_04: Raft River – Unnamed tributary</b>						
<a href="#">2007STWFA125</a>	Raft River	NA	NA	NA	NA	NAssd
<a href="#">2005STWFA055</a>	Raft River	NA	NA	NA	NA	Dry
<a href="#">2005STWFF016</a>	Raft River		0	1	0	NFS
<b>ID17040210SK012_02: Edwards Creek – source to mouth</b>						
<a href="#">2007STWFA127</a>	Center Creek	NA	NA	NA	NA	NAssd
<b>ID17040210SK012_03: Edwards Creek – source to mouth</b>						
<a href="#">2007STWFA093</a>	Edwards Creek	NA	NA	NA	NA	NAssd
<a href="#">2005STWFF015</a>	Edwards Creek	NA	1	1	1	NFS

BURP ID #	STREAM/LOCATION	SCORE			ASSESSMENT SCORE	SUPPORT STATUS
		SMI	SFI	SHI		
<b>ID17040210SK013_03: Raft River – Idaho/Utah border to Edwards Creek</b>						
<a href="#">2008STWFA023</a>	Johnson Creek	NA	NA	NA	NA	Dry
<a href="#">2004STWFA082</a>	Circle Creek	NA	NA	NA	NA	NAssd
<b>ID17040210SK016_02: Clear Creek – Idaho/Utah border to mouth</b>						
<a href="#">2007STWFA091</a>	Unnamed Stream	NA	NA	NA	NA	Dry
<a href="#">2008STWFA031</a>	Unnamed Stream	NA	NA	NA	NA	Dry
<a href="#">2005STWFA064</a>	Unnamed tributary to Raft River	NA	NA	NA	NA	Dry
<a href="#">2004STWFA074</a>	Unnamed tributary to Round Mountain Creek	NA	NA	NA	NA	Dry
<b>ID17040210SK016_03: Clear Creek – Idaho/Utah border to mouth</b>						
<a href="#">2008STWFA030</a>	Round Mountain Creek	NA	NA	NA	NA	Dry
<b>ID17040210SK018_02: Meadow Creek – source to mouth</b>						
<a href="#">2008STWFA034</a>	Unnamed Stream	NA	NA	NA	NA	Dry
<a href="#">2005STWFA063</a>	Unnamed Tributary to Meadow Creek	NA	NA	NA	NA	Dry
<b>ID17040210SK019_02: Sublett Creek- Sublett Reservoir Dam to mouth</b>						
<a href="#">2007STWFA053</a>	Unnamed Stream	NA	NA	NA	NA	Dry
<a href="#">2007STWFA054</a>	Unnamed Stream	NA	NA	NA	NA	Dry
<a href="#">2007STWFA055</a>	Unnamed Stream	NA	NA	NA	NA	Dry
<a href="#">2007STWFA056</a>	Unnamed Stream	NA	NA	NA	NA	Dry
<b>ID17040210SK021_02: Sublett Creek – source to Sublett Reservoir</b>						
<a href="#">2007STWFA057</a>	Unnamed Stream	NA	NA	NA	NA	Dry
<b>ID17040210SK021_02: Sublett Creek – source to Sublett Reservoir</b>						
<a href="#">2007STWFA057</a>	Unnamed Stream	NA	NA	NA	NA	Dry
<b>ID17040210SK021_03: Sublett Creek – source to Sublett Reservoir</b>						
<a href="#">2006STWFA031</a>	Sublett Creek	3	0	1	2	FS
<b>ID17040210SK022_02: Lake Fork Creek – source to Sublett Reservoir</b>						
<a href="#">2006STWFA032</a>	Van Camp Creek	NA	NA	2	2	NFS
<b>ID17040210SK022_03: Lake Fork Creek – source to Sublett Reservoir</b>						
<a href="#">2006STWFA030</a>	Lake Fork Creek	1	NA	1	1	NFS
<a href="#">2007STWFA058</a>	Lake Fork Creek	NA	NA	NA	NA	Dry
<b>ID17040210SK023_02: Heglar Canyon Creek – source to mouth</b>						
<a href="#">2007STWFA130</a>	North Heglar Can yon Creek	NA	NA	NA	NA	Dry
<b>ID17040210SK023_03: Heglar Canyon Creek – source to mouth</b>						
<a href="#">2005STWFA066</a>	Unnamed Tributary to North Heglar	NA	NA	NA	NA	Dry
<b>ID17040210SK023_04: Heglar Canyon Creek – source to mouth</b>						
<a href="#">2007STWFA090</a>	Unnamed Stream	NA	NA	NA	NA	Dry
SMI – stream macroinvertebrate index, SHI – stream habitat index, SFI – stream fish index, NA – not available, NFS – not fully supporting, NAssd – not addressed, FS- fully supporting						

## Recommendations

Table 9 contains current DEQ recommendations and justification to the next Integrated Report. This information was generated from the processes of gathering and analyzing available water quality data, recent Beneficial Use Reconnaissance information, and the writing of the Five-year review. At the time

this report was written, the Draft 2010 Integrated Report was in the final stages of development. When the report is complete some of the information listed in the chart below may be subject to change.

**Table 9. Summary of recommended changes for AUs evaluated.**

<b>STREAM</b>	<b>ASSESSMENT UNIT</b>	<b>PREVIOUS LISTED TMDL POLLUTANT(S)</b>	<b>DEQ RECOMMENDED CHANGES TO NEXT INTEGRATED REPORT</b>	<b>JUSTIFICATION FOR DEQ RECOMMENDED CHANGES TO INTEGRATED REPORT</b>
Raft River	ID17040210SK001_05 Heglar Canyon Creek to mouth	Ammonia, Low flow alterations, Cause unknown	Move to 4c	State determines water quality standards are being met, low flow is not caused by a pollutant
Raft River	ID17040210SK001_05 Cassia Creek to Heglar Canyon Creek	Ammonia, Low flow alterations, Cause unknown	Move to 4c	State determines water quality standards are being met, low flow is not caused by a pollutant
	ID17040210SK002_05 Cassia Creek to Heglar Canyon Creek	Ammonia, Low flow alterations, Cause unknown	Move to 4c	State determines water quality standards are being met, low flow is not caused by a pollutant
Cassia Creek	ID17040210SK003_04 Conner Creek to mouth	E. coli, Psha, Sed/silt, TP	Move to 4a, 4c	TMDL approved (4a) Not caused by pollutant (4c)
	ID17040210SK005_04 Clyde Creek to Conner Creek	Sed/silt, TP	Move to 4a	TMDL approved (4a)
	ID17040210SK007_02 Source to Clyde Creek	Sed/silt, F coli, TP	Move to 4a	TMDL approved (4a)
	ID17040210SK007_03 Source to Clyde Creek	E coli, Sed/silt, TP	Move to 4a	TMDL approved (4a)
	ID17040210SK007_04 Source to Clyde Creek	E coli, Sed/silt, TP	Move to 4a	TMDL approved (4a)
	ID17040210SK007_05 Source to Clyde Creek	Ammonia, Low flow alterations, Cause unknown, Temperature	Move to 4a, 4c	TMDL approved (4a) Not caused by pollutant (4c), state determined water quality standards are being met

<b>STREAM</b>	<b>ASSESSMENT UNIT</b>	<b>PREVIOUS LISTED TMDL POLLUTANT(S)</b>	<b>DEQ RECOMMENDED CHANGES TO NEXT INTEGRATED REPORT</b>	<b>JUSTIFICATION FOR DEQ RECOMMENDED CHANGES TO INTEGRATED REPORT</b>
Raft River	ID17040210SK008_04 Cottonwood Creek to Cassia Creek	OFRA, Salinity, Sed/Silt, F coli, Cause Unknown	Move to 4a, 4c	TMDL approved (4a) Not caused by pollutant (4c), state determined water quality standards are being met
	ID17040210SK010_04 Unnamed Tributary	E coli, Low flow alterations, Sed/Silt, Temperature	Move to 4a, 4c	TMDL approved (4a) Not caused by pollutant (4c)
	ID17040210SK013_04 Idaho/Utah border to Edwards Creek	OFRA, Salinity, Sed/Silt, F coli, cause unknown	Move to 4a, 4c	TMDL approved (4a) Not caused by pollutant (4c), state determined water quality standards are being met
Sublett Creek	ID17040210SK019_02 Sublett Reservoir Dam to mouth	ORFA, Sed/Silt, TP, Cause unknown	Move to 4a, 4c	TMDL approved (4a) Not caused by pollutant (4c), state determined water quality standards are being met
Sublett Reservoir	ID17040210SK020_0L	Low flow alterations, Sed/Silt, TP	Move to 4a, 4c	TMDL approved (4a) Not caused by pollutant (4c), state determined water quality standards are being met
Lake Fork Creek	ID17040210SK022_02 source to Sublett Reservoir	E coli, TP	Move to 4a	TMDL approved (4a)
Lake Fork Creek	ID17040210SK022_03 source to Sublett Reservoir	TP	Move to 4a	TMDL approved (4a)
Psha = physical substrate habitat alterations, Sed/Silt = sediment/siltation, TP = total phosphorous, F coli = fecal coliform, E coli = Escherichia coli, OFRA = other flow regime alterations,				

## Section 4: Review of Implementation Plan and Activities

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### 4.1 Development and Purpose

The implementation strategy of the Raft River Subbasin was written to provide details of the actions needed to achieve the load reductions set forth in the TMDL, provide a schedule for those actions, and specify monitoring needs to document actions and progress toward meeting water quality standards. Development of the final plan is current and ongoing. Cooperative development of this plan includes DEQ, the Raft River committee of the Lake Walcott WAG, the affected private landowners, designated federal, state and other agencies with input from the established public process.

### 4.2 Responsible Parties

This section identifies the federal, state, and local governments; individuals; or entities that are involved in or responsible for implementing the TMDL in the various 303(d) streams. Designated agencies are responsible for assisting with preparation of specific implementation plans, especially for the sources for which they have regulatory authority or responsibility. Idaho’s designated state management agencies include:

- Idaho Department of Agriculture (IDA): aquaculture, animal feeding operations (AFOs), confined animal feeding operations (CAFOs)
- Idaho Department of Lands (IDL): timber harvest, oil and gas exploration and development, mining,
- Idaho Department of Transportation (IDT): public roads
- Idaho Soil and Water Conservation Commission (ISCC): grazing and agriculture
- Idaho Department of Environmental Quality (DEQ): all other activities

Federal agency partners and land management agencies are also involved with the preparation of implementation plans. They include: Natural Resources Conservation Service (NRCS), United States Forest Service (USFS), Bureau of Land Management (BLM), and United States Bureau of Reclamation (USBOR).

All Stakeholders within the watershed have the responsibility of working toward the implementation of the TMDL. This includes DEQ, the “designated agencies”, landowners, local governing authorities, taxpayers, industries and land managers. Past experience has shown that the best and most effective implementation strategies are those that have been developed with substantial stakeholder involvement and cooperation. (Table 10) summarizes the responsible parties for the various segments of the Raft River Subbasin.

**Table 10. Responsible Parties.**

<b>Designated Management Agency</b>	<b>Resource Responsibility</b>	<b>Type of Involvement (regulatory, funding, assistance etc.)</b>
Idaho Soil and Water Conservation Commission	Guide implementation if BMPs for Ag and Grazing, evaluation BMP effectiveness, administer federal 319 grants, report on project progress	Assistance, grant administration, technical support

Designated Management Agency	Resource Responsibility	Type of Involvement (regulatory, funding, assistance etc.)
Idaho Department of Lands	BMP development, road maintenance/obliteration, implement grazing BMPs on allotments, conduct audits	Regulatory
United States Forest Service	BMP development, road/trail maintenance/obliteration, implement grazing BMPs on allotments, conduct audits	Regulatory
United States Bureau of Land Management	BMP development, road/trail maintenance/obliteration, implement grazing BMPs on allotments, conduct audits	Regulatory
Private Landowners	Implement BMPs on a voluntary basis	Voluntary, and/or with 319 share
Idaho Department of Transportation	Road maintenance	Regulatory

### 4.3 Planned Activities

The implementation strategy was designed to reduce pollutant loads from sources to meet the TMDLs and water quality standards. DEQ realizes that implementation that involves significant restoration can create time and economic constraints. A definitive timeline for implementation practices was listed in the Raft River TMDL (table 46, p.178) and is listed below as Table 11.

**Table 11 Implementation strategy goals and time frame for nonpoint sources.**

Industry	Year 1.5	Year 3	Year 10	Year 15	Year 25
Agriculture	Develop implementation plan for private lands	Begin BMP implementation	Document BMP implementation progress for DEQ database	Reevaluate targets and reductions	Meet reviewed TMDL targets; beneficial uses fully supported
Grazing	Federal agencies review allotment management plans	Begin allotment management adjustments as necessary	Document BMP implementation progress for DEQ database	Reevaluate targets and reductions	Meet reviewed TMDL targets; beneficial uses fully supported
DEQ	Maintain database; review nonpoint source efficacy data; seek funding	Collect data to determine water quality trends	Collect data to determine water quality trend, BMP effectiveness, and beneficial use support	Reevaluate targets and reductions, assess beneficial uses	Collect data to determine water quality trend, BMP effectiveness, and beneficial use support
BMP = Best management practice.					

## 4.4 Accomplished Activities

A compilation of implementation activities in the Raft River Subbasin and the designated management agency, or entity involved is listed in Table 12. While some activities are still in the planning and development stages, others listed below have been completed or are ongoing projects. The information collected from agencies and private landowner or managers details activities completed within the years following the completed 2004 Raft River TMDL through December of 2009.

**Table 12 Existing TMDLs and Implementation Status**

<b>STREAM</b>	<b>IMP PLAN</b>	<b>IMP ACTIVITIES</b>	<b>DMA OR ENTITY INVOLVED</b>
Almo Creek	Yes	Road rehab/ road removal	USFS
Cassia Creek	Yes	rest/rotational grazing, riparian management	BLM
Cold Springs	Yes	Riparian management, fencing	USFS
Grape Creek	Yes	Juniper removal, native grass reseeded, offsite livestock watering	Private and IDL
Onemile Creek	Yes	Road rehab/ road removal	USFS
Raft River	Yes	Livestock enclosure, water gaps, livestock exclusion	BLM
Unnamed Springs – tributaries to Clyde Creek and Cassia Creek	Yes	Livestock exclusions	BLM
Warm Creek	Yes	Sediment catchment ponds, livestock exclusions	BLM
USFS- United States Forest Service, BLM- Bureau of Land Management, IDL – Idaho Department of Lands			

### Point Sources

Point source accomplished activities are generally dealt with in National Pollutant Discharge Elimination System (NPDES) permits that are administered by the EPA. There are no known NPDES permitted point sources in the Raft River Subbasin. This includes fish farms, municipalities, industrial facilities and food processors. Although there has been some interest in fish farm development in the past, no known NPDES permitted fish farms are known to exist in the subbasin.

### Nonpoint Sources

Due to the fact, that no point sources occur in the Raft River Subbasin, the total pollutant loads on these water bodies are derived from nonpoint and background sources. Proposed nonpoint source management actions or best management practices on water bodies should be implemented with the purpose of attaining beneficial uses and state water quality standards. The objective of the Raft River Subbasin TMDLs is to allocate allowable loads among different pollutant sources in order to work under the parameters of appropriate control actions in order to meet water quality standards. This strategy has been implemented by DEQ on all water body projects, including any activities that fall below the ordinary high water mark of the stream (i.e. Section 404 projects).

As evidenced in Table 12 nonpoint source projects on BLM, USFS, IDL and private lands do exist. But the extent of such projects (and other projects) is unknown at the time of the writing of this document. However, the BLM, USFS and IDL did provide the projects listed in Table 12. The ISCC was contacted

for any private land projects, but at the time of this writing the information had not been compiled for inclusion in this document.

### **Section 404 Water Quality Projects**

The Army Corps of Engineers (ACOE) issues permits, under Section 404 of the Clean Water Act after notice and opportunities for public hearings, for the discharge of dredged or fill material into waters of the United States. The State of Idaho, as part of the Section 404 process, shall provide the licensing or permitting federal agency a water quality certification that certifies that the activity meets the water quality standards of the State. The IDWR and the IDL are also involved with these types of projects. As part of the Section 404 process, the State of Idaho shall provide the licensing or permitting federal agency a water quality certification that certifies that the activity meets the water quality standards of the State of Idaho. Since 2000, various Section 404 implementation projects have been permitted in the Raft River Subbasin. Each of these projects has required a Section 401 water quality certification. These implementation projects are summarized in Table 13 and indicate that 11 projects occurred on the Snake River and 9 projects occurred in various tributaries.

**Table 13 Section 404 Permitted Implementation Projects since 2000 in the Raft River HUC**

<b>ACOE Permit Number</b>	<b>Waterbody Involved</b>	<b>Year Project Initiated</b>	<b>Business or Agency</b>	<b>Project Description</b>
<b><i>Snake River Section 404 Permitted Implementation Projects</i></b>				
002200190	Snake River	2000	Private	NWP 13
012200270	Snake River	2001	Private	NWP 13
012200250	Snake River	2001	Private	NWP 13 & 14
043200045	Snake River	2004	Private	NWP 13
053200178	Snake River	2005	Private	
053200160	Snake River	2005	Private	NWP 13
052600026	Snake River	2005	ITD	NWP 3
063300031	Snake River	2006	Private	NWP 13
063300190	Snake River	2006	Private	NWP 36
IDWR L-45-S-58	Snake River	2008	Private	Retaining Wall & Dredging
IDWR L-45-S-59A	Snake River	2008	Private	NWP 13 & 36
<b><i>Tributary Section 404 Permitted Implementation Projects</i></b>				
022200170	Howell Creek	2001	AHD	NWP 3
012201260		2001	AHD	NWP 3
002200740	Almo Creek	2000	BLM	NWP 13 & 14
043300144		2004	Private	NWP 27
2007-158-102		2007	IDPR	NWP 33
043300142	Almo, Edwards & Little Cove Creeks	2004	Private	NWP 13
002200720	Little Cottonwood Creek	2000	BLM	NWP 13
002200380	Cassia Creek	2000	ITD	NWP 23
002200380		2000	ITD	Extension of Permit
2008-299-101	Unnamed Spring to Cassia Creek or Clyde Creek	2007	Private	Cattle crossing ford
012201190	Raft River	2001	Cassia Co.	NWP 3
012201180		2001	Cassia Co.	NWP 3
032100690		2003	MVP	NWP 13 & 14
042600068		2004	Private	NWP 12, 14 & 33
022101710	Summit Creek	2002	AHD	NWP 3 & 13
043200056		2004	Private	NWP 14
063300085	Cottonwood Creek	2006	Private	NWP 18

ACOE Permit Number	Waterbody Involved	Year Project Initiated	Business or Agency	Project Description
<p>ACOE = Army Corps of Engineers. NWP = Nationwide Permit classification. AHD = Albion Highway District. BLM = Bureau of Land Management. ITD = Idaho Transportation Department. Private = Private Individual, Private Farm, etc. NWP 3 = Maintenance. NWP 12 = Utility Line Activities. NWP 13 = Bank Stabilization. NWP 14 = Linear Transportation Projects. NWP 18 = Minor Discharges. NWP 20 = Oil Spill Cleanup. NWP 23 = Approved Categorical Exclusions. NWP 27 = Aquatic Habitat Restoration, Establishment, and Enhancement Activities. NWP 33 = Temporary Construction, Access, and Dewatering. NWP 36 = Boat Ramps. NWP 39 = Commercial and Institutional Developments. Co. = County. MVP = Mountain Valley Potato. McCains = McCains Foods – Burley Factory. IDPR = Idaho Department of Parks and Recreation. Chevron = Chevron Pipeline.</p>				

## 4.5 Future Strategy and Planned Time Frame

DEQ will present this document to the Lake Walcott Watershed Advisory Group to solicit their input and recommendations. Information from suggestions and discussions will assist with future project proposals on the pollutants of concern in the Subbasin and the particular stream segments that are most in need of implementation activities.

During these discussions the different management agencies and members of the WAG, and private landowners will help to distinguish various responsibilities necessary to continue implementation of Best Management Practices and implementations strategies. Designated Management Agencies will continue to work within their timelines as stated in Table 11. Future private implementation activities will be scheduled based on landowner interest and funding availability.

## **Section 5: Summary of Five Year Review**

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This section provides a summary of review process; changes to subbasin conditions since last assessment; analysis, assumptions and allocations for TMDL; appropriateness of use designations and water quality criteria. Watershed Advisory Involvement is also included.

### **Review process**

DEQ's data was collected under its standard operating field protocols governed under a Quality Assurance Project Plan (QAPP) for the Raft River Subbasin. DEQ reviewed its own data under this provision; and applied the same provision to other data submitted from outside sources. However, little data was provided by any of the stakeholders.

Monitoring points were selected prior to the approval of the TMDL that reflected the overall water quality condition of the stream; and with key linkage to the designated or existing beneficial uses based on the IDAPA numeric water quality standards or the TMDL water quality standards. In order to maintain consistency from year-to-year, the same monitoring points or locations were kept in order to provide meaningful comparison between pre-TMDL versus post-TMDL considerations. Water quality monitoring was conducted by DEQ under the provisions of a Quality Assurance Project Plan (QAPP) that provided an assurance that the quality control and quality assurance was present in sample preparation, field collection, and laboratory testing. Monitoring was conducted at a frequency that was dependent on available resources, which were primarily dictated by resource budget constraints. In the case of the Raft River Subbasin, little monitoring was afforded due to budget constraints. The Five-Year Review followed the same provisions designated for the TMDL and used the same monitoring points (locations). The water quality data was entered into a database; and statistical analysis of the data was conducted and determined by DEQ based on meeting beneficial use attainment provisions and TMDL water quality standards.

### **Changes in Subbasin**

There have been no major changes in land use, land ownership, or population in the Subbasin since the TMDL was approved in 2004 that would have either significantly improved or degraded water quality in the Raft River Subbasin. For the most part, land use, land ownership and population have remained unchanged.

### **TMDL Analysis and Water Quality Criteria**

The Five-Year Review concluded that the original analyses and assumptions are still valid for the Raft River TMDLs. It was also concluded that the allocations for point (no nonpoint sources exist in the Subbasin) sources are appropriate for the TMDLs. However, one of the concerns is population growth and economic development, and the effect this may have on possible wastewater treatment and the potential for small cities to want to discharge into a water body. Growth issues may require changes to the wasteload allocations and load allocations in the future, but at this time are not warranted. Since the creation of the original TMDLs there has been no change in water quality criteria that would affect the document.

### **Review of Beneficial Uses**

The DEQ concluded that the designated beneficial uses in the Raft River TMDL are appropriate as presently constituted and does not make or recommended changes to the beneficial uses at this time. In general, the DEQ concludes that beneficial uses for the Raft River Subbasin are either being met or will

## Watershed Advisory Group Consultation

The Lake Walcott Watershed Advisory Group (WAG) was created in 1995 and contributed to the original Raft River Subbasin Assessment and TMDL. The WAG has continued to meet several times annually since the approval of the original document. The WAG first met to discuss the draft Raft River Subbasin Five-Year review on December 2, 2010. The WAG was given a draft copy of the review and was asked to submit comments to DEQ. An email was sent to the WAG members the following week including the DEQ website address to access the draft document and comments were again requested before the date of January 21<sup>st</sup>, 2011. No comments were received. The Lake Walcott WAG met again on March 31, 2011 and a draft copy of the Five-Year review was handed out. An email was sent to the WAG members requesting comments by April 29, 2011.

Summarize recommendations for future scheduling proposals by listing in a table (Table 14) by category.

**Table 14. Summary of recommendations.**

<b>Recommended Action</b>	<b>Schedule</b>	<b>Responsibility</b>	<b>Justification</b>

## Recommendations for Further Action

DEQ and the Lake Walcott Watershed Advisory Group will continue to work together to implement strategies on-the-ground towards meeting the beneficial uses and water quality standards.

## References Cited

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