Upper Snake Rock TMDL Modification

Upper Snake Rock Watershed Management Plan – Modification
A Modification of the Mid-Snake TMDL & Upper Snake Rock TMDL
To Account for the Fish Processors Wasteload Allocation
Part 2

Prepared for
U. S. Environmental Protection Agency – Region 10
U. E. EPA Idaho Operations Office – Boise, Idaho
Idaho Department of Environmental Quality – State Office
Middle Snake River Watershed Advisory Group

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1.0 INTRODUCTION

This public comment document describes Part 2 in the modification of two total maximum daily loads (TMDLs) – the *Middle Snake River Watershed Management Plan* (or Mid-Snake TMDL) and the *Upper Snake Rock Watershed Management Plan* (or Upper Snake Rock TMDL). Part 2 in this TMDL modification process involves the fish processors, of which comprise only four (4) facilities or operations, which discharge. They are Rainbow Trout/Filer Fish Processor (GAP-028) and SeaPac of Idaho Fish Processor (GAP-046), which both discharge into the Cedar Draw drainage and are therefore a part of the Cedar Draw TMDL. It also includes the Clear Springs Fish Processor (GAP-125) and the Clear Lakes Trout Fish Processor (GAP-011), which both discharge into the Clear Lakes drainage and are therefore a part of the Clear Lakes TMDL. As such and as described in the Part 1 document, both TMDLs are compartmentalized under Segment 3 of the Middle Snake River, which is considered a receiving stream segment along with Cedar Draw and Clear Lakes.

The pollutants of concern are total phosphorus (TP) and total suspended solids (TSS). Bacteria are not considered because aquaculture fish hatcheries are not known to discharge *Escherichia coli* (or *E. coli*) from their facilities since the pollutant-generating species are cold-blooded fish.

After reviewing the public comments, DEQ intends to publish notice of its final decision in the Idaho Administrative Bulletin and provide written notice to members of the applicable Watershed Advisory Groups. Then the document will be submitted to the U. S. Environmental Protection Agency (EPA) for approval.

2.0 HISTORICAL PERSPECTIVE

Relative to the fish processors in the Middle Snake River, the following is a historical perspective. Part of that historical perspective is the understanding that the fish processors have always been considered "outside of the 970.2 lb/day TP load." Therefore, their wasteload allocation will be "in addition to" the 970.2 lb/day TP load, which has been considered for the overall industry.

> March 25, 1997 – *The Middle Snake River Watershed Management Plan* (or Mid-Snake TMDL) is submitted to EPA. Public comment occurred from October 23, 1996 to November 22, 1996.
>
> April 25, 1997 – The Mid-Snake TMDL is approved by EPA.
>
> December 20, 1999 – *The Upper Snake Rock Watershed Management Plan* (or Upper Snake Rock TMDL) is submitted to EPA. The Mid-Snake TMDL timeline is modified in conjunction with the Upper Snake Rock TMDL and the general aquaculture permit to commence in year 2000. Public comment occurred twice: (1) June 17, 1998 – September 17, 1998, and (2) November 1, 1999 – December 1, 1999.

January 1, 2000– December 31, 2000: Data collection by the aquaculture industry, inclusive of fish processors.

August 25, 2000: The Upper Snake Rock TMDL is approved by EPA.

January 01 – December 31, 2001: Data collection by the aquaculture industry, inclusive of fish processors.

December 18, 2001 – IDEQ-TFRO meets with fish processors to discuss the TMDL specific to the fish processors.

January 01 – June 30, 2002 – Data collection by the aquaculture industry, inclusive of fish processors.

September 6, 2002 – IDEQ-TFRO Memo on Fish Processors Wasteload Allocation sent out to fish processors for review and comment based on the mean monthly maximum load.

As previously noted, four (4) facilities are of concern as fish processors. These four facilities discharge to two drainages – Cedar Draw and Clear Lakes. There are other fish processors that exist but these additional processors do not discharge into streams that are listed as 303(d) streams. These other fish processors include Blue Lakes Trout Farm Fish Processor (which is no longer operational), Fish Breeders of Idaho Processing Plant (discharge into constructed wetland with no discharge to Snake River), Silver Creek (do not discharge to the Snake River but rather discharge into the City of Twin Falls and have a pre-treatment agreement), and Canyon Trout (have no discharge to Rock Creek due to self-containment). These facilities, along with the four that discharge, are listed in the Mid-Snake TMDL (Table 23, page 61) as numbers 68-75 (processors) with a TBD (To be Determined) later acronym in their wasteload allocation values. The Upper Snake Rock TMDL shows these same processors as "place holders" in the Executive Summary (2000), Tables 8a (Canyon Trout Processing), 8b (Rainbow Trout – Filer; SeaPac of Idaho), 8c (Clear Lakes Trout Processing; Clear Springs Foods Processing), 9b (City of Twin Falls (portion); Blue Lakes Processing), and 9g (Big Bend Trout, Inc.).

3.0 VERSION 13 DATABASE AND TECHNICAL CALCULATIONS

In order to maintain consistency within the aquaculture industry, the Version 13 Database of the fish processors was utilized to develop various wasteload allocation scenarios. The database was provided to the fish processors for their use in developing their own proposal with the stipulation that there could be no phosphorus speculation.

Finally, one technical aspect of the tables that are in this Part 1 document deals with the Microsoft program, Excel. This program was used for all calculations. Truncation of repeating or ratio values was selected at the centidecimal place (0.01 or two-decimal places to the right of the zero) and incorporated the Rule of Rounding before truncation. Therefore, although mathematically a rounded or truncated value may actually represent a range of numbers (such as 12.235-12.239 ≈ 12.24); the values found in the tables are the exact values at the second decimal place (i.e., 12.24) without any "hanging" rounding or truncation residual. This was done to eliminate any rounding errors or mis-calculations within the tables. However, despite the incorporation of the Rule of Rounding before truncation, a global rounding error is still expressed between what is considered the exact real number and the nearest floating-point representation. These rounding "precision" errors are accumulative where multiple calculations are involved. In effect, the value 4.0 (as an example) is really a range of values from 3.95 to 4.04, which yields a classic approach as an absolute bound or a probabilistic estimate of the first-order approximate of the final rounding error with respect to the elementary rounding errors introduced by the

computation of intermediate variables (Langlois 2000). This is demonstrated in the following example for Milner Dam and Pillar Falls relative to TP and TSS. The lower bound value is the lowest value that is equivalent (based on rounding) to the expected value as the instream concentration. Likewise, the upper bound value is the highest value that is equivalent (based on rounding) to the expected value as the instream concentration. The % Range equates to the percentage value of the actual range (Upper Bound – Lower Bound) against the expected value.

Compliance	Expected Value	Lower Bound	Upper Bound	% Range
Total Phosphorus: 0.075 mg/L TP				
Milner Dam	1,560.41 lb/day	1,570.80	1,550.01	1.33%
Pillar Falls	1,914.93 lb/day	1,902.17	1,927.69	1.33%
Total Suspended Solids: 52.0 mg/L TSS				
Milner Dam	197,443.25 ton/year	197,254.00	197,633.00	0.19%
Pillar Falls	196,172.04 ton/year	196,405.02	195,939.06	0.24%

Consequently, in this document the true or expected value is indeed a range of values that have lower and upper bound limits, but which round to the expected value. No correcting term was applied for this characteristic global rounding error (or linearization error) since it is characteristic of all data. Thus, the incorporation of standard mathematical operations from final accumulative solutions cannot be applied with the anticipation of obtaining the expected value. Therefore, a process was set by DEQ to minimize this potential error. That process followed the following procedure for determination of wasteload allocations within all of the TMDLs:

STEP 1. Calculate the Load Capacity for TP and TSS for each natural tributary using the following formulas:

TP, lb/day = cfs x 0.100-mg/L TP x 5.39 (tributaries)
TP, lb/day = cfs x 0.075-mg/L TP x 5.39 (Snake River)

TSS, ton/year = cfs x 52.0 mg/L TSS x 5.39 x 0.1825 (tributaries and Snake River)
TSS, ton/year = cfs x 25.0 mg/L TSS x 5.39 x 0.1825 (special resource waters)

STEP 2. Subtract the MOS from the Loading Capacity.

STEP 3. Subtract the Loss/Attenuation value where appropriate from the remaining Loading Capacity.

STEP 4. Subtract the Point Sources from the remaining Loading Capacity.

STEP 5. The remaining Loading Capacity is attributed to the Nonpoint Sources. Of this remaining Loading Capacity, 2% is temporarily attributed to Stormwater – Construction Activities. See §5.0 of this document on Stormwater. Therefore,

TP, lb/day = Loading Capacity, lb/day x 0.02
TSS, ton/year = Loading Capacity, ton/year x 0.02

For the Nonpoint Sources attributed to FERC facilities, Land Application sites, or Confined Feeding Operations (all sizes), these will carry a load of zero. The remaining Nonpoint Source component, once the 2% Stormwater – Construction Activities is

subtracted, is attributed to a combined Nonpoint Source load of agricultural activities, grazing lands, private ground, and within the 2-mile corridor of the stream.

Fish Processors – TSS Load

For the TSS load attributable to the fish processors, the wasteload allocation was based on the old NPDES permit (about 1976) based on the projected processing pounds. Only SeaPac of Idaho could not be shown what the older permit values were because they were not part of that particular NDPES permit at the time. However, using a linear regression analysis established from the other three processors, it was simple to establish its monthly average (lb/day TSS):

Fish Processor	lbs processed/year	Old Limits
Clear Springs	24,000,000	150 lb/day TSS
Idaho Trout	8,575,000	43 lb/day TSS
Rainbow Trout	6,125,000	32 lb/day TSS
SeaPac	10,000,000	Unknown = 52 lb/day TSS

The linear regression analysis indicates strongly significant correlation (r^2 = 0.9982), such that SeaPac's limit would be 52 lb/day TSS and represent the monthly average TSS. These values become the limits for the fish processors and calculated into the overall TMDL for Cedar Draw and Clear Lakes as part of the TMDL process.

4.0 EXCEPTIONS TO THE WASTELOAD ALLOCATION

As previously noted in the Part 1 document, two additional portions to the aquaculture wasteload allocation are not incorporated in the 970.2 lb/day TP target. First, the fish processors have a separate wasteload allocation that is not included in the 970.2-lb/day TP wasteload allocation. And, second, the Billingsley Creek facilities are on a separate TMDL (the Billingsley Creek TMDL). As such, the Billingsley Creek facilities are also outside of the 970.2-lb/day TP wasteload allocation. These two components will be submitted as Part 2 and Part 3 after public comment of each.

5.0 BENEFICIAL USE ATTAINMENT

Relative to compliance with water quality standards, the Upper Snake Rock TMDL (Buhidar 1999) defined tributaries as natural or manmade waterbodies that discharged into larger waterbodies. For example, a natural waterbody would be Cedar Draw discharging into the Middle Snake River. A manmade waterbody would be a canalway, drain, or coulee that drains into the Middle Snake River. A stream, on the on the other hand, means flowing water and includes creeks, rivers, and canals. Water quality standard limitations are set on tributaries and may be set throughout the entire length of the natural waterbody. Water quality standard limitations on canalways, however, are set at the point where the canalway discharges into a natural waterbody and not throughout the entire length of the canalway.

Relative to meeting beneficial uses, the Mid-Snake TMDL and the Upper Snake Rock TMDL identify nuisance aquatic plant growths as impairments to the beneficial uses of the Middle Snake River and of many tributaries. This nuisance macrophyte argument grew out of the original *The Middle Snake River Nutrient Management Plan* (IDEQ-TFRO 1995 [p 68]) effort. The DEQ determined under the *Nutrient Management Plan* that a 30% reduction in the nuisance aquatic plant growths (or macrophytes) in the Middle Snake River (as an average value and specifically in the Crystal Springs reach) was needed in order to restore the beneficial uses and comply with the water quality standards. The water quality standards prohibit excess nutrients that result in nuisance aquatic growths that impair beneficial uses of the river (IDAPA 58.01.02.200.06). The surrogate for the 30% reduction and compliance with the water

quality standards narrative criteria regarding excess nutrients was defined with TP as an instream targets that must be met by year 2010. Consequently, the Mid-Snake TMDL defines beneficial use attainment at 0.075-mg/L TP for the Snake River and is a surrogate for a 30% reduction in nuisance plant growths in the river. Attainment of water quality standards in the Mid-Snake TMDL is based on a single-compliance point correlation at Gridley Bridge. The Upper Snake Rock TMDL expanded on the Mid-Snake TMDL and defined beneficial use attainment at seven (7) compliance points with the following instream surrogate targets:

1. Tributaries

   The TMDL TP target is 0.100-mg/L TP for tributaries (natural and manmade) whether they discharge directly or indirectly to the Middle Snake River. The TMDL TSS target is 52.0-mg/L for tributaries (natural and manmade) whether they discharge directly or indirectly to the Middle Snake River. The compliance point for all natural tributaries is throughout the length of their system. In the case of manmade systems, their compliance point is where their discharge occurs into natural systems. Manmade systems include canals, drains (surface and subsurface as defined in the Upper Snake Rock TMDL), septic systems, subdivisions, construction activities, etc. See the Part 1 document for more information on special resource waters, drinking water supply, and manmade systems.

2. Middle Snake River

   The TMDL TP target is 0.075-mg/L TP for all six segments of the Middle Snake River. The 0.075-mg/L TP target is for the entire river from Milner Dam to King Hill. The TMDL TSS target is 52.0-mg/L TSS for the Middle Snake River. See the Part 1 document for more information.

3. Springs and Seeps

   The TMDL TP target is 0.020-mg/L TP for all groundwater sources that discharge as springs into natural systems and is the surrogate for achievement of beneficial uses relative to nuisance plant growth in the river and tributaries. Groundwater sources that exceed the 0.020-mg/L TP threshold are indicative of eutrophication. For TSS, a value of 1.3-mg/L is used as defined in the Upper Snake Rock TMDL. It is highly possible that this value is relatively high when compared to single springs or seeps that may have TSS values which are much less than 1.3 mg/L. Seeps, which have evolved as a consequence of irrigation, and which discharge into surface waterbodies are defined in the Upper Snake Rock TMDL, along with tile drains and tunnel drains, as having instream targets of 0.100 mg/L TP and a 1.3 mg/L TSS.

Stormwater Runoff and Construction Activities

Relative to nonpoint source stormwater runoff and construction activities that may potentially impact natural systems within the stream corridor, 2% of the nonpoint source load allocation was defined as a "reserve" for TSS and TP. As a reserve, it will revert to the nonpoint source category when stormwater runoff and construction activities are not occurring. These activities must comply with the limitations imposed by the TSS and TP reserve.

Future Growth Potential

Nonpoint source future growth potential such as subdivision development or similar ventures within the stream corridors must provide sufficient protection of nutrient (TP and nitrogen), sediment (TSS), and bacteria pollutants so that TMDL targets and goals are maintained. Subdivisions, although defined as a nonpoint source, have the tendency with septic systems to produce more TP than what would be allocated to straight agricultural lands. This assumes that the septic discharge enters the associated waterbody. Consequently, the TP loading limit for subsurface sewage disposal (IDAPA §58.01.03) or wastewater land application (IDAPA §58.01.17) is contained in the TMDL as part of the nonpoint source load allocation. Point source wasteload allocations are enforceable under NPDES permits. Nonpoint source load allocations are implemented by designated agencies under Idaho Code §39-3612 and IDAPA §58.01.02.350. In addition, DEQ policy relative to subdivision development within stream corridors should be reviewed in consultation with local planning and zoning restrictions for appropriate consideration.

Relative to the fish processors, their proposed wasteload allocations are included in this public comment document. Their wasteload allocation constitutes Part 2 of the TMDL submission process and will occur immediately after the submission of Part 1. In determining the wasteload allocations for the fish processors, DEQ reviewed historic information in the DMRs, including TP discharged and lbs of fish processed, and the proposal for locations provided by the fish processors. The process for determining wasteload allocations for the fish hatcheries included assigning TP concentrations to each of the Tiers of facilities. According to the fish hatcheries, the concentration assigned reflects, in part, industry expectations for growth and environmental performance. A similar process was also applied to the fish processors by using a two-step process. The two-step process of configuring a wasteload allocation that considers future growth is summarized as follows:

STEP 1. Calibrating the market value to Idaho trout production (1991-2002) using a minimum value (37.4 M lbs) and its associated maximum value (46.0 M lbs). The Idaho trout production data comes from the DMRs from all fish processors in Idaho for the years 1991-2002. The maximum and minimum values represent the maximum and minimum amount of pounds of fish processed in a year during the 1991-2002 time period. The growth ratio is estimated by the Min/Max ratio, or 37.4/46.0 = 0.813. This growth ratio is then applied to the maximum amount of phosphorus discharged from Clear Springs Foods, which is the largest fish processor. The resulting number reflects a lb/day amount that takes into consideration future growth.

Fish Processor	Max TP	Factor Conversion	TP Load
Clear Springs Foods	16.4 lb/day	16.4/0.813 =	20.2 lb/day
Idaho Trout Processors	1.5 lb/day	1.5/0.813 =	1.8 lb/day
Rainbow Trout	2.5 lb/day	2.5/0.813 =	3.1 lb/day
SeaPac of Idaho	3.2 lb/day	3.2/0.813 =	3.9 lb/day
Total	15.3 lb/day	23.6 lb/day	29.0 lb/day

STEP 2. Determine allocations based upon a production comparison against the maximum future growth (20.2 lb/day TP) of the largest fish processor (Clear Springs Foods).

Fish Processor	Production Comparison	Comparison	TP WLA
Clear Springs Foods	97,900.0/97,900 = 1.0	20.2/1.0 =	20.2 lb/day
Idaho Trout Processors	16,108.1/16,108.1 = 6.1	20.2/6.1 =	3.3 lb/day
Rainbow Trout	11,933.8/11,933.8 = 8.2	20.2/8.2 =	2.5 lb/day
SeaPac of Idaho	22,648.5/22,648.5 = 4.3	20.2/4.7 =	4.7 lb/day
Total			30.7 lb/day

IDEQ notes also that the four fish processing plants primarily process rainbow trout for sale. The market for these fish is subject to the same type of market fluctuations and trends that any type of agricultural commodity is subject to. That is, that there are periods of high demand and good sales price and then there are also periods of low demand and poorer price for consumable trout in the continental United States. IDEQ recognizes that the Idaho trout industry has had difficulty in the past couple of years finding a market for their entire available product inventory at a profitable price. Many of the producers, such as Clear Springs Foods, Idaho Trout Processors, and ARK Fisheries have donated large numbers of rainbow trout to the Idaho Department of Fish and Game for stocking to public waters because they had more fish available than they could sell because of depressed market conditions. Because of the close association to market conditions by the fish processors, IDEQ has developed a wasteload allocation based on the reported discharge loads for the processing industry. In so doing, IDEQ believes that the wasteload allocations that are proposed would allow the industry to continue to operate at a time when market conditions become more favorable with some room for additional growth in the products grown locally should the industry be able to expand in the future above levels that they have operated at over the past decade. IDEQ believes that the wasteload allocation proposed and based on their load data is conservative enough not to lend itself to phosphorus speculation or a phosphorus trading situation between the processing plants and some of the fish hatcheries. The fish processors industry have submitted 75 data points of phosphorus data to IDEQ on their discharge monitoring reports from 2000-2004. Under the wasteload allocation proposed by IDEQ, the fish processors would have only one exceedance in the proposed limits.

In the Part 1 document, Table 3-B (Cedar Draw TMDL) and Table 3-D (Clear Lakes TMDL) identify the fish processors as additional point source components of the overall allocation. Within these TMDLs (Cedar Draw and Clear Lakes) the overall allocation for TP and TSS cannot exceed the waterbody's instream targets, which have been defined as surrogates for beneficial uses and water quality standards attainment.

6.0 TOTAL PHOSPHORUS POLLUTANT TRADING

Total phosphorus pollutant trading is presently described under a trading guidance that was developed by EPA and DEQ. Pollutant trading is a contractual agreement to exchange pollutant reductions between two partners. It is a voluntary way to help meet TMDLs. Trading is allowed on the Middle Snake River as described in the guidance. Trading into the tributaries will be allowed once DEQ establishes equivalency ratios. Any seasonal or non-seasonal facility is eligible to participate in pollutant trading.

Pollutant trading is a tool that can be used to help a point source meet its NPDES phosphorus limits. Typically, a discharger facing relatively high pollutant reduction costs compensates another party to achieve an equivalent, though less costly, pollutant reduction. Trading is voluntary, takes place through private contracts, and is regulated through compliance with NPDES permit requirements.

A point source may voluntarily reduce its phosphorus discharge below its NPDES permit limit by a particular amount for a particular time-period. This creates a credit that may be sold to another point source. The transfer of credits reduces the seller's permit limit by the amount of the credits. The buyer may increase its discharge limit by the amount of credits it purchases. Credits are characterized by an amount of a pollutant per unit of time. Each point source is responsible for meeting its individual permit limit for phosphorus, adjusted by traded credits. Credits must be generated and purchased during the same time-period. In other words, if a discharger exceeds a permit limit in January it must purchase credits generated in January.

As an example, if facility X has an NPDES permit allowing for the discharge of 100 lb/day of phosphorus and is able, through technology, to reduce its discharge to 75 lb/day, it has 25 credits to sell. If facility Y has an NPDES permit allowing for the discharge of 100 lb/day phosphorus, but is currently

discharging 125 lb/day, it is exceeding its permit limit by 25 lb/day phosphorus. Facility Y may either find a way to reduce an additional 25 lb/day of phosphorus in order to meet its permit limit or it may purchase 25 lb/day of phosphorus credits from facility X. At this point, the same amount of phosphorus is discharged into the river, 200 lb/day, but through a different distribution between facilities X and Y. Each point source must reflect the actual discharge amount of phosphorus in their Discharge Monitoring Reports and also show the purchase of credits in a Trade Summary report in accordance with DEQ's trading guidance.

7.0 ALLOCATIONS BY RIVER SEGMENT & TRIBUTARY

The Middle Snake River was divided into six (6) decision units or segments based on seven (7) compliance points, as defined in the Upper Snake Rock TMDL. The method of allocation took into account the allocations given in the Mid-Snake TMDL and the Upper Snake Rock TMDL. Because the receiving stream is the Middle Snake River, each river segment indirectly describes all tributaries. Consequently, all tributaries (natural and manmade), all direct point source dischargers, and all nonpoint sources are linked to the six river segments.

See the Part 1 document for additional information.

7.1 SEGMENT 3 – MIDDLE SNAKE RIVER - Crystal Springs to Box Canyon

The load allocations for Segment 3 of the Middle Snake River are defined as follows based on mean flows. These loads represent input loads to Segment 3 at Crystal Springs. See the Part 1 document for more information. The tributaries of concern include Cedar Draw and Clear Lake, both being TMDL tributaries.

CEDAR DRAW TMDL
Segment 3 – Middle Snake River

Cedar Draw is a natural tributary to the Snake River with nonpoint sources and point sources discharging to it. The load allocations for Cedar Draw are defined as follows based on mean flows. The equivalent pollutant concentrations are 0.100-mg/L TP and 52.0-mg/L TSS.

Cedar Draw: Load Capacities for TP and TSS
TP = 144.29 cfs x 0.100-mg/L TP x 5.39 = 77.77-lb/day
TSS = 144.29 cfs x 52.0-mg/L TSS x 5.39 x 0.1825 = 7,380.59-ton/year

Table 3-B (as originally shown in the Part 1 document) summarizes the tributaries and the direct dischargers to Cedar Draw and indicates that the beneficial uses for Cedar Draw will be met if the point source and nonpoint source allocations are met by Year 2010 inclusive of the fish processors. Beneficial use attainment is also applicable to the fish processors of Cedar Draw and within the confines of the TMDL process.

Table 3-B. Cedar Draw TMDL

TP SOURCES	TP lb/day	SEASONALITY LOADS, lb/day TP			
		Qtr 1	Qtr 2	Qtr 3	Qtr 4
NPS (Ag, Graze, Private, Corridor)	30.94	30.94	30.94	30.94	30.94
FERC, LAFs, CFOs	0.00	0.00	0.00	0.00	0.00
Stormwater – Construction Activities	0.63	0.63	0.63	0.63	0.63
GAP-028 Rainbow Trout/Filer FH	5.30	5.30	5.30	5.30	5.30
GAP-028 Rainbow Trout/Filer FP	2.50	2.50	2.50	2.50	2.50
GAP-059 Olson Ponds FH	1.20	1.20	1.20	1.20	1.20

GAP-046 SeaPac of Idaho/Yoder	3.70	3.70	3.70	3.70	3.70
GAP-046 SeaPac of Idaho FP	4.70	4.70	4.70	4.70	4.70
GAP-103 Stutzman Farm FH	0.60	0.60	0.60	0.60	0.60
GAP-019 Cedar Draw FH	5.70	5.70	5.70	5.70	5.70
GAP-115 Leo Martins FH	2.20	2.20	2.20	2.20	2.20
GAP-040 Tunnel Creek FH	3.30	3.30	3.30	3.30	3.30
City of Filer POTW	17.0	17.0	17.0	17.0	17.0
Margin of Safety	Implicit	Implicit	Implicit	Implicit	Implicit
Total Load (at 0.100 mg/L TP)	77.77	77.77	77.77	77.77	77.77
TSS SOURCES	TSS ton/year	SEASONALITY LOADS, ton/year TSS			
		Qtr 1	Qtr 2	Qtr 3	Qtr 4
NPS (Ag, Graze, Private, Corridor)	6,762.77	6,762.77	6,762.77	6,762.77	6,762.77
FERC, LAFs, CFOs	0.00	0.00	0.00	0.00	0.00
Stormwater – Construction Activities	138.02	138.02	138.02	138.02	138.02
GAP-028 Rainbow Trout/Filer FH	55.60	55.60	55.60	55.60	55.60
GAP-028 Rainbow Trout/Filer FP	32.00	32.00	32.00	32.00	32.00
GAP-059 Olson Ponds FH	16.70	16.70	16.70	16.70	16.70
GAP-046 SeaPac of Idaho/Yoder	33.40	33.40	33.40	33.40	33.40
GAP-046 SeaPac of Idaho FP	52.00	52.00	52.00	52.00	52.00
GAP-103 Stutzman Farm FH	8.40	8.40	8.40	8.40	8.40
GAP-019 Cedar Draw FH	132.30	132.30	132.30	132.30	132.30
GAP-115 Leo Martins FH	45.70	45.70	45.70	45.70	45.70
GAP-040 Tunnel Creek FH	45.70	45.70	45.70	45.70	45.70
City of Filer POTW	58.00	58.00	58.00	58.00	58.00
Margin of Safety	Implicit	Implicit	Implicit	Implicit	Implicit
Total Load (at 52.0 mg/L TSS)	7,380.59	7,380.59	7,380.59	7,380.59	7,380.6

NPS = Nonpoint sources for agriculture, grazing, and private ground. TP = Total phosphorus. TSS = Total suspended solids. Qtr = Quarter. FERC = Hydropower facilities. LAFs = Land application facilities. CFOs = Confined feeding operations. FH = Fish hatchery. FP = Fish processor. TBD = To Be Determined.

CLEAR LAKES TMDL
Segment 3 – Middle Snake River

Clear Lakes is a natural springfed tributary to the Snake River with nonpoint sources and point sources discharging to it. The load allocations for Clear Lakes are defined as follows based on mean flows. The equivalent pollutant concentrations are 0.100-mg/L TP and 52.0-mg/L TSS.

Clear Lakes: Load Capacities for TP and TSS
TP = 494.0 cfs x 0.100-mg/L TP x 5.39 = 266.27-lb/day
TSS = 494.0 cfs x 52.0-mg/L TSS x 5.39 x 0.1825 = 25,268.64-ton/year

Table 3-D summarizes the tributaries and the direct dischargers to Clear Lakes and indicates that the beneficial uses for Clear Lakes will be met if the point source and nonpoint source allocations are met by Year 2010. Beneficial use attainment is also applicable to the fish processors of Clear Lakes and within the confines of the TMDL process.

Table 3-D. Clear Lakes TMDL

TP SOURCES	TP lb/day	SEASONALITY LOADS, lb/day TP			
		Qtr 1	Qtr 2	Qtr 3	Qtr 4
NPS (Ag, Graze, Private, Corridor)	48.87	48.87	48.87	48.87	48.87
FERC, LAFs, CFOs	0.00	0.00	0.00	0.00	0.00
Stormwater – Construction Activities	1.00	1.00	1.00	1.00	1.00

GAP-007 Middle Hatchery	75.00	75.00	75.00	75.00	75.00
GAP-125 Clear Springs FP	20.20	20.20	20.20	20.20	20.20
GAP-011 Clear Lakes Trout FH	70.90	70.90	70.90	70.90	70.90
GAP-011 Clear Lakes Trout FP	3.30	3.30	3.30	3.30	3.30
GAP-002 Snake River FH	47.00	47.00	47.00	47.00	47.00
Margin of Safety	Implicit	Implicit	Implicit	Implicit	Implicit
Total Load (at 0.100 mg/L TP)	266.27	266.27	266.27	266.27	266.27
TSS SOURCES	TSS ton/year	SEASONALITY LOADS, ton/year TSS			
		Qtr 1	Qtr 2	Qtr 3	Qtr 4
NPS (Ag, Graze, Private, Corridor)	22,375.20	22,375.20	22,375.20	22,375.20	22,375.20
FERC, LAFs, CFOs	0.00	0.00	0.00	0.00	0.00
Stormwater – Construction Activities	456.64	456.64	456.64	456.64	456.64
GAP-007 Middle Hatchery	983.70	983.70	983.70	983.70	983.70
GAP-125 Clear Springs FP	150.00	150.00	150.00	150.00	150.00
GAP-011 Clear Lakes Trout FH	788.90	788.90	788.90	788.90	788.90
GAP-011 Clear Lakes Trout FP	43.00	43.00	43.00	43.00	43.00
GAP-002 Snake River FH	471.20	471.20	471.20	471.20	471.20
Margin of Safety	Implicit	Implicit	Implicit	Implicit	Implicit
Total Load (at 52.0 mg/L TSS)	25,268.64	25,268.64	25,268.64	25,268.64	25,268.64

NPS = Nonpoint sources for agriculture, grazing, and private ground. TP = Total phosphorus. TSS = Total suspended solids. Qtr = Quarter. FERC = Hydropower facilities. LAFs = Land application facilities. CFOs = Confined feeding operations. FH = Fish hatchery. FP = Fish processor. TBD = To Be Determined.

8.0 REASONABLE ASSURANCE IN BENEFICIAL USE ATTAINMENT

Reasonable assurance in beneficial use attainment is specific in this Part 2 document to Cedar Draw and Clear Lakes tributaries, since the fish processors are located in these tributaries that eventually discharge to the Middle Snake River. The load capacities of Cedar Draw and Clear Lakes for TP and TSS are unchanged in this Part 2 document as they initially appeared in the Part 1 document. Consequently, we may conclude that if the loading capacities of these tributaries are met, the loading capacity of the Middle Snake River will be met, and thus beneficial uses will be attained in the river and in the tributaries. As such,

1. Point Source Reasonable Assurance. There is a reasonable assurance that point sources will meet their wasteload allocations because the Clean Water Act requires NPDES permits contain limits consistent with approved wasteload allocations. Each TMDL that has a point source has the point source wasteload allocation intended to achieve, in conjunction with reductions from nonpoint sources, compliance with Water Quality Standards and beneficial use attainment. Within the body of the Upper Snake Rock TMDL Modification, there exist 22 streams or stream segments that contain point sources – 5 Middle Snake River segments and 17 tributaries that are specifically structured to meet the surrogate water quality targets for beneficial use attainment.

2. Nonpoint Source Reasonable Assurance. There is a reasonable assurance that nonpoint sources will meet their wasteload allocations and thereby help achieve compliance with Water Quality Standards. Nonpoint source load allocations will be implemented by designated agencies pursuant to Idaho Code §39-3612 and the Water Quality Standards. Within the body of the Upper Snake Rock TMDL Modification, there exist 17 streams or stream segments that contain nonpoint sources – 1 Middle Snake River comprised of six (6) segments and 16 tributaries that are specifically structured to meet the surrogate water quality targets for

beneficial use attainment. Presently, there are implementation projects ongoing in several of these nonpoint source streams.

3. Tributaries' Load Capacity. The load capacity of all tributaries is subject to instream water quality targets of 0.100 mg/L TP and 52.0 mg/L TSS or 25.0 mg/L TSS. The water quality targets of 0.100 mg/L TP and 52.0 mg/L TSS are based on free-flowing streams discharging into other free-flowing streams. In streams where the designation is special resource water or drinking water supply, a 25.0 mg/L TSS water quality target has been used with a 0.100 mg/L TP target. All point sources and nonpoint sources have been assigned wasteload and load allocations to meet the water quality targets for beneficial use attainment. No aquaculture facility inclusive of the fish processors caused any tributary to exceed the TMDL instream targets. We can thus assume that if these targets are indeed met by the Year 2010, the beneficial uses of the tributaries will be met.

4. Middle Snake River Load Capacity. The Middle Snake River is subject to instream water quality targets of 0.075 mg/L TP and 52.0 mg/L TSS. All point sources and nonpoint sources have been assigned wasteload and load allocations to meet the water quality targets for beneficial use attainment. No aquaculture facility inclusive of the fish processors caused any segment of the Middle Snake River to exceed the TMDL instream targets. We can thus assume that if these targets are indeed met by the Year 2010, the beneficial uses of the tributaries will be met in the Middle Snake River.

5. Groundwater Load Capacity. All springs that are discharging into the river or an associated tributary have been set to an instream water quality target surrogate of 0.020 mg/L TP and 1.3 mg/L TSS. In the event that the water quality for TP or TSS elevates statistically to a significant level, then DEQ with the Mid-Snake WAG will re-evaluate the entire TMDL for additional reduction goals. The main premise of the present Upper Snake Rock TMDL is based on groundwater water quality not elevating to significant levels above 0.020 mg/L TP or 1.3 mg/L TSS.

Based on the foregoing discussion, there is reasonable assurance that water quality standards and beneficial use support will be reached for TP and TSS as a consequence of the wasteload allocations for the various aquaculture facilities inclusive of fish processors and load allocations for nonpoint sources. A preliminary mid-course assessment is scheduled for Year 2005 with a final assessment in the Year 2010.

9.0 REFERENCES

The following references are cited within this Part 2 TMDL modification document and originally appeared in the Part 1 document.

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