United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Colorado State Office
2850 Youngfield Street
Lakewood, Colorado 80215-7210
www.co.blm.gov

In Reply Refer To:
7250 (CO-932)

Ms. Linda Bassi
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, Colorado 80203

DEC 19 2018

Dear Ms. Bassi:

The Bureau of Land Management (BLM) is writing this letter to formally communicate its recommendation for an increase to the instream flow water right on Trout Creek, located in Water Division 6.

Location and Land Status. Trout Creek originates in the Flattops Wilderness Area, approximately 11.0 miles southwest of the community of Yampa. Trout Creek flows into the Yampa River at the town of Milner. This recommendation addresses only the portion of Trout Creek that starts at the confluence with an unnamed tributary located in the SW ¼ NW ¼, Section 8, T3N R86W and ending at the headgate of the Koll Ditch, a distance of approximately 7.0 miles. The BLM manages 0.8 miles of this reach, while approximately 6.2 miles are in private ownership.

Existing Instream Flow Water Rights. In 1977, the Colorado Water Conservation Board appropriated an instream flow water right on Trout Creek that begins at the outlet of Sheriff Reservoir and ends at the confluence with Middle Creek. The protected flow rate is 5.0 cfs, year round.

Biological Summary. Trout Creek is a cold water, moderate gradient stream. The reach that is the subject of this recommendation flows through valley that ranges from 1/8 to ½ mile in width. The upper part of the reach flows through agricultural lands used for livestock grazing, while the lower part of the reach flows through a confined canyon that is in largely natural condition. Substrate is generally from medium to large size, ranging from 4-inch cobbles to small boulders. Water quality is good for supporting salmonid fish species, but during July and August, temperatures can approach the maximum temperatures that can be tolerated by trout.

Fish surveys indicate a diverse and self-sustaining fish community. Trout Creek provides habitat for brook trout, brown trout, cutthroat trout, mottled sculpin, speckled dace, and mountain sucker. Spot surveys have indicated abundant populations of stonefly and caddisfly.

The creek also supports a vigorous riparian community comprised of alder, dogwood, and narrowleaf cottonwood. When the creek flows through confined canyons, the riparian community provides good cover and shading for the creek, and contributes substantially to bank stability.

R2Cross Analysis. The BLM collected the following R2Cross data from Trout Creek:

Cross Section Date	Discharge Rate	Top Width	Winter Flow Recommendation (meets 2 of 3 hydraulic criteria)	Summer Flow Recommendation (meets 3 of 3 hydraulic criteria)
08/12/2017 #1	9.43 cfs	39.42 feet	9.27 cfs	13.28 cfs
08/12/2017 #2	8.58 cfs	35.17 feet	5.79 cfs	12.80 cfs
		Averages:	7.53 cfs	13.04 cfs

BLM's analysis of this data, coordinated with Colorado Parks and Wildlife, indicates that the following flows are needed to protect the natural environment to a reasonable degree.

> 13.00 cubic feet per second is recommended during the snowmelt runoff period and early summer, from April 1 to July 31. This recommendation is driven by the average depth criteria. In many locations, the Trout Creek channel is wide with large substrate, so meeting the depth criteria is important for passage between rocks and between pools. Implementing this recommendation would require an increase of 8.0 cfs over the current instream flow water right.
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> 12.00 cubic feet per second is recommended during late summer and early fall, from August 1 to October 31. This recommendation is driven by limited water availability. This flow rate will maintain sufficient physical habitat in the creek for the fish population to complete important parts of their life cycle before cold temperatures reduce fish activity for the winter. Implementing this recommendation would require an increase of 7.0 cfs over the current instream flow water right.
>
> 7.00 cubic feet per second is recommended during the cold temperature portion of the year, from November 1 through March 31. This recommendation is driven by limited water availability but comes very close to meeting the wetted perimeter criteria and the velocity criteria. This flow rate should prevent complete icing of the numerous pools in this reach, allowing the fish population to overwinter. Implementing this recommendation would require an increase of 2.0 cfs over the current instream flow water right.

Rationale for Instream Flow Increase. BLM believes an instream flow increase for Trout Creek is warranted because of physical habitat characteristics. The R2Cross data summarized above clearly indicates that the current instream flow water right does not provide sufficient physical habitat during the warm weather portions of the year when the fish populations are feeding, growing, and spawning. When the existing instream flow rights are applied to the cross

sections that were collected, the stream would exhibit 40 percent to 66 percent wetted perimeter. However, this habitat is not highly usable by the fish population, because 5.0 cfs constrains the habitat to an average depth of 0.22 to 0.26 feet. An average habitat depth of 0.22 to 0.26 feet is not sufficient in a stream that averages 35 to 40 feet in top width. During the warm weather season, the fish populations need to have access to as much of the stream channel as possible for feeding, resting, and spawning if they are to survive the pronounced cold winters in this canyon. The increase in flow rates during winter is warranted because the average depths associated with 5.0 cfs make much of the physical habitat in the stream channel less susceptible to freezing.

Water Availability. The BLM recommends using a variety of data sources to confirm water availability, because BLM is not aware of any historical gage data on this creek. Use of Streamstats can provide an estimate of natural hydrology, but this estimate may have to be modified by adjusting for reservoir storage and for irrigation diversions. Two nearby gages may also provide an estimate of natural hydrology, because they are located on watersheds with similar characteristics. USGS Gage 0923800, on Oak Creek near the community of Oak Creek, is located on a smaller watershed, but appears to be relatively unaffected by diversion and storage operations. USGG Gage 09248500, on the East Fork of the Williams Fork near Willow Creek, is on a larger watershed, but this watershed has very similar altitude and aspect to the Trout Creek watershed. Neither of these gages is currently collecting data, but the period of record should be sufficient to help establish water availability for this recommendation. Finally, if reservoir storage and release records are available for Sheriff Reservoir, located upstream from the recommended reach, those records would assist would evaluating the impact of storage operations on stream flows.

The BLM is aware of the following water rights within the proposed instream flow reach:

Koll Ditch – 13.22 cfs
Alex Ditch – 1.28 cfs

The BLM is aware of the following water upstream from the recommended reach:

Orno Ditch – 8.31 cfs
Slough Ditch – 3.98 cfs
Knott Ditch – 2.00 cfs
Pine Grove Ditch – 3.98 cfs
David Chapman Ditch – 2.41 cfs
Male Move Ditch – 12.62 cfs
Last Chance Ditch – 19.29 cfs
Rich Ditch – 19.32 cfs
Sheriff Reservoir – 986.5 acre feet

Relationship to Land Management Plans. The BLM's management plan calls for improvement and recovery of current and historic fisheries as a means of increasing native fish populations. In addition, the BLM plan calls for making instream flow recommendations to the Colorado Water Conservation Board to meet minimum instream flow requirements to maintain

native fisheries. Finally, the plan calls for maintaining and improving the function of riparian areas to achieve advanced ecological stage for the riparian community, and it also calls for protecting riparian and wetland systems from further sources of degradation. Establishing an instream flow water right would assist in meeting these objectives.

Data sheets, R2Cross output, fishery survey information, and photographs of the cross section were included with BLM's draft recommendation in February 2018. We thank both Colorado Parks and Wildlife and the Colorado Water Conservation Board for their cooperation in this effort.

If you have any questions regarding our instream flow recommendation, please contact Roy Smith at 303-239-3940.

Sincerely,

Brian St. George
Deputy State Director
Resources and Fire

Cc: Bruce Sillitoe, Little Snake FO
Eric Scherff, Little Snake FO
Andrew Archuleta, Northwest District Manager

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP0085	ABV CO RD 29	8-Sep-1993	21041	PRESENCE/ABSENCE	MOTTLED SCULPIN	8	70
23533	Trout Creek #2	YP0085	ABV CO RD 29	8-Sep-1993	21041	PRESENCE/ABSENCE	MOTTLED SCULPIN	2	30
23533	Trout Creek #2	YP0085	ABV CO RD 29	8-Sep-1993	21041	PRESENCE/ABSENCE	MOTTLED SCULPIN	2	90
23533	Trout Creek #2	YP0085	ABV CO RD 29	8-Sep-1993	21041	PRESENCE/ABSENCE	BROOK TROUT	1	130
23533	Trout Creek #2	YP0085	ABV CO RD 29	8-Sep-1993	21041	PRESENCE/ABSENCE	BROOK TROUT	1	30
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	121
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	151
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	53
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	59
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	59
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	58
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	52
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	61
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	59
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	152
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	65
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	57
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	59
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	192
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	58
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	62
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	77
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	59
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	55
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	58
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	52
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	49
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	57
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	57
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	51

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	127
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	161
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	55
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	215
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	137
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	161
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	226
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	57
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	269
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	54
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	181
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	129
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	233
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	163
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	61
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	208
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	60
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	54
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	62
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	52
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	49
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	62
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	122
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	62
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	52
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	60
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	59
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	69
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	59
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	61
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	61
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROOK TROUT	1	54

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	LONGNOSE DACE	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	LONGNOSE DACE	1	105
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	LONGNOSE DACE	1	89
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	322
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	404
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	234
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	143
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	344
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	59
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	329
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	62
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	55
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	55
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	61
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	266
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	170
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	235
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	373
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	265
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	64
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	326
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	55
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	57
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	122
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	228
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	145
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	134
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	302
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	405
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	219
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	136
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	215
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	131

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	318
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	131
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	169
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	223
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	246
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	BROWN TROUT	1	382
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOUNTAIN SUCKER	1	160
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOUNTAIN SUCKER	1	138
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOUNTAIN SUCKER	1	107
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOUNTAIN SUCKER	1	125
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOUNTAIN SUCKER	1	112
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOUNTAIN SUCKER	1	88
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOUNTAIN SUCKER	1	102
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOUNTAIN SUCKER	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOUNTAIN SUCKER	1	96
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOUNTAIN SUCKER	1	167
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOUNTAIN SUCKER	1	172
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	79
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	54
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	44
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	52
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	91
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	96
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	41
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	74
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	106
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	48
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	80
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	55
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	68
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	96
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	49
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	101
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	94
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	69
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	96
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	87
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	79
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	82
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	88
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	89
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	54
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	55
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	102
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	90
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	64
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	110
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	89
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	61
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	92
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	68
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	77
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	74
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	48
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	93
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	83
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	58
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	74
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	44
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	63
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	91
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	105
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	78
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	115
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	106
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	88
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	94
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	57
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	87
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	49
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	108
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	64
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	91
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	63
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	70
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	81
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	52
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	53
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	93
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	102
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	41
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	126

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	104
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	95
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	82
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	101
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	98
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	67
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	94
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	53
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	62
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	55
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	81
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	59
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	89
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	81
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	72
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	77
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	44
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	42
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	112
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	96
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	101
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	109
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	82
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	99
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	74
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	67
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	74
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	90
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	87
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	77
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	94
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	49
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	87
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	94
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	80
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	108
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	97
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	82
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	82
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	70
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	80
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	84
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	74
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	49
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	72
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	78
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	65
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	65
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	82
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	47
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	47
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	55
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	61
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	87
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	92
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	94
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	93
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	87

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	84
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	84
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	67
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	79
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	94
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	64
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	94
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	69
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	63
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	48
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	48
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	78
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	48
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	49
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	96
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	94
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	77
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	74
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	82
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	81
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	101
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	69
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	93
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	68
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	68
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	62

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	68
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	103
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	77
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	44
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	48
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	52
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	55
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	61
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	52
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	44
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	130
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	87
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	91
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	68
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	95
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	87
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	81
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	80
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	74
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	68
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	87
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	84
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	67
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	72
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	87
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	72
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	92

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	77
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	84
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	72
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	61
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	74
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	54
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	70
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	96
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	99
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	48
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	108
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	102
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	96
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	88
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	108
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	94
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	81
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	84
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	73
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	64
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	65
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	49
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	48
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	65
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	90
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	100
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	101
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	99
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	80
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	103
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	67
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	73

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	81
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	73
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	72
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	70
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	49
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	58
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	135
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	125
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	94
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	53
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	89
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	91
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	67
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	64
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	49
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	49
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	NULL
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	69
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	94
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	67
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	83
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	105
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	91
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	89
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	83
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	89
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	95

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	95
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	71
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	79
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	83
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	69
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	94
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	89
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	78
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	96
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	92
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	69
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	83
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	113
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	64
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	87
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	44
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	45
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	117
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	72
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	74
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	67
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	80
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	77
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	76
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	55
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	47
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	80

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	79
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	44
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	49
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	57
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	58
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	52
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	47
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	90
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	69
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	64
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	53
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	48
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	48
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	42
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	52
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	55
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	45
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	55
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	98
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	95
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	80
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	83
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	58
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	67
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	45
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	84

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	82
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	55
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	82
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	80
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	90
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	96
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	89
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	84
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	69
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	91
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	96
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	80
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	97
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	117
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	77
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	70
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	78
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	94
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	106
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	47
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	60
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	82
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	78
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	70
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	72
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	74
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	66
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	50
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	74

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	70
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	67
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	53
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	54
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	48
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	56
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	46
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	44
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	51
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	70
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	88
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	89
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	84
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	136
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	67
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	97
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	62
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	90
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	95
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	64
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	68
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	MOTTLED SCULPIN	1	75
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	CUTTHROAT TROUT (S.S.U.)	1	412
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	CUTTHROAT TROUT (S.S.U.)	1	80
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	CUTTHROAT TROUT (S.S.U.)	1	196
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	CUTTHROAT TROUT (S.S.U.)	1	208
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	RAINBOW TROUT	1	267
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	RAINBOW TROUT	1	249
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	RAINBOW X CUTTHROAT	1	277
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	SPECKLED DACE	1	83
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	SPECKLED DACE	1	84
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	SPECKLED DACE	1	101
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	SPECKLED DACE	1	86
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	SPECKLED DACE	1	69
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	SPECKLED DACE	1	81
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	SPECKLED DACE	1	67
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	SPECKLED DACE	1	90

WaterCode	WaterName	StationCode	StationLocation	SampleDate	SurveyID	Protocol	CommonName	Numfish	FishLength
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	SPECKLED DACE	1	87
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	SPECKLED DACE	1	74
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	SPECKLED DACE	1	85
23533	Trout Creek #2	YP1965	4.5 Km BLW CO RD 29	19-Jul-2007	23350	THREE-PASS REMOVAL	SPECKLED DACE	1	84

COLORADO WATER CONSERVATION BOARD
INSTREAM FLOW / NATURAL LAKE LEVEL PROGRAM
STREAM CROSS-SECTION AND FLOW ANALYSIS

LOCATION INFORMATION

STREAM NAME:	Trout Creek
XS LOCATION:	0.5 mile upstr fr confl w Little Trout Ck.
XS NUMBER:	1
DATE:	2-Aug-17
OBSERVERS:	R. Smith, E. Scherff
1/4 SEC:	SW NW
SECTION:	23
TWP:	4N
RANGE:	86W
PM:	Sixth
COUNTY:	Routt
WATERSHED:	Yampa River
DIVISION:	6
DOW CODE:	23533
USGS MAP:	0
USFS MAP:	0

SUPPLEMENTAL DATA

TAPE WT:	0.0106
TENSION:	99999

*** NOTE ***
Leave TAPE WT and TENSION at defaults for data collected with a survey level and rod

CHANNEL PROFILE DATA

SLOPE:	0.013

INPUT DATA CHECKED BY: .....DATE.....

ASSIGNED TO: ….....……..…….....DATE.....

STREAM NAME: Trout Creek
XS LOCATION: 0.5 mile upstr fr confl w Little Trout Ck.
XS NUMBER: 1

DATA POINTS= 40

VALUES COMPUTED FROM RAW FIELD DATA

FEATURE	DIST	VERT DEPTH	WATER DEPTH	VEL	WETTED PERIM.	WATER DEPTH	AREA (Am)	Q (Qm)	% Q CELL
LS	1.30	3.92			0.00		0.00	0.00	0.0%
1 G	3.70	3.83			0.00		0.00	0.00	0.0%
	4.60	4.71			0.00		0.00	0.00	0.0%
W	6.70	5.05	0.00	0.00	0.00		0.00	0.00	0.0%
	8.00	5.25	0.20	0.45	1.32	0.20	0.23	0.10	1.1%
	9.00	5.20	0.15	0.67	1.00	0.15	0.15	0.10	1.1%
	10.00	5.45	0.40	1.22	1.03	0.40	0.30	0.37	3.9%
	10.50	5.40	0.35	1.67	0.50	0.35	0.18	0.29	3.1%
	11.00	5.50	0.45	1.65	0.51	0.45	0.23	0.37	3.9%
	11.50	5.45	0.40	2.20	0.50	0.40	0.20	0.44	4.7%
	12.00	5.45	0.40	1.98	0.50	0.40	0.20	0.40	4.2%
	12.50	5.45	0.40	1.72	0.50	0.40	0.20	0.34	3.6%
	13.00	5.50	0.45	1.95	0.50	0.45	0.23	0.44	4.7%
	13.50	5.50	0.45	1.61	0.50	0.45	0.23	0.36	3.8%
	14.00	5.55	0.50	1.24	0.50	0.50	0.25	0.31	3.3%
	14.50	5.55	0.50	1.48	0.50	0.50	0.25	0.37	3.9%
	15.00	5.45	0.40	1.40	0.51	0.40	0.20	0.28	3.0%
	15.50	5.50	0.45	1.76	0.50	0.45	0.23	0.40	4.2%
	16.00	5.50	0.45	1.61	0.50	0.45	0.23	0.36	3.8%
	16.50	5.55	0.50	2.01	0.50	0.50	0.25	0.50	5.3%
	17.00	5.45	0.40	2.34	0.51	0.40	0.20	0.47	5.0%
	17.50	5.60	0.55	2.05	0.52	0.55	0.28	0.56	6.0%
	18.00	5.65	0.60	1.63	0.50	0.60	0.30	0.49	5.2%
	18.50	5.70	0.65	1.42	0.50	0.65	0.33	0.46	4.9%
	19.00	5.75	0.70	1.84	0.50	0.70	0.53	0.97	10.2%
	20.00	5.55	0.50	0.00	1.02	0.50	0.50	0.00	0.0%
	21.00	5.45	0.40	0.49	1.00	0.40	0.40	0.20	2.1%
	22.00	5.30	0.25	2.07	1.01	0.25	0.25	0.52	5.5%
	23.00	5.35	0.30	1.01	1.00	0.30	0.30	0.30	3.2%
	24.00	5.05	0.00	0.00	1.04		0.00	0.00	0.0%
	25.00	5.15	0.10	0.28	1.00	0.10	0.10	0.03	0.3%
	26.00	5.15	0.10	0.02	1.00	0.10	0.09	0.00	0.0%
W	26.70	5.05	0.00	0.00	0.71		0.00	0.00	0.0%
	29.60	4.90			0.00		0.00	0.00	0.0%
	33.90	4.62			0.00		0.00	0.00	0.0%
	35.60	4.42			0.00		0.00	0.00	0.0%
	39.30	4.68			0.00		0.00	0.00	0.0%
	41.60	4.20			0.00		0.00	0.00	0.0%
	42.60	4.04			0.00		0.00	0.00	0.0%
1 RS & G	43.20	3.80			0.00		0.00	0.00	0.0%
TOTALS ----------					20.21	0.7 (Max.)	6.79	9.43	100.0%

Manning's n = 0.0589
Hydraulic Radius= 0.33589187

STREAM NAME: Trout Creek
XS LOCATION: 0.5 mile upstr fr confl w Little Trout Ck.
XS NUMBER: 1

WATER LINE COMPARISON TABLE

WATER LINE	MEAS AREA	COMP AREA	AREA ERROR
	6.79	6.79	0.0%
4.80	6.79	12.57	85.1%
4.82	6.79	12.05	77.5%
4.84	6.79	11.55	70.0%
4.86	6.79	11.05	62.7%
4.88	6.79	10.56	55.5%
4.90	6.79	10.08	48.4%
4.92	6.79	9.61	41.5%
4.94	6.79	9.14	34.7%
4.96	6.79	8.69	28.0%
4.98	6.79	8.25	21.5%
5.00	6.79	7.82	15.2%
5.01	6.79	7.61	12.1%
5.02	6.79	7.40	9.0%
5.03	6.79	7.20	6.0%
5.04	6.79	6.99	3.0%
5.05	6.79	6.79	0.0%
5.06	6.79	6.59	-2.9%
5.07	6.79	6.40	-5.8%
5.08	6.79	6.20	-8.7%
5.09	6.79	6.01	-11.5%
5.10	6.79	5.82	-14.2%
5.12	6.79	5.46	-19.7%
5.14	6.79	5.10	-24.9%
5.16	6.79	4.76	-29.9%
5.18	6.79	4.44	-34.6%
5.20	6.79	4.12	-39.3%
5.22	6.79	3.81	-43.9%
5.24	6.79	3.51	-48.2%
5.26	6.79	3.23	-52.4%
5.28	6.79	2.95	-56.5%
5.30	6.79	2.67	-60.6%

WATERLINE AT ZERO
AREA ERROR = 5.050

STREAM NAME: Trout Creek
XS LOCATION: 0.5 mile upstr fr confl w Little Trout Ck.
XS NUMBER: 1 Constant Manning's n

GL = lowest Grassline elevation corrected for sag
STAGING TABLE *WL* = Waterline corrected for variations in field measured water surface elevations and sag

	DIST TO WATER (FT)	TOP WIDTH (FT)	AVG. DEPTH (FT)	MAX. DEPTH (FT)	AREA (SQ FT)	WETTED PERIM. (FT)	PERCENT WET PERIM (%)	HYDR RADIUS (FT)	FLOW (CFS)	AVG. VELOCITY (FT/SEC)
GL	3.83	39.42	1.19	1.92	46.80	40.16	100.0%	1.17	148.97	3.18
	4.05	38.61	0.99	1.70	38.11	39.22	97.7%	0.97	107.45	2.82
	4.10	38.25	0.95	1.65	36.19	38.83	96.7%	0.93	99.23	2.74
	4.15	37.89	0.90	1.60	34.28	38.44	95.7%	0.89	91.29	2.66
	4.20	37.52	0.86	1.55	32.40	38.05	94.8%	0.85	83.64	2.58
	4.25	37.23	0.82	1.50	30.53	37.74	94.0%	0.81	76.18	2.50
	4.30	36.94	0.78	1.45	28.67	37.42	93.2%	0.77	69.01	2.41
	4.35	36.65	0.73	1.40	26.83	37.11	92.4%	0.72	62.14	2.32
	4.40	36.36	0.69	1.35	25.01	36.79	91.6%	0.68	55.57	2.22
	4.45	35.39	0.66	1.30	23.21	35.79	89.1%	0.65	49.98	2.15
	4.50	33.96	0.63	1.25	21.48	34.33	85.5%	0.63	45.15	2.10
	4.55	32.53	0.61	1.20	19.81	32.87	81.9%	0.60	40.63	2.05
	4.60	31.10	0.59	1.15	18.22	31.42	78.2%	0.58	36.43	2.00
	4.65	29.47	0.57	1.10	16.71	29.75	74.1%	0.56	32.68	1.96
	4.70	28.08	0.54	1.05	15.27	28.34	70.6%	0.54	29.07	1.90
	4.75	27.06	0.51	1.00	13.89	27.30	68.0%	0.51	25.45	1.83
	4.80	25.98	0.48	0.95	12.57	26.22	65.3%	0.48	22.12	1.76
	4.85	24.90	0.45	0.90	11.30	25.14	62.6%	0.45	19.04	1.69
	4.90	23.83	0.42	0.85	10.08	24.06	59.9%	0.42	16.21	1.61
	4.95	22.55	0.40	0.80	8.92	22.78	56.7%	0.39	13.72	1.54
	5.00	21.28	0.37	0.75	7.82	21.50	53.5%	0.36	11.46	1.46
WL	5.05	20.00	0.34	0.70	6.79	20.21	50.3%	0.34	9.43	1.39
	5.10	18.66	0.31	0.65	5.82	18.86	46.9%	0.31	7.65	1.31
	5.15	16.32	0.30	0.60	4.92	16.50	41.1%	0.30	6.32	1.28
	5.20	15.82	0.26	0.55	4.12	15.99	39.8%	0.26	4.80	1.16
	5.25	14.13	0.24	0.50	3.37	14.28	35.6%	0.24	3.70	1.10
	5.30	13.77	0.19	0.45	2.67	13.90	34.6%	0.19	2.56	0.96
	5.35	12.07	0.17	0.40	2.03	12.19	30.3%	0.17	1.76	0.87
	5.40	11.53	0.12	0.35	1.44	11.64	29.0%	0.12	1.03	0.71
	5.45	9.25	0.10	0.30	0.89	9.34	23.3%	0.10	0.54	0.60
	5.50	5.33	0.09	0.25	0.50	5.39	13.4%	0.09	0.30	0.59
	5.55	2.67	0.11	0.20	0.29	2.70	6.7%	0.11	0.19	0.65
	5.60	2.25	0.08	0.15	0.17	2.27	5.7%	0.07	0.09	0.51
	5.65	1.50	0.05	0.10	0.08	1.51	3.8%	0.05	0.03	0.39
	5.70	0.75	0.03	0.05	0.02	0.76	1.9%	0.02	0.00	0.24
	5.75	0.00	#DIV/0!	0.00	0.00	0.00	0.0%	#DIV/0!	#DIV/0!	#DIV/0!

STREAM NAME: Trout Creek
XS LOCATION: 0.5 mile upstr fr confl w Little Trout Ck.
XS NUMBER: 1

SUMMARY SHEET

MEASURED FLOW (Qm)=	9.43	cfs
CALCULATED FLOW (Qc)=	9.43	cfs
(Qm-Qc)/Qm * 100 =	0.0	%
MEASURED WATERLINE (WLm)=	5.05	ft
CALCULATED WATERLINE (WLc)=	5.05	ft
(WLm-WLc)/WLm * 100 =	0.0	%
MAX MEASURED DEPTH (Dm)=	0.70	ft
MAX CALCULATED DEPTH (Dc)=	0.70	ft
(Dm-Dc)/Dm * 100	0.0	%
MEAN VELOCITY=	1.39	ft/sec
MANNING'S N=	0.059	
SLOPE=	0.013	ft/ft
.4 * Qm =	3.8	cfs
2.5 * Qm=	23.6	cfs

RECOMMENDED INSTREAM FLOW:
==========

FLOW (CFS)	PERIOD
==========	========
_____	_____
_____	_____
_____	_____
_____	_____

RATIONALE FOR RECOMMENDATION:
==========

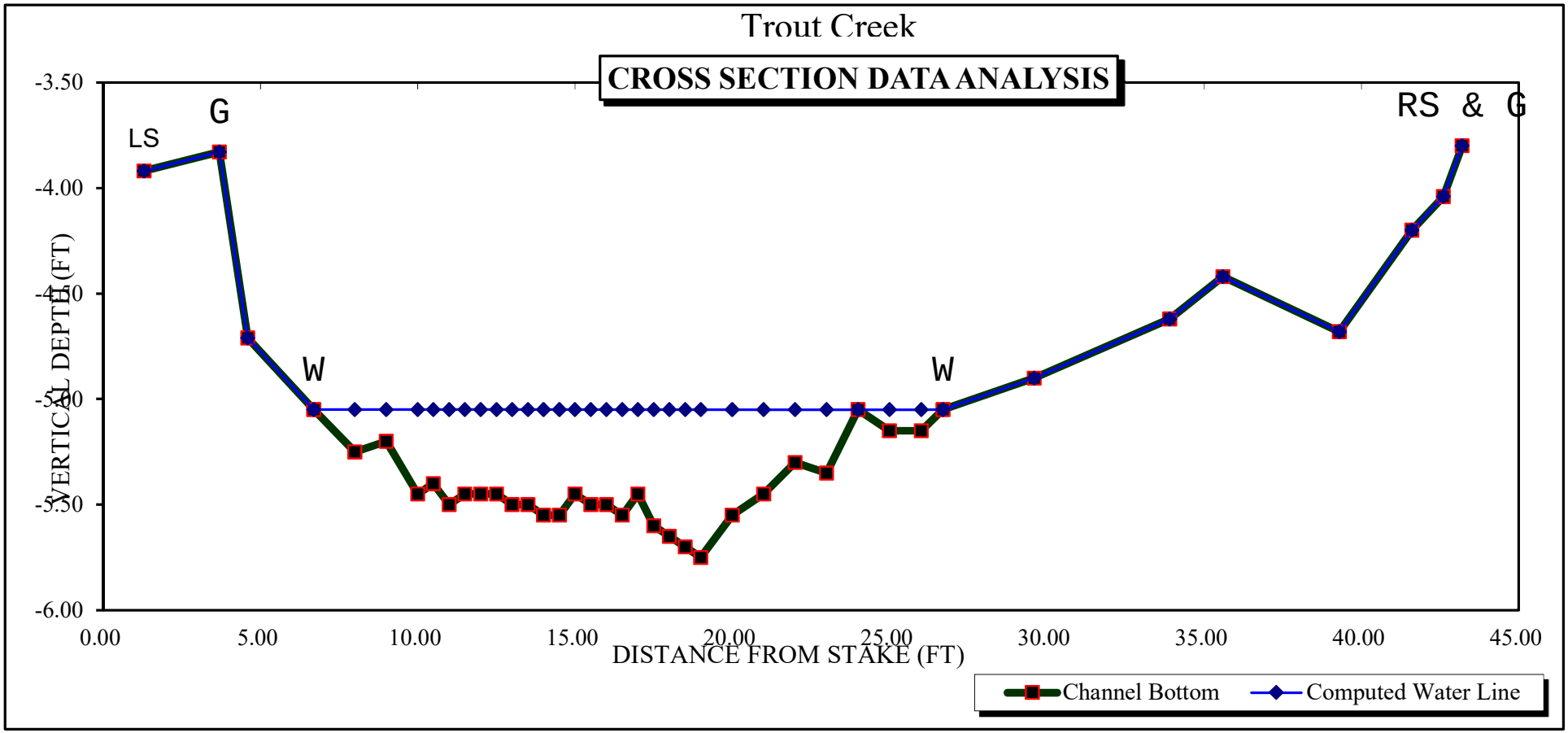
RECOMMENDATION BY: …… AGENCY…… DATE:……

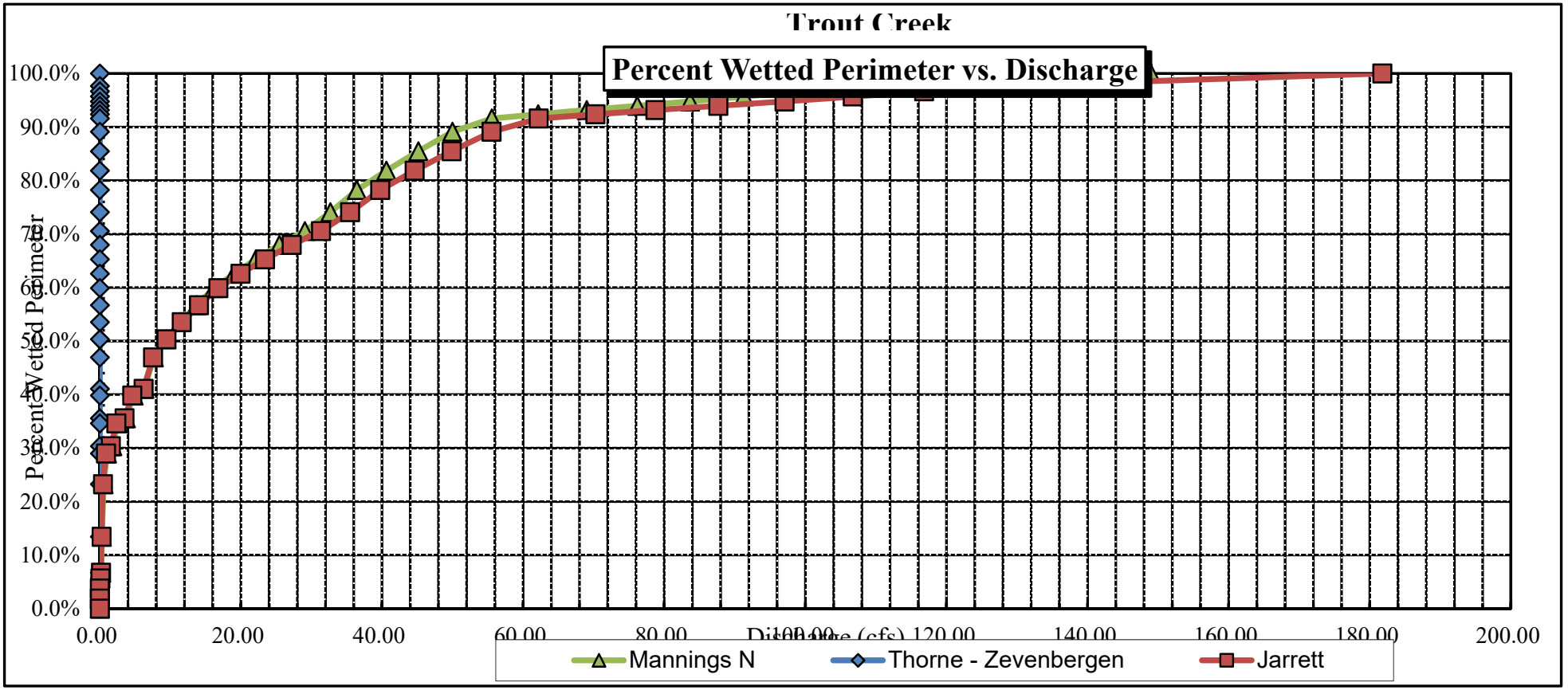
CWCB REVIEW BY: …… DATE:……

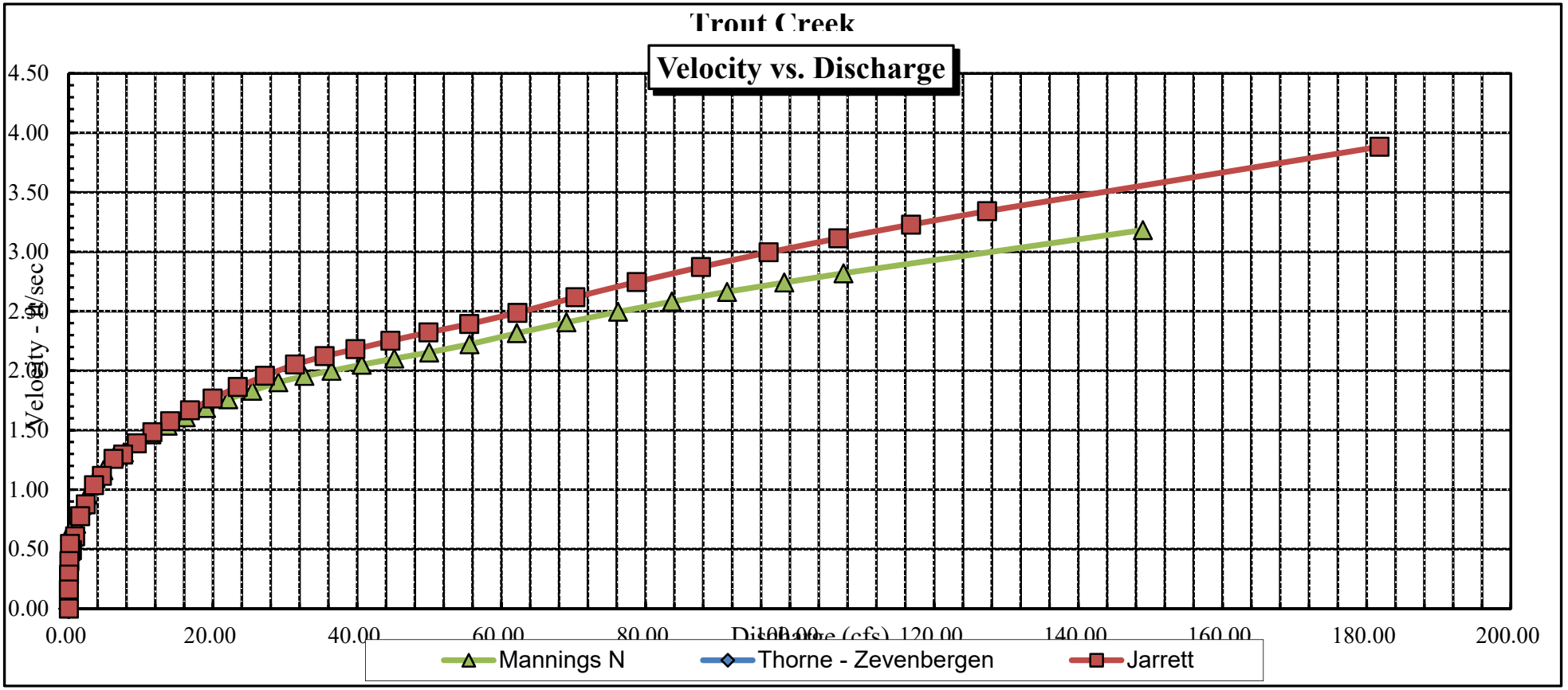
STREAM NAME: Trout Creek
XS LOCATION: 0.5 mile upstr fr confl w Little Trout Ck.
XS NUMBER: 1 Jarrett Variable Manning's n Correction Applied

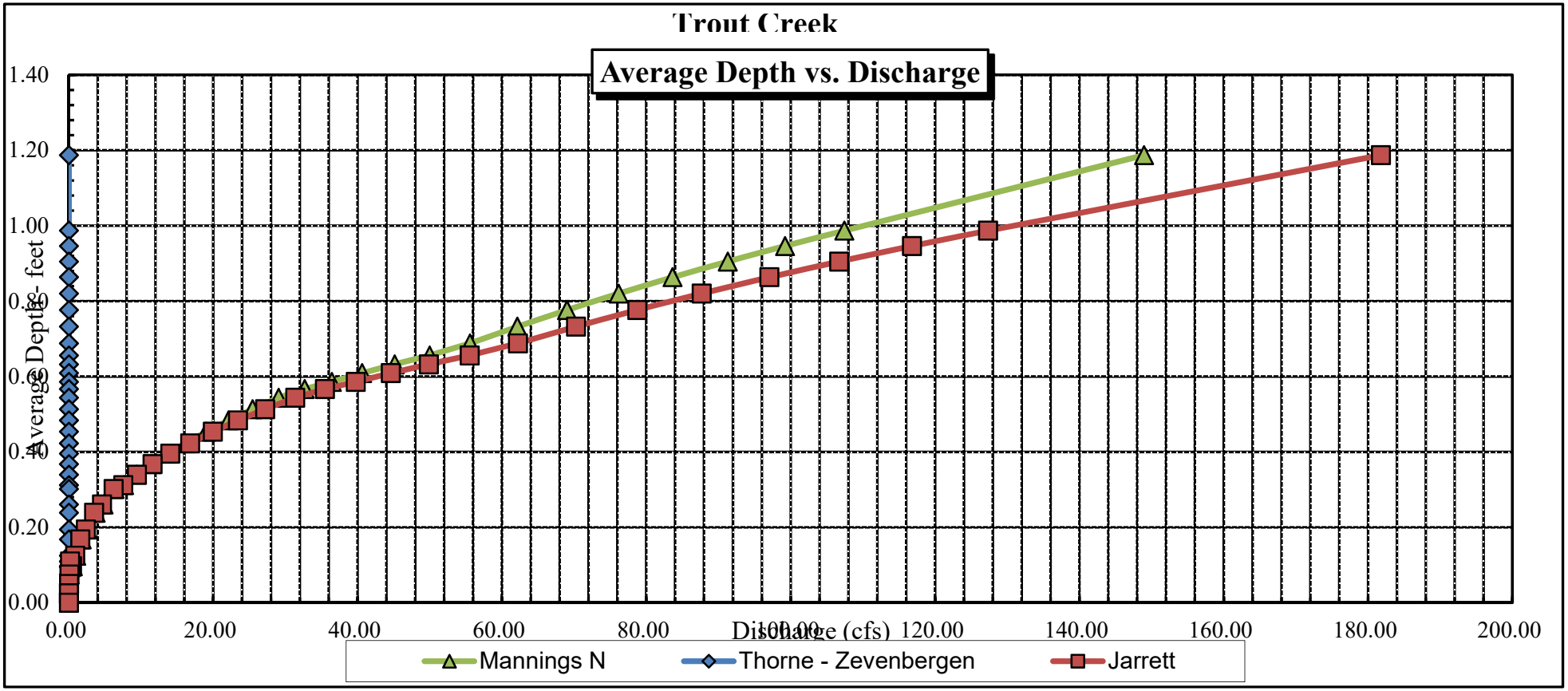
GL = lowest Grassline elevation corrected for sag
STAGING TABLE *WL* = Waterline corrected for variations in field measured water surface elevations and sag

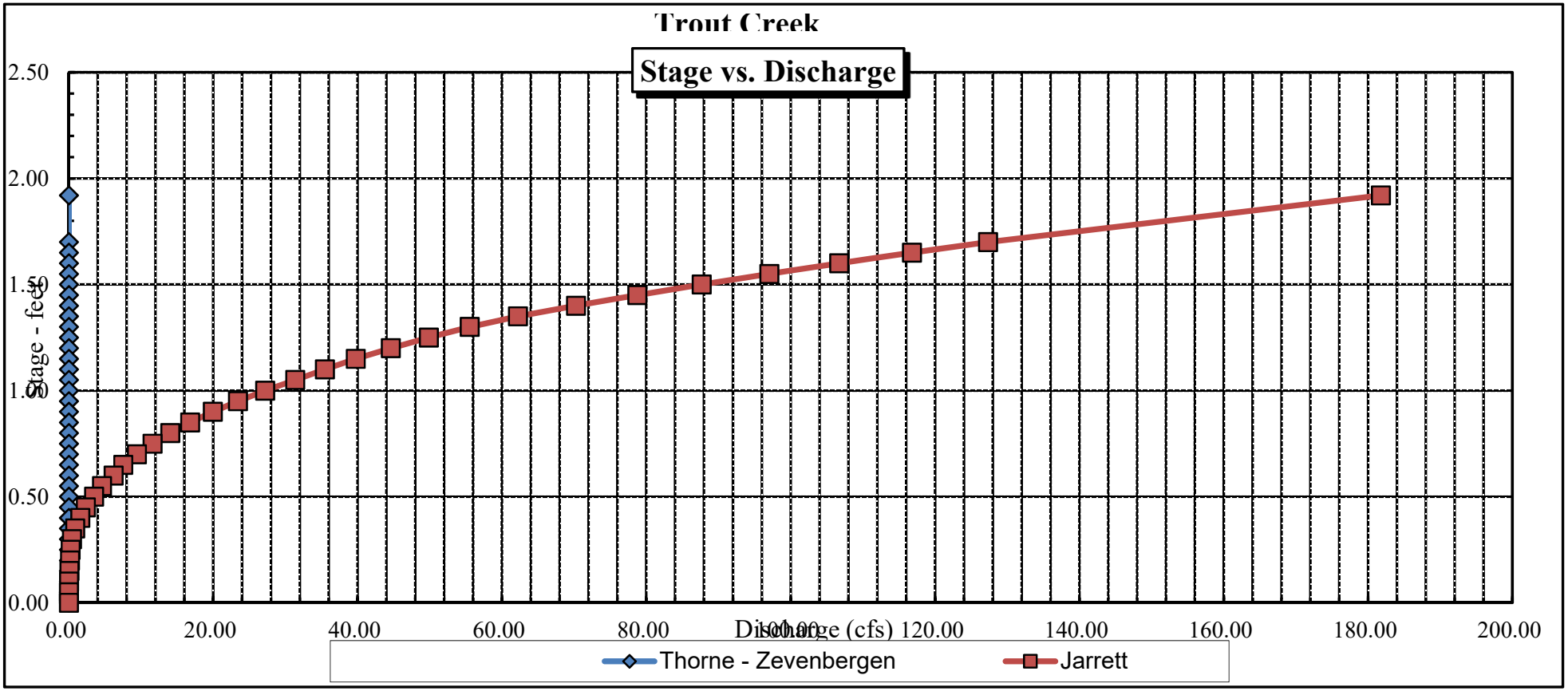
	DIST TO WATER (FT)	TOP WIDTH (FT)	AVG. DEPTH (FT)	MAX. DEPTH (FT)	AREA (SQ FT)	WETTED PERIM. (FT)	PERCENT WET PERIM (%)	HYDR RADIUS (FT)	FLOW (CFS)	AVG. VELOCITY (FT/SEC)
GL	3.83	39.42	1.19	1.92	46.80	40.16	100.0%	1.17	181.78	3.88
	4.05	38.61	0.99	1.70	38.11	39.22	97.7%	0.97	127.35	3.34
	4.10	38.25	0.95	1.65	36.19	38.83	96.7%	0.93	116.82	3.23
	4.15	37.89	0.90	1.60	34.28	38.44	95.7%	0.89	106.73	3.11
	4.20	37.52	0.86	1.55	32.40	38.05	94.8%	0.85	97.06	3.00
	4.25	37.23	0.82	1.50	30.53	37.74	94.0%	0.81	87.68	2.87
	4.30	36.94	0.78	1.45	28.67	37.42	93.2%	0.77	78.74	2.75
	4.35	36.65	0.73	1.40	26.83	37.11	92.4%	0.72	70.25	2.62
	4.40	36.36	0.69	1.35	25.01	36.79	91.6%	0.68	62.21	2.49
	4.45	35.39	0.66	1.30	23.21	35.79	89.1%	0.65	55.52	2.39
	4.50	33.96	0.63	1.25	21.48	34.33	85.5%	0.63	49.87	2.32
	4.55	32.53	0.61	1.20	19.81	32.87	81.9%	0.60	44.62	2.25
	4.60	31.10	0.59	1.15	18.22	31.42	78.2%	0.58	39.75	2.18
	4.65	29.47	0.57	1.10	16.71	29.75	74.1%	0.56	35.48	2.12
	4.70	28.08	0.54	1.05	15.27	28.34	70.6%	0.54	31.35	2.05
	4.75	27.06	0.51	1.00	13.89	27.30	68.0%	0.51	27.20	1.96
	4.80	25.98	0.48	0.95	12.57	26.22	65.3%	0.48	23.42	1.86
	4.85	24.90	0.45	0.90	11.30	25.14	62.6%	0.45	19.95	1.77
	4.90	23.83	0.42	0.85	10.08	24.06	59.9%	0.42	16.80	1.67
	4.95	22.55	0.40	0.80	8.92	22.78	56.7%	0.39	14.06	1.58
	5.00	21.28	0.37	0.75	7.82	21.50	53.5%	0.36	11.61	1.48
WL	5.05	20.00	0.34	0.70	6.79	20.21	50.3%	0.34	9.43	1.39
	5.10	18.66	0.31	0.65	5.82	18.86	46.9%	0.31	7.55	1.30
	5.15	16.32	0.30	0.60	4.92	16.50	41.1%	0.30	6.20	1.26
	5.20	15.82	0.26	0.55	4.12	15.99	39.8%	0.26	4.60	1.12
	5.25	14.13	0.24	0.50	3.37	14.28	35.6%	0.24	3.50	1.04
	5.30	13.77	0.19	0.45	2.67	13.90	34.6%	0.19	2.34	0.88
	5.35	12.07	0.17	0.40	2.03	12.19	30.3%	0.17	1.58	0.78
	5.40	11.53	0.12	0.35	1.44	11.64	29.0%	0.12	0.87	0.61
	5.45	9.25	0.10	0.30	0.89	9.34	23.3%	0.10	0.44	0.49
	5.50	5.33	0.09	0.25	0.50	5.39	13.4%	0.09	0.24	0.48
	5.55	2.67	0.11	0.20	0.29	2.70	6.7%	0.11	0.16	0.54
	5.60	2.25	0.08	0.15	0.17	2.27	5.7%	0.07	0.07	0.40
	5.65	1.50	0.05	0.10	0.08	1.51	3.8%	0.05	0.02	0.29
	5.70	0.75	0.03	0.05	0.02	0.76	1.9%	0.02	0.00	0.16
	5.75	0.00	#DIV/0!	0.00	0.00	0.00	0.0%	#DIV/0!	#DIV/0!	#DIV/0!


Trout Creek
CROSS SECTION DATA ANALYSIS
LS
G
W
W
RS & G
-3.50
-4.00
-4.50
-5.00
-5.50
-6.00
VERTICAL DEPTH (FT)
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
40.00
45.00
DISTANCE FROM STAKE (FT)
Channel Bottom
Computed Water Line


Trout Creek
Percent Wetted Perimeter vs. Discharge
Percent Wetted Perimeter
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
180.00
200.00
Discharge (cfs)
Mannings N
Thorne - Zevenbergen
Jarrett


Trout Creek
Velocity vs. Discharge
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
180.00
200.00
Mannings N
Thorne - Zevenbergen
Jarrett


Trout Creek
Average Depth vs. Discharge
Average Depth - feet
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
180.00
200.00
Discharge (cfs)
Mannings N
Thorne - Zevenbergen
Jarrett


Trout Creek
Stage vs. Discharge
2.50
2.00
1.50
1.00
0.50
0.00
Stage - feet
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
180.00
200.00
Discharge (cfs)
Thorne - Zevenbergen
Jarrett

Data Input & Proofing

STREAM NAME:	Trout Creek
XS LOCATION:	0.5 mile upstr fr confl w Little Trout Ck.
XS NUMBER:	1
DATE:	8/2/2017
OBSERVERS:	R. Smith, E. Scherff
1/4 SEC:	SW NW
SECTION:	23
TWP:	4N
RANGE:	86W
PM:	Sixth
COUNTY:	Routt
WATERSHED:	Yampa River
DIVISION:	6
DOW CODE:	23533
USGS MAP:	
USFS MAP:	
	Level and Rod Survey
TAPE WT:	0.0106 lbs / ft
TENSION:	99999 lbs
SLOPE:	0.013 ft / ft

CHECKED BY:.....DATE.....

ASSIGNED TO: .....DATE.....

GL=1	FEATURE	DIST	VERT DEPTH	WATER DEPTH	VEL	A	Q	Tape to Water
			Total Data Points = 40					
	LS	1.30	3.92			0.00	0.00	0.00
1	G	3.70	3.83			0.00	0.00	0.00
		4.60	4.71			0.00	0.00	0.00
	W	6.70	5.05	0.00	0.00	0.00	0.00	0.00
		8.00	5.25	0.20	0.45	0.23	0.10	5.05
		9.00	5.20	0.15	0.67	0.15	0.10	5.05
		10.00	5.45	0.40	1.22	0.30	0.37	5.05
		10.50	5.40	0.35	1.67	0.18	0.29	5.05
		11.00	5.50	0.45	1.65	0.23	0.37	5.05
		11.50	5.45	0.40	2.20	0.20	0.44	5.05
		12.00	5.45	0.40	1.98	0.20	0.40	5.05
		12.50	5.45	0.40	1.72	0.20	0.34	5.05
		13.00	5.50	0.45	1.95	0.23	0.44	5.05
		13.50	5.50	0.45	1.61	0.23	0.36	5.05
		14.00	5.55	0.50	1.24	0.25	0.31	5.05
		14.50	5.55	0.50	1.48	0.25	0.37	5.05
		15.00	5.45	0.40	1.40	0.20	0.28	5.05
		15.50	5.50	0.45	1.76	0.23	0.40	5.05
		16.00	5.50	0.45	1.61	0.23	0.36	5.05
		16.50	5.55	0.50	2.01	0.25	0.50	5.05
		17.00	5.45	0.40	2.34	0.20	0.47	5.05
		17.50	5.60	0.55	2.05	0.28	0.56	5.05
		18.00	5.65	0.60	1.63	0.30	0.49	5.05
		18.50	5.70	0.65	1.42	0.33	0.46	5.05
		19.00	5.75	0.70	1.84	0.53	0.97	5.05
		20.00	5.55	0.50	0.00	0.50	0.00	5.05
		21.00	5.45	0.40	0.49	0.40	0.20	5.05
		22.00	5.30	0.25	2.07	0.25	0.52	5.05
		23.00	5.35	0.30	1.01	0.30	0.30	5.05
		24.00	5.05	0.00	0.00	0.00	0.00	0.00
		25.00	5.15	0.10	0.28	0.10	0.03	5.05
		26.00	5.15	0.10	0.02	0.09	0.00	5.05
	W	26.70	5.05	0.00	0.00	0.00	0.00	0.00
		29.60	4.90			0.00	0.00	0.00
		33.90	4.62			0.00	0.00	0.00
		35.60	4.42			0.00	0.00	0.00
		39.30	4.68			0.00	0.00	0.00
		41.60	4.20			0.00	0.00	0.00
		42.60	4.04			0.00	0.00	0.00
1	RS & G	43.20	3.80			0.00	0.00	0.00
					Totals	6.79	9.43	

COLORADO WATER CONSERVATION BOARD

FIELD DATA FOR INSTREAM FLOW DETERMINATIONS

COLORADO DIVISION OF WILDLIFE

LOCATION INFORMATION

STREAM NAME: Trout Creek | CROSS-SECTION NO.: 2

CROSS-SECTION LOCATION: 0.5 mile upstream from confluence with Little Trout Creek

DATE: 8/2/17 | OBSERVERS: Ray Smith, Eric Scherff

LEGAL DESCRIPTION | ¼ SECTION: SW NW | SECTION: 23 | TOWNSHIP: 4 N/S | RANGE: 86 E/W | PM: 6th

COUNTY: Routt | WATERSHED: Yampa R. | WATER DIVISION: 6 | DOW WATER CODE: 33533

MAP(S): USGS: Zone B 4463647 N

USFS: 328647 E

SUPPLEMENTAL DATA

SAG TAPE SECTION SAME AS DISCHARGE SECTION: (YES) / NO | METER TYPE: M-M

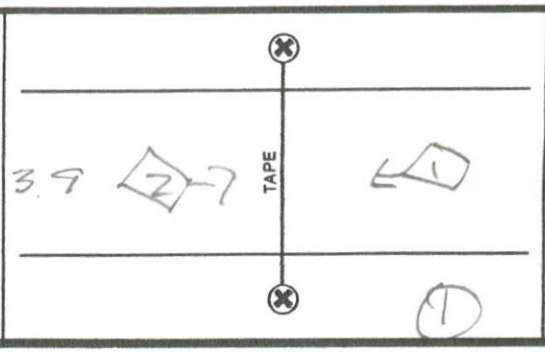
METER NUMBER: | DATE RATED: | CALIB/SPIN: _____ sec | TAPE WEIGHT: surveyed _____ lbs/foot | TAPE TENSION: surveyed _____ lbs

CHANNEL BED MATERIAL SIZE RANGE: 4" cobble to 18" boulders | PHOTOGRAPHS TAKEN: (YES)/NO | NUMBER OF PHOTOGRAPHS: 3

CHANNEL PROFILE DATA

STATION	DISTANCE FROM TAPE (ft)	ROD READING (ft)
(X) Tape @ Stake LB	0.0	surveyed
(X) Tape @ Stake RB	0.0	surveyed
(1) WS @ Tape LB/RB	0.0 78.9	4.10 / 4.10
(2) WS Upstream	39.0	3.55
(3) WS Downstream	88.8	5.22
SLOPE	1.67 / 127.8 = 0.013	

SKETCH



LEGEND: Stake (X) | Station (1) | Photo (1) | Direction of Flow

AQUATIC SAMPLING SUMMARY

STREAM ELECTROFISHED: YES/(NO) | DISTANCE ELECTROFISHED: _____ ft | FISH CAUGHT: YES/NO | WATER CHEMISTRY SAMPLED: (YES)/NO

LENGTH - FREQUENCY DISTRIBUTION BY ONE-INCH SIZE GROUPS (1.0-1.9, 2.0-2.9, ETC.)

SPECIES (FILL IN)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	>15	TOTAL

AQUATIC INSECTS IN STREAM SECTION BY COMMON OR SCIENTIFIC ORDER NAME:

mayfly, caddisfly, stonefly

COMMENTS

DISCHARGE/CROSS SECTION NOTES

STREAM NAME: Trout Creek	CROSS-SECTION NO.: 2	DATE: 8-2-17	SHEET 1 OF 2
BEGINNING OF MEASUREMENT	EDGE OF WATER LOOKING DOWNSTREAM: (0.0 AT STAKE) LEFT / RIGHT	Gage Reading: _____ ft	TIME: 2:40 PM

Stake (S) Grassline (G) Waterline (W) Rock (R)	Distance From Initial Point (ft)	Width (ft)	Total Vertical Depth From Tape/Inst (ft)	Water Depth (ft)	Depth of Observation (ft)	Revolutions	Time (sec)	Velocity (ft/sec) At Point	Velocity (ft/sec) Mean in Vertical	Area (ft^2)	Discharge (cfs)
RS	1.2		1.38								
	1.6		1.95								
G	1.8		2.38								
	2.4		4.04								
RW	3.9		4.10								
	5.0		4.4	0.30				0.09			
	6.0		4.6	0.50				0.70			
	7.0		4.4	0.30				1.02			
	8.0		4.5	0.40				1.59			
	9.0		4.3	0.20				0.23			
	9.5		4.65	0.55				1.41			
	10.0		4.5	0.40				1.85			
	10.5		4.5	0.40				1.09			
	11.0		4.6	0.50				0.88			
	11.5		4.45	0.35				1.39			
	12.0		4.35	0.25				1.56			
	12.5		4.35	0.25				1.94			
	13.0		4.55	0.45				1.07			
	13.5		4.5	0.40				0.94			
	14.0		4.45	0.35				1.13			
	14.5		4.15	0.05				0.60			
	15.0		4.4	0.30				0.67			
	15.5		4.55	0.45				1.09			
	16.0		4.15	0.05				0.76			
	16.5		4.35	0.25				0.23			
	17.0		4.3	0.20				0.49			
	18.0		4.4	0.30				1.55			
	19.0		4.6	0.50				1.66	23		
	19.5		4.65	0.55				1.56			
	20.0		4.6	0.50				1.44			
	20.5		4.5	0.40				1.99			
	21.0		4.50	0.40				1.26			
	22.0		4.35	0.25				1.67			
	23.0		4.35	0.25				1.63			
	24.0		4.35	0.25				0.71			
			see continuation sheet								
LW	28.9		4.10								
	30.3		4.01								
	31.8		3.42								
	33.0		2.84								
	35.0		2.52								
LS/G	37.0		2.46								
TOTALS:											

End of Measurement	Time:	Gage Reading: _____ ft	CALCULATIONS PERFORMED BY:	CALCULATIONS CHECKED BY:

continued next page →

COLORADO WATER CONSERVATION BOARD

FIELD DATA FOR INSTREAM FLOW DETERMINATIONS

COLORADO DIVISION OF WILDLIFE

LOCATION INFORMATION

STREAM NAME: Little Trout Creek - continuation sheet					CROSS-SECTION NO: 2
CROSS-SECTION LOCATION:					
DATE: 8-2-17	OBSERVERS: R. Smith, E. Scherff				
LEGAL DESCRIPTION	¼ SECTION:	SECTION:	TOWNSHIP: N/S	RANGE: E/W	PM:
COUNTY:	WATERSHED:	WATER DIVISION:	DOW WATER CODE:		
MAP(S): USGS:					
USFS:					

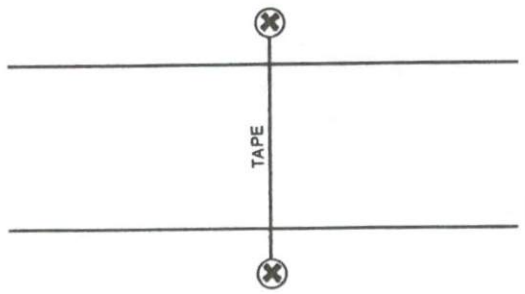
SUPPLEMENTAL DATA

SAG TAPE SECTION SAME AS DISCHARGE SECTION: YES / NO	METER TYPE:			
METER NUMBER:	DATE RATED:	CALIB/SPIN: _____ sec	TAPE WEIGHT: _____ lbs/foot	TAPE TENSION: _____ lbs
CHANNEL BED MATERIAL SIZE RANGE:	PHOTOGRAPHS TAKEN: YES/NO	NUMBER OF PHOTOGRAPHS:		

CHANNEL PROFILE DATA

STATION	DISTANCE FROM TAPE (ft)	ROD READING (ft)
⊗ Tape @ Stake LB	0.0	
⊗ Tape @ Stake RB	0.0	
① WS @ Tape LB/RB	0.0	
② WS Upstream		
③ WS Downstream		
SLOPE		

SKETCH



LEGEND:

Stake ⊗

Station ①

Photo ①→

Direction of Flow ← →

AQUATIC SAMPLING SUMMARY

STREAM ELECTROFISHED: YES/NO	DISTANCE ELECTROFISHED: _____ft	FISH CAUGHT: YES/NO	WATER CHEMISTRY SAMPLED: YES/NO

LENGTH - FREQUENCY DISTRIBUTION BY ONE-INCH SIZE GROUPS (1.0-1.9, 2.0-2.9, ETC.)

SPECIES (FILL IN)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	>15	TOTAL

AQUATIC INSECTS IN STREAM SECTION BY COMMON OR SCIENTIFIC ORDER NAME:

COMMENTS

DISCHARGE/CROSS SECTION NOTES

STREAM NAME: Trout Creek | CROSS-SECTION NO.: 2 | DATE: 8/2 | SHEET 2 OF 2

BEGINNING OF MEASUREMENT | EDGE OF WATER LOOKING DOWNSTREAM: (0.0 AT STAKE) LEFT / RIGHT | Gage Reading: ____ ft | TIME: continued from previous sheet

Features: Stake (S) Grassline (G) Waterline (W) Rock (R)	Distance From Initial Point (ft)	Width (ft)	Total Vertical Depth From Tape/Inst (ft)	Water Depth (ft)	Depth of Observation (ft)	Revolutions	Time (sec)	Velocity (ft/sec) At Point	Velocity (ft/sec) Mean in Vertical	Area (ft²)	Discharge (cfs)
	25.0		4.3	0.20				1.15			
	26.0		4.2	0.10				0.76			
	27.0		4.3	0.20				0.92			
	28.0		4.25	0.15				0.69			
TOTALS:											

End of Measurement | Time: 3:10 PM | Gage Reading: ____ ft | CALCULATIONS PERFORMED BY: | CALCULATIONS CHECKED BY:

COLORADO WATER CONSERVATION BOARD
INSTREAM FLOW / NATURAL LAKE LEVEL PROGRAM
STREAM CROSS-SECTION AND FLOW ANALYSIS

LOCATION INFORMATION

STREAM NAME:	Trout Creek
XS LOCATION:	0.5 mile upst fr conf w Little Trout Ck.
XS NUMBER:	2
DATE:	2-Aug-17
OBSERVERS:	R. Smith, E. Scherff
1/4 SEC:	SW NW
SECTION:	23
TWP:	4N
RANGE:	86W
PM:	Sixth
COUNTY:	Routt
WATERSHED:	Yampa River
DIVISION:	6
DOW CODE:	23533
USGS MAP:	0
USFS MAP:	0

SUPPLEMENTAL DATA

TAPE WT:	0.0106
TENSION:	99999

*** NOTE ***
Leave TAPE WT and TENSION at defaults for data collected with a survey level and rod

CHANNEL PROFILE DATA

SLOPE:	0.013

INPUT DATA CHECKED BY: .....DATE.....

ASSIGNED TO: ….....……..…….....DATE.....

STREAM NAME: Trout Creek
XS LOCATION: 0.5 mile upst fr conf w Little Trout Ck.
XS NUMBER: 2

DATA POINTS= 45

VALUES COMPUTED FROM RAW FIELD DATA

FEATURE	DIST	VERT DEPTH	WATER DEPTH	VEL	WETTED PERIM.	WATER DEPTH	AREA (Am)	Q (Qm)	% Q CELL
RS	1.20	1.38			0.00		0.00	0.00	0.0%
	1.60	1.95			0.00		0.00	0.00	0.0%
1 G	1.80	2.38			0.00		0.00	0.00	0.0%
	2.40	4.04			0.00		0.00	0.00	0.0%
RW	3.90	4.10	0.00	0.00	0.00		0.00	0.00	0.0%
	5.00	4.40	0.30	0.09	1.14	0.30	0.32	0.03	0.3%
	6.00	4.60	0.50	0.70	1.02	0.50	0.50	0.35	4.1%
	7.00	4.40	0.30	1.02	1.02	0.30	0.30	0.31	3.6%
	8.00	4.50	0.40	1.59	1.00	0.40	0.40	0.64	7.4%
	9.00	4.30	0.20	0.23	1.02	0.20	0.15	0.03	0.4%
	9.50	4.65	0.55	1.41	0.61	0.55	0.28	0.39	4.5%
	10.00	4.50	0.40	1.85	0.52	0.40	0.20	0.37	4.3%
	10.50	4.50	0.40	1.09	0.50	0.40	0.20	0.22	2.5%
	11.00	4.60	0.50	0.88	0.51	0.50	0.25	0.22	2.6%
	11.50	4.45	0.35	1.39	0.52	0.35	0.18	0.24	2.8%
	12.00	4.35	0.25	1.56	0.51	0.25	0.13	0.20	2.3%
	12.50	4.35	0.25	1.94	0.50	0.25	0.13	0.24	2.8%
	13.00	4.55	0.45	1.07	0.54	0.45	0.23	0.24	2.8%
	13.50	4.50	0.40	0.94	0.50	0.40	0.20	0.19	2.2%
	14.00	4.45	0.35	1.13	0.50	0.35	0.18	0.20	2.3%
	14.50	4.15	0.05	0.60	0.58	0.05	0.03	0.02	0.2%
	15.00	4.40	0.30	0.67	0.56	0.30	0.15	0.10	1.2%
	15.50	4.55	0.45	1.09	0.52	0.45	0.23	0.25	2.9%
	16.00	4.15	0.05	0.76	0.64	0.05	0.03	0.02	0.2%
	16.50	4.35	0.25	0.23	0.54	0.25	0.13	0.03	0.3%
	17.00	4.30	0.20	0.49	0.50	0.20	0.15	0.07	0.9%
	18.00	4.40	0.30	1.55	1.00	0.30	0.30	0.47	5.4%
	19.00	4.60	0.50	1.66	1.02	0.50	0.38	0.62	7.3%
	19.50	4.65	0.55	1.56	0.50	0.55	0.28	0.43	5.0%
	20.00	4.60	0.50	1.44	0.50	0.50	0.25	0.36	4.2%
	20.50	4.50	0.40	1.99	0.51	0.40	0.20	0.40	4.6%
	21.00	4.50	0.40	1.26	0.50	0.40	0.30	0.38	4.4%
	22.00	4.35	0.25	1.67	1.01	0.25	0.25	0.42	4.9%
	23.00	4.35	0.25	1.63	1.00	0.25	0.25	0.41	4.7%
	24.00	4.35	0.25	0.71	1.00	0.25	0.25	0.18	2.1%
	25.00	4.30	0.20	1.15	1.00	0.20	0.20	0.23	2.7%
	26.00	4.20	0.10	0.76	1.00	0.10	0.10	0.08	0.9%
	27.00	4.30	0.20	0.92	1.00	0.20	0.20	0.18	2.1%
	28.00	4.25	0.15	0.69	1.00	0.15	0.14	0.10	1.1%
LW	28.90	4.10	0.00	0.00	0.91		0.00	0.00	0.0%
	30.30	4.01			0.00		0.00	0.00	0.0%
	31.80	3.42			0.00		0.00	0.00	0.0%
	33.00	2.84			0.00		0.00	0.00	0.0%
	35.00	2.52			0.00		0.00	0.00	0.0%
1 LS & G	37.00	2.46			0.00		0.00	0.00	0.0%
TOTALS ----------					25.74	0.55 (Max.)	7.41	8.58	100.0%

Manning's n = 0.0637
Hydraulic Radius= 0.28774312

STREAM NAME: Trout Creek
XS LOCATION: 0.5 mile upst fr conf w Little Trout Ck.
XS NUMBER: 2

WATER LINE COMPARISON TABLE

WATER LINE	MEAS AREA	COMP AREA	AREA ERROR
	7.41	7.41	0.0%
3.85	7.41	14.31	93.2%
3.87	7.41	13.75	85.6%
3.89	7.41	13.18	77.9%
3.91	7.41	12.62	70.3%
3.93	7.41	12.05	62.7%
3.95	7.41	11.49	55.1%
3.97	7.41	10.93	47.5%
3.99	7.41	10.37	40.0%
4.01	7.41	9.81	32.4%
4.03	7.41	9.26	25.0%
4.05	7.41	8.71	17.6%
4.06	7.41	8.44	13.9%
4.07	7.41	8.18	10.4%
4.08	7.41	7.92	6.9%
4.09	7.41	7.66	3.4%
4.10	7.41	7.41	0.0%
4.11	7.41	7.16	-3.4%
4.12	7.41	6.91	-6.7%
4.13	7.41	6.66	-10.1%
4.14	7.41	6.42	-13.4%
4.15	7.41	6.17	-16.7%
4.17	7.41	5.68	-23.3%
4.19	7.41	5.20	-29.8%
4.21	7.41	4.73	-36.1%
4.23	7.41	4.27	-42.3%
4.25	7.41	3.83	-48.3%
4.27	7.41	3.40	-54.1%
4.29	7.41	3.00	-59.5%
4.31	7.41	2.61	-64.7%
4.33	7.41	2.25	-69.6%
4.35	7.41	1.91	-74.2%

WATERLINE AT ZERO
AREA ERROR = 4.100

STREAM NAME: Trout Creek
XS LOCATION: 0.5 mile upst fr conf w Little Trout Ck.
XS NUMBER: 2

Constant Manning's n

GL = lowest Grassline elevation corrected for sag
STAGING TABLE *WL* = Waterline corrected for variations in field measured water surface elevations and sag

	DIST TO WATER (FT)	TOP WIDTH (FT)	AVG. DEPTH (FT)	MAX. DEPTH (FT)	AREA (SQ FT)	WETTED PERIM. (FT)	PERCENT WET PERIM (%)	HYDR RADIUS (FT)	FLOW (CFS)	AVG. VELOCITY (FT/SEC)
GL	2.46	35.17	1.61	2.19	56.69	37.30	100.0%	1.52	199.26	3.51
	3.10	30.40	1.20	1.55	36.39	31.99	85.8%	1.14	105.41	2.90
	3.15	30.28	1.15	1.50	34.87	31.83	85.3%	1.10	98.53	2.83
	3.20	30.16	1.11	1.45	33.36	31.66	84.9%	1.05	91.84	2.75
	3.25	30.04	1.06	1.40	31.85	31.49	84.4%	1.01	85.34	2.68
	3.30	29.92	1.01	1.35	30.36	31.32	84.0%	0.97	79.04	2.60
	3.35	29.79	0.97	1.30	28.86	31.15	83.5%	0.93	72.93	2.53
	3.40	29.67	0.92	1.25	27.38	30.99	83.1%	0.88	67.02	2.45
	3.45	29.54	0.88	1.20	25.90	30.80	82.6%	0.84	61.32	2.37
	3.50	29.39	0.83	1.15	24.42	30.62	82.1%	0.80	55.85	2.29
	3.55	29.25	0.78	1.10	22.96	30.43	81.6%	0.75	50.58	2.20
	3.60	29.10	0.74	1.05	21.50	30.24	81.1%	0.71	45.53	2.12
	3.65	28.96	0.69	1.00	20.05	30.05	80.6%	0.67	40.69	2.03
	3.70	28.81	0.65	0.95	18.60	29.86	80.0%	0.62	36.08	1.94
	3.75	28.67	0.60	0.90	17.17	29.67	79.5%	0.58	31.69	1.85
	3.80	28.52	0.55	0.85	15.74	29.48	79.0%	0.53	27.53	1.75
	3.85	28.38	0.50	0.80	14.31	29.29	78.5%	0.49	23.61	1.65
	3.90	28.23	0.46	0.75	12.90	29.10	78.0%	0.44	19.94	1.55
	3.95	28.09	0.41	0.70	11.49	28.91	77.5%	0.40	16.51	1.44
	4.00	27.94	0.36	0.65	10.09	28.72	77.0%	0.35	13.36	1.32
	4.05	27.03	0.32	0.60	8.71	27.77	74.5%	0.31	10.68	1.23
WL	4.10	25.00	0.30	0.55	7.41	25.74	69.0%	0.29	8.58	1.16
	4.15	24.52	0.25	0.50	6.17	25.25	67.7%	0.24	6.41	1.04
	4.20	23.66	0.21	0.45	4.97	24.33	65.2%	0.20	4.58	0.92
	4.25	21.81	0.18	0.40	3.83	22.41	60.1%	0.17	3.13	0.82
	4.30	19.25	0.15	0.35	2.80	19.79	53.1%	0.14	2.02	0.72
	4.35	13.88	0.14	0.30	1.91	14.33	38.4%	0.13	1.33	0.69
	4.40	11.92	0.11	0.25	1.27	12.28	32.9%	0.10	0.74	0.58
	4.45	9.33	0.08	0.20	0.73	9.59	25.7%	0.08	0.35	0.48
	4.50	5.40	0.06	0.15	0.34	5.58	15.0%	0.06	0.14	0.41
	4.55	2.89	0.05	0.10	0.13	2.98	8.0%	0.05	0.05	0.34
	4.60	1.24	0.03	0.05	0.03	1.27	3.4%	0.02	0.01	0.22
	4.65	0.00	#DIV/0!	0.00	0.00	0.00	0.0%	#DIV/0!	#DIV/0!	#DIV/0!

STREAM NAME: Trout Creek
XS LOCATION: 0.5 mile upst fr conf w Little Trout Ck.
XS NUMBER: 2

SUMMARY SHEET

MEASURED FLOW (Qm)=	8.58	cfs
CALCULATED FLOW (Qc)=	8.58	cfs
(Qm-Qc)/Qm * 100 =	0.0	%
MEASURED WATERLINE (WLm)=	4.10	ft
CALCULATED WATERLINE (WLc)=	4.10	ft
(WLm-WLc)/WLm * 100 =	0.0	%
MAX MEASURED DEPTH (Dm)=	0.55	ft
MAX CALCULATED DEPTH (Dc)=	0.55	ft
(Dm-Dc)/Dm * 100	0.0	%
MEAN VELOCITY=	1.16	ft/sec
MANNING'S N=	0.064	
SLOPE=	0.013	ft/ft
.4 * Qm =	3.4	cfs
2.5 * Qm=	21.5	cfs

RECOMMENDED INSTREAM FLOW:
==========

FLOW (CFS)	PERIOD
==========	========
_____	_____
_____	_____
_____	_____
_____	_____

RATIONALE FOR RECOMMENDATION:
==========

_____
_____
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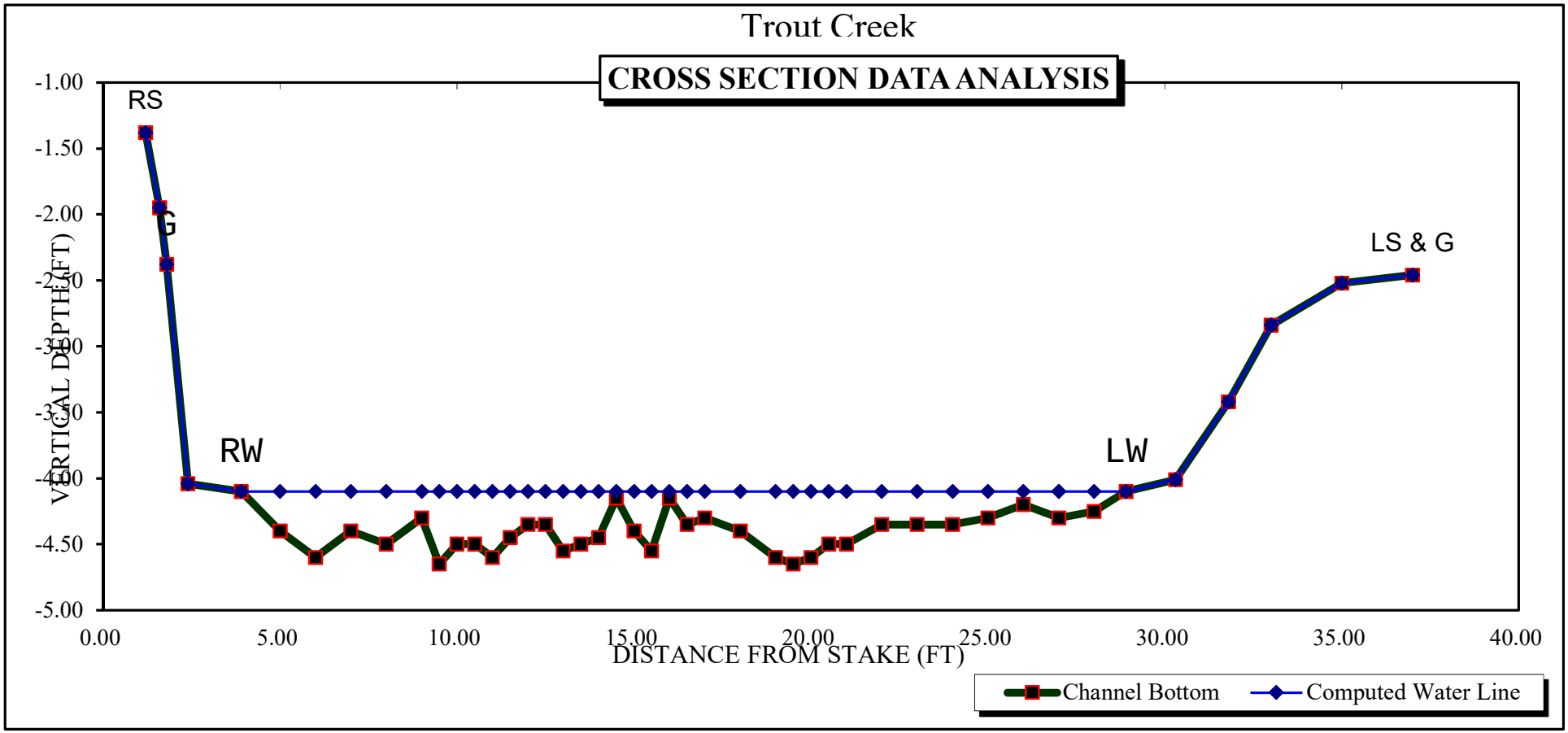
RECOMMENDATION BY: ..... AGENCY..... DATE:.....

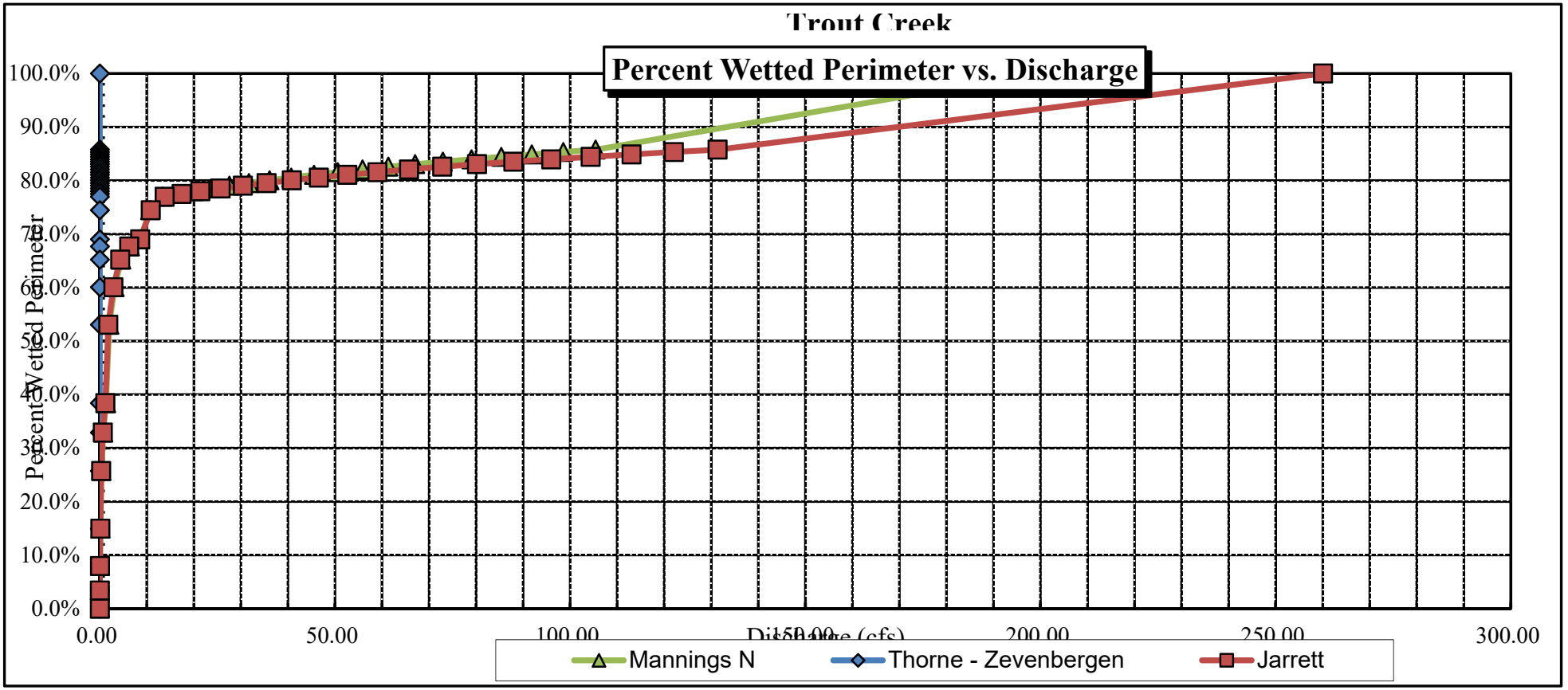
CWCB REVIEW BY: ..... DATE:.....

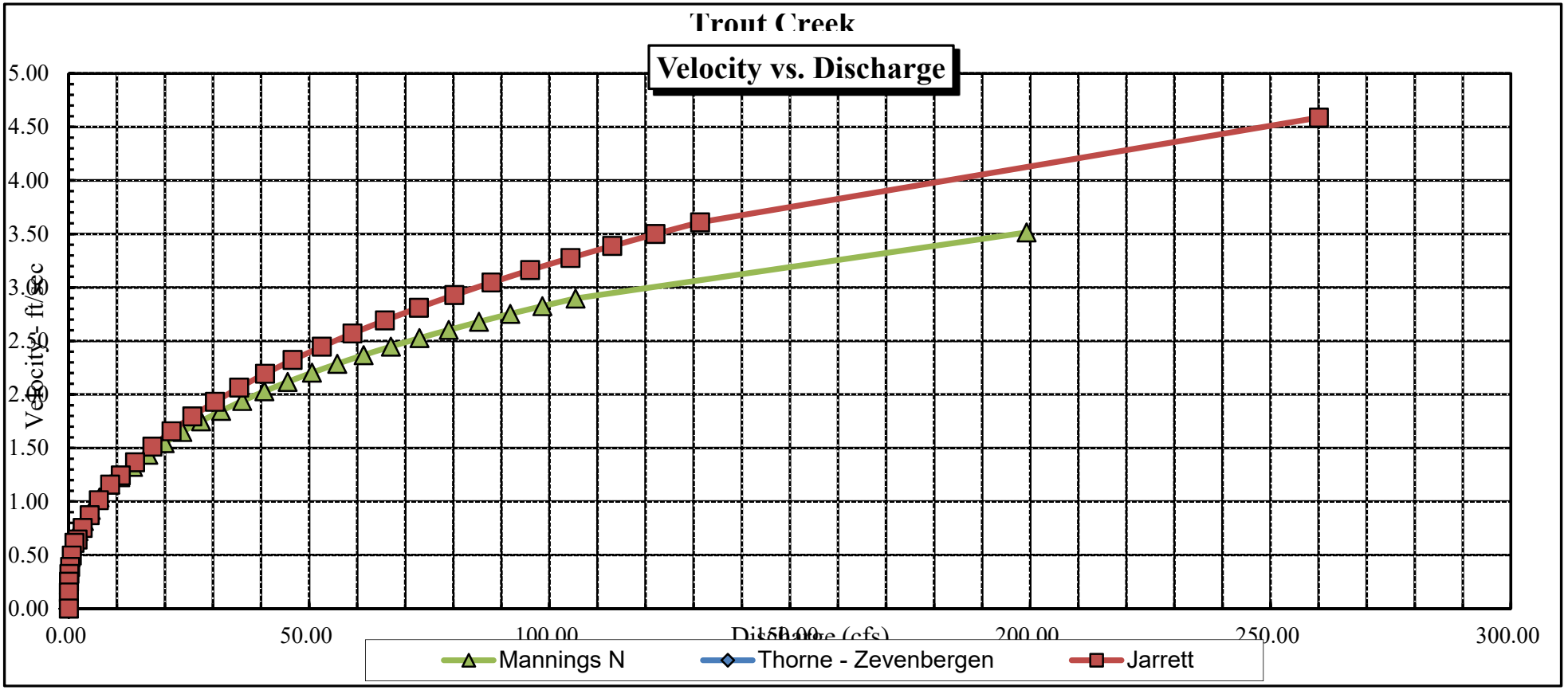
STREAM NAME: Trout Creek
XS LOCATION: 0.5 mile upst fr conf w Little Trout Ck.
XS NUMBER: 2 Jarrett Variable Manning's n Correction Applied

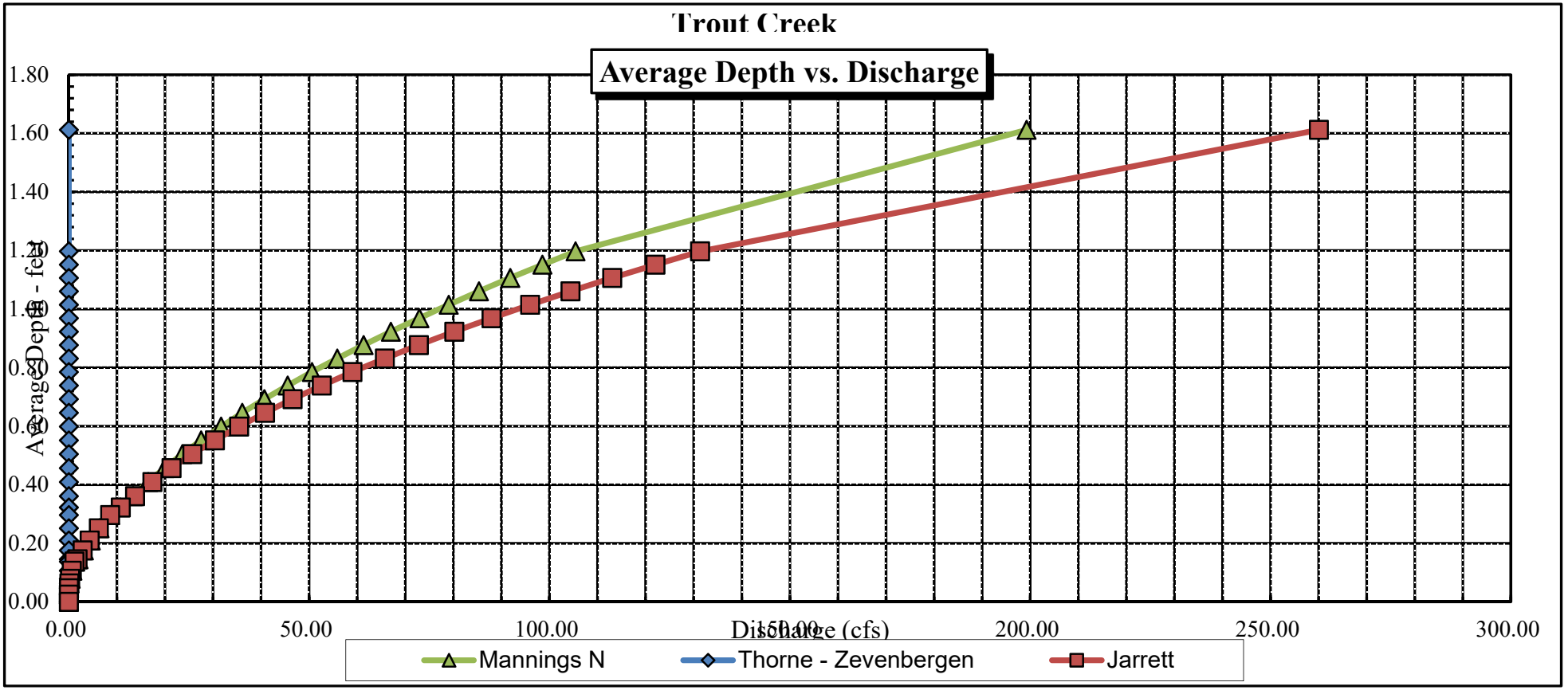
GL = lowest Grassline elevation corrected for sag
STAGING TABLE *WL* = Waterline corrected for variations in field measured water surface elevations and sag

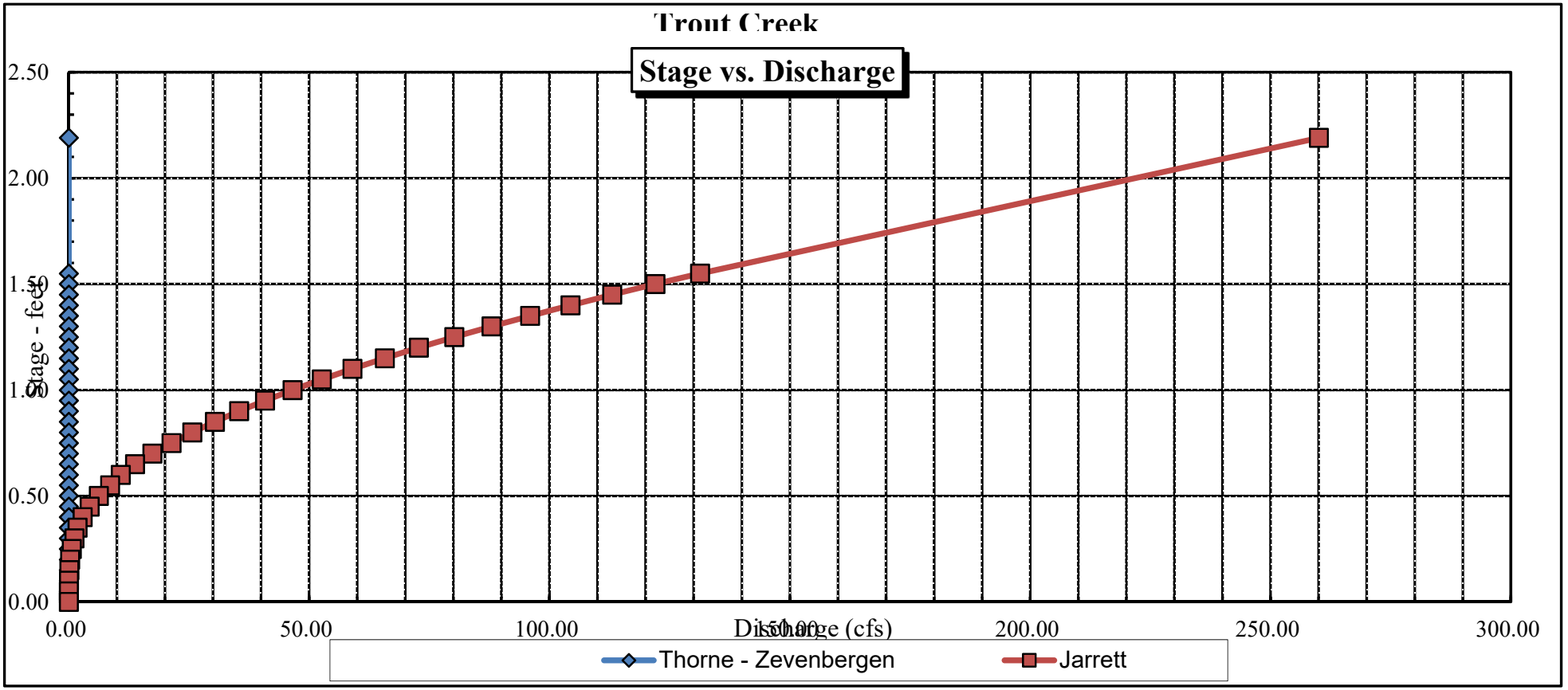
	DIST TO WATER (FT)	TOP WIDTH (FT)	AVG. DEPTH (FT)	MAX. DEPTH (FT)	AREA (SQ FT)	WETTED PERIM. (FT)	PERCENT WET PERIM (%)	HYDR RADIUS (FT)	FLOW (CFS)	AVG. VELOCITY (FT/SEC)
GL	2.46	35.17	1.61	2.19	56.69	37.30	100.0%	1.52	260.06	4.59
	3.10	30.40	1.20	1.55	36.39	31.99	85.8%	1.14	131.33	3.61
	3.15	30.28	1.15	1.50	34.87	31.83	85.3%	1.10	122.03	3.50
	3.20	30.16	1.11	1.45	33.36	31.66	84.9%	1.05	113.04	3.39
	3.25	30.04	1.06	1.40	31.85	31.49	84.4%	1.01	104.36	3.28
	3.30	29.92	1.01	1.35	30.36	31.32	84.0%	0.97	95.99	3.16
	3.35	29.79	0.97	1.30	28.86	31.15	83.5%	0.93	87.93	3.05
	3.40	29.67	0.92	1.25	27.38	30.99	83.1%	0.88	80.19	2.93
	3.45	29.54	0.88	1.20	25.90	30.80	82.6%	0.84	72.80	2.81
	3.50	29.39	0.83	1.15	24.42	30.62	82.1%	0.80	65.75	2.69
	3.55	29.25	0.78	1.10	22.96	30.43	81.6%	0.75	59.02	2.57
	3.60	29.10	0.74	1.05	21.50	30.24	81.1%	0.71	52.62	2.45
	3.65	28.96	0.69	1.00	20.05	30.05	80.6%	0.67	46.56	2.32
	3.70	28.81	0.65	0.95	18.60	29.86	80.0%	0.62	40.83	2.19
	3.75	28.67	0.60	0.90	17.17	29.67	79.5%	0.58	35.44	2.06
	3.80	28.52	0.55	0.85	15.74	29.48	79.0%	0.53	30.39	1.93
	3.85	28.38	0.50	0.80	14.31	29.29	78.5%	0.49	25.70	1.80
	3.90	28.23	0.46	0.75	12.90	29.10	78.0%	0.44	21.36	1.66
	3.95	28.09	0.41	0.70	11.49	28.91	77.5%	0.40	17.39	1.51
	4.00	27.94	0.36	0.65	10.09	28.72	77.0%	0.35	13.79	1.37
	4.05	27.03	0.32	0.60	8.71	27.77	74.5%	0.31	10.83	1.24
WL	4.10	25.00	0.30	0.55	7.41	25.74	69.0%	0.29	8.58	1.16
	4.15	24.52	0.25	0.50	6.17	25.25	67.7%	0.24	6.25	1.01
	4.20	23.66	0.21	0.45	4.97	24.33	65.2%	0.20	4.33	0.87
	4.25	21.81	0.18	0.40	3.83	22.41	60.1%	0.17	2.88	0.75
	4.30	19.25	0.15	0.35	2.80	19.79	53.1%	0.14	1.81	0.64
	4.35	13.88	0.14	0.30	1.91	14.33	38.4%	0.13	1.17	0.61
	4.40	11.92	0.11	0.25	1.27	12.28	32.9%	0.10	0.63	0.50
	4.45	9.33	0.08	0.20	0.73	9.59	25.7%	0.08	0.29	0.39
	4.50	5.40	0.06	0.15	0.34	5.58	15.0%	0.06	0.11	0.32
	4.55	2.89	0.05	0.10	0.13	2.98	8.0%	0.05	0.03	0.25
	4.60	1.24	0.03	0.05	0.03	1.27	3.4%	0.02	0.00	0.15
	4.65	0.00	#DIV/0!	0.00	0.00	0.00	0.0%	#DIV/0!	#DIV/0!	#DIV/0!


Trout Creek
CROSS SECTION DATA ANALYSIS
RS
G
RW
LW
LS & G
-1.00
-1.50
-2.00
-4.00
-4.50
-5.00
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
40.00
VERTICAL DEPTH (FT)
DISTANCE FROM STAKE (FT)
Channel Bottom
Computed Water Line


Trout Creek
Percent Wetted Perimeter vs. Discharge
Percent Wetted Perimeter
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
0.00
50.00
100.00
150.00
200.00
250.00
300.00
Mannings N
Thorne - Zevenbergen
Jarrett


Trout Creek
Velocity vs. Discharge
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Velocity - ft/sec
0.00
50.00
100.00
150.00
200.00
250.00
300.00
Discharge (cfs)
Mannings N
Thorne - Zevenbergen
Jarrett


Trout Creek
Average Depth vs. Discharge
Average Depth - feet
1.80
1.60
1.40
0.40
0.20
0.00
0.00
50.00
100.00
200.00
250.00
300.00
Discharge (cfs)
Mannings N
Thorne - Zevenbergen
Jarrett


Trout Creek
Stage vs. Discharge
2.50
2.00
1.50
1.00
0.50
0.00
Stage - feet
0.00
50.00
100.00
150.00
200.00
250.00
300.00
Discharge (cfs)
Thorne - Zevenbergen
Jarrett

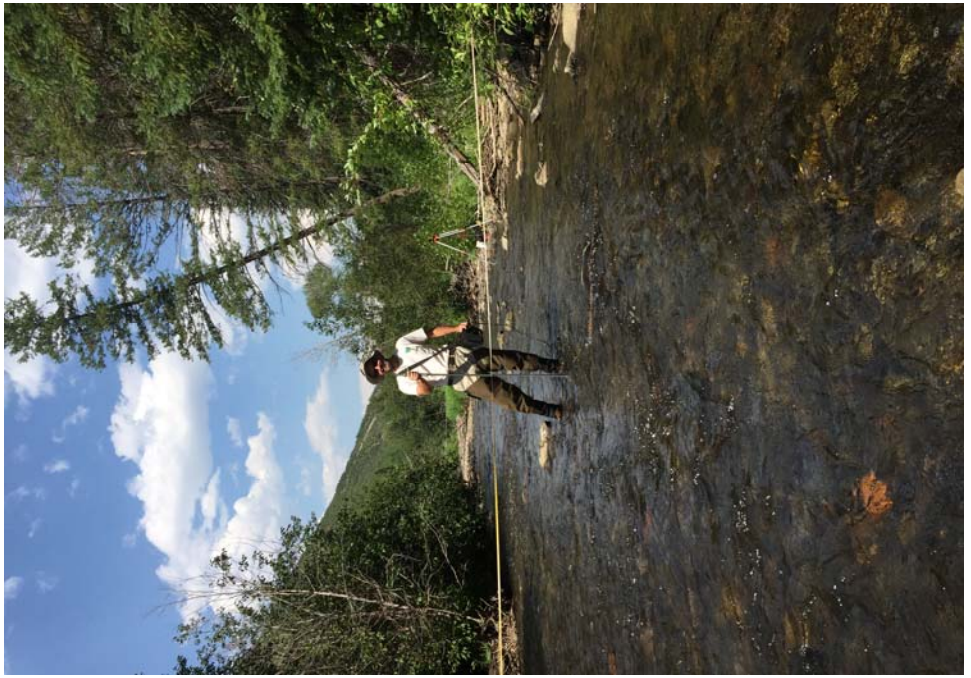
Data Input & Proofing

STREAM NAME:	Trout Creek
XS LOCATION:	0.5 mile upst fr conf w Little Trout Ck.
XS NUMBER:	2
DATE:	8/2/2017
OBSERVERS:	R. Smith, E. Scherff
1/4 SEC:	SW NW
SECTION:	23
TWP:	4N
RANGE:	86W
PM:	Sixth
COUNTY:	Routt
WATERSHED:	Yampa River
DIVISION:	6
DOW CODE:	23533
USGS MAP:	
USFS MAP:	
	Level and Rod Survey
TAPE WT:	0.0106 lbs / ft
TENSION:	99999 lbs
SLOPE:	0.013 ft / ft

CHECKED BY:.....DATE.....

ASSIGNED TO: .....DATE.....

GL=1	FEATURE	DIST	VERT DEPTH	WATER DEPTH	VEL	A	Q	Tape to Water
			Total Data Points = 45					
	RS	1.20	1.38			0.00	0.00	0.00
		1.60	1.95			0.00	0.00	0.00
1	G	1.80	2.38			0.00	0.00	0.00
		2.40	4.04			0.00	0.00	0.00
	RW	3.90	4.10	0.00	0.00	0.00	0.00	0.00
		5.00	4.40	0.30	0.09	0.32	0.03	4.10
		6.00	4.60	0.50	0.70	0.50	0.35	4.10
		7.00	4.40	0.30	1.02	0.30	0.31	4.10
		8.00	4.50	0.40	1.59	0.40	0.64	4.10
		9.00	4.30	0.20	0.23	0.15	0.03	4.10
		9.50	4.65	0.55	1.41	0.28	0.39	4.10
		10.00	4.50	0.40	1.85	0.20	0.37	4.10
		10.50	4.50	0.40	1.09	0.20	0.22	4.10
		11.00	4.60	0.50	0.88	0.25	0.22	4.10
		11.50	4.45	0.35	1.39	0.18	0.24	4.10
		12.00	4.35	0.25	1.56	0.13	0.20	4.10
		12.50	4.35	0.25	1.94	0.13	0.24	4.10
		13.00	4.55	0.45	1.07	0.23	0.24	4.10
		13.50	4.50	0.40	0.94	0.20	0.19	4.10
		14.00	4.45	0.35	1.13	0.18	0.20	4.10
		14.50	4.15	0.05	0.60	0.03	0.02	4.10
		15.00	4.40	0.30	0.67	0.15	0.10	4.10
		15.50	4.55	0.45	1.09	0.23	0.25	4.10
		16.00	4.15	0.05	0.76	0.03	0.02	4.10
		16.50	4.35	0.25	0.23	0.13	0.03	4.10
		17.00	4.30	0.20	0.49	0.15	0.07	4.10
		18.00	4.40	0.30	1.55	0.30	0.47	4.10
		19.00	4.60	0.50	1.66	0.38	0.62	4.10
		19.50	4.65	0.55	1.56	0.28	0.43	4.10
		20.00	4.60	0.50	1.44	0.25	0.36	4.10
		20.50	4.50	0.40	1.99	0.20	0.40	4.10
		21.00	4.50	0.40	1.26	0.30	0.38	4.10
		22.00	4.35	0.25	1.67	0.25	0.42	4.10
		23.00	4.35	0.25	1.63	0.25	0.41	4.10
		24.00	4.35	0.25	0.71	0.25	0.18	4.10
		25.00	4.30	0.20	1.15	0.20	0.23	4.10
		26.00	4.20	0.10	0.76	0.10	0.08	4.10
		27.00	4.30	0.20	0.92	0.20	0.18	4.10
		28.00	4.25	0.15	0.69	0.14	0.10	4.10
	LW	28.90	4.10	0.00	0.00	0.00	0.00	0.00
		30.30	4.01			0.00	0.00	0.00
		31.80	3.42			0.00	0.00	0.00
		33.00	2.84			0.00	0.00	0.00
		35.00	2.52			0.00	0.00	0.00
1	LS & G	37.00	2.46			0.00	0.00	0.00
					Totals	7.41	8.58	



COLORADO
Colorado Water Conservation Board
Department of Natural Resources

CWCB discharge measurement data
Collected using the ESRI Survey123 app on a Samsung tablet

Stream name	Trout Creek
Location description	Trout Creek - D6
Water division	6
Visit date	5/7/2018
Collected by CWCB staff	Jack Landers
Collected by non-CWCB staff	N/A
Non-CWCB entity	N/A
Measurement method	wadingADV
Equipment	Flowtracker2_sn_2H1747037
Site name	Trout Creek - D6
Measurement number	507
Weather	overcast, no recent precip
Wind	calm
Cross-section description	run, cobble substrate, confined by valley wall to south
Flow conditions	turbulent
Measurement start time	17:53
Flow amount	64.5796
Measurement rating	Good(5%)
Discharge comments:	Lots of beaver ponds and old dams in area, this xsec one of few good spots for measurement.
Location	13N 328640 4463623

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

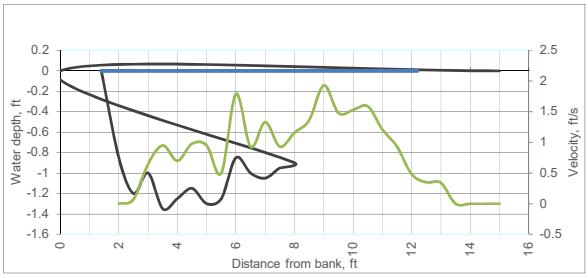
CWCB discharge measurement data
Collected using the ESRI Survey123 app on a Samsung tablet

Stream name	Trout Creek
Location description	Trout Creek and beaver ponds
Water division	6
Visit date	10/10/2018
Collected by CWCB staff	Other, Rob Viehl
Collected by non-CWCB staff	Jay Skinner
Non-CWCB entity	CPW
Measurement method	wadingMMcB
Equipment	Marsh McBirney
Site name	
Measurement number	2
Weather	cold cloudy,misty
Wind	No wind
Cross-section description	
Flow conditions	slightly turbulent
Measurement start time	09:45
Flow amount	9.59
Measurement rating	Good(5%)
Discharge comments:	
Location	13N 328736 4463735

Flow Measurement Calculations

Stream:Trout Creek
Date: 10/9/2018 **Time:945 AM**
Observers: Rob Viehl Jay Skinner
County: Routt
Water Division: 6
Latitude:
Longitude:
Location Description: above LT Beaver Ponds
Comments:
Other:

Station, ft	Width, ft	Depth, ft	Velocity, ft/s	Area, ft2	Discharge, cfs	%
1.4	water line	0	0			
2	0.5	0.85	0	0.425	0	0.0%
2.5	0.5	1.2	0.07	0.6	0.042	0.4%
3	0.5	1	0.65	0.5	0.325	3.4%
3.5	0.5	1.35	0.95	0.675	0.64125	6.7%
4	0.5	1.25	0.7	0.625	0.4375	4.6%
4.5	0.5	1.15	0.98	0.575	0.5635	5.9%
5	0.5	1.3	0.95	0.65	0.6175	6.4%
5.5	0.5	1.25	0.5	0.625	0.3125	3.3%
6	0.5	0.85	1.79	0.425	0.76075	7.9%
6.5	0.5	1	0.93	0.5	0.465	4.8%
7	0.5	1.05	1.33	0.525	0.69825	7.3%
7.5	0.5	0.95	0.93	0.475	0.44175	4.6%
8	0.5	0.9	1.16	0.45	0.522	5.4%
8.5	0.5	0.75	1.36	0.375	0.51	5.3%
9	0.5	0.7	1.93	0.35	0.6755	7.0%
9.5	0.5	0.9	1.48	0.45	0.666	6.9%
10	0.5	0.8	1.53	0.4	0.612	6.4%
10.5	0.5	0.7	1.59	0.35	0.5565	5.8%
11	0.5	0.6	1.21	0.3	0.363	3.8%
11.5	0.5	0.45	0.93	0.225	0.20925	2.2%
12	0.5	0.4	0.48	0.2	0.096	1.0%
12.5	0.5	0.2	0.35	0.1	0.035	0.4%
13	0.5	0.25	0.34	0.125	0.0425	0.4%
13.5	0.5	0.2	0	0.1	0	0.0%
14	0.5	0.1	0	0.05	0	0.0%
14.5	0.5	0.05	0	0.025	0	0.0%
15	water line	0	0	0	0	0.0%
				FLOW =	**9.59**	



Graph Data

Bed elevation		Waterline	
1.4	0	1.4	0
2	-0.85	12.2	0
2.5	-1.2		
3	-1		
3.5	-1.35		
4	-1.25		
4.5	-1.15		
5	-1.3		
5.5	-1.25		
6	-0.85		
6.5	-1		
7	-1.05		
7.5	-0.95		
8	-0.9		
#REF!	#REF!		
15	0		

Discharge Measurement Summary

File Information

File name	20180507_Trout Creek - D6.ft
Start date and time	5/7/2018 5:58 PM
Calculations engine	FlowTracker2
Data collection mode	Discharge

Discharge Summary

Start time	5/7/2018 6:00:52 PM		End time	5/7/2018 6:29:18 PM
# Stations	24		Avg interval	40
Mean depth	0.849	ft		
Mean velocity	3.3509	ft/s	Total width	22.700 ft
Mean SNR	47	dB	Total area	19.2725 ft²
Mean temp	52.252	°F	Total discharge	64.5796 ft³/s

System Information

Sensor type	Top Setting
Handheld serial number	FT2H1747037
Probe serial number	FT2P1747048
Probe firmware	1.23
Handheld software	1.4

Site Details

Site name	Trout Creek
Site number	0507
Operator(s)	Jack Landers
Comment	BLM land

Discharge Uncertainty

Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.2%	2.4%
Velocity	0.6%	2.2%
Width	0.1%	0.1%
Method	1.8%	
# Stations	2.1%	
Overall	3.0%	3.4%

Discharge Settings

Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Station Warning Settings

Station discharge caution	5.00	%
Station discharge warning	10.00	%
Maximum depth change	50.00	%
Maximum spacing change	100.00	%

Summary overview

No changes were made to this file
Quality control warnings

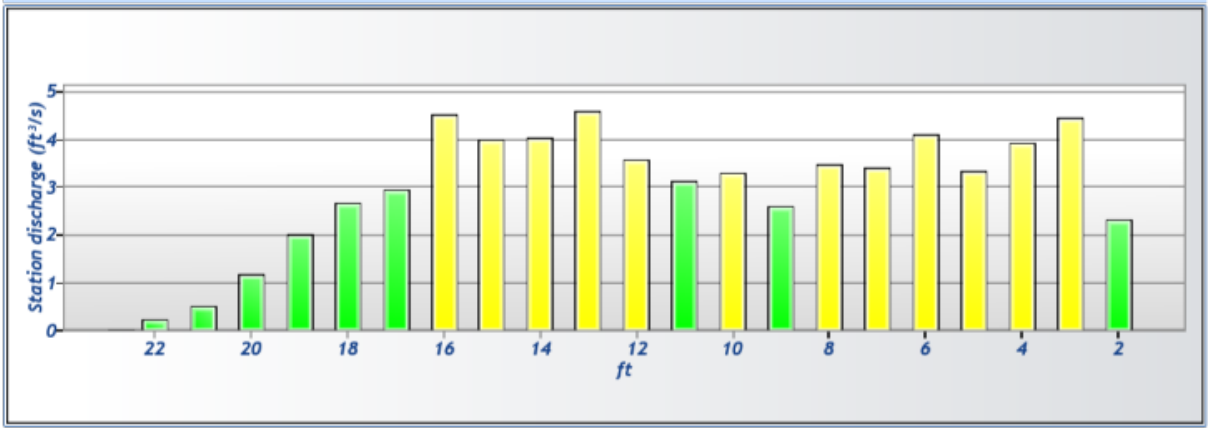
Data Collection Settings

Salinity	0.000	PSS-78
Temperature		°F
Sound speed		ft/s
Mounting correction	0.00	%

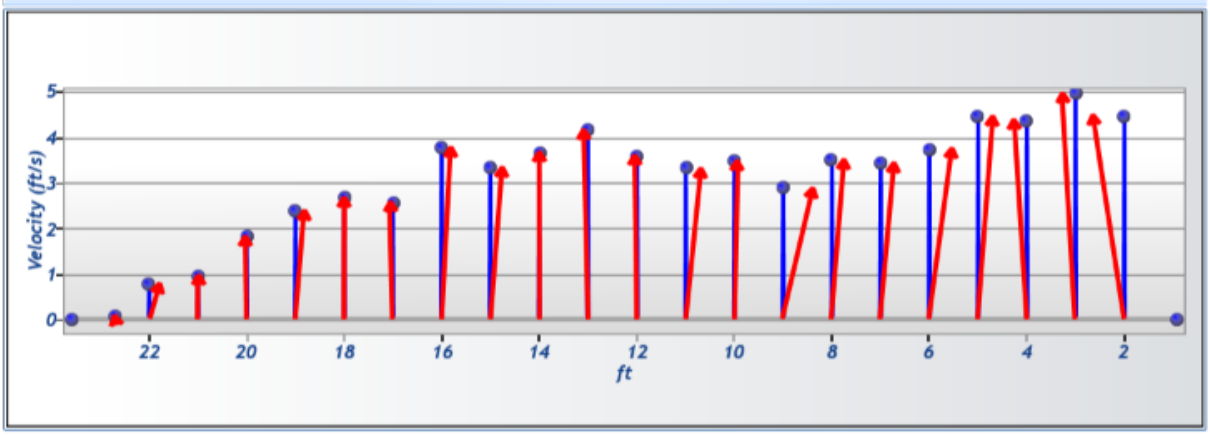
Quality Control Settings

SNR threshold	10	dB
Standard error threshold	0.0328	ft/s
Spike threshold	10.00	%
Maximum velocity angle	20.0	deg
Maximum tilt angle	5.0	deg

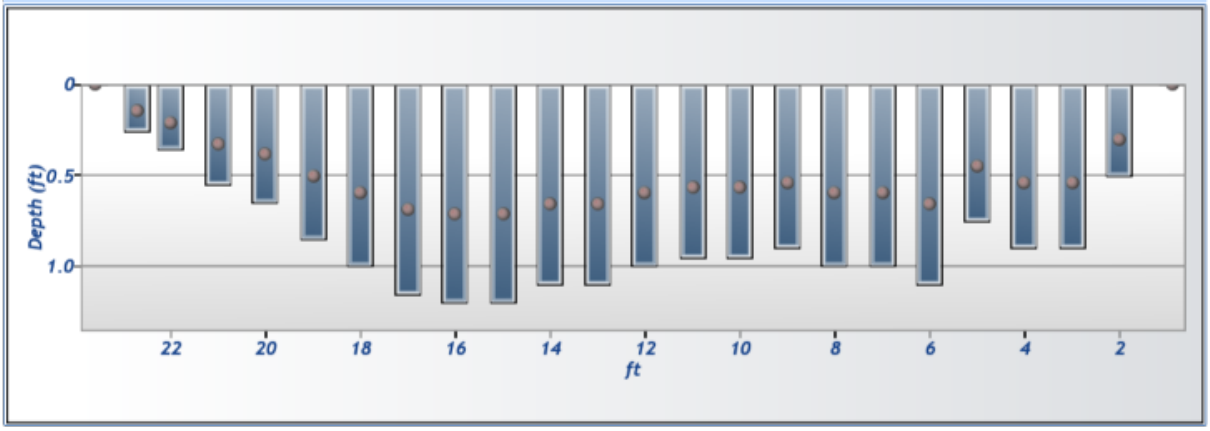
Discharge chart



Velocity chart



Depth chart



Measurement results

St#	Time	Location (ft)	Method	Depth (ft)	%Depth	Measured Depth (ft)	Samples	Velocity (ft/s)	Correction	Mean Velocity (ft/s)	Area (ft^2)	Flow (ft^3/s)	%Q	
0	6:00 PM	0.900	None	0.000	0.0000	0.000	0	0.0000	1.0000	4.4756	0.0000	0.0000	0.00	✓
1	6:01 PM	2.000	0.6	0.500	0.6000	0.300	80	4.4756	1.0000	4.4756	0.5250	2.3497	3.64	✓
2	6:03 PM	3.000	0.6	0.900	0.6000	0.540	80	4.9628	1.0000	4.9628	0.9000	4.4665	6.92	✓
3	6:04 PM	4.000	0.6	0.900	0.6000	0.540	80	4.3701	1.0000	4.3701	0.9000	3.9330	6.09	✓
4	6:06 PM	5.000	0.6	0.750	0.6000	0.450	80	4.4476	1.0000	4.4476	0.7500	3.3357	5.17	✓
5	6:07 PM	6.000	0.6	1.100	0.6000	0.660	80	3.7418	1.0000	3.7418	1.1000	4.1160	6.37	✓
6	6:08 PM	7.000	0.6	1.000	0.6000	0.600	80	3.4217	1.0000	3.4217	1.0000	3.4217	5.30	✓
7	6:09 PM	8.000	0.6	1.000	0.6000	0.600	80	3.4958	1.0000	3.4958	1.0000	3.4958	5.41	✓
8	6:11 PM	9.000	0.6	0.900	0.6000	0.540	80	2.8852	1.0000	2.8852	0.9000	2.5967	4.02	✓
9	6:12 PM	10.000	0.6	0.950	0.6000	0.570	80	3.4803	1.0000	3.4803	0.9500	3.3063	5.12	✓
10	6:13 PM	11.000	0.6	0.950	0.6000	0.570	80	3.3131	1.0000	3.3131	0.9500	3.1475	4.87	✓
11	6:14 PM	12.000	0.6	1.000	0.6000	0.600	80	3.5992	1.0000	3.5992	1.0000	3.5992	5.57	✓
12	6:16 PM	13.000	0.6	1.100	0.6000	0.660	80	4.1705	1.0000	4.1705	1.1000	4.5875	7.10	✓
13	6:17 PM	14.000	0.6	1.100	0.6000	0.660	80	3.6746	1.0000	3.6746	1.1000	4.0420	6.26	✓
14	6:18 PM	15.000	0.6	1.200	0.6000	0.720	80	3.3443	1.0000	3.3443	1.2000	4.0131	6.21	✓
15	6:19 PM	16.000	0.6	1.200	0.6000	0.720	80	3.7660	1.0000	3.7660	1.2000	4.5192	7.00	✓
16	6:20 PM	17.000	0.6	1.150	0.6000	0.690	80	2.5697	1.0000	2.5697	1.1500	2.9551	4.58	✓
17	6:22 PM	18.000	0.6	1.000	0.6000	0.600	80	2.6790	1.0000	2.6790	1.0000	2.6790	4.15	✓
18	6:23 PM	19.000	0.6	0.850	0.6000	0.510	80	2.3974	1.0000	2.3974	0.8500	2.0378	3.16	✓
19	6:24 PM	20.000	0.6	0.650	0.6000	0.390	80	1.8309	1.0000	1.8309	0.6500	1.1901	1.84	✓
20	6:25 PM	21.000	0.6	0.550	0.6000	0.330	80	0.9734	1.0000	0.9734	0.5500	0.5353	0.83	✓
21	6:26 PM	22.000	0.6	0.350	0.6000	0.210	80	0.7892	1.0000	0.7892	0.2975	0.2348	0.36	✓
22	6:28 PM	22.700	0.6	0.250	0.6000	0.150	80	0.0884	1.0000	0.0884	0.2000	0.0177	0.03	✓
23	6:29 PM	23.600	None	0.000	0.0000	0.000	0	0.0000	1.0000	0.0884	0.0000	0.0000	0.00	✓

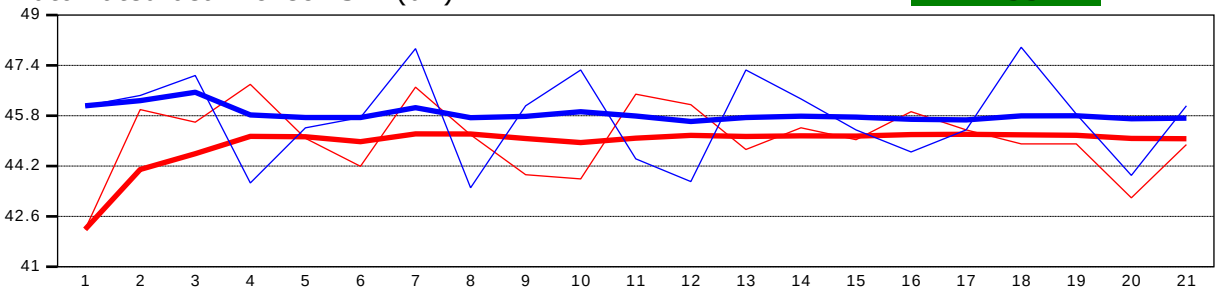
Quality control warnings

St#	Time	Location (ft)	Method	Depth (ft)	%Depth	Measured Depth (ft)	Warnings
1	6:01 PM	2.000	0.6	0.500	0.6000	0.300	Standard Error > QC
2	6:03 PM	3.000	0.6	0.900	0.6000	0.540	Standard Error > QC
3	6:04 PM	4.000	0.6	0.900	0.6000	0.540	Standard Error > QC
4	6:06 PM	5.000	0.6	0.750	0.6000	0.450	Standard Error > QC
5	6:07 PM	6.000	0.6	1.100	0.6000	0.660	Standard Error > QC
6	6:08 PM	7.000	0.6	1.000	0.6000	0.600	Standard Error > QC
7	6:09 PM	8.000	0.6	1.000	0.6000	0.600	Standard Error > QC
8	6:11 PM	9.000	0.6	0.900	0.6000	0.540	Standard Error > QC
9	6:12 PM	10.000	0.6	0.950	0.6000	0.570	Standard Error > QC
10	6:13 PM	11.000	0.6	0.950	0.6000	0.570	Standard Error > QC
11	6:14 PM	12.000	0.6	1.000	0.6000	0.600	Standard Error > QC
12	6:16 PM	13.000	0.6	1.100	0.6000	0.660	Standard Error > QC
13	6:17 PM	14.000	0.6	1.100	0.6000	0.660	Standard Error > QC
14	6:18 PM	15.000	0.6	1.200	0.6000	0.720	Standard Error > QC
15	6:19 PM	16.000	0.6	1.200	0.6000	0.720	Standard Error > QC
16	6:20 PM	17.000	0.6	1.150	0.6000	0.690	Standard Error > QC
17	6:22 PM	18.000	0.6	1.000	0.6000	0.600	Standard Error > QC
18	6:23 PM	19.000	0.6	0.850	0.6000	0.510	Standard Error > QC
19	6:24 PM	20.000	0.6	0.650	0.6000	0.390	Standard Error > QC
20	6:25 PM	21.000	0.6	0.550	0.6000	0.330	Standard Error > QC

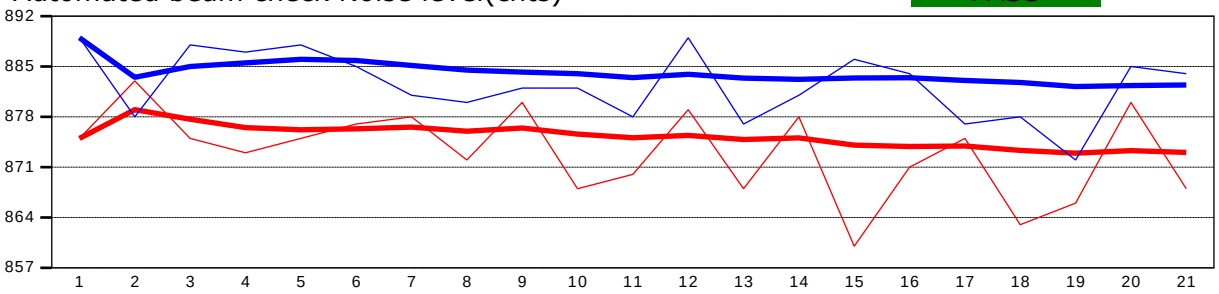
11/20/2018 12:10:06 PM

Automated beam check Start time 5/7/2018 6:00:09 PM

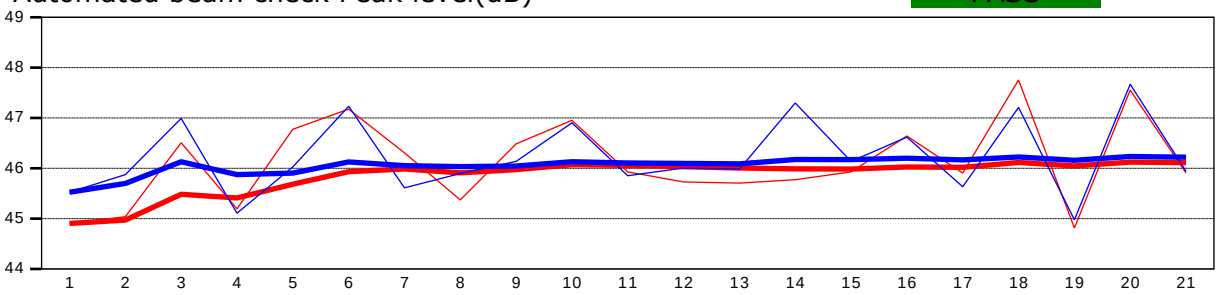
Automated beam check SNR(dB) PASS



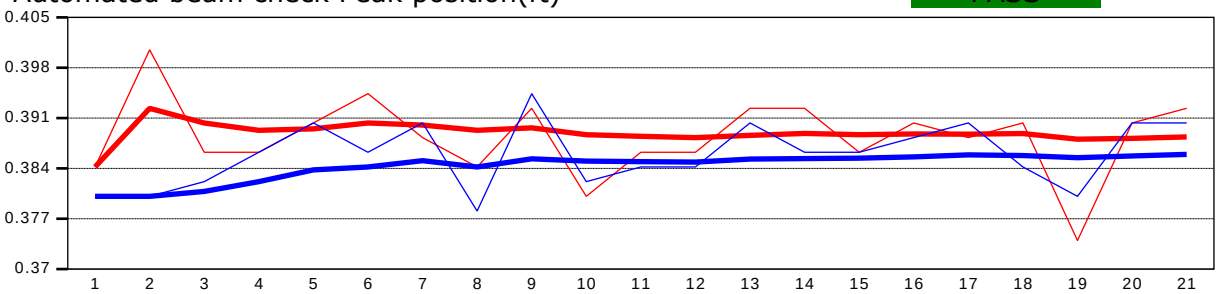
Automated beam check Noise level(cnts) PASS



Automated beam check Peak level(dB) PASS



Automated beam check Peak position(ft) PASS



Automated beam check Quality control warnings

No quality control warnings

WWC ENGINEERING
611 Skyline Road - Laramie, WY 82070 - (307) 742-0031
FAX (307) 721-2913 - E-mail: infolar@wwcengineering.com

February 18, 2010

Permit C-1980-001
Annual Hydrology Report

Mr. Jason Musick
Colorado Division of Reclamation, Mining and Safety
1313 Sherman Street
Room 215
Denver, Colorado 80203-2273

RE: Edna Mine 2009 Annual Hydrology Report

Dear Mr. Musick:

Enclosed is the 2009 Annual Hydrology Report for the Edna Mine. Should the Colorado Division of Reclamation, Mining and Safety have any comments or concerns regarding this submittal, please contact me at your convenience.

Sincerely,

Troy Summers
Project Manager

TNS
Enclosures
File: 99-144

cc: Chevron (Leach)
Permit (Weinman)

2009 Annual Hydrology Report

Edna Mine
Permit CO-80-001
Routt County, CO

February 2010

Prepared For: Chevron Mining Inc.
116 Inverness Drive East, Suite 207
Englewood, CO 80112

Submitted To: Colorado Division of Reclamation Mining & Safety
1313 Sherman Street, Room 215
Denver, Colorado 80203-2273

Prepared By: WWC Engineering
611 Skyline Road
Laramie, Wyoming 82070

Chevron

WWC Engineering

Table of Contents

Charts

Tables

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Plates

1.0 INTRODUCTION

A water quality monitoring program was initiated at the Edna Mine to monitor specific chemical characteristics of Trout Creek and the alluvium associated with Trout Creek which may be affected by mining and reclamation operations. This program is detailed enough to describe seasonal variations in concentration levels of the parameters monitored, as well as indicate if mining activities and/or reclamation activities are impacting the natural seasonal fluctuations.

The purpose of this report is to provide updated information pertaining to the on-going hydrologic monitoring program developed for the Edna Mine and discuss trends in surface and ground water quality. The previous report, dated February 2009, reported monitoring activities up through the end of 2008. This report provides a discussion on each of the parameters monitored which have been collected through 2009.

The report is divided into several sections including: Hydrologic Monitoring Network; Surface Water; Ground Water; Surface Water and Ground Water Interactions; Quality Assurance; Spring and Seep Survey; and Moffat Stability Monuments.

2.0 HYDROLOGIC MONITORING NETWORK

The present monitoring network is a modification of the network used during baseline monitoring. Continuous streamflow records are made for Trout Creek above the mine (TR-a) from May through October (periods of freezing sometimes necessitate the records to be of shorter duration). Instantaneous streamflow was recorded on Trout Creek below the Moffat mining area at TR-b prior to July 1994. During June 1994, a continuous streamflow recorder was installed at TR-b. Therefore, monitoring data after June 1994 has been collected on the same schedule as at TR-a. Surface water samples are collected above and below the mine at TR-A and TR-D, respectively. Additional surface water sampling sites along Trout Creek are TR-B (located adjacent to the East Ridge area) and TR-C (located adjacent to the Moffat area).

Ground water levels and samples are collected from four wells. Three wells are completed in the alluvium along Trout Creek (TR-1.5, TR-3 and TR-4) and one well is completed in the spoils (WR-1) located at the base of the West Ridge area. An additional water quality well is completed in the Trout Creek Sandstone (TCS-1) monitored downdip of mining activity. Water monitoring locations are shown on Plate 1.

The samples are analyzed for the parameters listed in Table 4.6-54, Section 4.6.8.4 of the permit. Sampling frequency at the various sites is also listed in Table 4.6-54. Parameters measured in the field include: pH, temperature, and specific conductivity. All other parameters measured are analytically derived at an independent laboratory.

The monitoring program has been altered via Technical Revisions 47 and 48. Monitoring wells 215W, 215L, 218W, 218L, M892S and M892L were discontinued September 21, 2007 in accordance with TR-47. Monitoring wells TR-1.5, TR-3, TR-4, WR-1 and TCS-1, surface water flow monitoring sites TR-a and TR-b and surface water quality monitoring sites TR-A, TR-B, TR-C and TR-D were discontinued September 2, 2009 in accordance with TR-48.

3.0 SURFACE WATER

As previously mentioned, Trout Creek is monitored for water quality at sites TR-A, TR-B, TR-C and TR-D and for flow at sites TR-a and TR-b. The following section discusses quantity and quality of surface water at the Edna Mine.

3.1 Gauging Stations

Chart 1 shows the continuous streamflow records for Trout Creek at TR-a and TR-b. The flow measurements along Trout Creek indicate that the monitoring program is being placed on-line early enough in the year to record flow prior to the peak runoff period for each year. The individual data points show the monthly average flows and give some indication of the variability between mild winters (winters of less snow accumulation) and harsh winters (winters of greater snow accumulation). The streamflow during 2009 is elevated compared with previous years with a slight decline from 2008. The chart indicates that 2009 was an average/harsh winter for the past two decades.

The flow record for 2009 shows a peak flow to have occurred in May. The peak flow historically occurs in either May or June. The runoff from the mine site was higher in 2009 than the majority of previous years probably due to more snowpack on the mine site and the on-set of warmer temperatures occurring later in the spring.

The flow data presented in Chart 1 consists only of information derived from continuous flow records. Instantaneous flow measurements obtained between 1989 and June 1994 for TR-b are provided in Table 1. Prior to 1994, instability of the stream channel caused by a 1984 flood precluded the installation of any type of monitoring station in the vicinity of TR-b. The Stevens chart recorders were replaced with electronic streamflow recorders in April 2003.

The bridge located immediately downstream of TR-a was replaced in the fall of 2001 potentially altering the stage rating curve. Therefore, the decision was made to update the stage/discharge curves for TR-a and TR-b. Over the 2001 season, a total of nine cross-sections and associated velocities were measured at each cross section location. This data was used to compute a stage rating curve at each location.

The stage rating curve for TR-a was developed from flows ranging from 11 cfs to 145 cfs. The curve equation and r^2 for the curve are as follows: $y = 44.469x^{3.2806}$, where y = flow in cfs and x = depth of flow; $r^2 = 0.98$. Flows for 2009 are in accordance with the range used to develop the rating curve; therefore, the calculated flow is considered accurate.

The stage rating curve for TR-b was developed from flows ranging from 13 cfs to 144 cfs. The curve equation and r^2 for the curve are as follows: $y = 65.049x^{2.431}$, where y = flow in cfs and x = depth of flow; $r^2 = 0.99$. Flows for May of 2009 were above the 144 cfs used to develop the

rating curve; therefore, this calculated flow may to be high. The stream flow data appears to indicate a good correlation between the upstream and downstream flows along Trout Creek.

To ensure the accuracy of the stream flow data, channel cross-sections at Site TR-a and TR-b are surveyed annually to verify streambed stability. Figure 1 shows channel cross-sections that were developed as part of an annual survey. These results confirm that the streambed configuration has remained fairly constant and therefore verify streambed stability.

Irrigation ditch flow observations (flowing/not flowing and approximate flow) were made monthly from April through September of 2009 at Site TR-A. Flow was observed in the irrigation ditch at site TR-A during June of 2009. Instantaneous flow observations are provided in Table 2.

3.2 NPDES Monitoring

Monitoring of point discharges from sedimentation impoundments is accomplished under Colorado Department of Public Health and Environment Colorado Permit Discharge System Permit CO-0032638. Copies of required Discharge Monitoring Reports are provided to the Colorado Division of Reclamation, Mining and Safety under separate cover, and are included in this report by reference.

3.3 Surface Water Quality

Surface water sampling is performed in accordance with EPA approved methods and instrumentation. As previously mentioned, the water quality along Trout Creek is monitored via the parameters listed on Table 4.6-54, Section 4.6.8.4 of the permit. Tabular analyses results for monitoring sites TR-A, TR-B, TR-C and TR-D are found in Tables 3, 4, 5 and 6. Results of the analyses are discussed below.

3.3.1 Surface Water Temperature

Chart 2 shows temperature values for monitoring sites TR-A, TR-B, TR-C and TR-D for the period of record. Temperature exhibited the same trends in 2009 as found during baseline studies and previous years monitoring. Specifically, patterns in temperature are seasonal, warming until July or August and than cooling throughout the remaining sampling season. Surface water temperature for 2009 was colder than average for the period of record due to a harsh winter and cool ambient temperatures. The lowest temperature in 2009 was recorded at monitoring site TR-A in April with a reading of 4.8 °C and the high was recorded at monitoring site TR-B in August with a reading of 17.0 °C.

3.3.2 Surface Water pH

Chart 3 shows pH concentrations for monitoring sites TR-A, TR-B, TR-C and TR-D for the period of record. Values of pH during 2009 were consistent with baseline studies and previous monitoring. There is no apparent trend regarding pH although only slight variations occur during the monitoring season. Overall, Trout Creek has remained slightly alkaline throughout the period of record. The lowest pH value in 2009 was recorded at monitoring site TR-D in April with a reading of 7.05 standard units and the high was recorded at monitoring site TR-A in August with a reading of 8.65 standard units.

3.3.3 Surface Water Total Suspended Solids

Chart 4 shows total suspended solids (TSS) concentrations for monitoring sites TR-A, TR-B, TR-C and TR-D for the period of record. Since 1989, TSS concentrations have remained relatively constant. The relatively constant TSS values observed over much of the period appear to be the result of two conditions. First, the stream channel, significantly altered during a 1984 flood, has stabilized and the stream banks have reestablished vegetation. Second, the section of the creek between TR-A and TR-B has become an inundated marsh as result of a continuous string of beaver ponds. Additionally, several long stretches of the creek between TR-B and TR-D have also become marshes due to numerous beaver dams.

Periodically, this general pattern is interrupted, as occurred in 1991, 1993, 1995, 2003, 2005 and 2006. The "spikes" in TSS levels during these years appear to be related to peak flow conditions along Trout Creek. TSS concentrations during the 2009 sampling season closely resemble the general pattern, decreasing as the season lengthens. The TSS concentrations remained fairly static in 2009 and consistent with previous sampling. The lowest TSS concentration in 2009 was <5 mg/L at numerous monitoring sites during numerous events, the high was recorded at monitoring site TR-D in April with a reading of 11 mg/L.

3.3.4 Surface Water Specific Conductivity

Chart 5 shows specific conductivity concentrations for monitoring sites TR-A, TR-B, TR-C and TR-D for the period of record. Specific conductivity from September 1992 through the end of the report period was similar to values obtained prior to October 1990. Data taken between October 1990 and August 1992 are believed to be invalid due to instrument errors. TDS values obtained during these same periods do not reflect the increases; therefore it is believed that the data excursions can be attributed to errors with the instrumentation rather than a reflection of actual field conditions.

New field equipment has been used since September 1992 along with laboratory verification. The values shown in past reports from 1992 through 1994 are the laboratory values. Since the field values and laboratory values have been in close agreement since 1994, values provided beginning in 1995 are field values. Specific conductivity has exhibited the same trends in 2009

as found during baseline studies and previous years monitoring. The lowest specific conductivity concentration in 2009 was recorded at monitoring site TR-A in June with a reading of 100 umhos/cm @ 25 °C and the high was recorded at monitoring site TR-C in April with a reading of 1010 umhos/cm @ 25 °C.

3.3.5 Surface Water Total Dissolved Solids

Chart 6 shows total dissolved solids (TDS) concentrations for monitoring sites TR-A, TR-B, TR-C and TR-D for the period of record. TDS concentrations in Trout Creek exhibit an expected pattern. As stream flow passes the mine, TDS levels increase while adjacent to the mined areas and then begin to decline downstream due to inflow from undisturbed lands below the active mine. Peak TDS levels in Trout Creek adjacent to the mine occur in early spring prior to the period of peak flow. This is caused by the spring runoff from the portion of the watershed in which the Edna Mine is located. Although TDS concentrations in the mine runoff may be quite high when compared to concentrations occurring above the mine, generally the mine runoff is small relative to Trout Creek's total flow. Therefore, a significant increase in Trout Creek TDS levels is observed only during the initial stages of spring runoff. A comparison of the TDS and flow data indicate that TDS concentrations appear to be directly related to flow volume.

The dilution of TDS concentrations in downstream flow for the past decade has not been as pronounced as in the previous decade. Beginning in 1990, mining and reclamation occurred in close proximity to TR-C. As such, dilution of TDS concentrations probably occurs farther downstream of TR-D as runoff from undisturbed areas enters into Trout Creek. Although elevated TDS concentrations have moved downstream in conjunction with mining and reclamation activities, all values for TDS are consistent with the probable hydrologic consequences projections. TDS concentrations seem to have peaked during the 1996 sampling season and have been steadily decreasing to the current year of sampling. TDS concentrations exhibited the same trends in 2009 as found during previous years monitoring. The lowest TDS concentration in 2009 was recorded at monitoring site TR-A in June with a value of 80 mg/L and the high was recorded at monitoring site TR-C in April with a value of 740 mg/L.

3.3.6 Surface Water Calcium, Magnesium and Sodium

Charts 7, 8 and 9 show calcium, magnesium and sodium concentrations for monitoring sites TR-A, TR-B, TR-C and TR-D for the period of record. Calcium is the dominant cation in Trout Creek with magnesium and sodium occurring in lesser concentrations. While the relative proportions of these parameters change slightly between the sampling points, all show peak concentrations coinciding with spring runoff, as would be expected. As with TDS, all three cations show general increases in concentration as the water passes the mine area. Additionally, the relative proportion of each constituent remains constant to the other constituents. While trends in their subsequent dilution downstream have yet to form a consistent pattern, little or no dilution in any of the concentrations have occurred between sampling points TR-C and TR-D since 1989. For the last decade, it is believed that this was due in part to the Moffat area mining

and reclamation activities and, as such, the pattern is anticipated to continue. However, since this occurrence existed prior to the initiation of Moffat mining activity, the trend may also suggest that inflow from undisturbed areas upstream and downstream of TR-C contains approximately the same concentrations of these parameters as runoff from the mine.

Calcium, magnesium and sodium concentrations exhibited similar trends in 2009 as found during baseline studies and previous years monitoring. All three parameters show a slight increase in concentration from the 2008 sampling season and an overall decreasing trend since the 1996 sampling season in agreement with the TDS trend. The lowest calcium concentration in 2009 was recorded at monitoring site TR-A in April with a value of 27 mg/L and the high was recorded at monitoring sites TR-C and TR-D in April with a value of 100.0 mg/L. The lowest magnesium concentration in 2009 was recorded at monitoring site TR-A in April a value of 10.0 mg/L and the high was recorded at monitoring site TR-C in April with a value of 71.0 mg/L. The lowest sodium concentration in 2009 was recorded at monitoring site TR-A in August with a value of 3.0 mg/L and the high was recorded at monitoring sites TR-C and TR-D in April with a value of 16.0 mg/L.

3.3.7 Surface Water Bicarbonate and Sulfate

Charts 10, 11 and 12 show bicarbonate and sulfate concentrations and the sulfate/bicarbonate ratio for monitoring sites TR-A, TR-B, TR-C and TR-D for the period of record. As noted in previous annual hydrology reports, upstream of the mine on Trout Creek, bicarbonate is the major anion with sulfate concentrations increasing rapidly along the mine area to become predominating downstream. The sulfate level increase is most markedly noticed prior to the peak flow period of Trout Creek and adjacent to where mining activity took place, as are TDS levels in general. This increase is probably caused by early runoff at the mine site leaching pyritic and organic sulfur as flow passes over and through the spoils. Since the flow of Trout Creek is low at that time, the amount of sulfur is sufficient to cause an ionic shift from a bicarbonate type water to a sulfate type. During periods of higher flow and late in the season when runoff from the mine is small relative to total Trout Creek flow, the sulfate component is less able to shift the anion balance to a sulfate type with concentrations of bicarbonate and sulfate being approximately equal downstream.

The 2009 data is similar to previous monitoring data indicating a trend that shows a topological change occurring generally at TR-B. This is believed to be the result of the spoil spring, which has developed at the base of the West Ridge mining area. As reclamation of West Ridge matures, the high levels of sulfur exhibited in the spring are anticipated to decrease. The recent trend showing peak sulfate levels at TR-C and TR-D are expected to continue for some time as spoil springs in the Moffat area have developed after the completion of mining in that area. Like the West Ridge area the sulfate sources within the Moffat area are anticipated to diminish as vegetation establishes and matures. An overall trend indicates a decrease in sulfate since the 1996 sampling season.

While peak levels of individual constituents may be shifting as flow proceeds past the mine, they

do not seem to be increasing overall. It is believed that an equalization in the sulfate-bicarbonate balance or a reversal (similar to the balance at TR-A) occurs downstream as the source of available sulfate (mining areas) is unavailable and dilution by runoff from undisturbed areas is introduced. The lowest bicarbonate concentration in 2009 was recorded at monitoring site TR-A in April with a value of 105 mg/L and the high was recorded at monitoring site TR-C in August with a value of 134 mg/L. The lowest sulfate concentration in 2009 was recorded at monitoring site TR-A in August with a value of 8 mg/L and the high was recorded at monitoring site TR-C in April with a value of 420 mg/L. The lowest sulfate/bicarbonate ratio in 2009 was recorded at monitoring site TR-A in August with a value of 0.10 SO4 (meq)/HCO3 (meq) and the high was recorded at monitoring site TR-C in April with a value of 5.21 SO4 (meq)/HCO3 (meq).

3.3.8 Surface Water Manganese

Chart 13 shows manganese concentrations for monitoring sites TR-A, TR-B, TR-C and TR-D for the period of record. Manganese shows fairly consistent values since 1989. Most of the manganese values observed are consistent with baseline values. Manganese values appear to be developing a trend, which may be directly related to flow in Trout Creek as are the TDS concentrations. Sampling in October of 2005, at site TR-D, produced an inconsistent spike of manganese up to 0.248 mg/L. Manganese remained within historical levels at all other sites along Trout Creek in October 2005. The October water quality data was re-analyzed and the original values were confirmed. There is no apparent reason for this sudden rise in value.

Site TR-D normalized over the last few years, regarding the October 2005 spike, and concentrations on average for all sites are low in comparison with the past decade. The concentration trend seemed to have reversed during 2006 with higher concentrations resulting during low flow in Trout Creek, however the 2007 to 2009 values fall back to the expected trend of decreasing concentrations according to flow. The lowest manganese concentration in 2009 was recorded at monitoring site TR-A in April with a value of 0.02 mg/L and the high was recorded at monitoring site TR-D in April with a value of 0.08 mg/L.

3.3.9 Surface Water Aluminum

Chart 14 shows aluminum concentrations for monitoring sites TR-A, TR-B, TR-C and TR-D for the period of record. Aluminum concentrations have been low with most being below detection limits throughout the duration of monitoring. The apparent elevated aluminum levels shown in 1995 were due to the laboratory lower detection limit being set at 0.2 ppm instead of 0.05 ppm. Aluminum was elevated at TR-C during the April 2002 sampling period. However, concentrations downstream of TR-C are consistent with previous sampling results. Therefore, either sample contamination or laboratory error is suspected. Aluminum was slightly elevated during the 2004 and 2005 sampling periods. The 2009 sampling period shows consistent sampling results with the past decade. The lowest and highest aluminum concentration in 2009 was the lower detection limit of <0.03 mg/L at all sites for all events.

3.3.10 Surface Water Unionized Ammonia

Chart 15 shows unionized ammonia concentrations for monitoring sites TR-A, TR-B, TR-C and TR-D for the period of record. Unionized ammonia concentrations have been consistently below detection limits. The unionized ammonia concentration appeared to drop for the 1997 through 1999 monitoring periods due to the laboratory lowering the detection limit from 0.05 ppm to 0.01 ppm. In 2000, the laboratory raised the detection limit for unionized ammonia back to 0.05 ppm, then lowered the detection back to 0.01 ppm in 2001. The 2009 sampling period shows detections in April at monitoring sites TR-B, TR-C and TR-D. The high was recorded at monitoring site TR-C in April with a value of 0.06 mg/L. Unionized ammonia concentrations were below the detection limit of <0.02 mg/L at all sites for the August 2009 sampling date.

3.3.11 Surface Water Nitrite

Chart 16 shows nitrite concentrations for monitoring sites TR-A, TR-B, TR-C and TR-D for the period of record. Nitrite concentrations have been consistently below detection limits with few exceptions. Nitrite was elevated at site TR-D with a value 0.32 mg/L in April 1999. This value is not consistent with historical data or the other monitoring sites during the April 1999 monitoring event. The April 1999 TR-D value is considered to be a sampling/laboratory error.

The nitrite concentration upstream of the mine at TR-A was 0.06 ppm in the July 2001 sample. The concentration decreased as it passed by the mine site as a result of dilution. Samples collected in May and October 2001 show nitrite levels at TR-A below the detection limit. The 2009 sampling period shows consistent sampling results compared to all previous events. Nitrite concentrations were below the detection limit of <0.01 mg/L at all sites for all sampling dates of 2009.

3.3.12 Surface Water Orthophosphate

Chart 17 shows orthophosphate concentrations for monitoring sites TR-A, TR-B, TR-C and TR-D for the period of record. Values obtained for orthophosphate have been low with most being below detection limits throughout the duration of monitoring. Orthophosphate showed some perturbation during the 2001 sampling period at TR-B. However, concentrations downstream of TR-B are consistent with previous sampling results. Therefore, either sample contamination or laboratory error is suspected. The 2009 sampling period shows slightly elevated sampling results compared to the period of record. The lowest orthophosphate concentration in 2009 was the lower detection limit of <0.01 mg/L recorded at all sites in April and the high was recorded at all monitoring site TR-C in August with a value of 0.04 mg/L.

3.3.13 Surface Water Chloride, Potassium and Iron

Charts 18, 19 and 20 show chloride, potassium and iron concentrations for monitoring sites TR-

A, TR-B, TR-C and TR-D for the period of record. Chloride and potassium were added to the monitoring program in 1993 while iron was added in 1994. The concentrations of all of these parameters in Trout Creek water are generally low. The 2009 sampling period shows consistent sampling results to the previous monitoring events regarding these constituents. Chloride and potassium have shown a trend decrease and stabilization over the past decade. Iron levels during the past few monitoring periods slightly decreased relative to those since 2004 showing a general relation to flow in Trout Creek. The lowest chloride concentration in 2009 was <1.0 mg/L at monitoring site TR-A in April and TR-A and TR-B in August and the high was recorded at monitoring sites TR-B, TR-C and TR-D in April and TR-C and TR-D in August with a value of 2.0 mg/L. The lowest potassium concentration in 2009 was recorded at monitoring site TR-A in August with a value of 1.0 mg/L and the high was recorded at monitoring sites TR-C and TR-D in April with a value of 2.6 mg/L. The lowest iron concentration in 2009 was recorded at monitoring site TR-D in August with a value of 0.07 mg/L and the high was recorded at monitoring site TR-D in April with a value of 0.42 mg/L.

4.0 GROUND WATER

As previously mentioned, ground water is monitored for water quality and static water level elevations at monitoring wells TR-1.5, TR-3, TR-4, WR-1 and TCS-1. The following section discusses quality and static water level elevations of ground water at the Edna Mine.

4.1 Ground Water Elevations

Water levels in the alluvial wells at the Edna Mine have remained constant over the period of record with minor fluctuations occurring seasonally. Elevations of the static water level in the alluvial wells (TR-1.5, TR-3 and TR-4) and the West Ridge spoils well (WR-1) are shown in Chart 21. In reviewing the data, it is apparent that WR-1 has reached steady state and exhibits consistent seasonal fluctuations. The seasonal fluctuations result from spring snowmelt causing a mounding of water in the perched aquifer which drains over the summer via discharge from a spring on the lower portion of West Ridge near the elevation of Trout Creek. Monitoring Well TR-4 was broken off and plugged by livestock in July 2002, preventing monitoring for the remainder of 2002. The well was repaired in the spring of 2003.

Ground water wells TR-1.5, TR-3, TR-4 and WR-1 all maintained levels and trends, a slight decrease of water level during the annual sampling season, similar to historical data during 2009. Ground water well elevations are provided in tabular format in Table 7.

4.2 Ground Water Quality

Comparisons of water quality data gathered from the alluvial wells at the Edna Mine must be exercised with caution due to the differing stratigraphic units intersected along Trout Creek adjacent to the various wells. The alluvium in the vicinity of Well TR-1.5 intersects stratigraphy above the Wadge coal seam while the alluvium in the vicinity of TR-3 intersects stratigraphy below the Wadge coal seam. Alluvium in the vicinity of TR-4 intersects even lower stratigraphic units than those at TR-3. The influence from contact with the differing lithology can not be quantified; therefore, differences between the wells may not be responses to mining related activities.

As previously mentioned, TR-4 was repaired in 2003. Groundwater samples from TR-4 show an increase in several parameters directly after repair, some of which have begun to stabilize and decrease to historical levels. Prior to 2003, parameters at the well had stabilized. Therefore, it is assumed that this increase is due to the well repairs.

Monitoring of Well TCS-1 was initiated in 1995 to ensure the absence of mining impacts on the Trout Creek Sandstone aquifer. To date, no impacts from mining activity are evident in Well TCS-1. TCS-1 was not sampled in 2004 due to equipment problems. The demolition of an adjacent house removed power from the site. During demolition the well sustained damage.

Sampling was attempted using a generator but the well was deemed not functional. TCS-1 was refurbished in the fall of 2005 and sampled thereafter.

Ground water sampling is performed in accordance with EPA approved methods and instrumentation. The ground water quality at the Edna Mine is monitored via the parameters, locations and frequency listed in Table 4.6-54, Section 4.6.8.4 of the permit. Analyses results for monitoring wells TR-1.5, TR-3, TR-4, WR-1 and TCS-1 are found in Tables 8, 9, 10, 11 and 12. Results of the analyses are discussed below.

4.2.1 Ground Water Temperature

Chart 22 shows temperature values for monitoring wells TR-1.5, TR-3, TR-4, WR-1 and TCS-1 for the period of record. Temperature exhibited the same trends in 2009 as found during baseline studies and previous years monitoring. Specifically, patterns in temperature are seasonal, warming until July or August and than cooling throughout the remaining sampling season. The amount of temperature fluctuation in Well TR-4 has been historically somewhat greater than expected suggesting the flow to the perched aquifer, although subsurface, is very shallow. The lowest temperature in 2009 was recorded at monitoring well TR-3 in May with a reading of 7.1 °C and the high was recorded at monitoring site TR-1.5 in July with a reading of 15.2 °C.

4.2.2 Ground Water pH

Chart 23 shows pH concentrations for monitoring wells TR-1.5, TR-3, TR-4, WR-1 and TCS-1 for the period of record. Values of pH during 2009 remained relatively constant over the monitoring period. There is no apparent trend regarding pH. Overall, the groundwater has tended to be alkaline throughout the period of record. The lowest pH value in 2009 was recorded at monitoring well TR-1.5 in August with a reading of 6.75 standard units and the high was recorded at monitoring well TCS-1 in August with a reading of 8.42 standard units.

4.2.3 Ground Water Specific Conductivity and Total Dissolved Solids

Charts 24 and 25 show specific conductivity and TDS concentrations for monitoring wells TR-1.5, TR-3, TR-4, WR-1 and TCS-1 for the period of record. Specific conductivity and TDS values for the three alluvial wells have remained fairly constant over the majority of the period of record. While specific conductivity and TDS values at sites TR-3 and TR-4 are consistent with values obtained during the baseline studies, these parameters and several others have elevated rapidly and remained elevated at TR-1.5 since 1995. The source of the elevated values is not readily identifiable. A few factors which may have contributed to the elevated values were mentioned in the 1996 Report (i.e., inundation of the area in late spring of 1995 and the laying of telephone cable immediately upstream of the area during the summer of 1995). If the elevated values resulted from those activities, the values should have returned to more historic levels during the past decade. However, the values have remained elevated. It appears that the

alluvium in this area is reflecting upstream alluvial water containing high levels of TDS, possibly from an old abandoned underground mine up the Little Trout Creek drainage. This conclusion is based partially on the similarity of the water quality between TR-1.5 and WR-1. The location of the underground mine is shown on Exhibit 3.1-1 of the permit.

Specific conductivity and TDS in Well WR-1 have tended to progress from an elevated state each spring to a lower state in the fall for the majority of the period of record. This phenomenon was caused by infiltration of snowmelt water leaching various minerals within the unsaturated zone of reclaimed spoil. As the enriched flow was released over the course of the summer, the conductivity values lessened to that of the stagnant saturated zone. The mounded aquifer exhibits a more diluted state each spring with a return to steady-state as the summer progresses.

Specific conductivity and TDS concentrations exhibited the same trends in 2009 as found during previous years of monitoring. Well TR-1.5 was low for both parameters when compared with the past decade. All concentrations were within the historical range. The lowest specific conductivity value in 2009 was recorded at monitoring well TR-3 in September with a reading of 680 umhos/cm @ 25 °C and the high was recorded at monitoring well WR-1 in May with a reading of 3950 umhos/cm @ 25 °C. The lowest TDS concentration in 2009 was recorded at monitoring well TR-3 in September with a value of 470 mg/L and the high was recorded at monitoring well WR-1 in May with a value of 4210 mg/L.

4.2.4 Ground Water Calcium, Magnesium and Sodium

Charts 26, 27 and 28 show calcium, magnesium and sodium concentrations for monitoring wells TR-1.5, TR-3, TR-4, WR-1 and TCS-1 for the period of record. Calcium is the major cation found in all of the wells, except TCS-1 which is sodium rich, with concentrations of sodium and magnesium occurring in lesser quantities. The sodium concentration at TR-1.5 in May 2001 was 179 ppm. This value is inconsistent with the historical sodium concentrations and the levels after May 2001. Therefore, either sample contamination or laboratory error is suspected. TR-1.5 generally contained the lowest concentrations of cations with a slight increase occurring downstream at TR-3 and TR-4 for the majority of the record. However, elevated levels of these parameters at TR-1.5 began to occur in 1995 consistent with the elevated specific conductivity and TDS levels previously mentioned. Elevated levels of sodium concentration occurred at TR-4 during the 2004 and 2005 sampling period compared with those of the last decade. However, the sodium concentration levels remain within historical levels found in Trout Creek.

Calcium, magnesium and sodium concentrations exhibited the same trends in 2009 as found during previous years of monitoring. The lowest calcium concentration in 2009 was recorded at monitoring well TCS-1 in May with a value of 39 mg/L and the high was recorded at monitoring well WR-1 in May with a value of 488 mg/L. The lowest magnesium concentration in 2009 was recorded at monitoring well TCS-1 in May with a value of 14.4 mg/L and the high was recorded at monitoring well WR-1 in May with a value of 445 mg/L. The lowest sodium concentration in 2009 was recorded at monitoring well TR-3 in May with a value of 12 mg/L and the high was recorded at monitoring well TCS-1 in August with a value of 293 mg/L.

4.2.5 Ground Water Bicarbonate and Sulfate

Charts 29, 30 and 31 show bicarbonate, sulfate and sodium concentrations and the sulfate/bicarbonate ratio for monitoring wells TR-1.5, TR-3, TR-4, WR-1 and TCS-1 for the period of record. Bicarbonate and sulfate concentrations show a consistent topological trend over the last 5 years. The sulfate/bicarbonate ratio during much of the previous decade showed the alluvial waters at TR-1.5, TR-3 and TR-4 and the backfill water at WR-1 to be sulfate type. Waters at TR-1.5 WR-1 and TR-3 have become slightly more sulfate over the period of record. The sulfate/bicarbonate ratio at TR-4 has resulted in a bicarbonate type over the last 5 years, differing from the period of record. During the last decade the sulfate/bicarbonate ratio at TR-1.5 was very similar to that found in WR-1 providing further evidence that the source of sulfate may be from a sulfur rich source such as leakage from an old abandoned underground mine.

Bicarbonate levels in TR-4 rose from 2003 to 2005 driving the sulfate/bicarbonate ratio lower, and shifting the water from a sulfate type to a bicarbonate type. This may be due to the well repairs performed in the spring of 2003. The bicarbonate concentrations at TR-4 seem to have peaked in 2004 and look as if they have stabilized and/or decreased in the past few years. Sulfate concentrations exhibited the same trends in 2009 as found during previous years of monitoring. The lowest bicarbonate concentration in 2009 was recorded at monitoring well TR-3 in May with a value of 111 mg/L and the high was recorded at monitoring well TR-4 in August with a value of 571 mg/L. The lowest sulfate concentration in 2009 was recorded at monitoring well TCS-1 in May with a value of 91 mg/L and the high was recorded at monitoring sites TR-1.5 and WR-1 in May with a value of 2700 mg/L. The lowest sulfate/bicarbonate ratio in 2009 was calculated for monitoring well TR-4 in May with a value of 0.25 SO4 (meq)/HCO3 (meq) and the high was calculated for monitoring well WR-1 in May with a value of 15.13 SO4 (meq)/HCO3 (meq).

4.2.6 Ground Water Dissolved Iron and Manganese

Charts 32 and 33 show dissolved iron and manganese concentrations for monitoring wells TR-1.5, TR-3, TR-4, WR-1 and TCS-1 for the period of record. Overall, dissolved iron and manganese levels for the three alluvial wells TR-1.5, TR-3 and TR-4, and backfill well WR-1 remained low during 2009 as in previous years. Monitoring wells TR-1.5 and TR-3 showed spikes in May of 2009 that are uncharacteristic of the sites. The reason for these outliers is unknown. However, both sites returned to historic levels in August of 2009. Manganese concentrations in TR-4 have risen from 2003 to the 2009 sampling season. Once again, this may be due to the well repairs conducted in the spring of 2003. The lowest dissolved iron concentration in 2009 was recorded at monitoring wells WR-1 in August with a value of 0.02 mg/L and the high was recorded at monitoring well TR-1.5 in May with a value of 30.7 mg/L. The lowest manganese concentration in 2009 was recorded at monitoring well TCS-1 in August with a value of 0.015 mg/L and the high was recorded at monitoring well TR-4 in August with a value of 2.86 mg/L.

4.2.7 Ground Water Orthophosphate and Nitrite

Charts 34 and 35 show orthophosphate and nitrite concentrations for the monitoring wells TR-1.5, TR-3, TR-4, WR-1 and TCS-1 for the period of record. Historically, orthophosphate and nitrite values obtained over the period of record have been low with most being below detection limits. Elevated orthophosphate readings occurred in the summers of 1998 through 2000, at up-gradient well TR-1.5, possibly due to nearby agricultural activity. In 2001, concentrations of orthophosphate returned to historically low levels. Site TR-4 had a slight rise in orthophosphate concentration during the 2005 monitoring period, but decreased to levels similar to previous sampling events during the past few years. Nitrite concentrations were again elevated at TR-1.5 in May 2000 and May 2001 and at WR-1 in May 2001, but decreased to historical levels as the year progressed. Nitrite levels remained at historical levels in the 2009 monitoring period. The lowest orthophosphate concentration in 2009 was recorded at monitoring well WR-1 with a value 0.01 mg/L and the high was recorded at monitoring well TR-4 in August with a value of 0.07 mg/L. The lowest nitrite concentration in 2009 was recorded at numerous monitoring wells during numerous events with a value of <0.01 mg/L and the high was recorded at monitoring well TR-4 in August with a value of 0.13 mg/L.

4.2.8 Ground Water Chloride and Potassium

Charts 36 and 37 show chloride and potassium concentrations for the monitoring wells TR-1.5, TR-3, TR-4, WR-1 and TCS-1 for the period of record. Chloride and Potassium were added to the parameters list in 1994. Potassium levels increased in TR-4 over the course of 2003, but have leveled off over the last few years. Chloride at TR-4 spiked in both October 2004 and May 2005, however concentrations returned to historical levels over the past few monitoring periods. Chloride has risen over the past 5 monitoring seasons at TCS-1. The lowest chloride concentration in 2009 was recorded at monitoring wells TR-3 and WR-1 in May with a value of 2 mg/L and the high was recorded at monitoring well TCS-1 in May with a value of 70 mg/L. The lowest potassium concentration in 2009 was recorded at monitoring well TR-3 in May with a value of 1.1 mg/L and the high was recorded at monitoring well WR-1 in May with a value of 11.3 mg/L.

5.0 SURFACE WATER AND GROUND WATER INTERACTIONS

The interrelationship in concentrations of chemical parameters between the surface waters and alluvial waters at the Edna Mine can only be suggested in very general terms. The primary reasons for this are the relative location of a given well to the creek, the source from which an alluvial well's water originates and the dynamics of alluvial flow.

Prior to 1995, a general trend evident in TDS and the major ions was that as one progressed downstream along the mine an increase in these parameters occurred in both the surface water and alluvial water. Beginning in 1995, the levels of all constituents in TR-1.5 increased dramatically. While the influence of this increase in upstream alluvial water is not clearly expressed in either surface or alluvial water downstream for the majority of the year, the elevated concentrations of surface water constituents observed in the early portion of the year are more pronounced than previously. This is probably a reflection of the co-mingling of alluvial water in the vicinity of TR-1.5 with creek water upstream of TR-B.

The independent nature of the observations and trends occurring within the creek water and alluvial water suggests the two water bodies have limited influence upon each other. The lack of influence is probably due to the slow exchange rate of water between the two bodies during most of the year.

6.0 QUALITY ASSURANCE

The quality assurance program is designed to check the precision and accuracy of the analytical results received from the laboratory providing the water quality analyses. During the collection of samples for analysis a duplicate sample from either a ground water or surface water monitoring site will be collected and analyzed. The duplicate sample analysis is compared with its paired sample for similarity.

Two duplicate samples were collected during 2009 for laboratory quality assurance purposes. The duplicate samples were taken at surface water monitoring sites TR-A in April and TR-B in August. Results of the duplicate analyses were favorable for most of the parameters tested.

The April duplicate for TR-A verified 10 of the 15 laboratory parameters to be within 5% of the original values obtained. The duplicate sample value for aluminum was 133% of the original value (0.03 mg/L-original vs. 0.04 mg/L-duplicate). The duplicate sample value for iron was 92% of the original value (0.25 mg/L-original vs. 0.23 mg/L-duplicate). The duplicate sample value for sodium was 139% of the original value (4.4 mg/L-original vs. 6.1 mg/L-duplicate). The duplicate sample value for chloride was 200% of the original value (1 mg/L-original vs. 2 mg/L-duplicate). The duplicate sample value for TSS was 120% of the original value (5 mg/L-original vs. 6 mg/L-duplicate).

The August duplicate for TR-B verified 13 of the 15 parameters to be within 5% of the original value obtained. The duplicate value for iron was 43% of the original value (0.21 mg/l-original vs. 0.09 mg/l-duplicate). The duplicate value for total suspended solids was 120% of the original value (5 mg/l-original vs. 6 mg/l-duplicate).

7.0 SPRING AND SEEP SURVEY

A spring and seep survey is performed annually in May, or as soon as practical after snowmelt, covering the base of reclaimed areas along Trout Creek. Flow from springs or seeps that exceed approximately 20 gpm are measured while flow from smaller expressions are visually estimated. Additionally, a sample will be taken annually from larger, exceeding 20 gpm, springs and seeps. The complete list of parameters used for surface water monitoring sites, except for TSS, is analyzed to characterize the type of flow.

A survey was conducted May 5, 2009 to May 6, 2009 to evaluate springs and seeps which existed during past surveys at the base of the ridge along Trout Creek from the northern Moffat boundary to the base of West Ridge. A total of 15 spring locations were surveyed. Of these 15 spring locations, 12 were either damp or had flowing water during the 2009 survey. A total of 21 seep locations were surveyed. Of these 21 seep locations, 5 were either damp or had flowing water during the 2009 survey. Table 13 contains a listing of the springs and seeps observed from 1993 through 2009. Spring and seep locations are shown on Plate 2.

Twelve of the 12 springs either damp or flowing exhibited sufficient discharge for flow to be estimated or calculated and field parameters measured during the 2009 monitoring period. Five of the 5 seeps either damp or flowing also exhibited sufficient discharge for flow to be estimated and field parameters measured. Several of the springs and seeps were sampled as single units due to their close proximity to each other and their apparent common origin. Flow estimates and field parameters for these springs and seeps are provided in Table 14.

Springs SPR-1, SPR-3, SPR-5 and SPR-11 and seep SE-23 had sufficient flow, singularly or in combination with other springs or seeps, to require additional laboratory water quality sampling in accordance with the mine's permit. Results of these analyses are provided in Table 15.

8.0 MOFFAT STABILITY MONUMENTS

A system of three control points and six monuments were established in the final Moffat pit area during the fourth quarter of 1997. The purpose of the monuments is to monitor the hillslope for long-term stability. The three control points were placed to form a large triangle. The reference control point was established along the top of the hillside in undisturbed ground above the final Moffat pit. The two additional control points (back-sites) were established in undisturbed ground northwest and south of the reference point. The back-sites were established to verify the location of the reference point. The monuments were installed in pairs with the first pair, SM-1 and SM-2, established in the lower third of the final pit area. SM-1 was placed approximately 130 feet south of the final pit highwall and SM-2 was placed approximately 340 feet south of the final pit highwall. The second pair, SM-3 and SM-4, were installed approximately mid-way along the pit. SM-3 was placed approximately 110 feet south of the highwall and SM-4 was placed approximately 325 feet south of the highwall. The last pair, SM-5 and SM-6 was installed in the upper third of final pit area. SM-5 was placed approximately 150 south of the highwall and SM-6 was placed approximately 350 feet south of the highwall. The monuments consist of 7' to 8' sections of 2-1/2" diameter drill steel driven 5-1/2' to 6-1/2' into the pit backfill material. Locations of the stability monuments are displayed on Plate 3.

The monuments were surveyed quarterly the first year and annually thereafter. In 2003, a level loop was surveyed providing elevation information. However, due to an equipment malfunction, x and y coordinates were lost. The 2009 stability monument survey was performed August 12, 2009. The coordinates of the initial monument survey and subsequent surveys are provided in Table 16.

CHARTS

Chart 1. Surface Water Flow

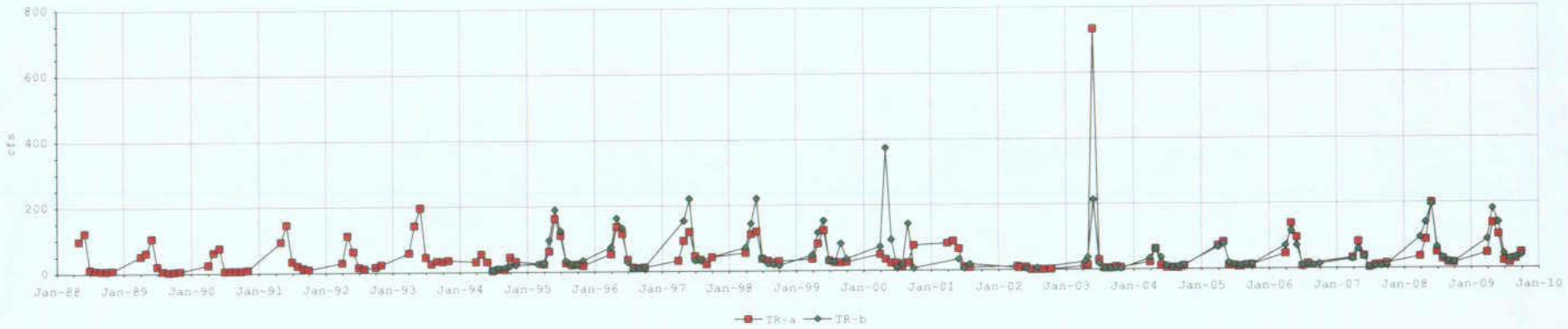


Chart 2. Surface Water Temperature

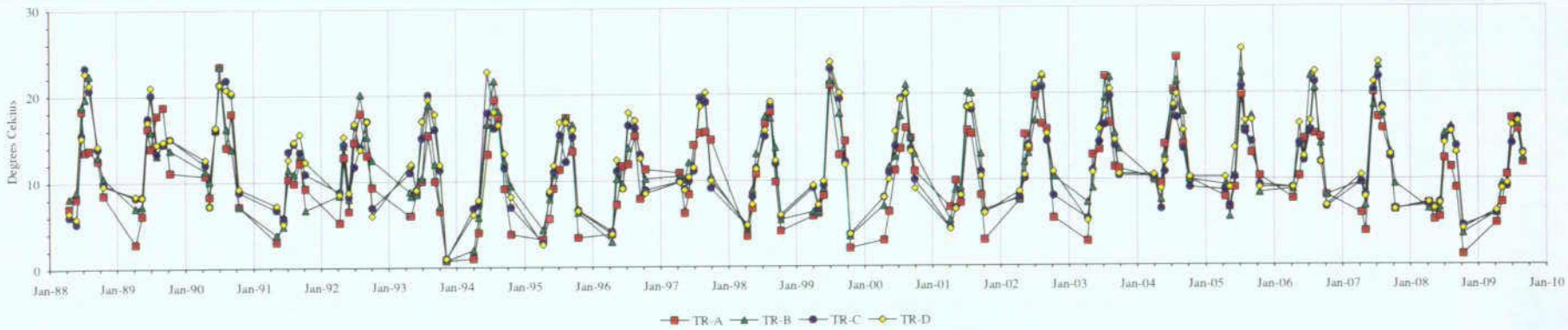


Chart 3. Surface Water pH

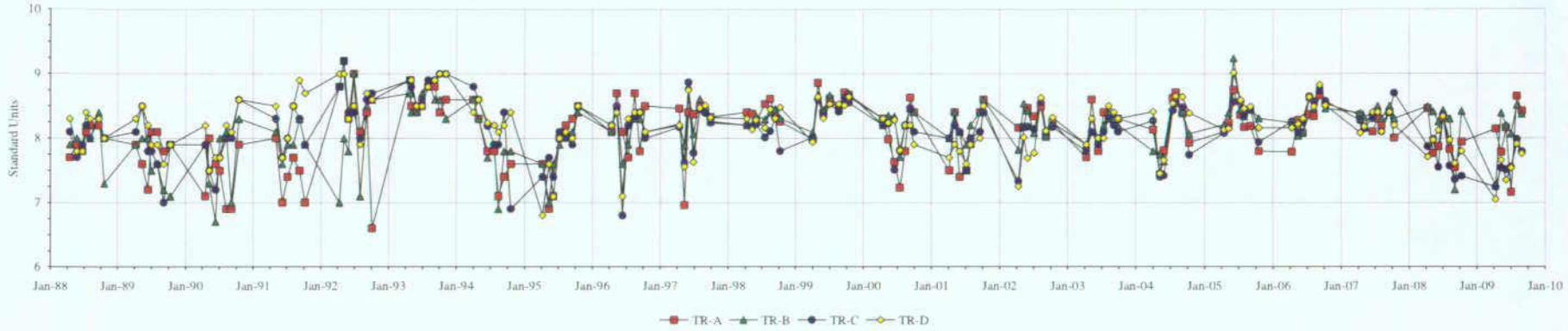


Chart 4. Surface Water Total Suspended Solids

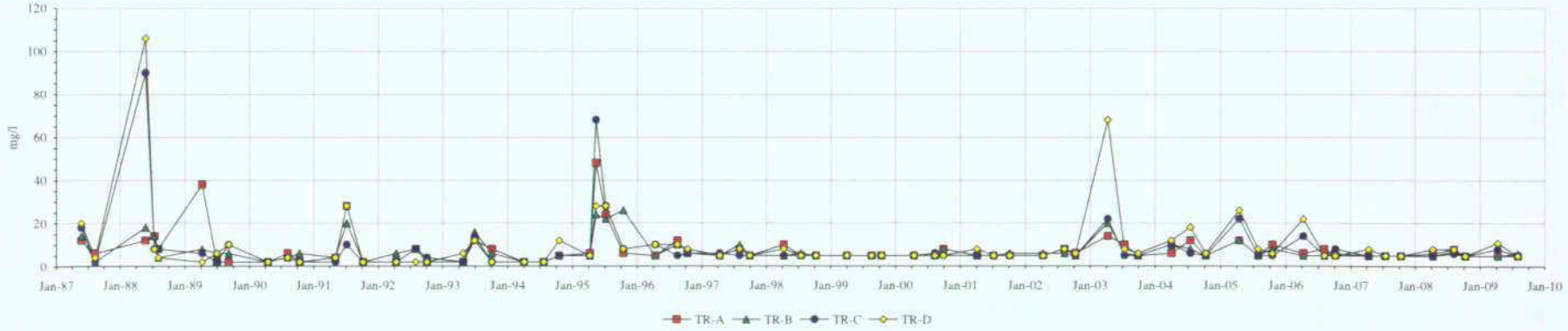


Chart 5. Surface Water Specific Conductivity

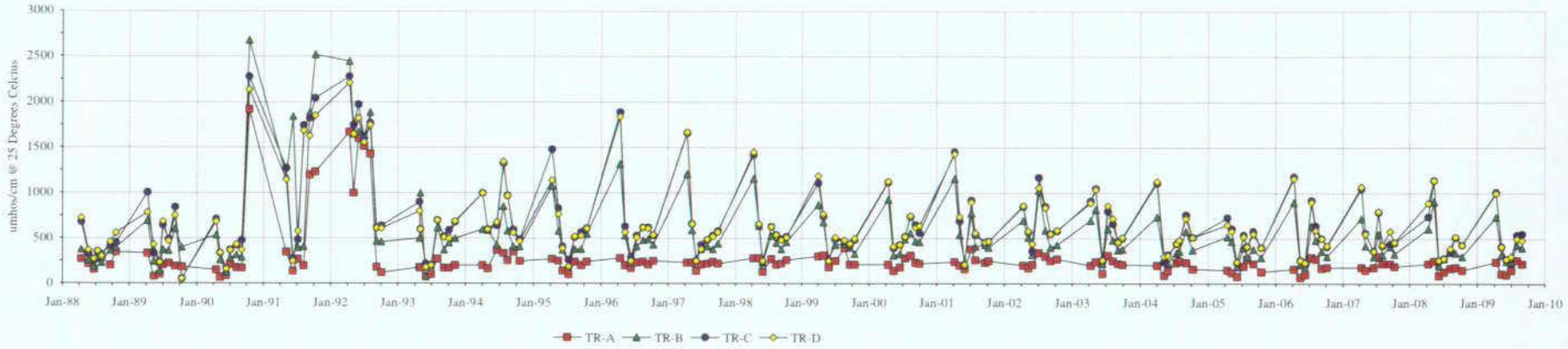


Chart 6. Surface Water Total Dissolved Solids

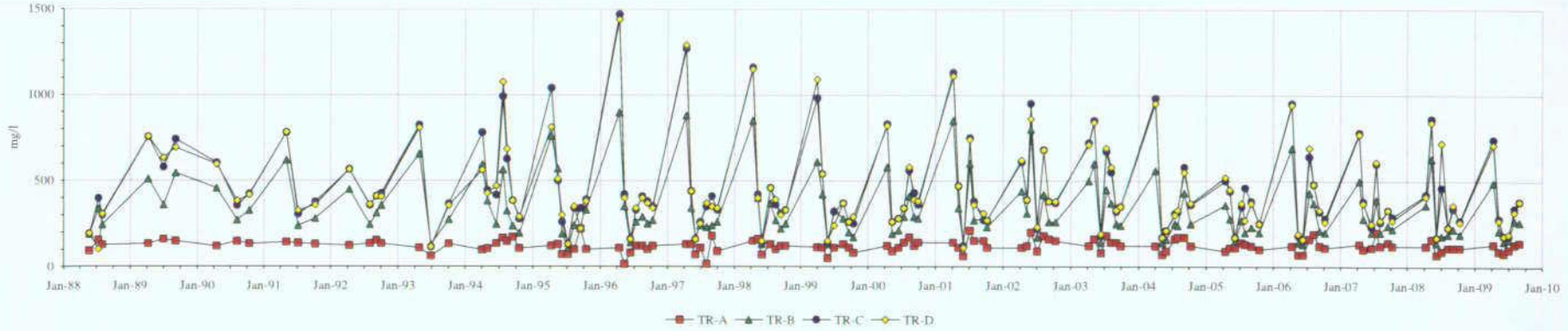


Chart 7. Surface Water Calcium

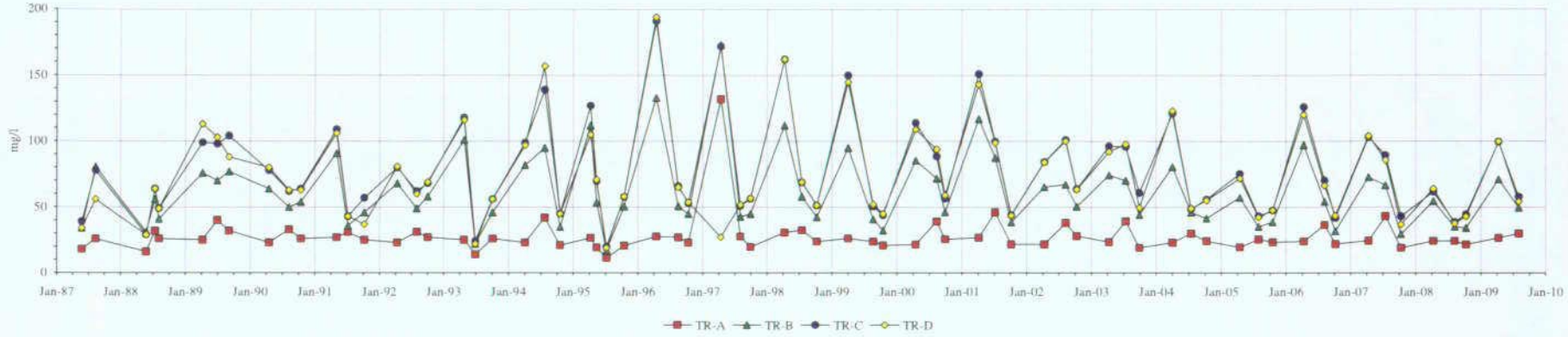


Chart 8. Surface Water Magnesium

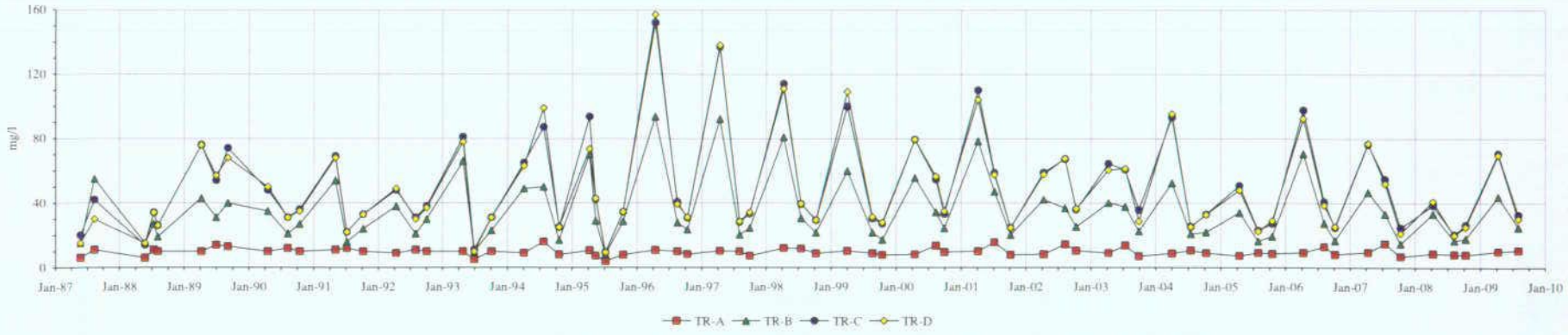


Chart 9. Surface Water Sodium

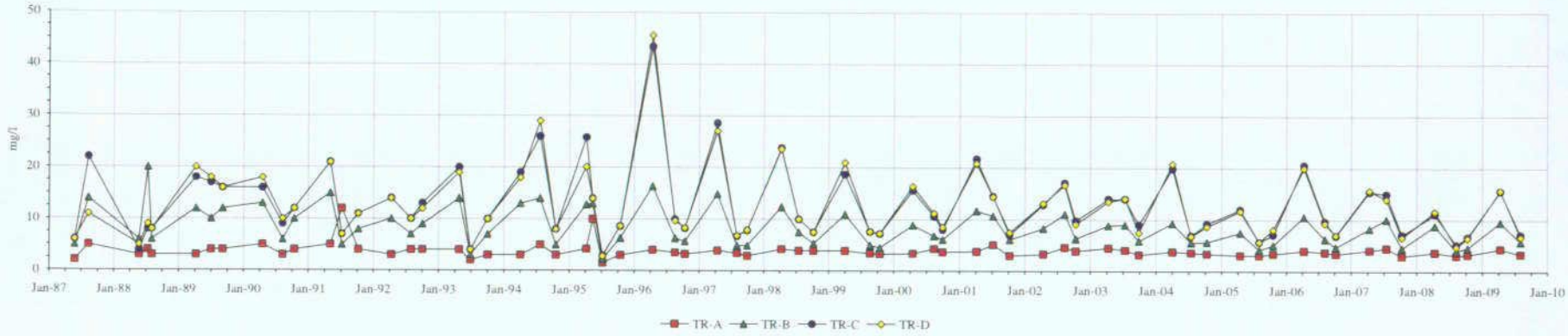


Chart 10. Surface Water Bicarbonate

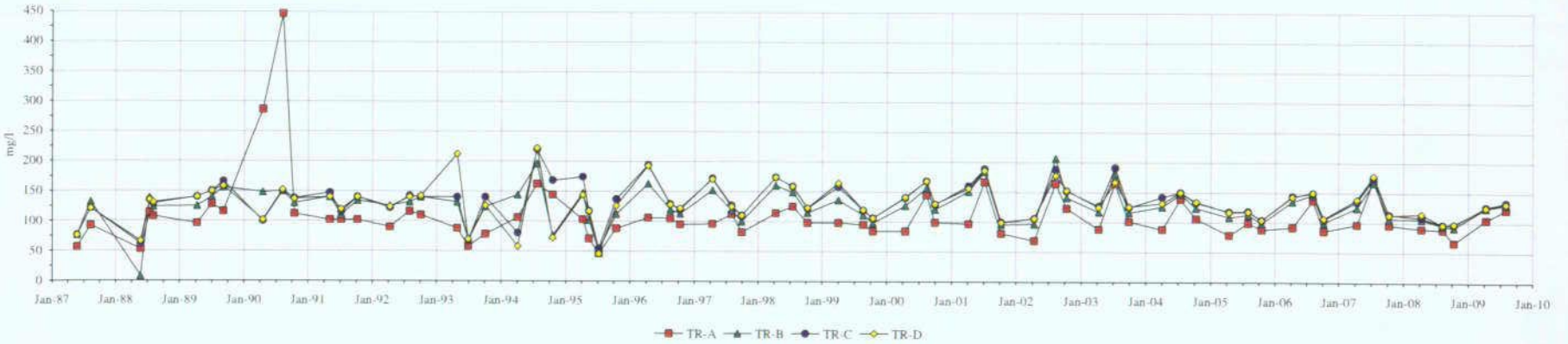


Chart 11. Surface Water Sulfate

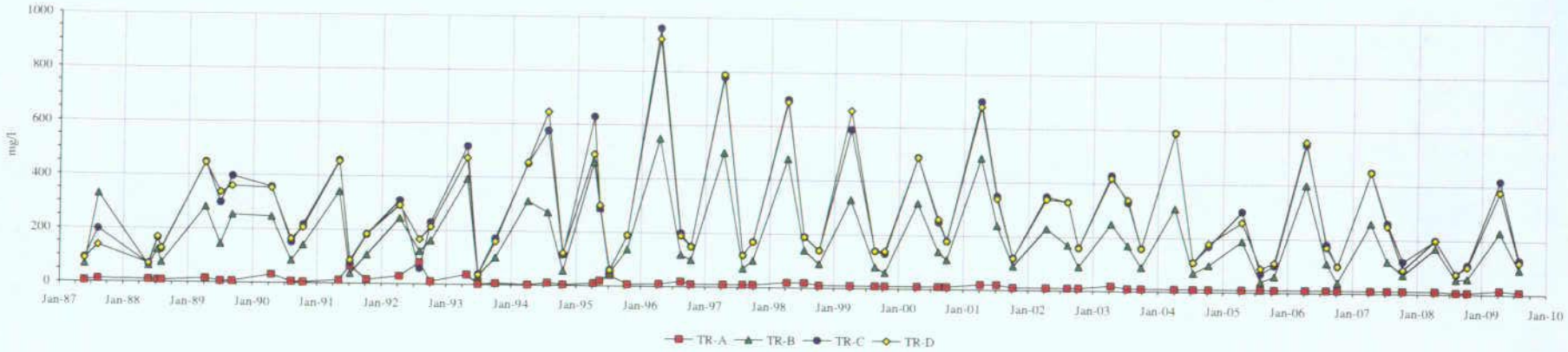
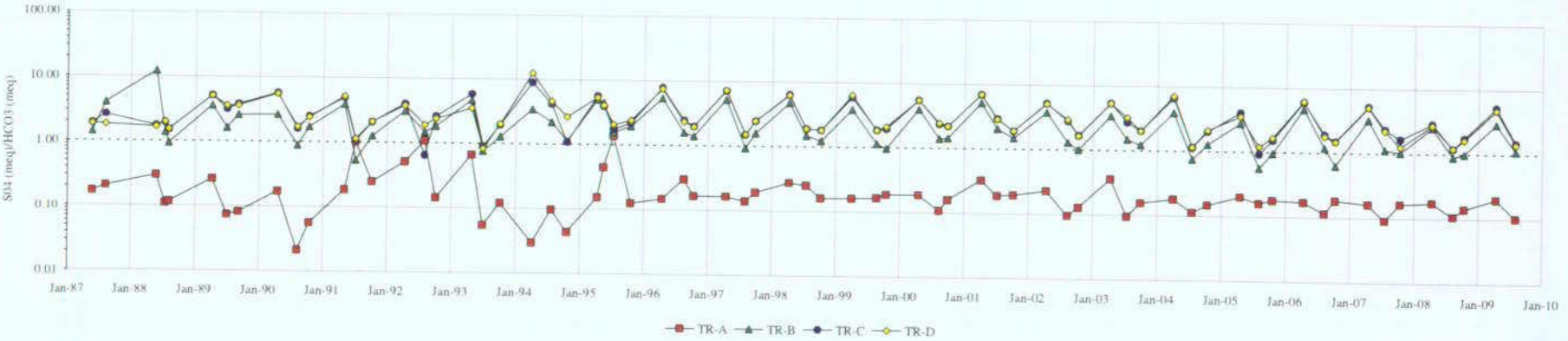


Chart 12. Surface Water Sulfate/Bicarbonate Ratio



(SO4 = HCO3 for y = 1.0 (---); SO4 > HCO3 for y > 1.0; SO4 < HCO3 for y < 1.0)

Chart 13. Surface Water Manganese

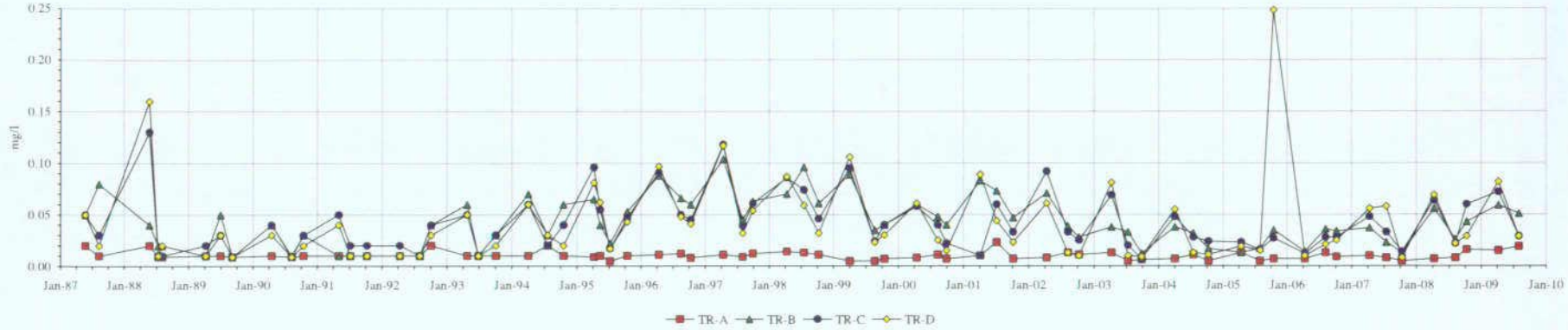


Chart 14. Surface Water Dissolved Aluminum

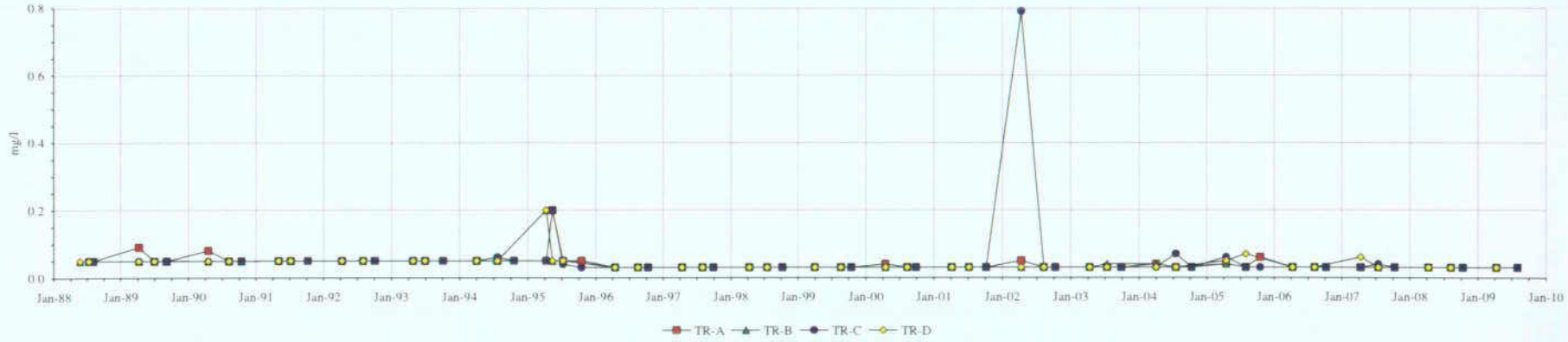


Chart 15. Surface Water Unionized Ammonia

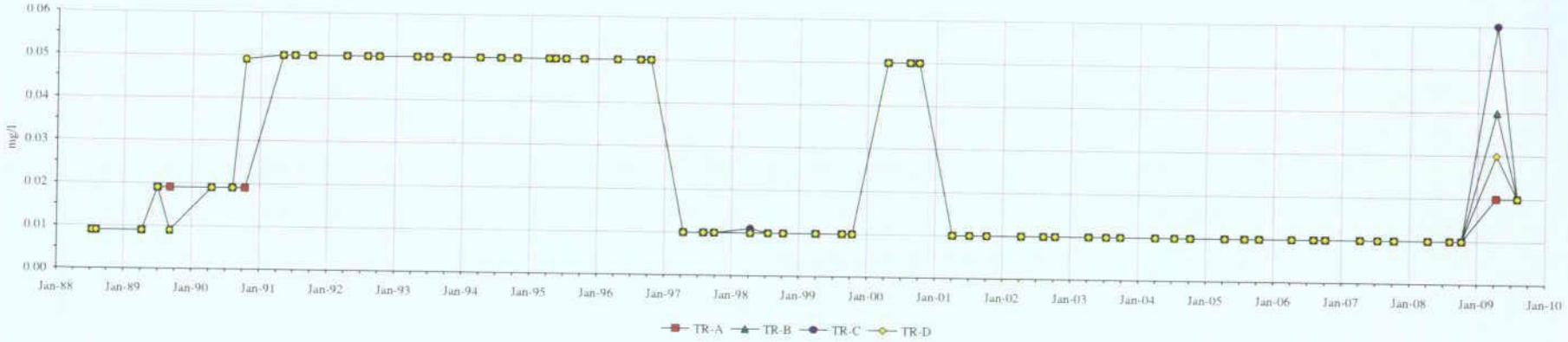


Chart 16. Surface Water Nitrite

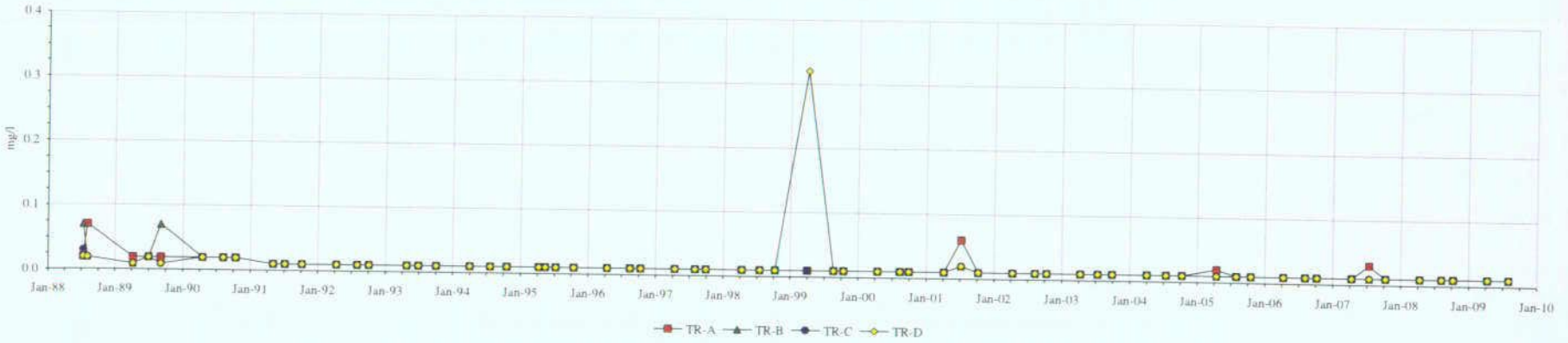


Chart 17. Surface Water Orthophosphate

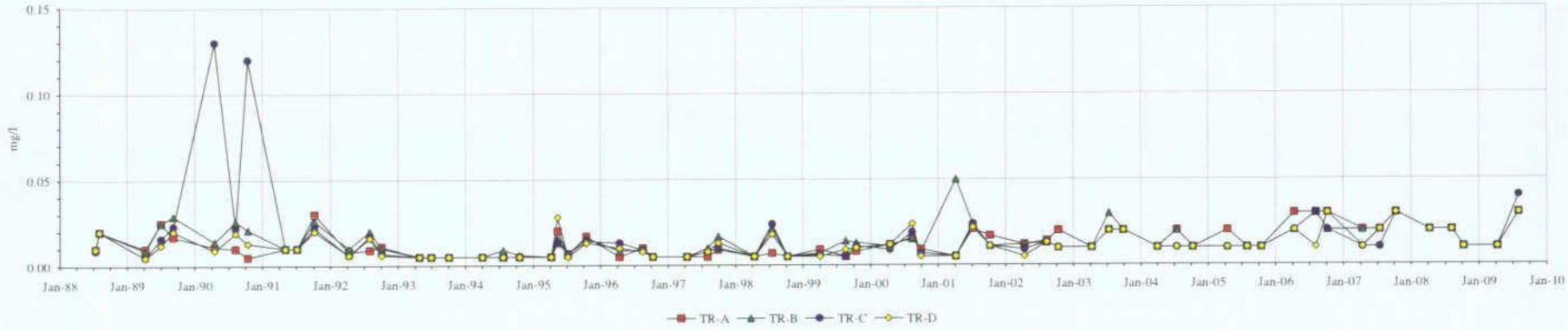


Chart 18. Surface Water Chloride

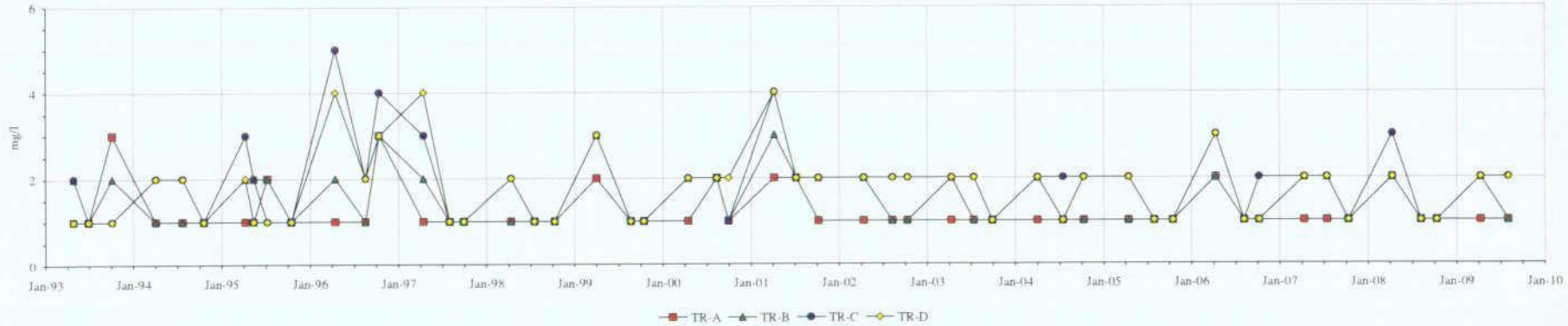


Chart 19. Surface Water Potassium

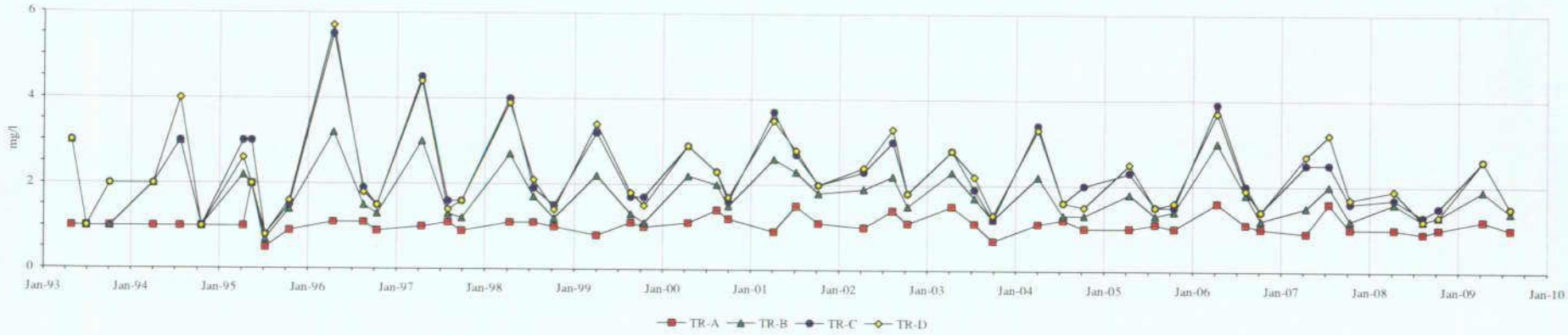


Chart 20. Surface Water Iron

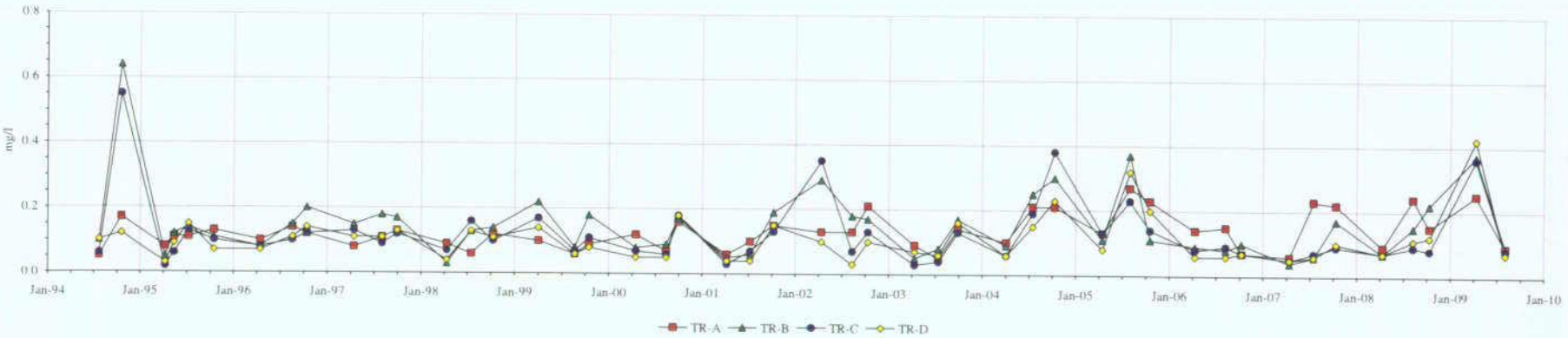


Chart 21. Ground Water Elevation

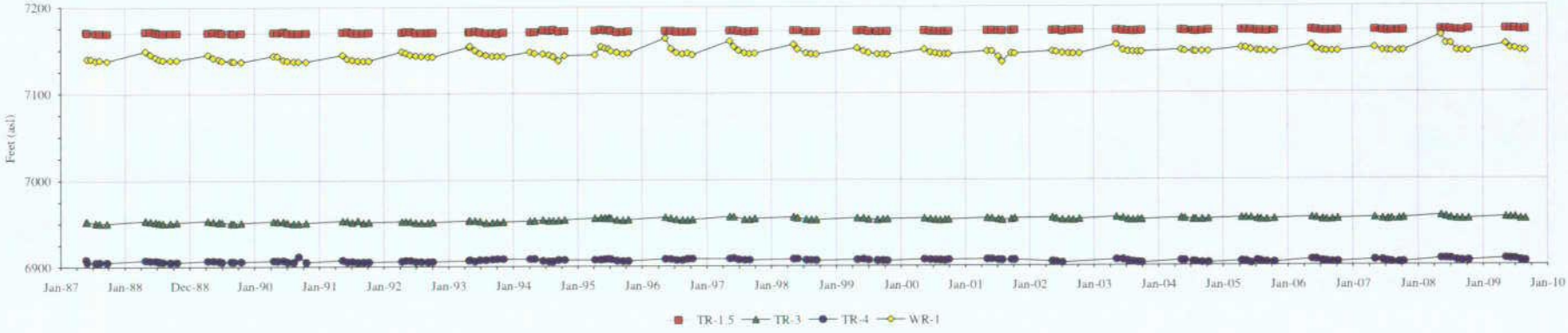


Chart 22. Ground Water Temperature

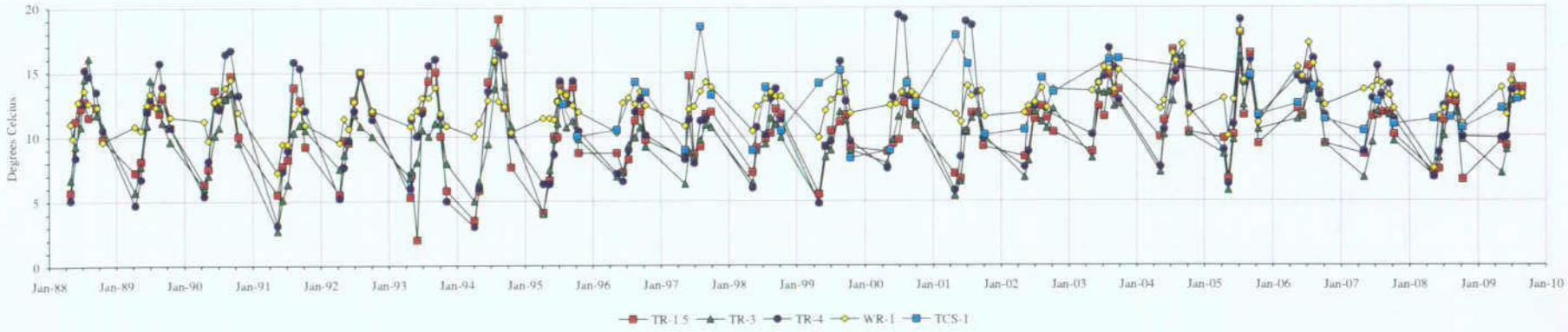


Chart 23. Ground Water pH

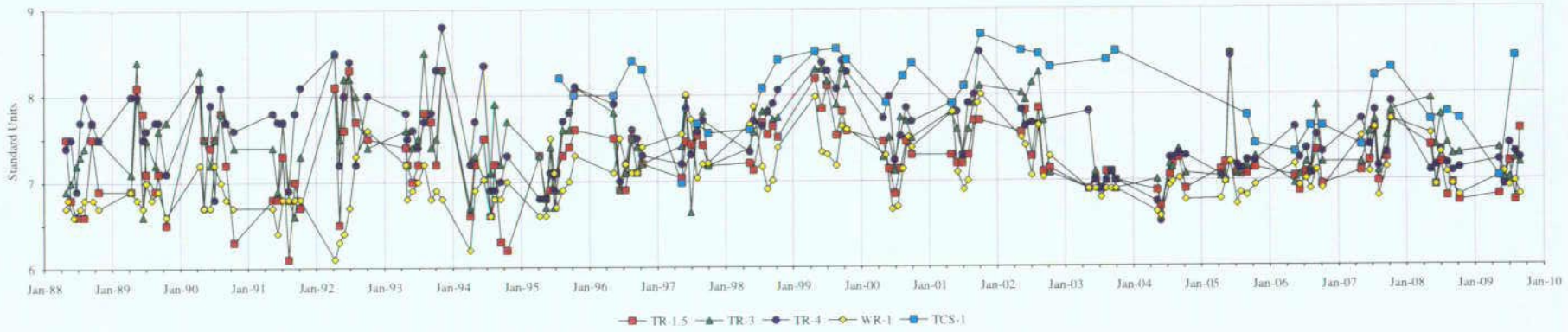


Chart 24. Ground Water Specific Conductivity

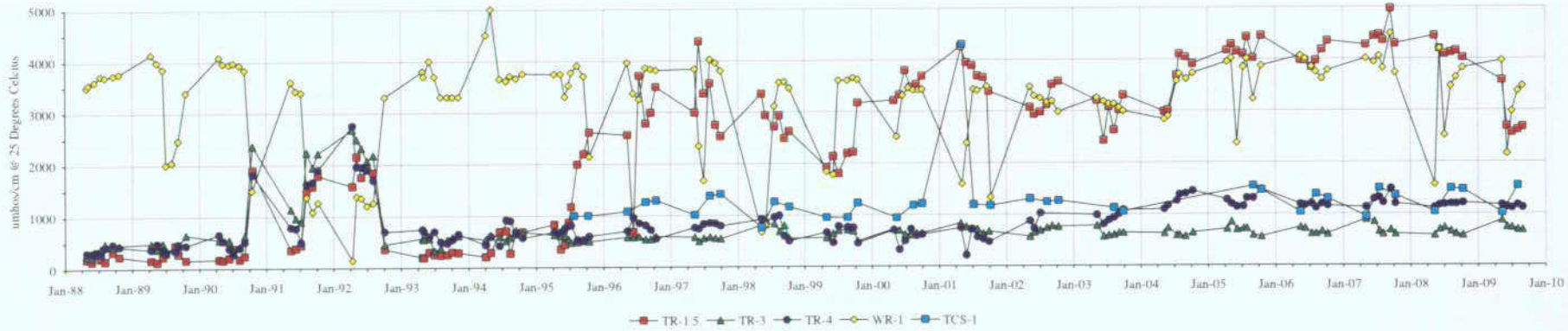


Chart 25. Ground Water Total Dissolved Solids

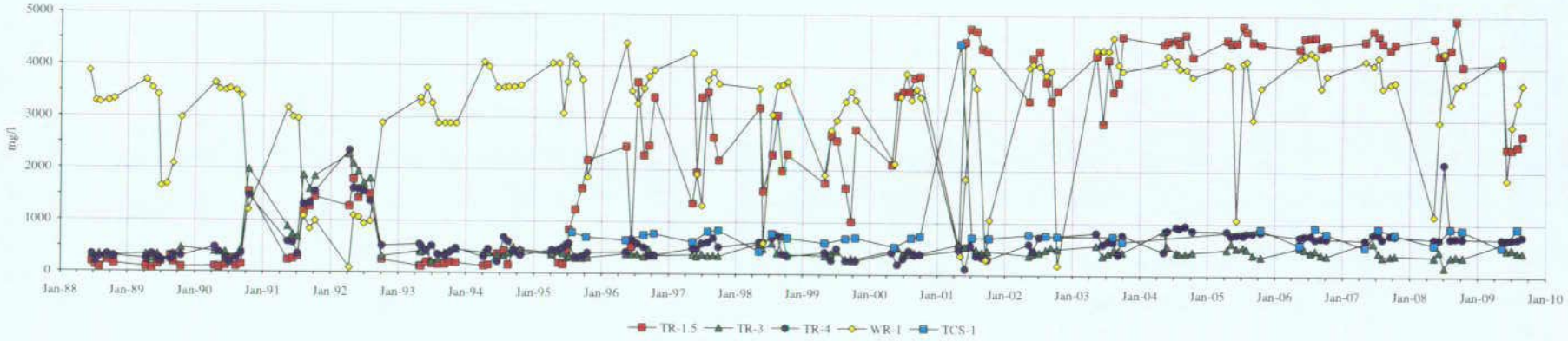


Chart 26. Ground Water Calcium

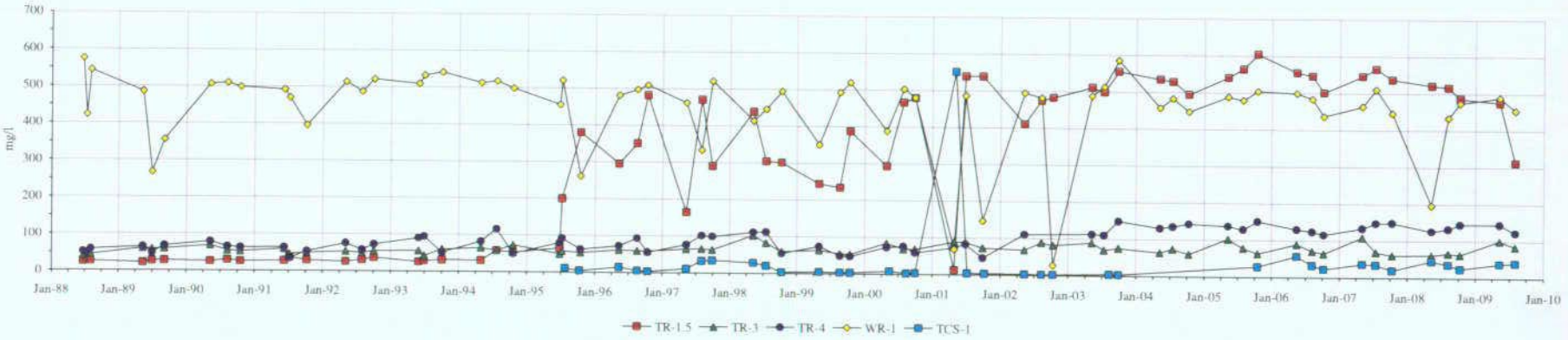


Chart 27. Ground Water Magnesium

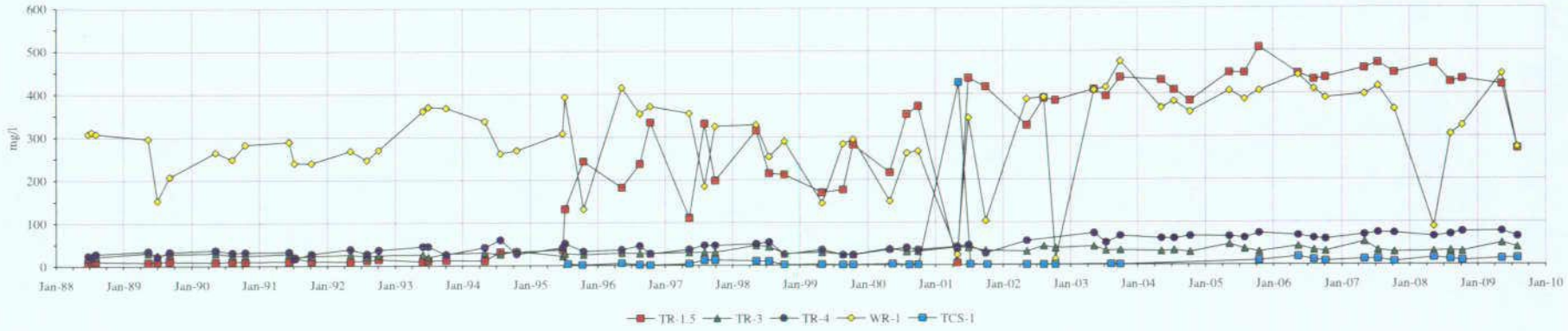


Chart 28. Ground Water Sodium

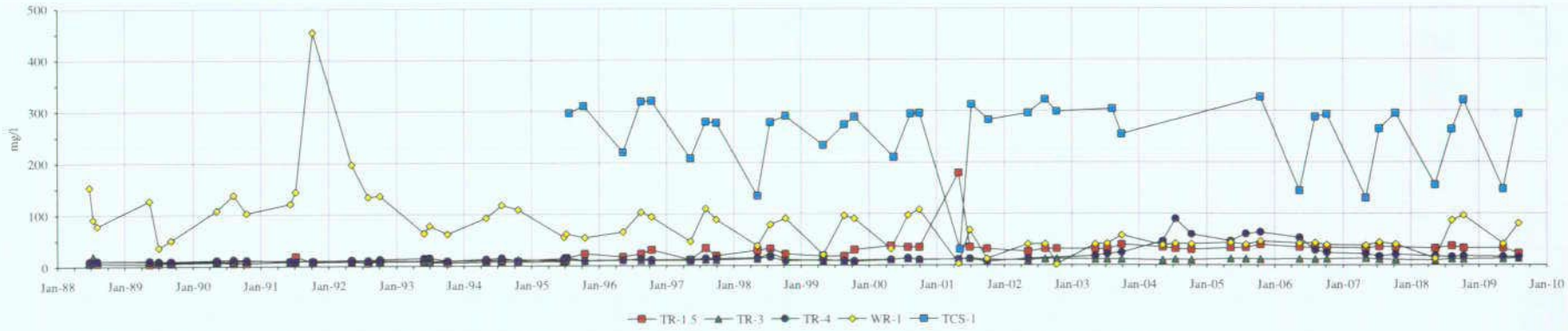


Chart 29. Ground Water Bicarbonate

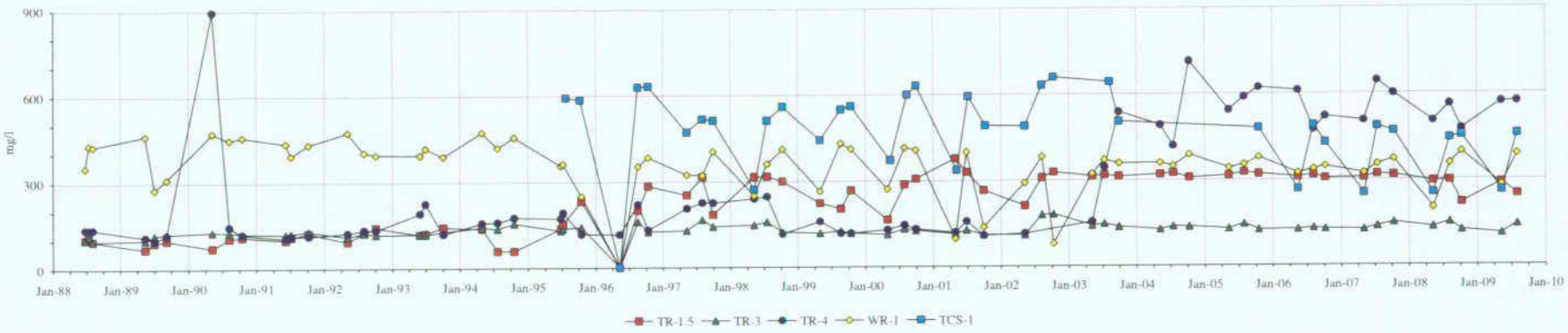


Chart 30. Ground Water Sulfate

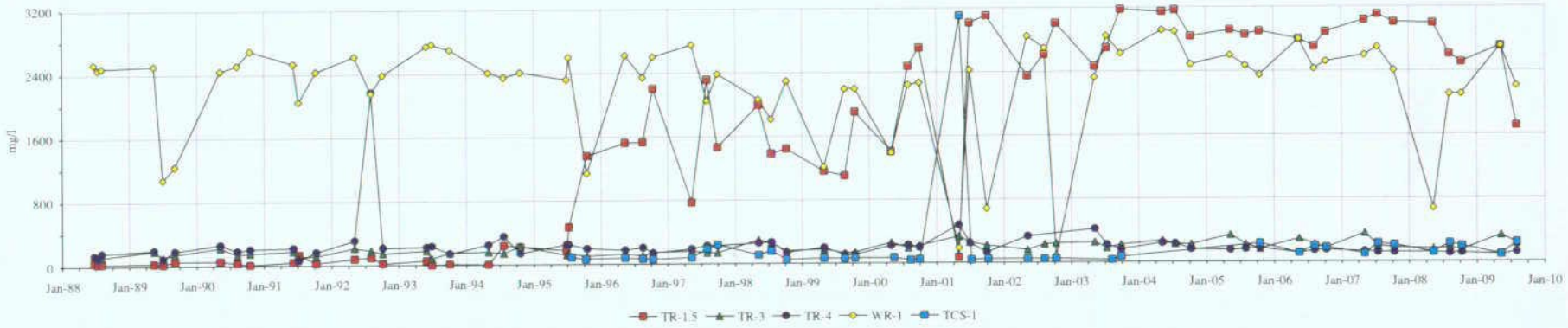


Chart 31. Ground Water Sulfate/Bicarbonate Ratio

(SO4 = HCO3 for y = 1.0 (---); SO4 > HCO3 for y > 1.0; SO4 < HCO3 for y < 1.0)

Chart 32. Ground Water Dissolved Iron

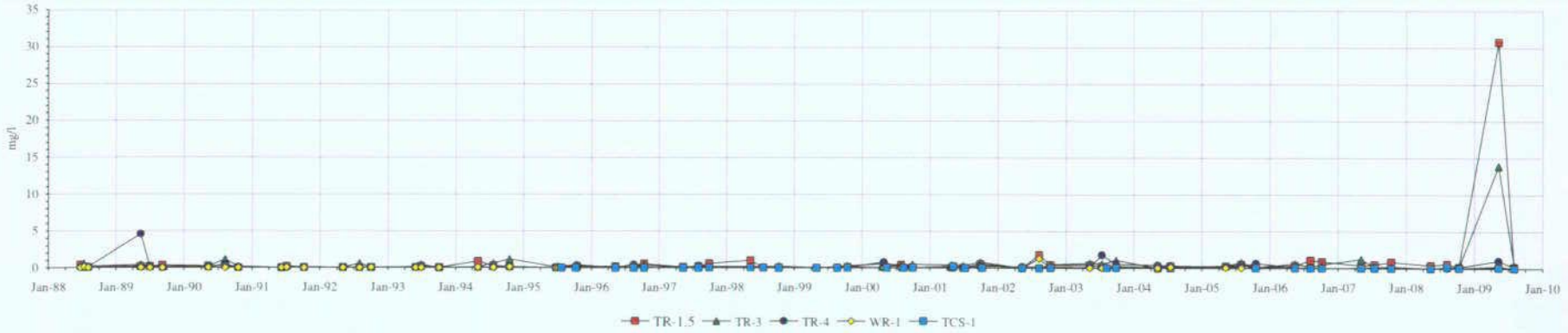


Chart 33. Ground Water Manganese

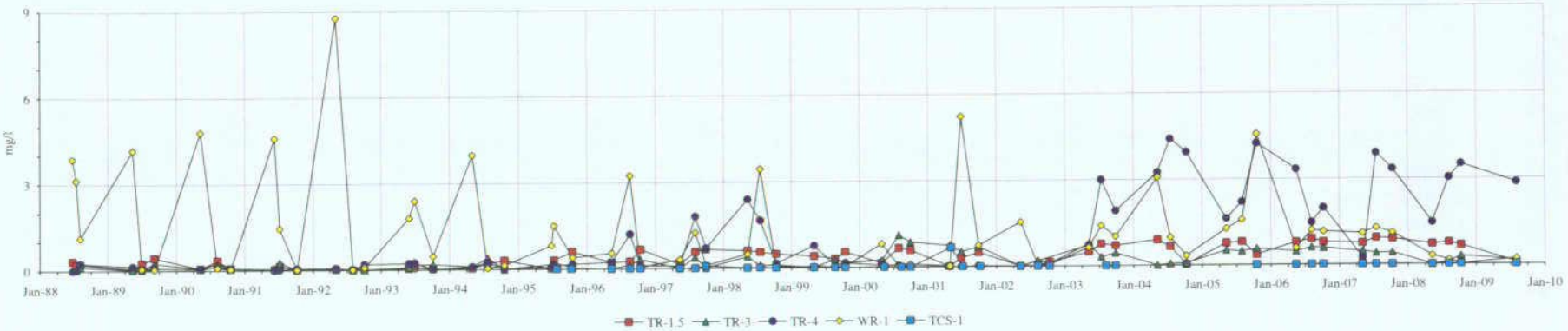


Chart 34. Ground Water Orthophosphate

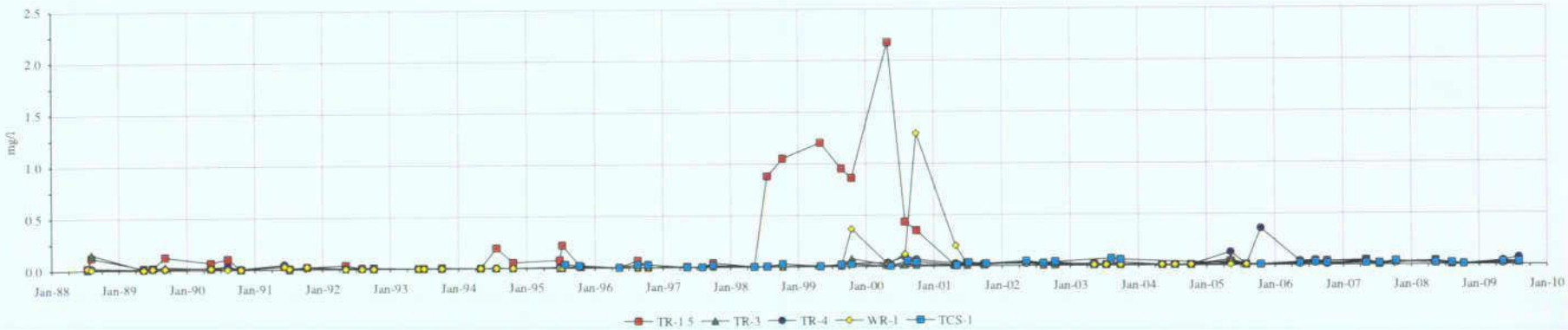


Chart 35. Ground Water Nitrite

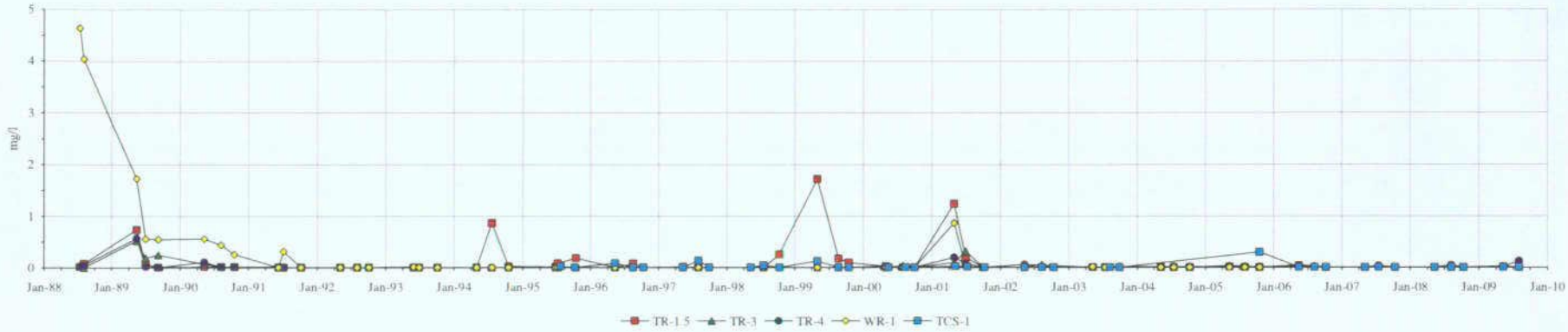


Chart 36. Ground Water Chloride

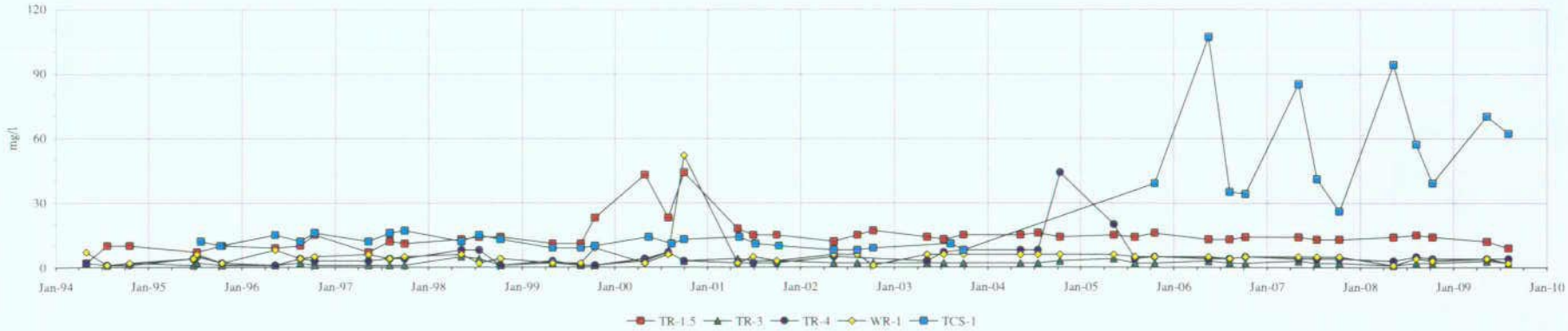
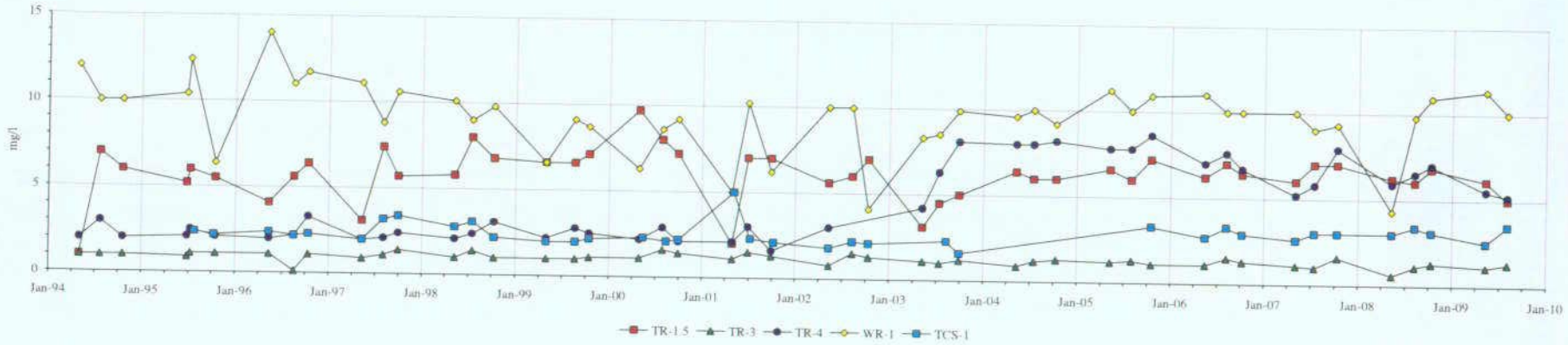


Chart 37. Ground Water Potassium



TABLES

Table 1. Trout Creek Average Streamflow at Site(s) TR-a (a) and/or TR-b (b)

Date	TR-a cfs. (avg)	TR-b cfs. (avg)	TR - A	TR - B	TR - C	TR - D
04/10/89	31.71		a			
04/13/89	24.48			a		
04/14/89	26.95	68.73			ab	ab
05/15/89	58.35	93.60	ab	ab	ab	ab
06/16/89	78.40		a	a		
06/19/89	102.88	93.60			b	b
07/03/89	6.34	19.72	ab	ab	ab	ab
08/03/89	4.03		a			
08/23/89	5.04	10.10		ab	ab	ab
09/07/89	1.79		a			
09/08/89		12.98		b	b	b
04/19/90	21.04	*217.94	ab	ab	ab	ab
05/14/90	58.48	*255.09			ab	ab
06/14/90	101.70	**	a	a	a	a
07/06/90	5.75	**	a	a	a	a
08/10/90	6.20	**				
09/07/90	7.80	25.02	ab	ab	ab	ab
10/16/90	5.88	28.28	ab	ab	ab	ab
05/06/91	21.60	23.57	ab	ab	ab	ab
06/11/91	233.75	**	a	a	a	a
07/09/91	42.29	**	a	a	a	a
08/09/91	24.41	**	a	a	a	a
09/11/91	13.48	**	a	a	a	a
04/13/92	23.35	68.73	ab	ab	ab	ab
05/06/92	81.38	176.20	ab	ab	ab	ab
06/01/92	141.27	148.23	ab	ab	ab	ab
07/01/92	12.09	35.51	ab	ab	ab	ab
08/03/92	18.10	28.15	ab	ab	ab	ab
10/05/92	8.17	33.99	ab	ab	ab	ab
04/28/93		115.23	b	b	b	b
05/04/93	79.49	186.15	ab	ab	ab	ab
06/02/93	198.24	255.09	ab	ab	ab	ab
07/01/93	42.61	78.14	ab	ab	ab	ab
08/04/93	14.46	*142.97	ab	ab	ab	ab
09/09/93	29.00	*257.53	ab	ab	ab	ab
10/06/93	25.49	*351.41	ab	ab	ab	ab
11/08/93	30.99	*295.69	ab	ab	ab	ab
05/03/94	29.83	*186.15	ab	ab	ab	ab
06/20/94	24.86		a	a	a	a
07/25/94	3.08		a	a	a	a
08/16/94	9.42	19.92	ab	ab	ab	ab
09/16/94	7.72	13.14	ab	ab	ab	ab
10/21/94	54.94	20.09	ab	ab	ab	ab

Table 1. Trout Creek Average Streamflow at Site(s) TR-a (a) and/or TR-b (b)

Date	TR-a cfs. (avg)	TR-b cfs. (avg)	TR - A	TR - B	TR - C	TR - D
04/11/95		20.45	b	b	b	b
05/16/95	94.94	76.91	ab	ab	ab	ab
06/08/95	109.17	119.04	ab	ab	ab	ab
07/11/95	177.95	199.82	ab	ab	ab	ab
08/14/95	24.34	29.78	ab	ab	ab	ab
09/18/95	17.83	19.23	ab	ab	ab	ab
10/18/95	20.91	15.95	ab	ab	ab	ab
04/16/96	42.65	71.57	ab	ab	ab	ab
05/13/96	152.68	195.25	ab	ab	ab	ab
06/14/96	110.61	128.08	ab	ab	ab	ab
07/15/96	26.87	13.20	ab	ab	ab	ab
08/19/96	12.10	8.71	ab	ab	ab	ab
09/16/96	9.62	10.12	ab	ab	ab	ab
10/14/96	10.87	16.03	ab	ab	ab	ab
04/16/97	17.78		a	a	a	a
05/13/97	81.30	122.90	ab	ab	ab	ab
06/04/97	162.14	307.07	ab	ab	ab	ab
07/01/97	82.48	65.51	ab	ab	ab	ab
08/04/97	42.18	38.29	ab	ab	ab	ab
09/02/97	34.30	18.14	ab	ab	ab	ab
10/01/97	18.63		a	a	a	a
04/14/98	37.84	42.96	ab	ab	ab	ab
05/12/98	101.80	135.33	ab	ab	ab	ab
06/02/98	167.38	156.95	ab	ab	ab	ab
07/20/98	17.68	17.10	ab	ab	ab	ab
08/17/98	29.07	18.89	ab	ab	ab	ab
09/14/98	27.78	19.06	ab	ab	ab	ab
10/12/98	29.43	15.21	ab	ab	ab	ab
04/01/99	35.06	47.79	ab	ab	ab	ab
05/01/99	82.39	117.22	ab	ab	ab	ab
06/01/99	123.44	153.24	ab	ab	ab	ab
07/01/99	31.19	28.61	ab	ab	ab	ab
08/01/99	25.28	26.53	ab	ab	ab	ab
09/01/99	24.53	*83.15	ab	ab	ab	ab
10/01/99	26.46	35.62	ab	ab	ab	ab
04/01/00	49.57	73.17	ab	ab	ab	ab
05/01/00	34.93	373.84*	ab	ab	ab	ab
06/01/00	23.29	94.76	ab	ab	ab	ab
07/01/00	20.14	8.82	ab	ab	ab	ab
08/01/00	13.15	18.74*	ab	ab	ab	ab
09/01/00	23.53	143.5*	ab	ab	ab	ab
10/01/00	76.87	6.54	ab	ab	ab	ab

Table 1. Trout Creek Average Streamflow at Site(s) TR-a (a) and/or TR-b (b)

Date	TR-a cfs. (avg)	TR-b cfs. (avg)	TR - A	TR - B	TR - C	TR - D
New stage/discharge curve developed in 2001.						
04/01/01	82.00	***	a	a	a	a
05/01/01	90.00	***	a	a	a	a
06/01/01	66.00	34.00	ab	ab	ab	ab
07/01/01	10.00	6.00	ab	ab	ab	ab
08/01/01	8.00	18.00	ab	ab	ab	ab
09/01/01	15.00	***	a	a	a	a
10/01/01	10.00	***	a	a	a	a
04/15/02	10.31	***	a	a	a	a
05/01/02	6.14	***	a	a	a	a
06/01/02	7.76	4.07	ab	ab	ab	ab
07/01/02	0.46	***	a	a	a	a
08/01/02	0.49	5.05	ab	ab	ab	ab
09/01/02	0.42	***	a	a	a	a
10/14/02	1.20	***	a	a	a	a
New digital recorders installed.						
04/16/03	9.77	23.69	ab	ab	ab	ab
05/01/03	13.80	36.68	ab	ab	ab	ab
06/01/03	733.47****	213.34	ab	ab	ab	ab
07/01/03	29.24	18.04	ab	ab	ab	ab
08/01/03	3.48	2.24	ab	ab	ab	ab
09/01/03	3.48	2.24	ab	ab	ab	ab
10/01/03	7.88	3.21	ab	ab	ab	ab
10/26/03	5.20	2.70	ab	ab	ab	ab
04/14/04	21.58	33.67	ab	ab	ab	ab
05/01/04	62.60	62.40	ab	ab	ab	ab
06/01/04	10.45	36.19	ab	ab	ab	ab
07/01/04	4.26	10.56	ab	ab	ab	ab
08/01/04	4.59	5.40	ab	ab	ab	ab
09/01/04	3.18	7.29	ab	ab	ab	ab
10/01/04	9.67	12.77	ab	ab	ab	ab
04/01/05	71.53	66.07	ab	ab	ab	ab
05/01/05	82.67	76.90	ab	ab	ab	ab
06/01/05	12.26	17.26	ab	ab	ab	ab
07/01/05	9.70	12.98	ab	ab	ab	ab
08/01/05	7.00	9.33	ab	ab	ab	ab
09/01/05	10.36	13.23	ab	ab	ab	ab
10/01/05	12.08	13.58	ab	ab	ab	ab
04/01/06	45.61	70.87	ab	ab	ab	ab
05/01/06	138.35	115.19	ab	ab	ab	ab
06/01/06	95.06	70.95	ab	ab	ab	ab
07/01/06	6.73	10.02	ab	ab	ab	ab
08/01/06	15.39	11.93	ab	ab	ab	ab
09/01/06	*****	9.92	b	b	b	b
10/01/06	*****	13.47	b	b	b	b

Table 1. Trout Creek Average Streamflow at Site(s) TR-a (a) and/or TR-b (b)

Date	TR-a cfs. (avg)	TR-b cfs. (avg)	TR - A	TR - B	TR - C	TR - D
04/01/07	31.88	28.29	ab	ab	ab	ab
05/01/07	81.57	58.74	ab	ab	ab	ab
06/01/07	37.32	34.95	ab	ab	ab	ab
07/01/07	2.78	4.10	ab	ab	ab	ab
08/01/07	9.84	5.61	ab	ab	ab	ab
09/01/07	11.11	6.28	ab	ab	ab	ab
10/01/07	15.39	9.42	ab	ab	ab	ab
04/01/08	35.23	94.37	ab	ab	ab	ab
05/01/08	87.35	139.68	ab	ab	ab	ab
06/01/08	200.24	196.29	ab	ab	ab	ab
07/01/08	47.71	63.95	ab	ab	ab	ab
08/01/08	27.11	31.76	ab	ab	ab	ab
09/01/08	17.47	21.02	ab	ab	ab	ab
10/01/08	15.70	17.79	ab	ab	ab	ab
04/01/09	45.46	86.98	ab	ab	ab	ab
05/01/09	136.88	181.01	ab	ab	ab	ab
06/01/09	102.13	138.54	ab	ab	ab	ab
07/01/09	21.59	42.59	ab	ab	ab	ab
08/01/09	15.57	27.72	ab	ab	ab	ab
09/01/09	27.53	32.30	ab	ab	ab	ab
10/01/09	47.45	37.81	ab	ab	ab	ab

*Water flow below Station B blocked by beaver dam
**Water level staff gauge destroyed by high flows
***Continuous reading meter down for repairs
**** Debris upstream of bridge forced water to backup to TR-a resulting in false high readings.
*****Battery failed on digital recorder. Data for TR-a unattainable.

Table 2. Irrigation Ditch Flow Observations at Site TR-A

Date	Flow Observation (Flowing/Not Flowing)	Approximate Flow (cfs)
04/18/00	Not Flowing	0.00
07/18/00	Flowing	1.69
08/15/00	Flowing	0.69
09/11/00	Flowing	0.23
04/09/01	Flowing	0.02
07/10/01	Flowing	8.63
08/01/01	Flowing	0.88
09/21/01	Flowing	0.88
10/10/01	Not Flowing	0.00
05/13/02	Flowing	9.23
06/03/02	Flowing	9.23
07/01/02	Flowing	2.59
07/30/02	Flowing	1.22
09/09/02	Not Flowing	0.00
04/14/03	Flowing	0.07
05/12/03	Flowing	0.02
06/17/03	Flowing	8.34
07/16/03	Flowing	4.63
08/12/03	Flowing	3.72
09/08/03	Flowing	1.01
10/01/03	Not Flowing	0.00
10/27/03	Not Flowing	0.00
04/05/04	Not Flowing	0.00
06/01/04	Flowing	2.49
07/01/04	Not Flowing	0.00
04/18/05	Flowing	1.69
05/12/05	Flowing	2.40
06/09/05	Flowing	9.38
07/15/05	Flowing	15.05
08/03/05	Flowing	0.02
10/20/05	Not Flowing	0.00
04/14/06	Not Flowing	0.00
05/19/06	Flowing	0.53
06/13/06	Flowing	1.10
07/18/06	Flowing	9.69
08/10/06	Not Flowing	0.00
10/11/06	Not Flowing	0.00
04/16/07	Not Flowing	0.00
05/08/07	Not Flowing	0.00
06/22/07	Flowing	9.54
07/01/07	Flowing	11.27
08/09/07	Not Flowing	0.00
09/21/07	Not Flowing	0.00
10/15/07	Not Flowing	0.00

Table 2. Irrigation Ditch Flow Observations at Site TR-A

Date	Flow Observation (Flowing/Not Flowing)	Approximate Flow (cfs)
04/14/08	Not Flowing	0.00
05/14/08	Not Flowing	0.00
06/11/08	Flowing	11.93
07/07/08	Not Flowing	0.00
08/11/08	Not Flowing	0.00
09/08/08	Not Flowing	0.00
10/14/08	Not Flowing	0.00
04/14/09	Not Flowing	0.00
05/14/09	Not Flowing	0.00
06/09/09	Flowing	13.98
07/06/09	Not Flowing	0.00
08/06/09	Not Flowing	0.00
09/02/09	Not Flowing	0.00

Table 3. Surface Water Quality at Site TR-A

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/15/88	7.70	7.0	269		4														
05/25/88	7.90	8.1	216	90	12				53	10	0.3	16.0	6.0	3.0		0.020			
06/24/88	7.80	18.3	152		12														
07/14/88	8.10	13.5	270	152	14	0.010	0.02	0.01	114	8	0.1	32.0	11.0	4.0	0.05	0.009			
08/05/88	8.20	13.7	284	126	8	0.020	0.07	0.01	108	8	0.1	26.0	10.0	3.0	0.05	0.009			
09/21/88	8.20	12.5	201		2														
10/21/88	8.00	8.5	347		2														
04/10/89	7.90	2.8	331	132	38	0.010	0.02	0.01	96	16	0.3	25.0	10.0	3.0	0.09	0.010			
05/15/89	7.60	6.1	78		4														
06/16/89	7.20	16.2	98		18														
07/03/89	8.10	13.9	203	158	2	0.025	0.02	0.02	128	6	0.1	40.0	14.0	4.0	0.05	0.010			
08/03/89	8.10	17.7	223		2														
09/07/89	7.80	18.7	189	148	2	0.017	0.02	0.02	116	6	0.1	32.0	13.0	4.0	0.05	0.009			
10/13/89	7.90	11.1	181		6														
04/19/90	7.10	10.7	149	118	2	0.011	0.02	0.02	286	31	0.2	23.0	10.0	5.0	0.08	0.010			
05/11/90	8.00	8.3	66		6														
06/14/90	7.60	16.0	84		20														
07/06/90	7.50	23.4	211		10														
08/10/90	6.90	14.0	172	146	6	0.010	0.02	0.02	446	6	0.0	33.0	12.0	3.0	0.05	0.009			
09/07/90	6.90	17.9	169		4														
10/16/90	7.90	7.1	1920	132	2	0.005	0.02	0.02	112	4	0.1	26.0	10.0	4.0	0.05	0.010			
05/06/91	8.00	3.0	347	142	4	< 0.010	< 0.01	< 0.05	102	12	0.2	27.0	11.0	5.0	< 0.05	< 0.010			
06/11/91	7.00	5.6	135		30														
07/09/91	7.40	10.3	266	136	28	< 0.010	< 0.01	< 0.05	102	66	1.0	31.0	12.0	12.0	< 0.05	< 0.010			
08/09/91	7.70	9.8	196		8														
09/11/91	7.50	12.2	1200		4														
10/10/91	7.00	9.2	1232	130	< 2	0.030	< 0.01	< 0.05	102	16	0.2	25.0	10.0	4.0	< 0.05	< 0.010			
04/13/92	8.80	5.2	1671	122	< 2	0.008	< 0.01	< 0.05	90	29	0.5	23.0	9.0	3.0	< 0.05	< 0.010			
05/06/92	9.20	12.8	996		< 2														
06/01/92	8.30	6.5	1600		8														
07/01/92	9.00	14.5	1515		4														
08/03/92	8.10	17.9	1430	134	8	0.009	< 0.01	< 0.05	116	80	1.1	31.0	11.0	4.0	< 0.05	< 0.010			
09/08/92	8.40	13.0	180	153	< 2														
10/05/92	6.60	9.3	120	134	< 2	0.011	< 0.01	0.05	110	< 10	0.1	27.0	10.0	4.0	< 0.05	0.020			

Table 3. Surface Water Quality at Site TR-A

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/28/93	8.90	6.0	175	108	< 2	< 0.005	< 0.01	< 0.05	88	37	0.7	25.0	10.0	4.0	< 0.05	0.010	1.0	< 1	
05/04/93	8.50	6.0	170		4														
06/02/93	8.40	8.5	74																
07/01/93	8.50	10.0	100	62	12	< 0.005	< 0.01	< 0.05	58	< 2	0.1	14.0	5.0	2.0	< 0.05	< 0.010	< 1.0	< 1	
08/04/93	8.80	15.3	270		6														
09/09/93	8.80	10.0	170		2														
10/06/93	8.40	6.5	170	132	8	< 0.005	< 0.01	< 0.05	78	6	0.1	26.0	10.0	3.0	< 0.05	< 0.010	1.0	3	
11/08/93	8.60	0.8	200		< 2														
04/05/94	8.60	1.0	200	96	< 2	< 0.005	< 0.01	< 0.05	106	< 2	0.0	23.0	9.0	3.0	< 0.05	< 0.010	< 1.0	< 1	
05/03/94	8.30	4.0	165	104															
06/20/94	7.80	13.1	370	134															
07/25/94	7.80	19.4	335	166	< 2	< 0.005	< 0.01	< 0.05	162	10	0.1	42.0	16.0	5.0	< 0.05	0.020	1.0	< 1	0.05
08/16/94	7.10	17.4	253	146															
09/16/94	7.40	9.1	352	172															
10/21/94	7.60	3.8	248	106	< 5	< 0.005	< 0.01	< 0.05	144	< 4	0.0	21.0	8.0	3.0	< 0.05	0.010	< 1.0	< 1	0.17
04/11/95	7.60	3.2	270	120	6	< 0.005	< 0.01	< 0.05	103	10	0.2	26.6	10.6	4.2	< 0.05	< 0.009	1.0	< 1	0.08
05/16/95	6.90	5.6	250	130	48	0.020	< 0.01	< 0.05	71	20	0.4	19.3	7.3	10.0	< 0.20	0.010	< 2.0	< 1	0.11
06/08/95	7.10	9.1	140	70															
07/11/95	8.00	11.3	101	70	24	0.060	< 0.01	< 0.05	46	40	1.4	11.4	4.0	1.5	0.05	< 0.005	0.5	2	0.11
08/14/95	8.20	17.3	240	100															
09/18/95	8.30	13.4	200	220															
10/18/95	8.50	3.4	240	100	6	0.017	< 0.01	< 0.05	88	7	0.1	20.6	7.9	3.0	< 0.05	< 0.010	0.9	< 1	0.13
04/16/96	8.10	3.8	280	108	< 5	< 0.005	< 0.01	< 0.05	106	< 10	0.1	27.7	10.8	4.0	< 0.03	0.011	1.1	1	0.10
05/13/96	8.70	7.2	200	14															
06/14/96	8.10	11.7	170	80															
07/15/96	7.70	11.9	230	120															
08/19/96	8.70	15.2	240	120	12	0.010	< 0.01	< 0.05	105	20	0.3	26.8	10.0	3.5	< 0.03	0.012	1.1	1	0.14
09/16/96	7.80	7.9	210	100															
10/14/96	8.50	11.3	250	120	6	< 0.005	< 0.01	< 0.05	95	< 10	0.2	22.9	8.3	3.2	< 0.03	0.008	0.9	3	0.12
04/16/97	8.46	10.9	230	130	< 5	< 0.005	< 0.01	0.01	96	10	0.2	132.0	10.4	3.9	< 0.03	0.011	1.0	< 1	0.08
05/13/97	6.96	6.2	230	130															
06/04/97	8.40	8.4	140	70															
07/01/97	8.37	14.1	210	110															
08/04/97	8.49	15.5	220	15	8	< 0.005	< 0.01	< 0.01	112	< 10	0.1	27.6	10.0	3.4	< 0.03	0.009	1.1	< 1	0.11
09/02/97	8.42	15.6	240	180															
10/01/97	8.33	14.7	220	90	< 5	0.009	< 0.01	< 0.01	82	< 10	0.2	19.7	7.3	2.9	< 0.03	0.012	0.9	< 1	0.13

Table 3. Surface Water Quality at Site TR-A

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/14/98	8.40	3.5	280	150	10	< 0.005	< 0.01	< 0.01	114	20	0.3	30.6	12.1	4.2	< 0.03	0.014	1.1	< 1	0.09
05/12/98	8.38	6.7	280	160															
06/02/98	8.25	10.7	130	70															
07/20/98	8.53	16.6	270	130	< 5	0.007	< 0.01	0.01	125	20	0.3	32.5	11.7	3.9	< 0.03	0.013	1.1	< 1	0.06
08/17/98	8.61	17.9	210	100															
09/14/98	8.35	9.8	220	120															
10/12/98	8.26	4.1	260	120	< 5	< 0.005	< 0.01	< 0.01	98	< 10	0.2	23.9	8.8	3.9	< 0.03	0.011	1.0	< 1	0.12
04/05/99	7.98	5.8	300	112	< 5	0.009	< 0.01	< 0.01	98	10	0.2	26.2	10.2	3.9	< 0.03	< 0.005	0.8	2	0.1
05/03/99	8.86	6.1	310	110															
06/01/99	8.39	8.2	180	50															
07/06/99	8.61	21.0	250	110															
08/24/99	8.43	12.9	390	130	< 5	< 0.005	< 0.01	< 0.01	95	< 10	0.2	23.7	8.8	3.4	< 0.03	< 0.005	1.1	< 1	0.06
09/23/99	8.71	14.5	210	110															
10/18/99	8.67	2.1	210	80	< 5	0.008	< 0.01	< 0.01	84	< 10	0.2	20.8	7.8	3.3	< 0.03	0.007	1.0	< 1	0.09
04/18/00	8.30	3.0	210	120	< 5	0.012	< 0.01	< 0.05	84	< 10	0.2	21.5	8.1	3.4	0.04	0.008	1.1	1	0.12
05/16/00	7.98	6.3	140	90															
06/19/00	7.63	11.1	180	110															
07/18/00	7.23	13.6	280	140															
08/15/00	7.80	16.0	310	170	< 5	0.015	< 0.01	< 0.05	145	10	0.1	39.1	13.5	4.3	< 0.03	0.011	1.4	2	0.07
09/11/00	8.63	14.8	230	120															
10/02/00	8.40	11.0	220	140	8	0.009	< 0.01	< 0.05	99	< 10	0.2	25.5	9.6	3.7	< 0.03	0.007	1.2	1	0.16
04/09/01	7.50	6.8	240	140	< 5	< 0.005	< 0.01	< 0.01	97	20	0.3	26.7	10.1	3.8	< 0.03	0.010	0.9	2	0.06
05/08/01	8.40	9.9	200	110															
06/04/01	7.40	7.3	160	60															
07/10/01	7.50	15.7	380	210	< 5	0.021	0.06	< 0.01	167	20	0.2	45.9	15.7	5.1	< 0.03	0.023	1.5	2	0.10
08/01/01	7.90	15.3	260	150															
09/21/01	8.40	8.2	230	150															
10/10/01	8.60	3.0	250	110	< 5	0.017	< 0.01	< 0.01	81	10	0.2	21.7	7.9	3.0	< 0.03	0.007	1.1	1	0.15
04/15/02	8.16	7.6	200	110	< 5	0.012	< 0.01	< 0.01	69	10	0.2	21.7	8.2	3.3	0.05	0.008	1.0	1	0.13
05/13/02	8.17	15.2	170	120															
06/03/02	8.47	13.6	210	200															
07/08/02	8.34	19.7	340	90															
08/13/02	8.49	16.4	300	180	8	0.014	< 0.01	< 0.01	164	10	0.1	38.0	14.4	4.6	< 0.03	0.013	1.4	< 1	0.13
09/09/02	8.02	15.8	250	160															
10/14/02	8.24	5.5	270	150	6	0.020	< 0.01	< 0.01	123	< 10	0.1	27.9	10.5	3.9	< 0.03	0.011	1.1	1	0.21

Table 3. Surface Water Quality at Site TR-A

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/14/03	7.70	2.8	200	120	14	< 0.010	< 0.01	< 0.01	88	20	0.4	23.4	9.0	4.5	< 0.03	0.013	1.5	1	0.09
05/12/03	8.60	12.8	240	160															
06/17/03	7.80	13.4	110	80															
07/16/03	8.40	21.9	310	180	10	0.020	< 0.01	< 0.01	165	< 10	0.1	39.2	13.7	4.1	< 0.03	0.005	1.1	1	0.05
08/12/03	8.30	16.5	250	140															
09/08/03	8.30	11.4	220	140															
10/01/03	8.30	11.2	210	120	< 5	0.020	< 0.01	< 0.01	101	< 10	0.2	19.1	7.0	3.2	< 0.03	0.006	0.7	< 1	0.14
04/05/04	8.13	10.1	200	120	6	< 0.010	< 0.01	< 0.01	88	< 10	0.2	23.0	8.8	3.8	0.04	0.007	1.1	1	0.10
05/12/04	7.44	9.5	90	70															
06/01/04	7.81	14.0	140	90															
07/19/04	8.62	20.3	230	160	12	0.020	< 0.01	< 0.01	139	< 10	0.1	29.9	10.6	3.6	< 0.03	0.011	1.2	1	0.21
08/03/04	8.71	24.1	250	170															
09/08/04	8.38	14.0	230	170															
10/13/04	7.93	10.0	160	120	< 5	< 0.010	< 0.01	< 0.01	106	10	0.1	24.1	9.0	3.4	< 0.03	0.005	1.0	1	0.21
04/18/05	8.10	7.9	150	90	12	0.020	0.02	< 0.01	79	10	0.2	19.4	7.3	3.1	0.04	0.013	1.0	< 1	0.13
05/12/05	8.24	6.7	120	110															
06/09/05	8.75	9.0	80	110															
07/15/05	8.36	19.7	190	140															
08/03/05	8.17	15.6	270	130	< 5	< 0.010	< 0.01	< 0.01	99	< 10	0.2	25.4	9.2	3.1	< 0.03	< 0.005	1.1	1	0.27
09/06/05	8.19	13.0	220	120															
10/20/05	7.80	10.3	130	100	10	0.010	< 0.01	< 0.01	88	< 10	0.2	23.3	8.5	3.4	0.06	0.007	1.0	1	0.23
04/14/06	7.79	7.7	160	120	6	0.030	< 0.01	< 0.01	92	< 10	0.2	23.8	9.3	4.0	< 0.03	0.007	1.6	2	0.14
05/19/06	8.28	10.3	70	70															
06/13/06	8.08	14.6	100	70															
07/18/06	8.37	15.5	290	160															
08/10/06	8.34	15.2	270	190	8	0.030	< 0.01	< 0.01	137	< 10	0.1	36.4	12.9	3.7	< 0.03	0.013	1.1	< 1	0.15
09/11/06	8.67	14.8	170	120															
10/11/06	8.54	8.1	180	110	< 5	0.030	< 0.01	< 0.01	86	< 10	0.2	21.9	8.2	3.4	< 0.03	0.009	1.0	1	0.07
04/16/07	8.36	6.0	180	130	< 5	0.020	< 0.01	< 0.01	97	< 10	0.2	24.4	9.5	4.1	< 0.03	0.010	0.9	1	0.06
05/08/07	8.15	3.9	150	100															
06/22/07	8.10	20.0	180	110															
07/19/07	8.30	17.1	300	200	< 5	0.020	0.03	< 0.01	172	< 10	0.1	43.1	14.8	4.5	< 0.03	0.008	1.6	1	0.23
08/09/07	8.20	15.8	220	120															
09/21/07	8.40	12.6	220	140															
10/15/07	8.00	6.4	190	120	< 5	0.030	< 0.01	< 0.01	96	< 10	0.2	19.1	6.9	3.0	< 0.03	< 0.005	1.0	1	0.22

Table 3. Surface Water Quality at Site TR-A

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/14/08	8.46	7.1	220	120	6	0.020	< 0.01	< 0.01	90	< 10	0.2	24.3	8.7	3.7	< 0.03	0.007	1.0	2	0.09
05/14/08	7.76	5.2	250	160															
06/11/08	7.87	5.5	90	70															
07/07/08	8.32	12.3	130	90															
08/11/08	7.83	11.3	170	110	8	0.020	< 0.01	< 0.01	88	6	0.1	24.3	8.2	3.1	< 0.03	0.008	0.9	1	0.24
09/08/08	7.55	8.9	180	110															
10/14/08	7.94	1.2	150	110	5	< 0.010	< 0.01	< 0.01	67	6	0.1	21.5	8.0	3.3	< 0.03	0.016	1.0	< 1	0.15
04/14/09	8.14	4.8	240	130	< 5	< 0.010	< 0.01	< 0.02	105	14	0.2	26.5	10.0	4.4	< 0.03	0.015	1.2	< 1	0.25
05/14/09	7.78	7.2	110	90															
06/09/09	8.16	10.4	100	80															
07/06/09	7.16	16.9	150	100															
08/06/09	8.65	15.6	260	130	< 5	0.030	< 0.01	< 0.02	122	8	0.1	29.8	10.7	3.4	< 0.03	0.019	1.0	< 1	0.09
09/02/09	8.42	11.8	220	140															

Note: Monitoring site TR-A was removed from the Monitoring Program on September 2, 2009 in accordance with TR-48.

Table 4. Surface Water Quality at Site TR-B

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/28/88	7.90	8.2	378		4														
05/25/88	8.00	9.0	258	186	18				8	62	12.2	31.0	15.0	6.0		0.040			
06/24/88	7.90	18.8	187		4														
07/15/88	8.20	19.7	295	336	14	0.010	0.07	0.01	139	121	1.4	56.0	27.0	20.0	0.05	0.020			
08/05/88	8.00	22.4	228	242	4	0.020	0.02	0.01	124	74	0.9	41.0	19.0	6.0	0.05	0.020			
09/21/88	8.40	13.0	365		2														
10/21/88	7.30	10.5	397		2														
04/13/89	7.90	7.0	695	510	8	0.009	0.01	0.01	125	282	3.6	76.0	43.0	12.0	0.05	0.010			
05/15/89	8.00	7.2	243		6														
06/16/89	8.00	17.4	144		18														
07/03/89	7.50	15.9	375	358	6	0.025	0.02	0.02	140	144	1.6	70.0	31.0	10.0	0.05	0.050			
08/23/89	7.60	13.1	362		6														
09/08/89	7.20	14.5	606	544	6	0.029	0.07	0.01	156	253	2.6	77.0	40.0	12.0	0.05	0.009			
10/13/89	7.10	13.7	399		4														
04/19/90	7.90	11.3	536	456	2	0.014	0.02	0.02	148	247	2.6	64.0	35.0	13.0	0.05	0.040			
05/11/90	7.30	10.1	259		2														
06/14/90	6.70	16.2	124		14														
07/06/90	8.00	23.4	284		6														
08/10/90	8.10	16.2	316	270	4	0.026	0.02	0.02	150	84	0.9	50.0	21.0	6.0	0.05	0.010			
09/07/90	7.00	13.8	290		6														
10/16/90	8.30	7.1	2680	326	6	0.021	0.02	0.05	130	142	1.7	54.0	27.0	10.0	0.05	0.030			
05/06/91	8.10	3.8	1182	620	4	< 0.010	< 0.01	< 0.05	140	342	3.8	91.0	54.0	15.0	< 0.05	< 0.010			
06/11/91	7.60	4.8	1843		22														
07/09/91	7.90	11.4	396	238	20	< 0.010	< 0.01	< 0.05	110	37	0.5	36.0	16.0	5.0	< 0.05	0.010			
08/09/91	7.90	10.9	406		12														
09/11/91	8.30	13.1	1890		4														
10/10/91	7.90	6.7	2521	280	< 2	0.026	< 0.01	< 0.05	134	107	1.3	46.0	24.0	8.0	< 0.05	< 0.010			
04/13/92	7.00	8.4	2448	450	6	0.010	< 0.01	< 0.05	126	245	3.1	68.0	38.0	10.0	< 0.05	0.010			
05/06/92	8.00	14.2	1650		4														
06/01/92	7.80	8.0	1674		2														
07/01/92	9.00	16.6	1621		10														
08/03/92	7.10	20.1	1887	244	8	0.020	< 0.01	< 0.05	132	123	1.5	49.0	21.0	7.0	< 0.05	0.010			
09/08/92	8.50	15.2	470	312	< 2														
10/05/92	8.60	12.5	460	356	< 2	0.010	< 0.01	< 0.05	140	161	1.8	58.0	30.0	9.0	< 0.05	0.040			

Table 4. Surface Water Quality at Site TR-B

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/28/93	8.70	8.8	500	656	2	< 0.005	< 0.01	< 0.05	132	393	4.7	101.0	66.0	14.0	< 0.05	0.060	3.0	2	
05/04/93	8.40	8.3	1000		8														
06/02/93	8.40	8.5	74																
07/01/93	8.70	10.4	200	128	16	< 0.005	< 0.01	< 0.05	68	33	0.8	22.0	10.0	3.0	< 0.05	< 0.010	< 1.0	< 1	
08/04/93	8.90	18.9	620		< 2														
09/09/93	8.60	12.0	370		2														
10/06/93	8.60	7.1	450	274	6	< 0.005	< 0.01	< 0.05	124	101	1.3	46.0	23.0	7.0	< 0.05	0.030	1.0	2	
11/08/93	8.30	0.8	500		< 2														
04/05/94	8.60	2.0	600	594	< 2	< 0.005	< 0.01	< 0.05	144	313	3.4	82.0	49.0	13.0	< 0.05	0.070	2.0	1	
05/03/94	8.30	5.8	590	382															
06/20/94	7.70	16.6	430	246															
07/25/94	7.90	21.6	855	564	2	0.009	< 0.01	< 0.05	196	272	2.2	95.0	50.0	14.0	< 0.05	0.030	3.0	1	0.10
08/16/94	6.90	18.1	584	324															
09/16/94	7.80	12.3	410	236															
10/21/94	7.80	9.4	407	194	< 5	0.006	< 0.01	< 0.05	76	54	1.1	35.0	17.0	5.0	< 0.05	0.060	1.0	< 1	0.64
04/11/95	7.60	4.3	1080	760	< 5	< 0.005	< 0.01	< 0.05	147	460	4.9	112.0	70.2	12.8	< 0.05	0.065	2.2	2	0.05
05/16/95	7.00	7.9	580	570	24	0.015	< 0.01	< 0.05	102	290	4.5	53.5	28.9	13.0	< 0.20	0.040	2.0	2	0.12
06/08/95	7.60	10.7	370	190															
07/11/95	7.90	15.0	200	110	22	0.007	< 0.01	< 0.05	51	50	1.5	17.2	8.1	2.2	0.05	0.022	0.7	2	0.14
08/14/95	8.10	17.3	380	240															
09/18/95	8.10	16.5	380	340															
10/18/95	8.40	6.3	550	330	26	0.016	< 0.01	< 0.05	112	137	1.9	50.4	28.7	6.3	< 0.05	0.053	1.4	1	0.11
04/16/96	8.10	2.9	1320	897	< 5	0.008	< 0.01	< 0.05	163	550	5.3	133.0	93.5	16.4	< 0.03	0.088	3.2	2	0.08
05/13/96	8.50	10.2	530	350															
06/14/96	7.60	9.6	230	140															
07/15/96	7.90	13.8	410	260															
08/19/96	8.40	16.4	480	290	10	0.009	< 0.01	< 0.05	120	120	1.6	50.7	27.8	6.3	< 0.03	0.066	1.5	1	0.15
09/16/96	8.30	13.1	490	250															
10/14/96	8.10	10.2	430	270	8	< 0.005	< 0.01	< 0.05	113	100	1.4	44.7	23.5	5.7	0.03	0.060	1.3	3	0.20
04/16/97	8.22	10.5	1210	880	< 5	< 0.005	< 0.01	< 0.01	152	500	5.2	173.0	92.2	14.9	< 0.03	0.104	3.0	2	0.15
05/13/97	7.89	10.1	590	340															
06/04/97	8.81	12.1	280	170															
07/01/97	8.07	11.7	380	240															
08/04/97	8.61	19.1	410	230	10	0.010	< 0.01	< 0.01	119	70	0.9	42.7	20.5	4.9	< 0.03	0.045	1.3	< 1	0.18
09/02/97	8.44	19.2	380	240															
10/01/97	8.26	10.5	440	260	< 5	0.017	< 0.01	< 0.01	100	100	1.6	44.8	24.5	4.9	< 0.03	0.063	1.2	< 1	0.17

Table 4. Surface Water Quality at Site TR-B

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/14/98	8.20	4.5	1160	850	< 5	< 0.005	< 0.01	< 0.01	160	480	4.7	112.0	80.9	12.4	< 0.03	0.070	2.7	< 1	0.03
05/12/98	8.20	8.9	640	400															
06/02/98	8.35	13.1	230	130															
07/20/98	8.29	17.4	530	370	6	0.021	< 0.01	0.01	149	140	1.5	58.0	30.6	7.5	< 0.03	0.096	1.7	< 1	0.13
08/17/98	8.40	17.2	450	270															
09/14/98	8.45	13.8	380	220															
10/12/98	8.31	5.4	460	250	< 5	< 0.005	< 0.01	< 0.01	115	90	1.2	42.5	21.5	5.3	< 0.03	0.061	1.2	< 1	0.14
04/05/99	8.09	6.3	870	610	< 5	0.007	< 0.01	< 0.01	136	330	3.8	95.0	60.0	11.0	< 0.03	0.089	2.2	3	0.22
05/03/99	8.67	6.3	680	420															
06/01/99	8.43	9.1	280	130															
07/06/99	8.67	21.5	430	330															
08/24/99	8.48	17.7	440	280	< 5	0.014	< 0.01	< 0.01	111	80	1.1	40.8	21.7	5.0	< 0.03	0.035	1.3	< 1	0.08
09/23/99	8.64	12.4	400	200															
10/18/99	8.69	3.5	330	170	< 5	0.013	< 0.01	< 0.01	98	60	1.0	32.2	17.2	4.5	< 0.03	0.040	1.1	< 1	0.18
04/18/00	8.20	7.0	930	580	< 5	0.011	< 0.01	< 0.05	127	320	4.0	85.5	55.7	8.9	< 0.03	0.060	2.2	2	0.08
05/16/00	8.35	11.5	310	190															
06/19/00	8.34	12.7	330	210															
07/18/00	7.71	17.4	490	290															
08/15/00	8.20	21.0	560	410	< 5	0.016	< 0.01	< 0.05	156	140	1.4	71.7	34.3	6.8	< 0.03	0.048	2.0	2	0.09
09/11/00	8.46	14.9	470	290															
10/02/00	8.40	13.0	460	280	8	0.008	< 0.01	< 0.05	121	110	1.4	46.3	24.3	6.1	< 0.03	0.040	1.5	1	0.17
04/09/01	8.00	5.3	1160	850	< 5	< 0.050	< 0.01	< 0.01	151	490	5.1	117.0	78.3	11.7	< 0.03	0.083	2.6	3	0.05
05/08/01	8.40	8.9	540	340															
06/04/01	8.10	9.1	240	130															
07/10/01	7.90	20.2	780	600	< 5	0.024	0.02	< 0.01	184	240	2.1	87.5	47.1	10.7	< 0.03	0.073	2.3	2	0.06
08/01/01	8.20	20.0	410	270															
09/21/01	8.40	13.0	430	280															
10/10/01	8.60	6.5	400	230	6	0.011	< 0.01	< 0.01	96	90	1.5	38.5	20.3	6.1	< 0.03	0.047	1.8	2	0.19
04/15/02	7.82	7.8	700	440	6	0.012	< 0.01	< 0.01	97	230	3.7	65.2	42.1	8.3	< 0.03	0.071	1.9	2	0.29
05/13/02	8.54	12.0	510	310															
06/03/02	8.43	13.0	320	800															
07/08/02	8.08	16.8	1030	170															
08/13/02	8.57	22.1	590	420	6	0.013	< 0.01	< 0.01	207	170	1.3	67.2	36.9	11.1	< 0.03	0.039	2.2	1	0.18
09/09/02	8.05	15.0	400	260															
10/14/02	8.23	10.3	430	260	< 5	0.010	< 0.01	< 0.01	141	90	1.0	50.4	25.3	6.3	< 0.03	0.028	1.5	1	0.17

Table 4. Surface Water Quality at Site TR-B

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/14/03	7.90	7.3	700	500	20	< 0.010	< 0.01	< 0.01	117	250	3.4	74.3	40.1	8.9	< 0.03	0.038	2.3	2	0.05
05/12/03	8.10	9.0	820	600															
06/17/03	8.00	16.1	220	140															
07/16/03	8.20	19.4	610	450	6	0.030	< 0.01	< 0.01	181	170	1.5	70.2	37.8	9.0	< 0.03	0.033	1.7	1	0.08
08/12/03	8.40	21.8	480	370															
09/08/03	8.30	15.3	370	250															
10/01/03	8.20	13.5	380	240	< 5	0.020	< 0.01	< 0.01	116	90	1.2	44.1	22.5	5.9	0.04	0.012	1.2	1	0.17
04/05/04	7.80	9.9	740	560	10	< 0.010	< 0.01	< 0.01	126	310	3.9	80.4	52.4	9.3	< 0.03	0.038	2.2	2	0.09
05/12/04	7.75	7.6	250	140															
06/01/04	7.64	12.8	230	160															
07/19/04	8.48	20.1	340	250	8	0.020	< 0.01	< 0.01	147	70	0.7	46.0	20.7	5.6	0.04	0.032	1.3	1	0.25
08/03/04	8.55	21.4	360	240															
09/08/04	8.41	17.8	580	430															
10/13/04	8.07	9.9	370	250	< 5	< 0.010	< 0.01	< 0.01	124	100	1.3	41.4	21.9	5.7	< 0.03	0.017	1.3	1	0.30
04/18/05	8.21	9.3	520	360	12	0.010	< 0.01	< 0.01	109	190	2.7	57.3	34.0	7.5	< 0.03	0.013	1.8	1	0.11
05/12/05	8.39	5.6	470	280															
06/09/05	9.24	10.3	190	150															
07/15/05	8.45	22.3	400	270															
08/03/05	8.34	16.1	300	200	< 5	0.010	< 0.01	< 0.01	113	40	0.6	35.2	16.3	4.2	0.04	0.017	1.3	1	0.37
09/06/05	8.46	17.3	380	230															
10/20/05	8.31	8.4	290	200	8	< 0.010	< 0.01	< 0.01	99	60	1.0	38.7	19.3	5.1	< 0.03	0.035	1.4	1	0.11
04/14/06	8.24	8.8	900	690	< 5	0.020	< 0.01	< 0.01	135	400	4.7	97.1	70.5	10.6	< 0.03	0.014	3.0	2	0.09
05/19/06	8.04	14.0	210	140															
06/13/06	8.09	12.6	180	130															
07/18/06	8.64	21.9	640	430															
08/10/06	8.47	20.5	480	370	< 5	0.030	< 0.01	< 0.01	146	110	1.2	54.2	27.5	6.3	< 0.03	0.036	1.8	1	0.08
09/11/06	8.83	14.1	360	210															
10/11/06	8.46	8.1	300	200	6	0.020	< 0.01	< 0.01	100	40	0.6	31.8	16.8	4.7	< 0.03	0.034	1.2	1	0.10
04/16/07	8.39	9.6	720	500	< 5	0.020	< 0.01	< 0.01	125	260	3.3	72.8	46.8	8.3	< 0.03	0.037	1.5	2	0.04
05/08/07	8.32	6.9	420	280															
06/22/07	8.40	18.5	300	200															
07/19/07	8.50	23.1	550	390	< 5	0.020	< 0.01	< 0.01	167	120	1.1	66.5	33.3	10.1	< 0.03	0.023	2.0	2	0.06
08/09/07	8.30	17.6	320	200															
09/21/07	8.50	13.1	410	240															
10/15/07	8.30	9.4	330	220	< 5	0.030	< 0.01	< 0.01	107	70	1.0	29.5	14.8	4.5	< 0.03	0.013	1.2	1	0.17

Table 4. Surface Water Quality at Site TR-B

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/14/08	8.49	6.5	610	360	< 5	0.020	< 0.01	< 0.01	106	170	2.5	54.5	33.4	8.9	< 0.03	0.056	1.6	2	0.07
05/14/08	8.41	6.4	910	630															
06/11/08	8.25	6.6	200	140															
07/07/08	8.43	15.2	280	180															
08/11/08	8.30	16.0	350	190	7	0.020	< 0.01	< 0.01	95	54	0.9	35.2	16.9	4.0	< 0.03	0.026	1.2	1	0.15
09/08/08	7.20	13.2	340	220															
10/14/08	8.42	3.6	300	190	< 5	< 0.010	< 0.01	< 0.01	92	58	1.0	34.2	17.9	4.6	< 0.03	0.043	1.3	1	0.22
04/14/09	7.26	6.0	740	490	5	0.010	< 0.01	0.04	125	230	2.9	71.0	43.8	9.6	< 0.03	0.059	1.9	2	0.37
05/14/09	8.39	9.4	320	210															
06/09/09	8.20	9.6	250	150															
07/06/09	8.07	14.4	240	160															
08/06/09	8.51	16.3	430	270	6	0.030	< 0.01	< 0.02	131	92	1.1	49.5	25.0	5.8	< 0.03	0.051	1.4	1	0.09
09/02/09	8.37	12.4	400	260															

Note: Monitoring site TR-B was removed from the Monitoring Program on September 2, 2009 in accordance with TR-48.

Table 5. Surface Water Quality at Site TR-C

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/29/88	8.10	6.0	679		4														
05/17/88	7.70	5.2	331	190	90				62	68	1.7	29.0	14.0	4.0		0.130			
06/25/88	7.90	15.5	255		6														
07/14/88	8.20	23.3	354	396	8	0.009	0.03	0.01	135	165	1.9	64.0	34.0	8.0	0.05	0.010			
08/05/88	8.00	20.7	320	298	8	0.020	0.02	0.01	129	123	1.5	49.0	26.0	8.0	0.05	0.010			
09/21/88	8.30	13.9	415		4														
10/21/88	8.00	9.8	451		2														
04/14/89	8.10	8.2	1005	754	6	0.005	0.01	0.01	140	449	5.0	99.0	76.0	18.0	0.05	0.020			
05/15/89	8.50	8.3	333		6														
06/19/89	7.80	17.4	232		10														
07/03/89	7.80	20.1	643	578	2	0.016	0.02	0.02	150	298	3.1	98.0	54.0	17.0	0.05	0.030			
08/23/89	7.60	13.3	487		4														
09/08/89	7.00	14.4	842	740	10	0.023	0.01	0.01	166	397	3.8	104.0	74.0	16.0	0.05	0.009			
10/13/89	7.90	15.0	51		2														
04/19/90	7.90	12.0	712	604	2	0.130	0.02	0.02	100	358	5.6	78.0	48.0	16.0	0.05	0.040			
05/14/90	7.50	7.2	335		12														
06/14/90	7.20	16.2	162		20														
07/06/90	7.70	21.3	371		14														
08/10/90	8.00	21.8	420	354	4	0.022	0.02	0.02	150	152	1.6	62.0	31.0	9.0	0.05	0.009			
09/07/90	8.00	20.2	477		4														
10/16/90	8.60	8.8	2280	422	2	0.120	0.02	0.05	138	218	2.5	64.0	36.0	12.0	0.05	0.030			
05/06/91	8.30	6.7	1272	780	2	< 0.010	< 0.01	< 0.05	147	459	4.9	109.0	69.0	21.0	< 0.05	0.050			
06/11/91	7.70	5.8	275		26														
07/09/91	8.00	13.5	482	304	10	< 0.010	< 0.01	< 0.05	115	78	1.1	43.0	22.0	7.0	< 0.05	0.020			
08/09/91	8.50	14.4	1743		8														
09/11/91	8.30	13.4	1819		< 2														
10/10/91	7.90	10.9	2042	376	< 2	0.022	< 0.01	< 0.05	140	183	2.1	57.0	33.0	11.0	< 0.05	0.020			
04/13/92	8.80	8.8	2282	566	< 2	0.006	< 0.01	< 0.05	122	311	4.0	80.0	48.0	14.0	< 0.05	0.020			
05/06/92	9.20	14.3	1748		6														
06/01/92	8.40	8.2	1972		8														
07/01/92	8.40	11.7	1599		2														
08/03/92	8.00	14.0	1769	356	8	0.017	< 0.01	< 0.05	142	58	0.6	62.0	31.0	10.0	< 0.05	0.010			
09/08/92	8.60	17.0	615	409	2														
10/05/92	8.70	6.9	640	426	4	0.007	< 0.01	< 0.05	140	230	2.6	68.0	38.0	13.0	< 0.05	0.040			

Table 5. Surface Water Quality at Site TR-C

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/28/93	8.90	11.0	900	824	2	< 0.005	< 0.01	< 0.05	140	515	5.8	118.0	81.0	20.0	< 0.05	0.050	3.0	2	
05/04/93	8.80	11.8	600		8														
06/02/93	8.50	9.0	220																
07/01/93	8.60	15.0	205	114	14	< 0.005	< 0.01	< 0.05	68	39	0.9	24.0	11.0	4.0	< 0.05	0.010	< 1.0	< 1	
08/04/93	8.90	20.0	700		14														
09/09/93	8.90	16.0	520		4														
10/06/93	9.00	11.3	590	366	< 2	< 0.005	< 0.01	< 0.05	140	173	1.9	56.0	31.0	10.0	< 0.05	0.030	2.0	< 1	
11/08/93	9.00	1.0	680		< 2														
04/05/94	8.80	6.8	1000	780	< 2	< 0.005	< 0.01	< 0.05	80	453	8.9	99.0	65.0	19.0	< 0.05	0.060	2.0	2	
05/03/94	8.60	7.2	600	444															
06/20/94	8.19	17.9	640	416															
07/25/94	7.90	16.1	1328	990	< 2	< 0.005	< 0.01	< 0.05	220	576	4.1	139.0	87.0	26.0	0.06	0.020	3.0	2	0.06
08/16/94	7.90	16.7	970	626															
09/16/94	8.40	11.5	595	384															
10/21/94	6.90	6.9	486	276	< 5	< 0.005	< 0.01	< 0.05	168	115	1.1	45.0	25.0	8.0	< 0.05	0.040	1.0	< 1	0.55
04/11/95	7.40	2.8	1480	1040	< 5	< 0.005	< 0.01	< 0.05	174	630	5.7	127.0	93.5	25.8	< 0.05	0.096	3.0	3	0.02
05/16/95	7.70	8.5	830	500	68	0.013	< 0.01	< 0.05	117	290	3.9	69.7	42.5	14.0	< 0.20	0.055	3.0	2	0.06
06/08/95	7.40	11.0	410	260															
07/11/95	8.10	15.3	260	130	28	0.007	< 0.01	< 0.05	54	60	1.7	19.7	9.4	2.9	0.04	0.017	0.8	1	0.13
08/14/95	8.00	12.2	510	340															
09/18/95	7.90	15.1	570	340															
10/18/95	8.50	6.6	610	390	8	0.014	< 0.01	< 0.05	137	189	2.2	57.7	34.5	8.6	< 0.03	0.047	1.5	1	0.10
04/16/96	8.20	4.1	1890	1470	10	0.013	< 0.01	< 0.05	194	960	7.8	191.0	152.0	43.4	< 0.03	0.091	5.5	5	0.08
05/13/96	8.50	11.1	630	420															
06/14/96	6.80	9.1	290	160															
07/15/96	8.20	16.4	530	330															
08/19/96	8.30	16.1	620	410	< 5	0.009	< 0.01	< 0.05	129	200	2.4	65.8	40.5	10.0	< 0.03	0.050	1.9	2	0.10
09/16/96	8.40	13.0	620	380															
10/14/96	8.00	8.9	530	350	6	< 0.005	< 0.01	< 0.05	120	150	2.0	53.1	30.7	8.2	0.03	0.045	1.5	4	0.12
04/16/97	8.17	9.9	1660	1270	6	< 0.005	< 0.01	< 0.01	172	780	7.1	172.0	137.0	28.6	0.03	0.118	4.5	3	0.13
05/13/97	7.62	9.0	660	440															
06/04/97	8.87	9.9	250	160															
07/01/97	7.77	11.1	430	260															
08/04/97	8.45	19.6	480	350	< 5	0.008	< 0.01	< 0.01	127	120	1.5	51.0	28.2	6.7	< 0.03	0.039	1.6	< 1	0.09
09/02/97	8.39	19.1	530	410															
10/01/97	8.24	9.1	580	330	< 5	0.010	< 0.01	< 0.01	110	170	2.4	56.3	33.4	7.8	< 0.03	0.061	1.6	< 1	0.12

Table 5. Surface Water Quality at Site TR-C

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/14/98	8.20	4.6	1420	1160	< 5	< 0.005	< 0.01	< 0.01	174	700	6.3	162.0	114.0	23.8	< 0.03	0.086	4.0	2	0.07
05/12/98	8.16	8.1	650	420															
06/02/98	8.22	11.4	240	140															
07/20/98	8.01	15.1	630	460	< 5	0.024	< 0.01	< 0.01	159	190	1.9	68.8	39.4	10.0	< 0.03	0.074	1.9	< 1	0.16
08/17/98	8.11	18.6	540	360															
09/14/98	8.31	11.9	490	310															
10/12/98	7.80	5.7	520	330	< 5	< 0.005	< 0.01	< 0.01	122	140	1.8	51.3	29.3	7.5	< 0.03	0.046	1.5	< 1	0.1
04/05/99	8.01	9.1	1110	980	< 5	0.006	< 0.01	< 0.01	158	590	5.9	150.0	99.7	18.7	< 0.03	0.095	3.2	3	0.17
05/03/99	8.60	6.7	740	540															
06/01/99	8.35	9.4	250	140															
07/06/99	8.53	22.9	490	320															
08/24/99	8.41	19.4	470	370	< 5	< 0.005	< 0.01	< 0.01	119	140	1.9	50.4	30.3	7.6	< 0.03	0.024	1.7	< 1	0.07
09/23/99	8.62	12.1	420	260															
10/18/99	8.55	3.7	480	250	< 5	0.011	< 0.01	< 0.01	106	130	1.9	43.8	27.0	7.2	< 0.03	0.040	1.7	< 1	0.11
04/18/00	8.20	8.0	1120	830	< 5	0.009	< 0.01	< 0.05	140	490	5.5	114.0	79.4	15.6	< 0.03	0.058	2.9	2	0.07
05/16/00	8.23	10.8	390	260															
06/19/00	7.51	13.9	430	280															
07/18/00	7.81	19.4	520	340															
08/15/00	8.20	20.0	740	560	6	0.019	< 0.01	< 0.05	168	250	2.3	88.5	54.6	10.6	< 0.03	0.040	2.3	2	0.06
09/11/00	8.47	13.6	650	430															
10/02/00	8.10	10.0	560	360	< 5	0.007	< 0.01	< 0.05	129	180	2.2	56.4	33.2	8.0	< 0.03	0.022	1.6	1	0.18
04/09/01	8.00	4.4	1450	1130	< 5	< 0.005	< 0.01	< 0.01	160	700	6.9	151.0	110.0	21.7	< 0.03	0.010	3.7	4	0.03
05/08/01	8.20	6.7	690	470															
06/04/01	8.10	8.2	200	120															
07/10/01	7.50	18.4	920	750	< 5	0.024	< 0.02	< 0.01	189	350	2.9	99.8	58.8	14.5	< 0.03	0.060	2.7	2	0.07
08/01/01	8.00	18.1	540	380															
09/21/01	8.10	10.9	450	270															
10/10/01	8.40	6.2	470	270	< 5	0.011	< 0.01	< 0.01	100	120	1.9	43.9	24.7	7.0	< 0.03	0.033	2.0	2	0.13
04/15/02	7.33	8.0	850	610	< 5	0.009	< 0.01	< 0.01	106	350	5.2	84.4	59.0	12.9	0.79	0.092	2.3	2	0.35
05/13/02	8.17	10.1	570	390															
06/03/02	8.18	14.0	360	950															
07/08/02	8.14	20.5	1170	220															
08/13/02	8.55	20.7	850	680	8	0.013	< 0.01	< 0.01	188	330	2.8	101.0	67.3	17.1	< 0.03	0.033	3.0	2	0.07
09/09/02	8.10	14.4	550	380															
10/14/02	8.17	8.1	580	370	< 5	< 0.010	< 0.01	< 0.01	152	160	1.7	63.8	35.9	9.8	< 0.03	0.025	1.8	2	0.13

Table 5. Surface Water Quality at Site TR-C

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/14/03	7.80	5.4	910	720	22	< 0.010	< 0.01	< 0.01	127	430	5.3	96.2	64.4	14.0	< 0.03	0.069	2.8	2	0.03
05/12/03	8.10	11.0	1050	850															
06/17/03	7.90	14.3	260	180															
07/16/03	8.10	16.3	800	670	< 5	0.020	< 0.01	< 0.01	191	330	2.7	95.8	60.7	14.0	< 0.03	0.020	1.9	2	0.04
08/12/03	8.30	19.6	660	550															
09/08/03	8.20	13.9	460	320															
10/01/03	8.10	10.4	500	350	< 5	0.020	< 0.01	< 0.01	125	160	2.0	60.7	35.6	9.0	< 0.03	0.007	1.2	1	0.13
04/05/04	8.27	10.3	1110	980	10	< 0.010	< 0.01	< 0.01	142	590	6.5	121.0	93.1	19.9	< 0.03	0.048	3.4	2	0.06
05/12/04	7.40	6.5	240	170															
06/01/04	7.42	10.8	320	210															
07/19/04	8.43	18.2	440	310	6	0.010	< 0.01	< 0.01	150	110	1.2	48.5	25.3	6.9	0.07	0.028	1.6	2	0.19
08/03/04	8.57	17.1	470	320															
09/08/04	8.48	13.5	760	580															
10/13/04	7.74	9.0	510	360	< 5	< 0.010	< 0.01	< 0.01	133	170	2.0	55.8	33.0	9.2	< 0.03	0.024	2.0	2	0.38
04/18/05	8.08	8.7	730	500	22	0.010	< 0.01	< 0.01	118	300	4.0	75.2	50.7	12.0	0.06	0.023	2.3	2	0.13
05/12/05	8.16	6.8	610	440															
06/09/05	8.56	10.2	230	170															
07/15/05	8.57	20.7	540	350															
08/03/05	8.36	15.4	410	460	< 5	0.010	< 0.01	< 0.01	119	70	0.9	43.2	23.0	5.7	0.03	0.016	1.5	1	0.23
09/06/05	8.44	14.3	580	380															
10/20/05	7.94	9.3	400	250	< 5	< 0.010	< 0.01	< 0.01	104	100	1.5	47.4	27.1	7.1	< 0.03	0.027	1.5	1	0.14
04/14/06	8.26	9.0	1180	950	14	0.020	< 0.01	< 0.01	144	550	6.0	126.0	97.6	20.6	< 0.03	0.012	3.9	3	0.08
05/19/06	8.09	14.1	260	180															
06/13/06	8.25	12.1	230	150															
07/18/06	8.65	15.6	920	640															
08/10/06	8.57	21.2	640	480	< 5	0.030	< 0.01	< 0.01	149	180	1.9	70.1	40.9	9.7	< 0.03	0.028	2.0	1	0.09
09/11/06	8.73	11.9	500	320															
10/11/06	8.58	6.7	410	280	8	0.020	< 0.01	< 0.01	105	100	1.5	41.7	24.8	6.9	< 0.03	0.028	1.4	2	0.07
04/16/07	8.27	9.6	1050	780	< 5	0.010	< 0.01	< 0.01	135	450	5.2	103.0	76.4	15.4	< 0.03	0.048	2.5	2	0.05
05/08/07	8.16	8.1	560	380															
06/22/07	8.30	20.3	360	230															
07/19/07	8.40	21.8	790	600	< 5	0.010	< 0.01	< 0.01	174	260	2.4	89.3	54.8	15.0	0.04	0.033	2.5	2	0.07
08/09/07	8.10	18.3	420	260															
09/21/07	8.40	12.5	440	330															
10/15/07	8.70	6.5	450	290	< 5	0.030	< 0.01	< 0.01	114	120	1.7	43.0	24.8	7.1	< 0.03	0.014	1.6	1	0.09

Table 5. Surface Water Quality at Site TR-C

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/14/08	7.87	6.9	740	420	< 5	0.020	< 0.01	< 0.01	109	200	2.9	61.6	38.6	11.1	< 0.03	0.064	1.7	3	0.07
05/14/08	7.98	6.6	1140	860															
06/11/08	7.55	7.2	250	170															
07/07/08	8.36	14.4	280	460															
08/11/08	7.57	15.7	360	230	6	0.020	< 0.01	< 0.01	97	74	1.2	38.6	20.6	5.2	< 0.03	0.022	1.3	1	0.09
09/08/08	7.36	13.7	510	340															
10/14/08	7.41	4.5	430	270	< 5	< 0.010	< 0.01	< 0.01	97	108	1.8	44.5	26.5	6.7	< 0.03	0.060	1.5	1	0.08
04/14/09	7.24	5.9	1010	740	8	0.010	< 0.01	0.06	127	420	5.2	99.5	70.5	15.6	< 0.03	0.072	2.6	2	0.36
05/14/09	7.54	8.9	410	280															
06/09/09	7.51	9.0	270	180															
07/06/09	7.55	14.0	280	180															
08/06/09	7.98	17.0	540	340	< 5	0.040	< 0.01	< 0.02	134	127	1.5	57.8	32.6	7.1	< 0.03	0.029	1.5	2	0.08
09/02/09	7.79	12.9	550	380															

Note: Monitoring site TR-C was removed from the Monitoring Program on September 2, 2009 in accordance with TR-48.

Table 6. Surface Water Quality at Site TR-D

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/29/88	8.30	6.5	727		2														
05/17/88	7.80	5.8	369	192	106				66	70	1.7	29.0	15.0	5.0		0.160			
06/25/88	7.80	15.2	273		12														
07/14/88	8.40	22.7	358	100	8	0.010	0.02	0.01	135	169	2.0	64.0	34.0	9.0	0.05	0.010			
08/05/88	8.30	21.3	302	306	4	0.020	0.02	0.01	131	126	1.5	49.0	26.0	8.0	0.05	0.020			
09/21/88	8.30	14.2	457		8														
10/21/88	8.00	9.6	558		2														
04/14/89	8.30	8.4	785	756	2	0.005	0.01	0.01	140	447	5.0	113.0	76.0	20.0	0.18	0.010			
05/15/89	8.50	8.3	429		6														
06/19/89	8.20	17.0	231		12														
07/03/89	7.90	21.0	687	632	6	0.012	0.02	0.02	150	338	3.5	103.0	57.0	18.0	0.05	0.030			
08/23/89	7.90	14.4	467		2														
09/08/89	7.60	14.7	755	692	10	0.020	0.01	0.01	158	360	3.6	88.0	68.0	16.0	0.05	0.009			
10/13/89	7.90	15.0	51		2														
04/19/90	8.20	12.6	685	596	2	0.009	0.02	0.02	102	354	5.5	80.0	50.0	18.0	0.06	0.030			
05/14/90	7.50	7.2	336		10														
06/14/90	7.70	16.3	158		28														
07/06/90	7.70	21.3	368		2														
08/10/90	8.20	20.7	432	382	4	0.019	0.02	0.02	152	165	1.7	63.0	31.0	10.0	0.05	0.009			
09/07/90	8.10	20.4	367		12														
10/16/90	8.60	9.2	2140	418	2	0.013	0.02	0.05	137	208	2.4	63.0	35.0	12.0	0.05	0.020			
05/06/91	8.50	7.2	1145	782	4	< 0.010	< 0.01	< 0.05	140	455	5.1	106.0	68.0	21.0	< 0.05	0.040			
06/11/91	7.70	5.1	245		20														
07/09/91	8.00	12.6	579	326	28	< 0.010	< 0.01	< 0.05	120	86	1.1	43.0	22.0	7.0	< 0.05	< 0.010			
08/09/91	8.50	14.6	1686		10														
09/11/91	8.90	15.5	1629		< 2														
10/10/91	8.70	12.3	1851	358	< 2	0.020	< 0.01	< 0.05	140	185	2.1	37.0	33.0	11.0	< 0.05	< 0.010			
04/13/92	9.00	8.5	2209	566	< 2	0.006	< 0.01	< 0.05	124	294	3.7	81.0	49.0	14.0	< 0.05	< 0.010			
05/06/92	9.00	15.2	1648		12														
06/01/92	8.30	8.7	1824		4														
07/01/92	8.50	16.7	1558		4														
08/03/92	7.90	13.7	1748	362	2	0.016	< 0.01	< 0.05	140	167	1.9	60.0	30.0	10.0	< 0.05	0.010			
09/08/92	8.70	17.0	615	409	4														
10/05/92	8.60	6.0	610	406	2	0.006	< 0.01	< 0.05	142	214	2.4	69.0	37.0	12.0	< 0.05	0.030			

Table 6. Surface Water Quality at Site TR-D

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/28/93	8.90	11.8	800	808	6	< 0.005	< 0.01	< 0.05	212	471	3.5	116.0	78.0	19.0	< 0.05	0.050	3.0	< 1	
05/04/93	8.90	12.0	600		< 2														
06/02/93	8.50	9.0	180																
07/01/93	8.50	17.0	200	114	12	< 0.005	< 0.01	< 0.05	70	37	0.8	22.0	10.0	4.0	< 0.05	0.010	< 1.0	< 1	
08/04/93	8.80	19.5	700		6														
09/09/93	8.90	17.8	510		< 2														
10/06/93	9.00	11.9	500	356	< 2	< 0.005	< 0.01	< 0.05	126	161	2.0	56.0	31.0	10.0	< 0.05	0.020	2.0	< 1	
11/08/93	9.00	1.0	690		< 2														
04/05/94	8.40	6.1	1000	562	< 2	< 0.005	< 0.01	< 0.05	58	457	12.4	97.0	63.0	18.0	< 0.05	0.060	2.0	2	
05/03/94	8.60	7.8	600	428															
06/20/94	8.24	22.7	680	470															
07/25/94	8.20	18.0	1346	1076	< 2	< 0.005	< 0.01	< 0.05	222	646	4.6	157.0	99.0	29.0	< 0.05	0.030	4.0	2	0.10
08/16/94	8.10	16.5	970	684															
09/16/94	8.20	13.2	561	384															
10/21/94	8.40	8.2	468	290	12	< 0.005	< 0.01	< 0.05	72	121	2.6	45.0	25.0	8.0	< 0.05	0.020	1.0	< 1	0.12
04/11/95	6.80	2.6	1140	810	< 5	< 0.005	< 0.01	< 0.05	144	490	5.4	105.0	73.5	20.1	< 0.05	0.081	2.6	2	0.03
05/16/95	7.60	8.8	770	510	28	0.028	< 0.01	< 0.05	117	300	4.0	70.8	42.8	14.0	< 0.20	0.062	2.0	1	0.09
06/08/95	7.10	11.8	390	300															
07/11/95	8.00	16.8	190	130	28	0.005	< 0.01	< 0.05	46	60	2.1	19.1	9.4	2.8	0.05	0.017	0.8	1	0.15
08/14/95	8.10	16.8	520	350															
09/18/95	8.00	15.9	530	220															
10/18/95	8.50	6.5	610	380	8	0.013	< 0.01	< 0.05	126	190	2.4	58.2	34.7	8.7	< 0.05	0.043	1.6	1	0.07
04/16/96	8.20	3.8	1840	1440	10	0.010	< 0.01	< 0.05	193	920	7.5	194.0	157.0	45.6	< 0.03	0.097	5.7	4	0.07
05/13/96	8.40	12.4	570	400															
06/14/96	7.10	9.1	250	160															
07/15/96	8.30	17.9	510	340															
08/19/96	8.40	17.0	620	400	10	0.008	< 0.01	< 0.05	128	190	2.3	65.1	39.3	9.7	< 0.03	0.048	1.8	2	0.11
09/16/96	8.40	12.6	610	370															
10/14/96	8.10	8.5	540	340	8	< 0.005	< 0.01	< 0.05	122	150	1.9	53.7	31.1	8.3	0.03	0.041	1.5	3	0.14
04/16/97	8.20	9.8	1670	1290	< 5	< 0.005	< 0.01	< 0.01	171	790	7.3	27.1	138.0	27.1	< 0.03	0.117	4.4	4	0.11
05/13/97	7.56	8.9	660	440															
06/04/97	8.75	10.4	250	160															
07/01/97	7.63	11.5	380	250															
08/04/97	8.47	18.6	490	370	8	0.008	< 0.01	< 0.01	125	120	1.5	51.9	28.7	6.8	< 0.03	0.032	1.4	< 1	0.11
09/02/97	8.51	20.2	520	350															
10/01/97	8.32	10.0	570	340	< 5	0.013	< 0.01	< 0.01	110	170	2.4	56.7	34.3	7.9	< 0.03	0.054	1.6	< 1	0.13

Table 6. Surface Water Quality at Site TR-D

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/14/98	8.30	4.8	1450	1150	8	< 0.005	< 0.01	< 0.01	174	690	6.2	162.0	111.0	23.6	< 0.03	0.087	3.9	2	0.04
05/12/98	8.13	7.2	660	400															
06/02/98	8.28	11.3	250	150															
07/20/98	8.16	15.8	630	460	< 5	0.018	< 0.01	< 0.01	159	190	1.9	69.1	39.6	10.0	< 0.03	0.059	2.1	< 1	0.13
08/17/98	8.45	19.1	540	390															
09/14/98	8.31	12.3	480	300															
10/12/98	8.48	6.0	510	330	< 5	< 0.005	< 0.01	< 0.01	123	140	1.8	51.4	29.4	7.5	< 0.03	0.032	1.4	< 1	0.11
04/05/99	7.94	9.4	1190	1090	< 5	< 0.005	0.32	< 0.01	164	660	6.3	145.0	109.0	21.0	< 0.03	0.106	3.4	3	0.14
05/03/99	8.64	7.1	770	540															
06/01/99	8.31	9.9	250	150															
07/06/99	8.53	23.7	510	240															
08/24/99	8.53	20.1	480	370	< 5	0.009	< 0.01	< 0.01	120	140	1.8	52.0	31.4	7.6	< 0.03	0.023	1.8	< 1	0.06
09/23/99	8.51	11.8	440	260															
10/18/99	8.64	3.7	500	290	< 5	0.010	< 0.01	< 0.01	106	140	2.1	44.9	27.9	7.3	< 0.03	0.030	1.5	< 1	0.08
04/18/00	8.30	8.0	1130	820	< 5	0.012	< 0.01	< 0.05	141	490	5.5	109.0	79.5	16.4	< 0.03	0.061	2.9	2	0.05
05/16/00	8.24	10.1	410	260															
06/19/00	8.28	15.6	430	280															
07/18/00	7.81	19.3	520	340															
08/15/00	8.20	20.0	750	580	< 5	0.024	< 0.01	< 0.05	168	260	2.4	94.0	56.5	11.2	< 0.03	0.025	2.3	2	0.05
09/11/00	8.20	13.3	620	390															
10/02/00	7.90	9.0	640	380	< 5	< 0.005	< 0.01	< 0.05	130	180	2.2	58.9	35.0	8.5	< 0.03	0.015	1.7	2	0.18
04/09/01	7.70	4.3	1430	1110	8	< 0.005	< 0.01	< 0.01	156	680	6.9	143.0	104.0	20.9	< 0.03	0.089	3.5	4	0.04
05/08/01	7.90	6.6	740	470															
06/04/01	7.80	8.2	210	110															
07/10/01	7.60	18.4	900	740	< 5	0.022	< 0.02	< 0.01	186	340	2.9	98.7	57.5	14.4	< 0.03	0.044	2.8	2	0.04
08/01/01	7.90	18.6	560	360															
09/21/01	8.00	10.4	460	310															
10/10/01	8.50	6.1	470	270	< 5	0.011	< 0.01	< 0.01	99	120	1.9	43.7	24.8	7.5	< 0.03	0.023	2.0	2	0.15
04/15/02	7.25	8.6	860	620	< 5	< 0.005	< 0.01	< 0.01	106	340	5.0	84.1	57.8	13.1	0.04	0.061	2.4	2	0.10
05/13/02	8.01	10.5	580	390															
06/03/02	7.69	13.8	440	860															
07/08/02	7.77	21.0	1060	230															
08/13/02	8.63	22.1	840	680	8	0.013	< 0.01	< 0.01	178	330	2.9	100.0	67.6	16.7	< 0.03	0.013	3.3	2	0.03
09/09/02	8.11	15.3	550	380															
10/14/02	8.32	10.9	590	380	6	< 0.010	< 0.01	< 0.01	153	160	1.6	63.4	36.5	9.1	< 0.03	0.010	1.8	2	0.10

Table 6. Surface Water Quality at Site TR-D

Date	pH (s.u.)	Temp (C)	S.C. (umhos/cm)	TDS (mg/l)	TSS (mg/l)	O-P (mg/l)	NO2 (mg/l)	NH3 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Al (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)	Fe (mg/l)
04/14/03	7.90	5.2	890	710	68	< 0.010	< 0.01	< 0.01	125	420	5.3	92.0	60.5	13.5	< 0.03	0.081	2.8	2	0.07
05/12/03	8.30	10.8	1040	840															
06/17/03	8.00	15.8	260	190															
07/16/03	8.00	17.9	860	690	8	0.020	< 0.01	< 0.01	167	340	3.2	97.6	61.3	14.1	< 0.03	< 0.010	2.2	2	0.06
08/12/03	8.50	20.4	720	580															
09/08/03	8.40	14.5	460	330															
10/01/03	8.30	10.6	510	350	6	0.020	< 0.01	< 0.01	126	160	2.0	49.6	28.6	7.5	< 0.03	0.009	1.3	1	0.16
04/05/04	8.41	10.5	1130	950	12	< 0.010	< 0.01	< 0.01	132	590	7.0	123.0	95.3	20.8	< 0.03	0.055	3.3	2	0.06
05/12/04	7.45	8.9	300	170															
06/01/04	7.66	12.0	310	210															
07/19/04	8.54	18.6	440	300	18	0.010	< 0.01	< 0.01	150	110	1.2	49.0	25.2	6.8	< 0.03	0.013	1.6	1	0.15
08/03/04	8.65	19.8	480	330															
09/08/04	8.64	15.6	720	550															
10/13/04	8.39	10.2	510	370	6	< 0.010	< 0.01	< 0.01	134	180	2.1	55.0	32.8	8.7	< 0.03	0.011	1.5	2	0.23
04/18/05	8.13	10.2	650	520	26	0.010	< 0.01	< 0.01	117	260	3.5	71.7	47.9	11.7	< 0.03	0.019	2.5	2	0.08
05/12/05	8.15	9	580	450															
06/09/05	9.02	13.6	240	170															
07/15/05	8.59	25.1	520	370															
08/03/05	8.46	16.7	410	270	8	0.010	< 0.01	< 0.01	118	90	1.2	42.2	22.4	5.7	0.05	0.015	1.5	1	0.32
09/06/05	8.49	16.8	550	370															
10/20/05	8.16	9.0	400	250	6	< 0.010	< 0.01	< 0.01	104	110	1.7	47.7	29.0	8.1	0.07	0.248	1.6	1	0.20
04/14/06	8.16	9.0	1160	940	22	0.020	< 0.01	< 0.01	143	560	6.2	120.0	92.3	20.0	< 0.03	0.010	3.7	3	0.06
05/19/06	8.22	16.4	260	190															
06/13/06	8.31	12.6	230	160															
07/18/06	8.64	16.7	900	690															
08/10/06	8.49	22.4	590	480	< 5	< 0.010	< 0.01	< 0.01	150	170	1.8	66.3	38.5	9.3	< 0.03	0.021	1.9	1	0.06
09/11/06	8.83	11.9	500	330															
10/11/06	8.51	6.9	420	260	< 5	0.030	< 0.01	< 0.01	107	100	1.5	43.5	25.4	7.0	< 0.03	0.025	1.4	1	0.07
04/16/07	8.08	10.4	1070	770	8	0.010	< 0.01	< 0.01	139	450	5.1	104.0	76.9	15.7	< 0.03	0.056	2.7	2	0.05
05/08/07	8.18	7.9	550	370															
06/22/07	8.40	21.2	360	250															
07/19/07	8.40	23.5	800	610	< 5	0.020	< 0.01	< 0.01	178	250	2.2	85.7	52.1	14.0	0.06	0.058	3.2	2	0.06
08/09/07	8.10	18.1	430	270															
09/21/07	8.40	12.8	580	330															
10/15/07	8.20	6.4	460	270	< 5	0.030	< 0.01	< 0.01	113	90	1.3	36.8	21.3	6.6	< 0.03	0.008	1.7	< 1	0.10

Table 6. Surface Water Quality at Site TR-D

Date	pH	Temp	S.C.	TDS	TSS	O-P	NO2	NH3	HCO3	SO4	SO4:HCO3	Ca	Mg	Na	Diss.Al	Diss.Mn	K	Cl	Fe
	(s.u.)	(C)	(umhos/cm)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(Ratio)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
04/14/08	7.71	7.2	890	410	8	0.020	< 0.01	< 0.01	115	200	2.7	63.9	41.2	11.6	< 0.03	0.069	1.9	2	0.07
05/14/08	7.97	6.5	1140	840															
06/11/08	8.12	7.1	260	170															
07/07/08	8.34	14.1	280	720															
08/11/08	7.97	15.4	390	230	8	0.020	< 0.01	< 0.01	97	75	1.2	37.5	20.1	4.8	< 0.03	0.022	1.2	< 1	0.11
09/08/08	7.61	13.0	520	360															
10/14/08	7.80	4.2	430	260	< 5	< 0.010	< 0.01	< 0.01	98	101	1.6	42.9	25.2	6.5	< 0.03	0.029	1.3	1	0.12
04/14/09	7.05	6.2	1000	710	11	< 0.010	< 0.01	0.03	126	380	4.7	99.7	69.6	15.7	0.04	0.082	2.6	2	0.42
05/14/09	7.66	8.8	410	270															
06/09/09	7.35	9.4	270	180															
07/06/09	7.54	16.1	300	190															
08/06/09	7.91	16.6	500	320	5	0.030	< 0.01	< 0.02	132	118	1.4	54.3	30.2	6.7	< 0.03	0.029	1.5	2	0.07
09/02/09	7.76	12.8	480	380															

Note: Monitoring site TR-D was removed from the Monitoring Program on September 2, 2009 in accordance with TR-48.

Table 7. Monitoring Well Static Water Level Elevations

Date	TR-1.5 (asl)	TR-3 (asl)	TR-4 (asl)	WR-1 (asl)
May-87	7170.92	6952.55	6908.50	
Jun-87	7170.45	6952.75	6905.50	7140.38
Jul-87	7169.90	6950.80	6904.90	7138.38
Aug-87	7169.85	6950.65	6905.35	7139.18
Sep-87	7169.60	6950.65	6905.30	7138.18
Apr-88	7171.55	6953.65	6907.60	7149.28
May-88	7171.75	6952.95	6907.00	7145.48
Jun-88	7170.70	6952.10	6907.10	7142.38
Jul-88	7169.90	6951.31	6906.13	7139.93
Aug-88	7169.69	6950.70	6905.52	7139.08
Sep-88	7169.90	6950.95	6905.30	7138.78
Oct-88	7170.05	6951.40	6905.35	7138.98
Apr-89	7170.65	6953.50	6907.05	7145.18
May-89	7171.25	6952.65	6907.10	7141.48
Jun-89	7170.75	6952.05	6906.50	7139.68
Jul-89	7169.90	6951.40	6905.55	7138.43
Aug-89	7169.90	6950.75	6906.00	7137.78
Sep-89	7169.45	6950.25	6905.75	7137.28
Oct-89	7169.90	6951.15	6906.00	7136.88
Apr-90	7170.50	6952.90	6907.10	7143.88
May-90	7170.57	6952.65	6906.90	7143.55
Jun-90	7171.65	6952.70	6907.30	7138.88
Jul-90	7170.00	6951.25	6905.55	7138.18
Aug-90	7169.65	6950.30	6905.15	7137.53
Sep-90	7169.60	6950.35	6911.70	7137.28
Oct-90	7169.95	6951.15	6905.20	7137.03
May-91	7170.90	6953.05	6907.50	7144.68
Jun-91	7171.35	6953.35	6905.60	7140.38
Jul-91	7170.15	6951.60	6906.10	7138.88
Aug-91	7169.75	6953.55	6904.80	7137.98
Sep-91	7170.05	6950.85	6905.45	7137.68
Oct-91	7170.40	6951.37	6905.37	7137.96
Apr-92	7170.57	6952.62	6906.12	7148.48
May-92	7171.37	6952.62	6906.93	7146.96
Jun-92	7171.45	6952.49	6907.03	7144.69
Jul-92	7169.98	6951.24	6905.57	7143.82
Aug-92	7170.15	6951.03	6905.62	7143.15
Sep-92	7170.07	6951.03	6905.37	7142.82
Oct-92	7170.32	6951.37	6905.62	7142.65

Table 7. Monitoring Well Static Water Level Elevations

Date	TR-1.5 (asl)	TR-3 (asl)	TR-4 (asl)	WR-1 (asl)
Apr-93	7171.23	6953.28	6907.03	7153.98
May-93	7171.15	6953.12	6907.66	7154.90
Jun-93	7171.86	6953.53	6905.91	7150.15
Jul-93	7170.69	6952.53	6907.41	7146.48
Aug-93	7169.48	6950.95	6907.32	7144.27
Sep-93	7169.90	6951.20	6908.24	7143.32
Oct-93	7169.15	6951.70	6908.70	7143.32
Nov-93	7170.36	6952.03	6908.53	7143.02
Apr-94	7170.69	6952.91	6908.62	7148.19
May-94	7170.98	6952.99	6908.77	7146.36
Jun-94	7172.89	6954.24	6906.46	7145.77
Jul-94	7172.82	6953.18	6905.71	7144.63
Aug-94	7173.52	6953.21	6905.77	7142.72
Sep-94	7171.84	6953.53	6907.36	7137.87
Oct-94	7172.16	6954.12	6907.66	7143.84
Apr-95	7172.51	6956.02	6907.59	7144.96
May-95	7173.49	6956.51	6907.72	7154.13
Jun-95	7173.01	6956.36	6908.18	7152.14
Jun-95	7173.01	6956.36	6908.53	7151.39
Jul-95	7172.13	6955.61	6908.14	7148.98
Aug-95	7170.84	6954.01	6906.47	7147.62
Sep-95	7171.02	6953.53	6906.03	7145.28
Oct-95	7171.53	6954.08	6906.24	7146.39
May-96	7172.26	6957.16	6908.39	7163.76
Jun-96	7172.06	6955.88	6908.28	7151.60
Jul-96	7171.13	6954.47	6907.03	7147.12
Aug-96	7170.70	6953.52	6906.94	7145.23
Sep-96	7170.97	6953.57	6908.43	7146.37
Oct-96	7171.24	6954.03	6908.69	7144.43
May-97	7172.16	6957.32	6908.54	7160.27
Jun-97	7172.54	6957.39	6909.29	7153.64
Jul-97	7171.49		6907.50	7149.31
Aug-97	7170.70	6954.26	6906.98	7146.37
Sep-97	7171.12	6954.34	6906.96	7145.53
Oct-97	7171.37	6955.37		7146.09

Table 7. Monitoring Well Static Water Level Elevations

Date	TR-1.5 (asl)	TR-3 (asl)	TR-4 (asl)	WR-1 (asl)
May-98	7172.13	6956.93	6908.09	7156.07
Jun-98	7172.14	6955.91	6908.28	7150.67
Jul-98	7170.74	6954.04	6906.72	7146.04
Aug-98	7170.84	6953.76	6906.53	7145.19
Sep-98	7171.02	6953.74	6906.41	7144.69
May-99	7171.69	6955.84	6907.26	7151.84
Jun-99	7171.93	6955.46	6907.81	7148.36
Jul-99	7170.97	6954.29	6906.67	7146.51
Aug-99	7170.84	6953.64	6906.14	7144.79
Sep-99	7171.06	6954.19	6906.12	7144.47
Oct-99	7171.11	6954.49	6906.09	7144.31
May-00	7171.86	6955.44	6907.36	7150.39
Jun-00	7171.19	6954.38	6906.96	7146.96
Jul-00	7171.02	6953.59	6906.69	7145.69
Aug-00	7170.74	6953.04	6906.36	7144.94
Sep-00	7170.84	6953.40	6906.28	7144.79
Oct-00	7171.02	6953.94	6906.98	7144.79
May-01	7171.79	6955.52	6907.31	7148.19
Jun-01	7171.68	6955.10	6907.54	7148.14
Jul-01	7171.53	6954.04	6906.51	7141.86
Aug-01	7171.39	6953.28	6906.49	7135.77
Sep-01	7171.80	6954.36	6906.68	7145.31
Oct-01	7172.11	6955.06	6906.74	7145.13
May-02	7171.77	6955.69	6904.87	7148.17
Jun-02	7171.94	6954.94	6904.39	7147.04
Jul-02	7170.84	6953.42	6903.46	7145.87
Aug-02	7171.67	6953.44		7145.14
Sep-02	7171.87	6953.33		7144.91
Oct-02	7172.08	6954.16		7145.11
May-03	7172.19	6956.46	6906.99	7155.28
Jun-03	7171.44	6955.51	6906.87	7149.01
Jul-03	7170.88	6953.67	6905.28	7147.48
Aug-03	7170.84	6953.22	6904.24	7147.08
Sep-03	7171.22	6953.39	6903.69	7146.96
Oct-03	7171.27	6953.72	6903.12	7146.86

Table 7. Monitoring Well Static Water Level Elevations

Date	TR-1.5 (asl)	TR-3 (asl)	TR-4 (asl)	WR-1 (asl)
May-04	7171.75	6955.21	6905.82	7148.97
Jun-04	7171.42	6954.97	6905.53	7147.83
Jul-04	7170.63	6953.61	6904.28	7147.24
Aug-04	7170.46	6953.39	6904.09	7147.18
Sep-04	7170.87	6953.60	6903.17	7147.36
Oct-04	7171.50	6954.20	6903.28	7147.32
Apr-05	7171.82	6955.49	6904.92	7151.51
May-05	7171.73	6955.54	6904.69	7151.34
Jun-05	7171.57	6955.51	6902.59	7149.14
Jul-05	7170.81	6954.01	6905.57	7147.94
Aug-05	7170.83	6953.58	6904.59	7147.51
Sep-05	7170.33	6953.44	6903.88	7147.21
Oct-05	7170.93	6954.27	6903.56	7146.86
May-06	7172.13	6955.61	6906.98	7154.36
Jun-06	7171.46	6955.13	6906.77	7149.61
Jul-06	7170.62	6953.61	6905.09	7147.67
Aug-06	7170.41	6953.30	6904.29	7147.08
Sep-06	7170.49	6953.53	6903.77	7147.13
Oct-06	7170.84	6954.03	6903.99	7147.14
May-07	7171.62	6955.41	6906.38	7151.22
Jun-07	7170.73	6954.23	6905.78	7147.64
Jul-07	7170.12	6953.76	6904.21	7147.36
Aug-07	7170.32	6954.04	6903.53	7147.21
Sep-07	7170.29	6954.23	6903.27	7147.12
Oct-07	7170.79	6954.93	6903.67	7147.29
May-08	7172.06	6957.59	6907.53	7165.44
Jun-08	7172.16	6956.34	6907.58	7155.71
Jul-08	7171.57	6954.64	6907.31	7155.49
Aug-08	7171.00	6953.88	6905.67	7147.48
Sep-08	7170.61	6953.44	6904.86	7147.16
Oct-08	7172.08	6953.88	6905.14	7147.01
May-09	7172.49	6955.96	6907.59	7155.01
Jun-09	7172.37	6955.52	6907.19	7149.91
Jul-09	7172.19	6955.56	6906.98	7149.48
Aug-09	7171.34	6953.67	6905.44	7147.38
Sep-09	7171.69	6953.44	6904.64	7147.2

Note: Monitoring wells TR-1.5, TR-3, TR-4 and WR-1 were removed from the Monitoring Program on September 2, 2009 in accordance with TR-48. Monitoring wells TR-1.5 and WR-1 were plugged and abandoned September 8, 2009. Monitoring wells TR-3 and TR-4 were transferred to the current land owner September 15, 2009.

Table 8. Ground Water Quality at Monitoring Well TR-1.5

Date	pH (s.u.)	Temp (C)	S.C (umhos/cm)	TDS mg/l	O-P (mg/l)	NO2 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss. Fe (mg/l)	Diss. Mn (mg/l)	K (mg/l)	Cl (mg/l)
04/28/88	7.50	5.7	179													
05/25/88	6.80	11.2	141													
06/24/88	6.60	12.2	322	194			104	39	0.6	25.0	9.0	6.0	0.38	0.330		
07/14/88	6.60	12.7	198	128	0.020	0.02	118	23	0.3	31.0	12.0	8.0	0.07	0.230		
08/05/88	6.60	11.5	148	93	0.120	0.08	98	25	0.4	26.0	11.0	6.0	0.08	0.220		
09/16/88	7.50	12.3	324	221												
10/21/88	6.90	9.8	235	155												
04/14/89	6.90	7.2	160	101												
05/15/89	8.10	8.1	123	76	0.016	0.74	70	29	0.7	22.0	9.0	5.0	0.18	0.060		
06/16/89	7.80	12.0	222	145												
07/03/89	7.10	12.5	301	203	0.020	0.08	92	21	0.4	27.0	10.0	6.0	0.18	0.260		
08/23/89	6.90	11.8	444	313												
09/07/89	7.10	13.0	278	186	0.124	0.01	100	56	0.9	28.0	11.0	6.0	0.35	0.440		
10/19/89	6.50	10.7	160	101												
04/19/90	8.10	6.3	174	111												
05/11/90	7.50	7.5	155	98	0.069	0.02	73	58	1.3	26.0	9.0	8.0	0.23	0.070		
06/14/90	7.40	13.6	200	129												
07/06/90	7.50	12.2	380	263												
08/10/90	7.80	12.9	174	111	0.105	0.02	106	35	0.5	30.0	11.0	6.0	0.29	0.340		
09/07/90	7.20	14.7	234	154												
10/19/90	6.30	10.0	1890	1555	0.005	0.02	110	12	0.2	26.0	10.0	6.0	0.03	0.070		
05/15/91	6.80	5.5	348	239												
06/11/91	6.80	7.7	379	262	0.030	< 0.01	100	43	0.7	28.0	11.0	9.0	< 0.02	0.040		
07/09/91	7.30	8.2	437	307	< 0.010	0.01	110	132	1.9	37.0	18.0	19.0	0.21	0.150		
08/09/91	6.10	13.8	1480	1186												
09/11/91	7.00	12.8	1573	1269												
10/10/91	6.70	9.2	1786	1460	0.022	< 0.01	124	29	0.4	29.0	11.0	8.0	0.04	0.020		
04/13/92	8.10	5.5	1582	1277												
05/06/92	6.50	9.7	2155	1798	0.038	0.01	94	80	1.3	26.0	10.0	9.0	0.08	0.030		
06/01/92	7.60	9.5	1754	1432												
07/01/92	8.30	12.8	1923	1585												
08/03/92	7.70	15.0	1840	1509	0.008	< 0.01	124	97	1.2	31.0	13.0	6.0	0.02	< 0.010		
10/05/92	7.50	11.9	360	248	0.011	< 0.01	142	23	0.3	37.0	15.0	9.0	0.04	0.020		

Table 8. Ground Water Quality at Monitoring Well TR-1.5

Date	pH	Temp	S.C	TDS	O-P	NO2	HCO3	SO4	SO4:HCO3	Ca	Mg	Na	Diss. Fe	Diss. Mn	K	Cl
	(s.u.)	(C)	(umhos/cm)	mg/l	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(Ratio)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
04/28/93	7.40	5.3	200	129												
05/04/93	7.20	7.0	190	122												
06/02/93	7.00	2.0	300	203	< 0.005	< 0.01	118	58	0.8	26.0	10.0	9.0	0.07	0.050		
07/01/93	7.20	12.0	255	169	< 0.005	< 0.01	122	2	0.0	29.0	12.0	7.0	0.19	0.090		
08/04/93	7.80	14.3	240	158												
09/09/93	7.70	15.0	250	166												
10/06/93	7.20	10.0	300	203	0.008	< 0.01	144	12	0.1	32.0	13.0	6.0	0.05	0.030		
11/08/93	8.30	5.8	290	195												
04/07/94	6.60	3.5	210	137												
05/03/94	7.20	5.8	290	154	< 0.005	< 0.01	138	6	0.1	31.0	12.0	8.0	0.89	0.040	< 1.0	2
06/20/94	7.50	14.2	690	370												
07/25/94	6.60	17.3	707	434	0.197	0.87	60	243	6.4	58.0	32.0	8.0	0.29	0.210	7.0	10
08/16/94	7.20	19.1	275	156												
09/16/94	6.30	12.2	667	412												
10/21/94	6.20	7.6	686	418	0.056	0.03	60	224	5.9	53.0	32.0	8.0	0.16	0.310	6.0	10
04/11/95	7.30	4.1	830	360												
05/16/95	6.80	6.6	350	200												
06/08/95	6.90	10.0	440	170												
06/28/95	7.10	9.9	870	430	0.080	0.02	138	180	2.1	65.4	37.0	8.5	0.03	0.021	5.2	
07/11/95	7.10	14.0	1170	840	0.220	0.09	153	470	4.8	200.0	132.0	15.4	0.08	0.315	6.0	7
08/14/95	7.30	13.3	1990	1230												
09/18/95	7.40	13.8	2190	1640												
10/18/95	7.60	8.7	2610	2180	0.013	0.19	233	1360	9.2	379.0	243.0	23.3	0.18	0.610	5.5	10
05/13/96	7.50	8.7	2560	2450	< 0.005	< 0.01	< 2	1520	1196.4	295.0	182.0	17.5	0.18	0.220	4.1	9
06/14/96	6.90	7.2	680	520												
07/15/96	6.90	8.2	3710	3690												
08/19/96	7.50	11.2	2780	2280	0.072	0.08	201	1530	12.0	350.0	237.0	23.4	< 0.02	0.260	5.6	10
09/16/96	7.10	11.9	2990	2470												
10/14/96	7.20	9.7	3490	3400	< 0.005	< 0.01	285	2200	12.2	481.0	334.0	30.7	0.57	0.670	6.4	15
05/13/97	7.04	8.3	2990	1360	0.009	0.02	254	770	4.8	165.0	111.0	11.2	0.14	0.150	3.1	7
06/04/97	7.46	14.7	4370	1960												
07/01/97	7.43	8.6	3360	3400												
08/04/97	7.53	9.2	3560	3510	< 0.005	< 0.01	316	2310	11.5	470.0	331.0	33.6	0.18	0.586	7.4	12
09/02/97	7.42	11.7	2750	2630												
10/01/97	7.18	11.9	2530	2190	0.044	< 0.01	185	1460	12.4	290.0	198.0	18.9	0.64	0.660	5.7	11

Table 8. Ground Water Quality at Monitoring Well TR-1.5

Date	pH (s.u.)	Temp (C)	S.C (umhos/cm)	TDS mg/l	O-P (mg/l)	NO2 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss. Fe (mg/l)	Diss. Mn (mg/l)	K (mg/l)	Cl (mg/l)
05/12/98	7.21	7.2	3350	3200	< 0.005	< 0.01	316	1990	9.9	438.0	315.0	29.9	1.02	0.614	5.8	13
06/02/98	7.13	9.1	2930	1600												
07/20/98	7.68	9.8	2710	2300	0.879	< 0.01	317	1380	6.9	304.0	215.0	33.0	< 0.05	0.560	8.0	14
08/17/98	7.54	10.2	2930	3060												
09/14/98	7.64	12.1	2480	1990												
10/12/98	7.51	11.7	2620	2310	1.050	0.26	300	1440	7.6	301.0	212.0	22.4	0.06	0.490	6.8	14
05/03/99	8.19	5.5	1920	1760	1.200	1.72	224	1160	8.2	244.0	170.0	18.2	0.03	0.407	6.6	11
06/07/99	7.84	9.2	2130	2680												
07/06/99	8.11	10.4	1800	2580												
08/24/99	7.53	11.1	2190	1670	0.950	0.18	204	1100	8.5	234.0	176.0	17.9	0.05	0.310	6.6	11
09/23/99	7.81	11.6	2210	1020												
10/18/99	7.58	9.1	3170	2790	0.859	0.10	268	1900	11.2	387.0	281.0	30.0	0.11	0.550	7.1	23
05/16/00	7.46	8.8	3210	2120	2.170	0.03	165	1400	13.4	293.0	216.0	37.9	0.09	0.149	9.7	43
06/19/00	7.14	9.4	3320	3450												
07/18/00	6.85	9.7	3790	3530												
08/15/00	7.14	12.6	3460	3530	0.432	0.01	287	2470	13.5	466.0	352.0	35.0	0.42	0.670	8.0	23
09/11/00	7.46	11.6	3520	3790												
10/02/00	7.30	10.8	3680	3820	0.350	< 0.01	307	2700	13.8	478.0	371.0	35.2	0.09	0.590	7.2	44
05/08/01	7.30	7.1	4250	530	0.005	1.24	377	70	0.3	12.9	4.7	179.0	0.06	0.016	2.0	18
06/04/01	7.20	6.7	3940	4480												
07/10/01	7.20	10.3	3880	4740	0.033	0.20	329	3010	14.4	538.0	436.0	35.0	< 0.05	0.310	7.0	15
08/01/01	7.30	11.8	3680	4690												
09/21/01	7.70	11.8	3650	4360												
10/10/01	7.70	9.2	3380	4310	0.013	< 0.01	266	3100	18.3	538.0	416.0	32.0	0.53	0.500	7.0	15
05/13/02	7.56	8.4	3070	3350	0.039	0.01	212	2340	17.4	410.0	326.0	26.5	< 0.02	< 0.010	5.6	12
06/03/02	7.82	11.8	2930	4180												
07/08/02	7.28	11.3	2980	4310												
08/13/02	7.84	12.3	3120	3720	0.028	< 0.01	309	2610	13.3	474.0	389.0	32.0	1.82	< 0.030	6.0	15
09/09/02	7.10	11.4	3510	3350												
10/14/02	7.14	10.3	3570	3550	< 0.010	< 0.01	328	3000	14.4	482.0	384.0	32.0	0.44	0.140	7.0	17
05/12/03	6.90	8.8	3200	4230	0.010	< 0.01	314	2460	12.3	510.0	410.0	32.0	0.44	0.490	3.1	14
06/17/03	7.00	12.3	2420	2920												
07/16/03	6.90	11.5	3080	4150	< 0.010	< 0.01	318	2690	13.3	498.0	394.0	31.0	0.25	0.770	4.5	13
08/12/03	7.10	14.8	2620	3530												
09/08/03	7.10	13.2	3010	3710												
10/01/03	7.00	13.6	3300	4590	0.010	< 0.01	313	3170	15.9	554.0	437.0	40.0	0.25	0.710	5.0	15

Table 8. Ground Water Quality at Monitoring Well TR-1.5

Date	pH (s.u.)	Temp (C)	S.C (umhos/cm)	TDS mg/l	O-P (mg/l)	NO2 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss. Fe (mg/l)	Diss. Mn (mg/l)	K (mg/l)	Cl (mg/l)
05/12/04	6.88	9.9	2980	4450	< 0.010	< 0.01	320	3140	15.4	534.0	431.0	35.2	0.14	0.900	6.4	15
06/01/04	6.69	11.2	3010	4510												
07/19/04	7.06	16.7	3680	4530	< 0.010	< 0.01	324	3160	15.4	528.0	408.0	32.0	0.29	0.660	6.0	16
08/03/04	7.19	14.4	4090	4460												
09/08/04	7.26	15.9	4030	4630												
10/13/04	6.90	10.3	3900	4210	< 0.010	< 0.01	308	2830	14.5	493.0	383.0	30.0		0.040	6.0	14
04/18/05	7.12	9.8	4160	4530												
05/12/05	7.20	6.7	4280	4460	0.040	0.02	315	2910	14.5	540.0	448.0	33.9	0.27	0.774	6.6	15
06/09/05	8.46	10.1	4140	4480												
07/15/05	7.08	18.0	4090	4800												
08/03/05	7.06	11.6	4420	4700	< 0.010	< 0.01	326	2850	13.8	563.0	447.0	34.0	0.50	0.820	6.0	14
09/06/05	7.07	16.4	4010	4500												
10/20/05	7.14	9.4	4440	4450	< 0.010	< 0.01	320	2890	14.2	603.0	506.0	39.8	< 0.02	0.364	7.2	16
05/19/06	7.04	12.1	3970	4370	0.030	0.04	309	2790	14.2	554.0	446.0	34.7	0.37	0.800	6.2	13
06/13/06	6.87	11.6	3960	4570												
07/18/06	7.09	15.4	3830	4590												
08/10/06	7.08	13.8	3960	4600	0.040	< 0.01	316	2700	13.5	545.0	432.0	34.0	1.10	0.910	7.0	13
09/11/06	7.34	13.3	4170	4400												
10/11/06	6.94	9.4	4340	4430	0.040	< 0.01	305	2880	14.9	500.0	436.0	34.0	0.92	0.795	6.4	14
05/08/07	7.10	8.6	4260	4510	0.050	0.01	306	3030	15.6	545.0	458.0	33.0	0.40	0.760	6.0	14
06/22/07	7.22	11.5	4430	4720												
07/19/07	7.60	11.6	4460	4620	< 0.010	0.01	318	3100	15.3	565.0	470.0	36.0	0.50	0.940	7.0	13
08/09/07	6.98	11.8	4350	4480												
09/21/07	7.25	11.8	4960	4360												
10/15/07	7.70	10.1	4280	4460	0.030	< 0.01	315	3000	15.0	536.0	447.0	35.0	0.90	0.900	7.0	13
05/14/08	7.39	7.2	4430	4570	0.040	0.01	294	2990	16.0	520.0	468.0	32.3	0.45	0.716	6.2	14
06/11/08	6.93	7.4	4180	4250												
07/07/08	7.19	11.2	4080	4270												
08/11/08	6.80	12.7	4110	4360	0.010	< 0.01	296	2600	13.8	515.0	426.0	37.0	0.60	0.770	6.0	15
09/08/08	6.95	12.6	4140	4920												
10/14/08	6.75	6.6	4010	4040	< 0.010	< 0.01	219	2500	18.0	485.0	433.0	33.2	0.22	0.670	6.8	14
05/14/09	6.82	9.6	3570	4100	0.020	0.02	289	2700	14.7	474.0	420.0	32.7	30.70		6.1	12
06/09/09	6.98	9.2	2680	2460												
07/06/09	7.20	15.2	2560	2450												
08/06/09	6.75	13.7	2610	2510	0.020	< 0.01	248	1700	10.8	312.0	271.0	22.8	0.21	0.071	5.0	9
09/02/09	7.58	13.7	2670	2710												

Note: Monitoring well TR-1.5 was removed from the Monitoring Program on September 2, 2009 in accordance with TR-48. Monitoring well TR-1.5 was plugged and abandoned September 8, 2009.

Table 9. Ground Water Quality at Monitoring Well TR-3

Date	pH (s.u.)	Temp (C)	S.C (umhos/cm)	TDS mg/l	O-P (mg/l)	NO2 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss. Fe (mg/l)	Diss. Mn (mg/l)	K (mg/l)	Cl (mg/l)
04/28/88	6.90	6.7	242													
05/17/88	7.00	9.3	240													
06/25/88	7.20	10.8	298	332			104	138	2.1	41.0	19.0	8.0	0.22	0.030		
07/14/88	7.30	14.5	397	277	0.009	0.05	118	117	1.6	48.0	23.0	20.0	0.59	0.050		
08/05/88	7.40	16.1	490	349	0.150	0.00	98	113	1.8	44.0	22.0	11.0	0.18	0.140		
09/21/88	7.70	11.7	433	304												
10/21/88	7.50	10.8	453	320												
04/14/89	7.10	5.7	485	345												
05/15/89	8.40	7.7	376	260	0.010	0.52	102	189	2.9	61.0	31.0	10.0	0.45	0.030		
06/19/89	6.60	10.9	486	346												
07/03/89	7.50	14.4	376	260	0.016	0.19	118	107	1.4	59.0	26.0	10.0	0.18	0.040		
08/23/89	7.20	12.3	369	255												
09/08/89	7.60	11.1	447	315	0.032	0.25	122	144	1.9	60.0	28.0	8.0	0.11	0.260		
10/19/89	7.70	9.6	643	471												
04/19/90	8.30	6.0	551	397												
05/11/90	7.50	7.0	535	385	0.015	0.07	129	222	2.7	69.0	30.0	10.0	0.19	0.060		
06/17/90	7.20	10.1	549	396												
07/06/90	7.50	10.7	365	252												
08/10/90	7.80	13.0	420	294	0.031	0.02	127	138	1.7	55.0	24.0	9.0	1.14	0.260		
09/07/90	7.70	13.4	630	461												
10/16/90	7.40	9.5	2360	1988	0.005	0.02	123	154	2.0	53.0	24.0	11.0	0.18	0.060		
05/15/91	7.40	2.7	1137	886												
06/11/91	6.90	5.1	966	740	0.050	< 0.01	120	179	2.3	60.0	28.0	11.0	< 0.02	0.030		
07/09/91	7.70	6.3	901	685	<0.010	0.01	123	111	1.4	46.0	21.0	10.0	0.23	0.270		
08/09/91	6.80	10.3	2238	1875												
09/11/91	6.60	10.9	1948	1608												
10/10/91	7.30	10.5	2223	1860	0.022	< 0.01	130	117	1.4	50.0	23.0	11.0	0.09	0.020		
04/13/92	8.50	7.5	2675	2284												
05/06/92	7.50	8.6	2485	2105	0.006	< 0.01	112	218	3.1	54.0	26.0	11.0	0.06	0.040		
06/01/92	8.20	9.7	2321	1952												
07/01/92	8.20	11.7	2076	1725												
08/03/92	8.00	10.8	2177	1818	0.020	0.01	124	187	2.4	50.0	22.0	10.0	0.62	0.030		
10/05/92	7.40	10.0	450	318	0.005	< 0.01	118	150	2.0	55.0	25.0	10.0	0.08	0.010		

Table 9. Ground Water Quality at Monitoring Well TR-3

Date	pH (s.u.)	Temp (C)	S.C (umhos/cm)	TDS mg/l	O-P (mg/l)	NO2 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss. Fe (mg/l)	Diss. Mn (mg/l)	K (mg/l)	Cl (mg/l)
04/28/93	7.60	6.8	570	412												
05/04/93	7.20	7.3	550	397												
06/02/93	7.40	8.0	570	412	< 0.005	< 0.01	120	183	2.4	56.0	26.0	10.0	0.15	0.090		
07/01/93	7.50	10.5	330	225	< 0.005	< 0.01	118	84	1.1	42.0	20.0	9.0	0.44	0.170		
08/04/93	8.50	10.0	380	263												
09/09/93	7.40	11.0	540	389												
10/06/93	7.50	11.0	590	429	< 0.005	< 0.01	128	154	1.9	61.0	28.0	10.0	< 0.01	0.190		
11/08/93	8.30	7.9	620	453												
04/07/94	6.70	5.0	540	389												
05/03/94	7.30	6.5	630	392	< 0.005	< 0.01	142	161	1.8	65.0	31.0	11.0	0.13	0.100	1.0	2
06/20/94	7.04	9.4	600	346												
07/25/94	7.10	13.7	523	340	< 0.005	< 0.01	138	146	1.7	58.0	27.0	11.0	0.60	0.400	1.0	< 1
08/16/94	7.90	16.7	583	390												
09/16/94	7.20	13.9	719	502												
10/21/94	7.70	10.8	683	460	< 0.005	< 0.01	156	230	2.3	73.0	34.0	12.0	1.17	0.005	1.0	2
04/11/95	7.30	4.0	630	390												
05/16/95	6.70	7.4	610	420												
06/08/95	7.40	9.8	620	390												
06/28/95	6.70	11.0	540	310	< 0.005	< 0.01	131	120	1.4	49.5	22.6	10.3	0.12	0.167	.9	< 1
07/11/95	6.90	12.8	480	340	< 0.005	< 0.01	138	140	1.6	57.7	27.9	10.9	0.22	0.235	1.1	2
08/14/95	7.60	10.7	490	300												
09/18/95	7.60	11.2	510	300												
10/18/95	8.10	9.8	500	310	0.014	< 0.01	142	106	1.2	53.6	25.4	10.2	0.42	0.040	1.1	1
05/13/96	7.80	6.9	580	380	< 0.005	< 0.01	< 2	130	102.3	61.4	29.1	11.5	0.02	< 0.005	1.1	< 1
06/14/96	6.90	7.2	580	380												
07/15/96	7.10	9.3	590	380												
08/19/96	7.50	9.9	540	330	< 0.005	< 0.01	162	110	1.1	59.7	28.2	11.0	0.49	0.133	.1	2
09/16/96	7.40	10.7	540	480												
10/14/96	7.20	9.2	590	350	< 0.005	< 0.01	126	150	1.9	59.0	27.9	10.2	0.45	0.319	1.1	< 1
05/13/97	7.41	6.3	580	370	< 0.005	< 0.01	130	160	1.9	65.2	30.4	10.6	0.02	< 0.005	.9	1
06/04/97	8.01	8.8	500	340												
07/01/97	6.64	8.4	560	380												
08/04/97	7.67	9.7	580	350	< 0.005	< 0.01	168	140	1.3	65.6	30.5	11.2	0.17	0.377	1.1	< 1
09/02/97	7.81	10.9	560	360												
10/01/97	7.18	10.7	550	350	0.012	< 0.01	144	140	1.5	63.8	30.6	11.0	0.20	0.015	1.4	< 1

Table 9. Ground Water Quality at Monitoring Well TR-3

Date	pH	Temp	S.C	TDS	O-P	NO2	HCO3	SO4	SO4:HCO3	Ca	Mg	Na	Diss. Fe	Diss. Mn	K	Cl
	(s.u.)	(C)	(umhos/cm)	mg/l	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(Ratio)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
05/12/98	7.38	6.4	800	590	< 0.005	< 0.01	148	300	3.2	103.0	47.1	13.2	0.22	0.404	1.0	5
06/02/98	7.57	8.9	820	490												
07/20/98	7.81	9.4	830	600	0.006	< 0.01	159	260	2.6	83.3	43.2	24.3	0.16	0.095	1.4	4
08/17/98	7.83	11.4	680	410												
09/14/98	7.72	10.9	800	740												
10/12/98	7.74	9.9	550	380	< 0.005	< 0.01	123	160	2.0	59.9	27.4	11.5	0.24	0.102	1.0	< 1
05/03/99	8.30	4.9	560	358	< 0.005	< 0.01	119	180	2.4	63.9	29.7	9.3	0.05	0.015	1.0	2
06/07/99	8.30	8.4	640	410												
07/06/99	8.16	8.9	700	460												
08/24/99	7.89	11.9	710	299	0.008	< 0.01	126	130	1.6	54.9	25.5	9.9	0.17	0.294	1.0	1
09/23/99	8.31	11.2	690	320												
10/18/99	8.12	8.9	490	304	0.081	0.01	120	140	1.8	53.7	25.0	10.1	0.30	0.180	1.1	1
05/16/00	7.28	7.9	720	468	0.014	0.01	114	260	3.6	84.2	39.1	11.5	0.55	0.248	1.1	3
06/19/00	7.51	9.7	700	520												
07/18/00	7.12	11.5	620	410												
08/15/00	7.74	13.3	610	394	0.016	0.04	133	190	2.2	69.0	31.1	13.3	0.44	1.110	1.6	7
09/11/00	7.70	11.6	640	430												
10/02/00	7.50	11.1	640	414	0.015	< 0.01	127	220	2.7	68.1	32.1	11.6	0.49	0.873	1.4	3
05/08/01	7.80	5.4	830	590	0.007	0.10	115	330	4.5	89.3	41.5	11.4	0.45	0.748	1.1	4
06/04/01	7.60	6.5	760	550												
07/10/01	7.30	10.4	720	560	0.009	0.32	128	260	3.2	87.8	41.0	13.8	0.31	0.531	1.5	3
08/01/01	7.60	11.4	720	490												
09/21/01	7.90	11.8	630	440												
10/10/01	8.10	10.1	670	470	0.013	< 0.01	111	220	3.1	73.5	34.2	10.9	0.79	0.703	1.3	3
05/13/02	8.02	6.8	570	380	0.036	< 0.01	110	160	2.3	68.9	32.1	10.0	< 0.01	< 0.005	.8	2
06/03/02	7.94	8.1	650	420												
07/08/02	8.14	11.9	690	440												
08/13/02	8.26	11.1	740	491	0.007	0.06	180	230	2.0	89.3	44.0	12.5	< 0.01	0.203	1.5	2
09/09/02	7.70	10.6	780	550												
10/14/02	7.09	12.1	760	510	< 0.010	< 0.01	182	240	2.1	82.5	39.3	12.2	0.52	0.102	1.3	2
05/12/03	6.90	8.3	780	580	< 0.010	0.02	142	250	2.8	89.9	43.6	11.8	0.69	0.784	1.1	2
06/17/03	7.10	13.5	570	380												
07/16/03	6.90	13.3	590	430	< 0.010	< 0.01	148	180	1.9	70.6	33.5	11.4	0.58	0.313	1.0	2
08/12/03	7.00	13.4	600	480												
09/08/03	7.10	12.3	640	480												
10/01/03	6.90	12.5	640	450	0.010	< 0.01	137	220	2.5	75.7	34.4	11.6	1.10	0.448	1.2	2

Table 9. Ground Water Quality at Monitoring Well TR-3

Date	pH	Temp	S.C	TDS	O-P	NO2	HCO3	SO4	SO4:HCO3	Ca	Mg	Na	Diss. Fe	Diss. Mn	K	Cl
	(s.u.)	(C)	(umhos/cm)	mg/l	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(Ratio)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
05/12/04	7.01	7.2	630	860	< 0.010	< 0.01	128	270	3.3	65.1	32.0	10.1	0.01	0.020	.9	2
06/01/04	6.64	10.1	730	570												
07/19/04	7.19	12.7	590	450	< 0.010	< 0.01	139	230	2.6	75.0	33.9	11.4	0.08	0.061	1.2	2
08/03/04	7.15	16.2	590	430												
09/08/04	7.36	16.1	570	430												
10/13/04	7.08	10.2	640	460	< 0.010	< 0.01	137	220	2.5	61.2	29.6	10.2		0.081	1.3	3
04/18/05	7.04	8.6	710	510												
05/12/05	6.99	5.8	850	630	0.060	0.04	130	340	4.1	103.0	47.9	12.6	0.36	0.523	1.2	4
06/09/05	8.48	9.7	700	540												
07/15/05	7.07	16.1	720	560												
08/03/05	7.10	12.4	720	520	< 0.010	0.03	146	220	2.4	78.4	37.5	12.2	0.81	0.488	1.3	2
09/06/05	7.17	14.6	590	410												
10/20/05	7.27	10.5	560	370	0.010	< 0.01	126	160	2.0	64.0	30.5	11.7	0.14	0.570	1.1	2
05/19/06	6.96	11.3	740	550	0.030	0.05	127	290	3.6	89.7	43.4	12.0	0.62	0.481	1.1	3
06/13/06	7.06	11.5	720	520												
07/18/06	7.20	13.6	620	460												
08/10/06	7.12	13.9	620	500	0.040	0.03	132	220	2.6	71.4	34.5	11.8	0.24	0.613	1.5	2
09/11/06	7.86	12.8	660	420												
10/11/06	7.20	9.4	610	400	0.040	< 0.01	128	170	2.1	65.1	32.2	11.9	0.49	0.595	1.3	2
05/08/07	7.20	6.8	892	650	0.040	0.01	126	360	4.5	109.0	53.6	13.4	1.24	0.468	1.1	3
06/22/07	7.55	9.5	850	640												
07/19/07	7.70	11.9	665	460	< 0.010	0.03	137	200	2.3	69.7	33.7	11.7	0.17	0.411	1.0	2
08/09/07	7.10	13.1	610	380												
09/21/07	7.51	11.6	690	400												
10/15/07	7.80	9.6	608	410	0.030	< 0.01	150	180	1.9	61.4	29.5	10.8	0.24	0.423	1.6	2
05/14/08	7.94	6.9	580	380	0.020	< 0.01	134	160	1.9	62.3	31.1	9.5	< 0.02	< 0.005	.6	1
06/11/08	7.40	8.3	700	490												
07/07/08	7.75	10.0	730	180												
08/11/08	7.42	13.2	660	381	< 0.010	< 0.01	151	174	1.8	67.4	32.8	12.0	0.19	0.098	1.1	2
09/08/08	7.29	11.8	610	400												
10/14/08	7.30	9.7	580	380	< 0.010	< 0.01	123	148	1.9	63.3	31.1	11.6	0.15	0.292	1.3	2
05/14/09	7.36	7.1	870	630	0.030	0.03	111	330	4.7	101.0	50.5	12.2	13.90		1.1	3
06/09/09	7.01	8.9	740	520												
07/06/09	7.01	12.7	730	540												
08/06/09	7.24	13.1	690	480	0.030	0.01	144	230	2.5	85.2	40.8	13.2	0.43	0.153	1.3	2
09/02/09	7.19	13.0	680	470												

Note: Monitoring well TR-3 was removed from the Monitoring Program on September 2, 2009 in accordance with TR-48. Monitoring well TR-3 was transferred to the current land owner September 15, 2009.

Table 10. Ground Water Quality at Monitoring Well TR-4

Date	pH	Temp	S.C	TDS	O-P	NO2	HCO3	SO4	SO4:HCO3	Ca	Mg	Na	Diss. Fe	Diss. Mn	K	Cl
	(s.u.)	(C)	(umhos/cm)	mg/l	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(Ratio)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
04/29/88	7.40	5.1	304													
05/17/88	7.50	8.4	295													
06/25/88	6.90	12.6	309	338			139	134	1.5	51.0	24.0	10.0	0.06	0.009		
07/14/88	7.70	15.2	296	200	0.010	0.02	137	97	1.1	46.0	22.0	9.0	0.06	0.030		
08/05/88	8.00	14.7	410	286	0.020	0.05	139	161	1.8	58.0	29.0	11.0	0.15	0.260		
09/21/88	7.70	13.5	475	337												
10/21/88	7.50	10.5	426	299												
04/14/89	8.00	4.7	368	254												
05/15/89	8.00	6.7	480	341	0.008	0.57	112	196	2.8	65.0	35.0	11.0	4.61	0.150		
06/19/89	7.50	12.0	364	251												
07/03/89	7.60	12.9	321	218	0.022	0.02	100	93	1.5	48.0	22.0	10.0	0.12	0.070		
08/23/89	7.70	15.7	339	232												
09/08/89	7.70	13.9	468	332	0.012	0.01	118	185	2.5	68.0	33.0	10.0	0.02	0.090		
10/19/89	7.10	10.7	440	310												
04/19/90	8.10	5.4	655	481												
05/14/90	6.70	8.1	532	382	0.023	0.11	895	261	0.5	79.0	37.0	12.0	0.12	0.050		
06/14/90	7.90	12.7	384	266												
07/06/90	6.80	12.1	269	180												
08/10/90	8.10	16.4	395	275	0.036	0.02	146	185	2.0	66.0	31.0	13.0	0.43	0.140		
09/07/90	7.70	16.7	507	362												
10/16/90	7.60	13.2	1810	1482	0.010	0.02	120	206	2.7	63.0	32.0	12.0	0.08	0.080		
05/15/91	7.80	3.1	788	590												
06/11/91	7.70	7.3	768	573	0.050	0.02	106	220	3.3	64.0	33.0	10.0	<0.02	0.010		
07/09/91	7.70	8.9	499	356	<0.010	< 0.01	113	66	0.9	34.0	17.0	10.0	0.02	0.020		
08/09/91	6.90	15.8	1623	1314												
09/11/91	7.80	15.3	1660	1346												
10/10/91	8.10	12.0	1899	1563	0.018	< 0.01	114	167	2.3	54.0	28.0	10.0	0.09	0.050		
04/13/92	8.50	5.2	2749	2354												
05/06/92	7.20	7.6	1960	1619	0.008	< 0.01	124	311	3.9	76.0	39.0	12.0	0.04	0.070		
06/01/92	8.00	9.7	1952	1611												
07/01/92	8.40	12.0	1899	1563												
08/03/92	7.20	14.7	1698	1381	0.014	< 0.01	134	2165	25.4	58.0	28.0	11.0	0.08	0.014		
10/05/92	8.00	11.3	700	518	< 0.005	< 0.01	134	218	2.6	73.0	37.0	13.0	0.06	0.200		

Table 10. Ground Water Quality at Monitoring Well TR-4

Date	pH (s.u.)	Temp (C)	S.C (umhos/cm)	TDS mg/l	O-P (mg/l)	NO2 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss. Fe (mg/l)	Diss. Mn (mg/l)	K (mg/l)	Cl (mg/l)
04/28/93	7.80	6.0	740	551												
05/04/93	7.50	11.3	700	518												
06/02/93	7.60	10.0	600	437	< 0.005	< 0.01	192	228	1.9	91.0	45.0	15.0	0.04	0.220		
07/01/93	7.40	11.8	700	518	0.007	< 0.01	226	239	1.7	95.0	45.0	16.0	0.23	0.240		
08/04/93	7.70	15.5	500	357												
09/09/93	7.80	16.0	470	333												
10/06/93	8.30	11.5	540	389	< 0.005	< 0.01	120	142	1.9	52.0	26.0	10.0	< 0.01	0.020		
11/08/93	8.80	5.0	650	477												
04/07/94	7.20	3.0	440	310												
05/03/94	7.70	6.0	600	458	< 0.005	< 0.01	158	251	2.5	82.0	43.0	13.0	0.06	0.100	2.0	2
06/20/94	8.35	13.5	420	216												
07/25/94	6.90	15.8	917	690	0.006	< 0.01	160	356	3.5	116.0	60.0	15.0	0.06	0.240	3.0	1
08/16/94	6.90	16.9	900	608												
09/16/94	7.00	16.3	643	422												
10/21/94	7.30	10.1	570	340	< 0.005	< 0.01	176	140	1.3	50.0	27.0	10.0	0.11	0.030	2.0	< 1
04/11/95	6.80	6.3	680	450												
05/16/95	6.80	6.3	680	450												
06/08/95	7.10	8.6	760	500												
06/28/95	6.90	12.7	800	560	0.012	< 0.01	173	250	2.3	80.0	42.0	14.0	0.02	0.068	2.1	4
07/11/95	7.10	14.3	810	580	< 0.005	< 0.01	194	250	2.0	92.0	51.9	15.6	0.02	0.118	2.5	5
08/14/95	7.70	12.5	530	310												
09/18/95	7.80	14.3	530	330												
10/18/95	8.10	10.4	600	400	0.020	< 0.01	118	198	2.6	62.8	33.2	9.7	0.34	0.167	2.1	2
05/13/96	7.90	7.1	700	420	< 0.005	< 0.01	117	180	2.4	72.6	36.9	10.6	0.07	0.220	2.0	1
06/14/96	7.00	6.5	960	660												
07/15/96	7.20	8.9	850	580												
08/19/96	7.60	11.9	810	510	< 0.005	< 0.01	222	210	1.5	93.8	45.6	13.7	0.44	1.210	2.2	4
09/16/96	7.50	12.9	720	340												
10/14/96	7.30	10.1	550	360	< 0.005	< 0.01	132	140	1.7	55.9	27.5	11.4	0.09	0.112	3.3	3
05/13/97	7.20	8.2	760	490	< 0.005	< 0.01	207	190	1.4	76.6	37.7	11.7	0.03	0.097	2.0	3
06/04/97	7.85	11.3	740	480												
07/01/97	7.31	7.9	830	590												
08/04/97	7.58	11.2	850	610	< 0.005	< 0.01	227	230	1.6	102.0	47.5	13.9	0.31	1.810	2.1	4
09/02/97	7.71	11.4	840	690												
10/01/97			797	520	< 0.005	< 0.01	226	230	1.6	99.6	46.8	13.6	0.12	0.702	2.4	4

Table 10. Ground Water Quality at Monitoring Well TR-4

Date	pH (s.u.)	Temp (C)	S.C (umhos/cm)	TDS mg/l	O-P (mg/l)	NO2 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss. Fe (mg/l)	Diss. Mn (mg/l)	K (mg/l)	Cl (mg/l)
05/12/98	7.34	6.0	920	620	< 0.005	< 0.01	240	260	1.7	112.0	50.4	14.6	0.20	2.400	2.1	8
06/02/98	7.70	10.7	870	620												
07/20/98	7.64	10.1	960	700	< 0.005	< 0.01	248	270	1.7	113.0	54.0	16.0	0.10	1.660	2.4	8
08/17/98	7.80	12.9	990	750												
09/14/98	7.90	13.7	590	390												
10/12/98	8.06	11.3	500	350	< 0.005	< 0.01	117	140	1.9	54.7	25.6	9.0	0.11	0.154	3.1	< 1
05/03/99	8.50	4.8	660	424	0.006	< 0.01	160	200	2.0	74.5	36.1	11.0	0.05	0.770	2.2	3
06/07/99	8.38	9.2	460	270												
07/06/99	8.28	9.6	780	500												
08/24/99	8.07	15.8	760	266	0.022	< 0.01	119	110	1.5	49.1	23.9	8.9	0.07	0.073	2.8	< 1
09/23/99	8.40	12.7	750	260												
10/18/99	8.27	9.6	450	264	0.031	< 0.01	118	110	1.5	47.6	23.9	7.9	0.12	0.160	2.5	1
05/16/00	7.73	7.5	700	427	0.039	0.03	130	220	2.7	73.1	36.1	10.9	0.80	0.079	2.2	4
06/19/00	7.98	13.0	320	200												
07/18/00	7.24	19.4	490	310												
08/15/00	7.52	19.1	720	459	0.095	< 0.01	146	230	2.5	75.8	40.5	14.0	0.04	0.058	2.9	7
09/11/00	7.85	13.1	590	380												
10/02/00	7.69	12.2	610	390	0.069	< 0.01	132	200	2.4	58.9	35.5	10.9	0.07	0.014	2.1	3
05/08/01	7.90	5.8	740	480	0.029	0.20	120	475	6.2	73.1	42.6	11.8	0.09	0.010	2.1	2
06/04/01	7.80	8.4	210	120												
07/10/01	7.30	18.9	720	570	0.037	0.08	158	250	2.5	83.2	46.6	12.7	< 0.01	< 0.005	3.0	2
08/01/01	7.90	18.6	560	370												
09/21/01	8.00	13.4	520	340												
10/10/01	8.50	9.8	470	300	0.023	< 0.01	108	130	1.9	45.7	27.1	7.5	0.25	0.029	1.6	2
05/13/02	7.82	7.6	870	600	0.024	0.06	115	330	4.5	111.0	56.4	13.1	0.21	0.012	3.0	5
06/03/02	7.63	8.8	730	470												
07/08/02	7.67	12.3	1020	730												
08/13/02																
09/09/02																
10/14/02																
05/12/03	7.80	10.1	980	820	0.020	< 0.01	155	420	4.3	113.0	74.2	18.1	0.13	0.727	4.2	3
06/17/03	7.00	14.1	800	600												
07/16/03	6.90	14.6	880	650	< 0.010	< 0.01	345	220	1.0	111.0	52.2	22.2	1.80	3.000	6.3	7
08/12/03	7.00	16.8	930	640												
09/08/03	7.10	15.3	1000	400												
10/01/03	7.00	12.8	1080	780	0.030	0.02	537	160	0.5	149.0	68.1	24.5	0.54	1.920	8.1	8

Table 10. Ground Water Quality at Monitoring Well TR-4

Date	pH (s.u.)	Temp (C)	S.C (umhos/cm)	TDS mg/l	O-P (mg/l)	NO2 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss. Fe (mg/l)	Diss. Mn (mg/l)	K (mg/l)	Cl (mg/l)
05/12/04	6.75	7.6	1090	460	< 0.010	0.02	491	240	0.8	131.0	62.2	46.4	0.45	3.250	8.0	8
06/01/04	6.52	10.5	1160	870												
07/19/04	7.26	14.1	1250	940	0.010	0.02	419	230	0.9	135.0	61.6	89.8	0.37	4.410	8.0	8
08/03/04	7.26	15.0	1370	920												
09/08/04	7.31	15.4	1390	960												
10/13/04	7.28	12.2	1440	870	< 0.010	0.02	713	160	0.4	143.0	66.9	59.9		3.950	8.2	44
04/18/05	7.06	8.9	1270	860												
05/12/05	7.00	6.3	1190	770	0.130	0.02	542	150	0.4	138.0	66.5	46.7	0.20	1.630	7.8	20
06/09/05	8.44	10.9	1130	790												
07/15/05	7.17	19.0	1140	780												
08/03/05	7.13	14.1	1300	820	0.010	0.02	588	160	0.4	129.0	63.1	60.8	0.25	2.210	7.8	4
09/06/05	7.23	15.9	1300	820												
10/20/05	7.22	11.5	1470	840	0.360	0.02	621	170	0.4	151.0	73.8	63.7	0.67	4.240	8.6	5
05/19/06	7.61	14.6	1180	750	0.040	0.02	610	110	0.3	130.0	68.4	53.2	0.14	3.330	7.0	4
06/13/06	7.25	14.2	1160	770												
07/18/06	7.36	14.1	1190	780												
08/10/06	7.07	16.0	1110	710	0.050	0.02	474	140	0.5	124.0	62.0	28.7	0.06	1.480	7.6	4
09/11/06	7.52	13.2	1190	730												
10/11/06	7.32	11.6	1150	720	0.010	< 0.01	520	150	0.5	116.0	60.3	24.3	0.08	1.990	6.7	5
05/08/07	7.70	8.8	1120	700	0.040	< 0.01	505	130	0.4	134.0	70.7	21.7	0.03	0.249	5.2	4
06/22/07	7.40	12.9	1280	810												
07/19/07	7.80	15.4	1310	810	< 0.010	0.04	644	120	0.3	148.0	75.0	17.3	0.22	3.890	5.8	4
08/09/07	7.15	13.2	1210	720												
09/21/07	7.31	14.0	1480	790												
10/15/07	7.90	11.3	1190	780	0.030	< 0.01	599	120	0.3	149.0	73.6	20.5	0.13	3.340	7.9	4
05/14/08	7.10	6.8	1110	720	0.040	0.01	503	120	0.4	127.0	66.2	17.2	0.04	1.470	5.9	3
06/11/08	7.16	8.7	1160	710												
07/07/08	7.34	12.3	1170	2160												
08/11/08	7.18	15.1	1180	730	0.020	0.05	561	106	0.3	133.0	70.9	16.5	0.13	3.030	6.5	5
09/08/08	7.09	13.0	1180	740												
10/14/08	7.13	9.9	1200	730	< 0.010	0.01	475	110	0.4	145.0	77.6	17.3	0.22	3.500	7.0	4
05/14/09	7.22	9.8	1160	720	0.040	0.02	569	92	0.3	145.0	78.2	16.4	1.08		5.5	4
06/09/09	6.93	9.9	1120	710												
07/06/09	7.41	13.5	1100	720												
08/06/09	7.31	13.4	1160	730	0.070	0.13	571	121	0.3	123.0	65.6	14.9	0.18	2.860	5.2	4
09/02/09	7.24	13.2	1110	770												

Note: Monitoring well TR-4 was removed from the Monitoring Program on September 2, 2009 in accordance with TR-48. Monitoring well TR-4 was transferred to the current land owner September 15, 2009.

Table 11. Ground Water Quality at Monitoring Well WR-1

Date	pH	Temp	S.C	TDS	O-P	NO2	HCO3	SO4	SO4:HCO3	Ca	Mg	Na	Diss. Fe	Diss. Mn	K	Cl
	(s.u.)	(C)	(umhos/cm)	mg/l	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(Ratio)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
04/28/88	6.70	11.0	3499													
05/09/88	6.80	9.9	3549													
06/09/88	6.60	12.7	3605	3874			353	2527	11.3	574.0	309.0	153.0	0.03	3.880		
07/14/88	6.70	13.6	3720	3290	0.020	4.64	431	2457	9.0	422.0	313.0	91.0	0.12	3.140		
08/05/88	6.80	12.6	3698	3269	0.010	4.04	427	2472	9.1	543.0	309.0	78.0	0.03	1.140		
09/21/88	6.80	12.3	3729	3299												
10/21/88	6.70	9.6	3764	3334												
04/13/89	6.90	10.8	4129	3693												
05/15/89	6.80	10.5	3982	3548	0.005	1.73	464	2503	8.5	485.0	297.0	127.0	0.04	4.180		
06/16/89	6.70	12.5	3850	3418												
07/03/89	7.00	13.3	2000	1655	0.013	0.56	278	1076	6.1	267.0	153.0	36.0	0.03	0.060		
08/03/89	6.80	12.3	2040	1692												
09/07/89	6.90	13.4	2465	2086	0.014	0.55	312	1239	6.3	355.0	208.0	50.0	0.02	0.040		
10/19/89	6.60	11.5	3399	2978												
04/19/90	7.20	11.2	4083	3648												
05/11/90	6.70	9.7	3959	3525	0.017	0.56	472	2441	8.1	506.0	265.0	108.0	0.06	4.800		
06/14/90	6.70	12.7	3942	3509												
07/06/90	7.20	12.9	3974	3540												
08/10/90	7.00	13.8	3930	3497	0.007	0.44	448	2507	8.8	509.0	249.0	138.0	0.02	0.090		
09/07/90	6.80	14.4	3830	3398												
10/16/90	6.70	11.9	1500	1204	0.005	0.26	458	2690	9.2	498.0	283.0	103.0	0.02	0.040		
05/15/91	6.70	7.2	3602	3175												
06/11/91	6.40	9.4	3422	3000	0.030	< 0.01	436	2529	9.1	491.0	289.0	121.0	< 0.02	4.590		
07/09/91	6.80	9.4	3392	2971	< 0.010	0.32	392	2046	8.2	469.0	240.0	144.0	0.04	1.450		
08/09/91	6.80	11.8	1370	1089												
09/11/91	6.80	12.2	1084	840												
10/10/91	6.80	10.9	1265	997	0.027	< 0.01	432	2428	8.8	395.0	240.0	454.0	< 0.02	< 0.010		
04/13/92	6.10	9.5	147	92												
05/06/92	6.30	11.4	1385	1102	< 0.005	0.01	474	2618	8.7	513.0	268.0	197.0	< 0.02	8.760		
06/01/92	6.40	10.6	1350	1071												
07/01/92	6.70	12.7	1203	943												
08/03/92	7.30	15.0	1257	990	< 0.005	< 0.01	404	2151	8.4	486.0	247.0	134.0	< 0.02	0.010		
10/05/92	7.60	12.0	3300	2882	0.005	< 0.01	396	2379	9.5	520.0	270.0	136.0	0.08	0.080		

Table 11. Ground Water Quality at Monitoring Well WR-1

Date	pH	Temp	S.C	TDS	O-P	NO2	HCO3	SO4	SO4:HCO3	Ca	Mg	Na	Diss. Fe	Diss. Mn	K	Cl
	(s.u.)	(C)	(umhos/cm)	mg/l	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(Ratio)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
04/28/93	7.20	10.8	3800	3369												
05/04/93	6.80	11.5	3700	3271												
06/02/93	6.90	12.0	4000	3566	< 0.005	0.02	394	2741	11.0	508.0	361.0	64.0	< 0.02	1.800		
07/01/93	7.00	13.0	3700	3271	< 0.005	< 0.01	418	2766	10.4	531.0	370.0	78.0	< 0.02	2.400		
08/04/93	7.20	13.0	3300	2882												
09/09/93	6.80	13.8	3300	2882												
10/06/93	6.90	11.8	3300	2882	< 0.005	< 0.01	390	2696	10.9	540.0	368.0	62.0	< 0.02	0.470		
11/08/93	6.80	10.8	3300	2882												
04/07/94	6.20	10.0	4500	4062												
05/03/94	6.90	11.0	5000	3974	< 0.005	< 0.01	474	2408	8.0	512.0	337.0	93.0	0.09	3.980	12.0	7
06/20/94	7.03	12.8	3650	3572												
07/25/94	6.60	15.9	3610	3578	< 0.005	< 0.01	420	2346	8.8	516.0	262.0	118.0	0.06	0.040	10.0	1
08/16/94	6.80	12.7	3710	3586												
09/16/94	6.80	12.3	3660	3592												
10/21/94	7.00	10.3	3750	3620	< 0.005	< 0.01	456	2410	8.3	498.0	269.0	109.0	0.12	0.140	10.0	2
04/11/95	6.60	11.4	3740	4050												
05/16/95	6.60	11.4	3740	4050												
06/08/95	7.50	11.3	3300	3090												
06/28/95	7.10	12.7	3520	3690	< 0.005	< 0.01	357	2320	10.2	454.0	308.0	55.5	< 0.01	0.826	10.4	4
07/11/95	6.70	13.5	3770	4190	< 0.005	< 0.01	362	2600	11.3	520.0	393.0	62.3	< 0.01	1.510	12.4	6
08/14/95	6.90	13.2	3900	4040												
09/18/95	7.00	12.4	3700	3730												
10/18/95	7.30	11.9	2140	1860	0.011	< 0.01	251	1140	7.2	261.0	132.0	54.6	< 0.01	0.400	6.4	2
05/13/96	7.10	10.3	3960	4440	< 0.005	< 0.01	< 2	2620	2062.3	480.0	415.0	66.0	< 0.05	0.540	14.0	8
06/14/96	7.50	12.6	3360	3520												
07/15/96	7.20	13.0	3250	3280												
08/19/96	7.10	12.5	3860	3570	< 0.005	< 0.01	354	2340	10.4	496.0	354.0	104.0	< 0.05	3.240	11.0	4
09/16/96	7.10	13.5	3830	3800												
10/14/96	7.40	12.4	3810	3920	< 0.005	< 0.01	385	2600	10.6	508.0	371.0	95.0	0.04	0.040	11.7	5
05/13/97	7.55	10.8	3830	4250	< 0.005	< 0.01	324	2750	13.4	461.0	355.0	47.0	0.03	0.310	11.1	6
06/04/97	8.01	12.1	2340	1920												
07/01/97	7.72	12.3	1670	1320												
08/04/97	7.04	13.5	4020	3740	0.006	< 0.01	322	2050	10.0	333.0	185.0	111.0	< 0.01	1.250	8.8	4
09/02/97	7.20	14.2	3950	3890												
10/01/97	7.21	13.8	3800	3670	< 0.005	< 0.01	405	2380	9.3	520.0	325.0	89.3	0.03	0.100	10.6	5

Table 11. Ground Water Quality at Monitoring Well WR-1

Date	pH	Temp	S.C	TDS	O-P	NO2	HCO3	SO4	SO4:HCO3	Ca	Mg	Na	Diss. Fe	Diss. Mn	K	Cl
	(s.u.)	(C)	(umhos/cm)	mg/l	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(Ratio)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
05/12/98	7.66	10.4	670	3580	< 0.005	0.01	251	2060	12.9	413.0	328.0	38.0	0.04	0.498	10.1	6
06/02/98	7.87	12.3	810	600												
07/20/98	7.17	12.9	3110	3080	0.008	< 0.01	361	1810	7.9	445.0	254.0	80.0	< 0.05	3.450	9.0	2
08/17/98	6.91	13.4	3570	3630												
09/14/98	7.01	13.1	3580	3650												
10/12/98	7.39	13.1	3460	3710	< 0.005	< 0.01	412	2290	8.8	494.0	289.0	91.7	< 0.02	0.040	9.8	4
05/03/99	7.98	9.9	1840	1910	0.011	< 0.01	265	1210	7.2	350.0	145.0	20.7	< 0.01	0.045	6.6	2
06/07/99	7.34	12.0	1780	2780												
07/06/99	7.31	12.8	3600	2970												
08/24/99	7.18	13.4	3600	3330	0.011	< 0.01	431	2190	8.0	492.0	283.0	96.5	0.02	0.030	9.1	2
09/23/99	7.64	14.1	3650	3530												
10/18/99	7.60	11.8	3620	3360	0.366	< 0.01	412	2190	8.4	519.0	294.0	91.0	0.04	0.040	8.7	9
05/16/00	7.30	12.4	2510	2140	0.025	< 0.01	272	1390	8.0	388.0	150.0	31.9	0.02	0.811	6.3	2
06/19/00	6.67	12.5	3310	3430												
07/18/00	6.70	13.4	3450	3870												
08/15/00	7.14	14.3	3410	3370	0.120	< 0.01	415	2240	8.5	502.0	262.0	97.1	0.06	0.040	8.6	6
09/11/00	7.51	13.4	3410	3570												
10/02/00	7.39	13.1	3420	3420	1.290	< 0.01	407	2260	8.7	479.0	266.0	108.0	0.08	0.100	9.2	52
05/08/01	7.80	11.7	1590	370	0.200	0.87	98	190	3.1	69.6	24.2	3.8	0.03	0.039	5.0	2
06/04/01	7.10	11.1	2380	1850												
07/10/01	6.90	13.9	3420	3930	0.018	< 0.02	399	2420	9.5	485.0	344.0	68.1	0.03	5.240	10.2	5
08/01/01	7.00	13.1	3400	3600												
09/21/01	7.90	13.5	3480	300												
10/10/01	8.00	11.5	1330	1070	0.025	< 0.01	138	680	7.8	147.0	103.0	12.7	< 0.01	0.755	6.2	3
05/13/02	7.50	11.8	3470	4000	0.027	< 0.01	291	2840	15.4	494.0	387.0	41.0	< 0.05	1.550	10.0	6
06/03/02	7.41	12.3	3290	4060												
07/08/02	7.06	12.6	3250	4020												
08/13/02	7.64	13.7	3170	3850	0.007	< 0.01	382	2690	11.1	481.0	392.0	41.0	1.31	< 0.030	10.0	6
09/09/02	7.04	12.2	3190	3930												
10/14/02	7.28	13.6	2980	190	0.030	< 0.01	80	80	1.6	28.2	13.7	1.8	0.04	0.060	4.1	< 1
05/12/03	6.90	13.5	3250	4330	0.010	0.02	322	2320	11.3	487.0	408.0	41.0	< 0.05	0.650	8.3	6
06/17/03	6.90	14.1	3180	4330												
07/16/03	6.80	15.3	3130	4320	< 0.010	< 0.01	370	2840	12.1	512.0	415.0	42.0	< 0.05	1.410	8.5	6
08/12/03	6.90	15.2	3130	4570												
09/08/03	6.90	13.6	3060	4060												
10/01/03	6.90	15.1	2990	3930	< 0.010	< 0.01	359	2620	11.5	584.0	475.0	58.1	< 0.02	1.030	9.9	6

Table 11. Ground Water Quality at Monitoring Well WR-1

Date	pH (s.u.)	Temp (C)	S.C (umhos/cm)	TDS mg/l	O-P (mg/l)	NO2 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 (Ratio)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss. Fe (mg/l)	Diss. Mn (mg/l)	K (mg/l)	Cl (mg/l)
05/12/04	6.63	12.1	2830	4090	< 0.010	< 0.01	360	2910	12.7	456.0	367.0	39.1	0.06	3.080	9.6	6
06/01/04	6.58	12.7	2890	4230												
07/19/04	6.94	16.4	3570	4140	< 0.010	< 0.01	349	2890	13.0	482.0	382.0	42.0	0.16	0.980	10.0	6
08/03/04	6.98	15.8	3710	3990												
09/08/04	7.02	17.1	3610	3970												
10/13/04	6.77	11.7	3720	3830	< 0.010	< 0.01	388	2480	10.1	447.0	357.0	40.9		0.340	9.2	6
04/18/05	6.78	12.9	3940	4060												
05/12/05	6.98	10.0	4010	4020	< 0.010	< 0.01	341	2590	12.0	487.0	406.0	43.7	0.01	1.280	11.2	6
06/09/05	7.21	12.8	2370	1080												
07/15/05	6.72	18.1	3840	4090												
08/03/05	6.85	14.3	4000	4130	< 0.010	< 0.01	353	2460	11.0	478.0	386.0	40.0	0.10	1.590	10.0	5
09/06/05	6.82	14.8	3220	3010												
10/20/05	6.94	11.0	3860	3620	< 0.010	< 0.01	378	2340	9.7	503.0	406.0	46.5	0.05	4.560	10.9	5
05/19/06	7.18	15.3	4050	4190	< 0.010	0.04	323	2790	13.6	498.0	442.0	42.5	0.08	0.590	11.0	5
06/13/06	6.93	14.6	3990	4250												
07/18/06	7.01	17.2	3840	4300												
08/10/06	6.89	15.6	3740	4240	0.020	< 0.01	337	2420	11.3	483.0	410.0	43.0	< 0.10	1.210	10.0	4
09/11/06	7.11	13.9	3610	3620												
10/11/06	6.90	12.4	3770	3850	< 0.010	< 0.01	346	2510	11.4	436.0	389.0	39.6	0.03	1.170	10.0	5
05/08/07	7.50	13.6	4000	4140	0.020	< 0.01	322	2590	12.7	463.0	398.0	38.0	0.10	1.100	10.0	5
06/22/07	7.09	13.7	3930	4060												
07/19/07	7.60	14.2	4040	4210	< 0.010	< 0.01	353	2690	12.0	509.0	416.0	44.0	< 0.10	1.290	9.0	5
08/09/07	6.81	14.1	3810	3620												
09/21/07	7.14	13.1	4480	3700												
10/15/07	7.70	12.1	3720	3730	0.020	< 0.01	370	2400	10.2	445.0	363.0	40.3	< 0.04	1.120	9.3	5
05/14/08	7.53	7.5	1560	1160	0.040	< 0.01	201	670	5.2	196.0	89.2	12.2	< 0.02	0.312	4.3	< 1
06/11/08	6.93	11.5	4180	2970												
07/07/08	7.31	12.1	2510	4300												
08/11/08	7.08	13.1	3460	3320	< 0.010	< 0.01	355	2100	9.3	433.0	305.0	86.8	0.04	0.160	9.8	4
09/08/08	6.94	13.1	3630	3670												
10/14/08	6.81	10.9	3810	3710	< 0.010	< 0.01	396	2100	8.3	473.0	325.0	96.3	< 0.04	0.020	10.9	3
05/14/09	7.03	13.7	3950	4210	0.010	0.02	281	2700	15.1	488.0	445.0	40.9	0.33		11.3	4
06/09/09	7.08	11.6	2150	1860												
07/06/09	6.92	14.2	2970	2890												
08/06/09	6.97	13.2	3360	3360	0.020	< 0.01	388	2200	8.9	453.0	274.0	80.9	0.02	0.187	10.0	2
09/02/09	6.82	13.2	3460	3690												

Note: Monitoring well WR-1 was removed from the Monitoring Program on September 2, 2009 in accordance with TR-48. Monitoring well WR-1 was plugged and abandoned September 8, 2009.

Table 12. Ground Water Quality at Monitoring Well TCS-1

Date	pH (s.u.)	Temp Cel.	S.C umhos/cm	TDS mg/l	O-P (mg/l)	NO2 (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	SO4:HCO3 Ratio	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	Diss.Fe (mg/l)	Diss.Mn (mg/l)	K (mg/l)	Cl (mg/l)
7/27/1995	8.20	12.5	1000	790	0.036	0.03	594	90	0.2	11.9	4.6	296.0	0.01	0.0080	2.4	12
10/12/1995	8.00	10.0	1000	700	0.025	< 0.01	586	68	0.2	5.0	1.7	310.0	< 0.01	< 0.0090	2.2	10
5/13/1996	8.00	10.5	1080	640	< 0.005	0.09	< 2	80	63.0	15.0	5.7	220.0	0.01	< 0.0050	2.4	15
8/19/1996	8.40	14.2	1260	740	0.031	< 0.01	630	70	0.2	5.5	1.9	319.0	< 0.01	0.0060	2.2	12
10/14/1996	8.30	13.4	1290	770	0.030	< 0.01	633	60	0.1	4.2	1.4	320.0	0.01	0.0050	2.3	16
5/13/1997	6.98	8.9	1010	620	< 0.005	< 0.01	472	80	0.3	11.9	4.4	208.0	< 0.01	0.0050	2.0	12
8/4/1997	7.67	18.5	1380	820	< 0.005	0.14	518	190	0.6	33.1	12.7	279.0	0.01	0.0140	3.2	16
10/1/1997	7.56	13.2	1410	840	0.020	< 0.01	513	240	0.7	34.4	12.9	277.0	0.03	0.0770	3.4	17
5/12/1998	7.60	8.9	760	440	< 0.005	0.01	272	110	0.6	29.1	10.4	135.0	0.06	0.0110	2.8	12
7/20/1998	8.08	13.8	1260	780	0.007	0.05	512	160	0.5	21.1	9.5	278.0	< 0.05	0.0190	3.1	15
10/12/1998	8.41	10.4	1160	700	0.030	< 0.01	560	50	0.1	4.3	1.5	290.0	< 0.01	0.0050	2.2	13
5/3/1999	8.51	14.1	950	606	0.006	0.13	443	70	0.2	5.6	2.2	233.0	< 0.01	0.0110	2.0	9
8/24/1999	8.54	15.1	950	692	0.021	< 0.01	550	60	0.2	4.1	1.4	273.0	< 0.01	0.0070	2.0	9
10/18/1999	8.41	8.3	1230	712	0.024	< 0.01	561	70	0.2	3.8	1.3	288.0	0.02	0.0060	2.2	10
5/16/2000	7.91	8.9	940	535	< 0.005	< 0.01	372	70	0.3	8.3	3.0	210.0	0.03	0.0100	2.3	14
8/15/2000	8.22	14.1	1180	711	0.055	< 0.01	600	40	0.1	3.1	.9	294.0	0.02	< 0.0050	2.1	11
10/2/2000	8.37	12.6	1210	742	0.043	< 0.01	631	50	0.1	4.0	1.2	295.0	0.04	0.0050	2.2	13
5/8/2001	7.90	17.8	4290	4440	0.008	0.03	337	3100	14.5	550.0	426.0	31.0	0.23	0.6800	5.0	14
7/10/2001	8.10	15.6	1190	720	0.036	< 0.02	593	40	0.1	4.9	1.7	312.0	0.01	0.0060	2.3	11
10/10/2001	8.70	10.1	1170	710	0.025	< 0.01	491	50	0.2	3.6	1.1	282.0	0.02	0.0060	2.1	10
5/13/2002	8.51	10.5	1300	780	0.047	< 0.01	489	50	0.2	3.1	1.0	295.0	0.02	< 0.0050	1.8	8
8/13/2002	8.47	14.5	1240	765	0.029	< 0.01	631	50	0.1	3.0	1.0	322.0	< 0.01	< 0.0050	2.2	8
10/14/2002	8.32	13.4	1260	750	0.040	< 0.01	658	50	0.1	2.8	.9	298.0	0.04	0.0050	2.1	9
8/12/2003	8.40	15.9	1120	750	0.070	< 0.01	642	30	0.1	4.8	1.6	303.0	0.08	< 0.0050	2.3	11
10/1/2003	8.50	16.0	1050	650	0.060	< 0.01	504	70	0.2	4.0	1.4	254.0	0.06	0.0080	1.6	8
9/6/2005	7.75	14.7	1540													
10/20/2005	7.42	11.6	1460	900	< 0.010	0.30	480	230	0.8	28.5	10.2	326.0	0.05	0.0140	3.3	39
5/19/2006	7.32	12.5	1030	600	0.020	< 0.01	267	110	0.6	57.5	18.7	144.0	0.05	0.0130	2.7	107
8/10/2006	7.62	13.8	1380	930	0.030	< 0.01	489	200	0.6	33.2	12.1	287.0	0.02	0.0170	3.3	35
10/11/2006	7.62	11.3	1290	820	0.020	< 0.01	429	180	0.7	23.0	8.7	292.0	< 0.02	0.0190	2.9	34
5/8/2007	7.40	10.4	945	560	0.020	< 0.01	252	100	0.6	37.4	13.2	130.0	0.03	0.0150	2.6	85
7/19/2007	8.20	12.7	1490	920	0.020	< 0.01	485	230	0.7	35.7	13.3	264.0	0.05	0.0150	3.0	41
10/15/2007	8.30	10.9	1350	810	0.040	< 0.01	468	210	0.7	20.8	7.5	294.0	< 0.02	0.0150	3.0	26
5/14/2008	7.69	11.3	1030	610	0.020	< 0.01	254	120	0.7	45.9	16.5	155.0	< 0.02	0.0060	3.0	94
8/11/2008	7.78	11.4	1480	920	0.020	< 0.01	444	230	0.8	36.5	13.3	263.0	0.21	0.0170	3.4	57
10/14/2008	7.70	10.6	1460	890	< 0.010	< 0.01	453	196	0.7	24.9	9.8	320.0	0.07	0.0190	3.1	39
5/14/2009	7.03	12.1	1010	570	0.030	< 0.01	261	91	0.5	39.0	14.4	147.0	0.12		2.5	70
8/6/2009	8.42	12.8	1530	930	0.030	< 0.01	458	240	0.8	41.3	15.8	293.0	0.03	0.0150	3.5	62

Note: Monitoring well TCS-1 was removed from the Monitoring Program on September 2, 2009 in accordance with TR-48.

Table 13. Spring and Seep Survey

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Spring [a]																	
SPR 1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SPR 2	X		X	X	X	X			X								
SPR 3	X		X	X	X	X			X	X	X	X	X	X	X	X	X
SPR 4	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
SPR 5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SPR 6	X	X	X	X	X	X	X	X								X	X
SPR 7	X		X	X	X	X	X	X						X	X	X	X
SPR 10	X		X	X	X							X	X	X	X	X	X
SPR 11	X	X	X	X	X					X	X	X	X	X	X	X	X
SPR 12	X	X	X	X	X				X	X	X		X	X	X	X	X
SPR 13	X		X	X	X									X	X	X	X
SPR 14	X		X	X	X	X				X	X	X	X				
SPR 15			X	X	X	X			X			X					
SPR 16			X	X	X	X	X	X	X	X	X	X	X			X	X
SPR 17			X	X	X	X	X	X	X		X		X			X	X
Seep [a]																	
SE 1	X	X	X	X													
SE 2 [b]	X	X	X	X	X	X	X	X	X								
SE 10	X	X	X	X	X	X											
SE 11	X	X	X	X	X	X											
SE 12	X	X	X	X	X	X											
SE 13	X	X	X	X	X	X			X	X	X		X		X	X	X
SE 14	X	X	X	X													
SE 15	X	X	X	X	X												
SE 16	X	X	X	X	X	X				X			X	X	X	X	X
SE 17	X	X	X	X	X	X						X					
SE 18	X	X	X	X	X	X											
SE 19	X	X	X	X	X	X											
SE 20	X	X	X	X	X	X			X	X	X	X	X	X	X	X	
SE 21	X	X	X	X													
SE 22	X	X	X	X													
SE 23	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SE 26	X		X	X	X												
SE 27	X		X	X	X									X	X	X	X
SE 28			X	X	X	X	X	X									
SE 29			X	X	X	X	X	X	X								
SE 30					X						X		X		X	X	X

[a] Springs 8 and 9, and Seeps 24 and 25 have been deleted from the survey. These areas actually represented surface expressions of ground water within the alluvial valley floor.

[b] Individual seeps 2, 3, 4, 5, 6 and 7 have been combined into one seep area (SE 2) to more accurately depict the seep area located adjacent to SPR 1.

Table 14. Spring and Seep Flow and Field Water Quality

Spring No.	Date	Level	Flow (gpm)	pH (s.u.)	Temp (°C)	SC (µmhos/cm)	TDS* (mg/l)
SPR 1	05/05/09	0.73	1012.51	6.68	11.2	3920	3920
SPR 2	05/06/09	0.00	0.00				
SPR 3	05/06/09	0.40	73.28	6.87	11.6	1880	1540
SPR 4	05/06/09	0.05	1.15	6.91	11.8	1870	
SPR 5	05/06/09	0.39	69.66	7.11	10.9	2630	2480
SPR 6	05/06/09	0.03	0.41	7.16	11.4	2710	
SPR 7	05/06/09	0.02	0.18	7.06	11.1	2740	
SPR 10	05/05/09	0.04	0.73	7.03	12.1	4210	
SPR 11	05/05/09	0.43	351.31	7.04	12.2	4350	4510
SPR 12	05/05/09	0.03	0.41	7.01	12.4	4360	
SPR 13	05/05/09	0.01	0.05	7.09	12.7	4290	
SPR 14	05/05/09	0.00	0.00				
SPR 15	05/06/09	0.00	0.00				
SPR 16	05/05/09	0.02	0.18	7.03	12.5	4400	
SPR 17	05/05/09	0.03	0.41	7.07	12.3	4380	

Seep No.	Date	Level	Flow (gpm)	pH (s.u.)	Temp (°C)	SC (µmhos/cm)	TDS (mg/l)
SE 1	05/06/09	0.00	0.00				
SE 2	05/05/09	0.00	0.00				
SE 8	05/06/09	0.00	0.00				
SE 12	05/06/09	0.00	0.00				
SE 13	05/06/09	0.01	0.05	7.58	12.1	1490	
SE 14	05/06/09	0.00	0.00				
SE 15	05/06/09	0.00	0.00				
SE 16	05/06/09	0.06	1.65	6.98	10.8	2690	
SE 17	05/06/09	0.00	0.00				
SE 18	05/06/09	0.00	0.00				
SE 19	05/06/09	0.00	0.00				
SE 21	05/05/09	0.00	0.00				
SE 22	05/05/09	0.00	0.00				
SE 23	05/05/09	0.44	367.84	6.84	10.6	2590	2270
SE 26	05/05/09	0.00	0.00				
SE 27	05/05/09	0.02	0.18	7.07	12.5	4340	
SE 28	05/05/09	0.00	0.00				
SE 29	05/05/09	0.00	0.00				
SE 30	05/05/09	0.01	0.05	7.02	12.6	4190	

* Measurements were analytically derived; all other measurements were derived with a field test meter.

Table 15. Spring and Seep Laboratory Water Quality

Spring/Seep	Date	Diss. Al (mg/l)	Ca (mg/l)	Fe (mg/l)	Mg (mg/l)	Diss. Mn (mg/l)	K (mg/l)	Na (mg/l)	HCO_3 (mg/l)	NH_3 (mg/l)	Cl (mg/l)	NO_2 (mg/l)	Ortho-P (mg/l)	SO_4 (mg/l)
SPR 1	May-98	< 0.2	522	< 0.05	406	0.950	12.0	48.0	360	< 0.01	7	< 0.01	< 0.005	2730
SPR 3	May-98	< 0.06	264	0.02	113	< 0.005	2.8	9.2	297	< 0.01	5	0.01	< 0.005	900
SPR 5 - 7	May-98	< 0.06	434	< 0.02	198	< 0.005	4.8	12.7	256	< 0.01	3	< 0.01	< 0.005	1590
SPR 16 & 17	May-98	< 0.2	515	< 0.05	490	0.170	16.0	63.0	532	< 0.01	11	< 0.01	< 0.005	3050
SE 23	May-98	< 0.06	313	< 0.02	183	0.010	6.7	15.0	364	< 0.01	5	< 0.01	< 0.005	1240
SPR 1; SE 2	May-99	< 0.06	540	< 0.02	418	1.240	11.3	45.2	375	< 0.01	6	< 0.01	< 0.005	2460
SPR 4	May-99	< 0.03	348	0.04	157	< 0.005	2.8	10.1	335	< 0.01	4	< 0.01	< 0.005	1030
SPR 5-7	May-99	< 0.06	426	< 0.02	191	< 0.005	3.9	11.9	256	< 0.01	3	< 0.01	< 0.005	1520
SPR 16-17; SE 28-29	May-99	< 0.2	543	< 0.05	504	0.120	17.0	72.0	432	< 0.01	12	< 0.01	< 0.005	2820
SE 23	May-99	< 0.06	331	0.06	190	0.020	7.0	14.8	376	< 0.01	4	< 0.01	< 0.005	1120
SPR 1	May-00	< 0.2	506	0.13	394	1.070	11.0	44.0	368	< 0.05	7	< 0.01	0.007	2630
SPR 5 - 7	May-00	< 0.06	392	0.03	181	< 0.010	4.4	11.6	242	< 0.05	3	< 0.01	0.019	1470
SPR 16-17; SE 28-29	May-00	< 0.2	503	< 0.05	480	0.050	15.0	69.0	414	< 0.05	12	< 0.01	0.007	2990
SPR 23	May-00	< 0.06	331	< 0.02	186	< 0.005	6.0	13.1	383	< 0.05	4	< 0.01	< 0.005	1280
SPR 1	May-01	< 0.2	509	< 0.05	403	1.120	11.0	45.0	364	< 0.05	6	< 0.01	0.009	2710
SPR 3	May-01	< 0.2	331	0.03	151	< 0.005	2.6	10.4	328	< 0.05	30	< 0.01	0.007	1160
SPR 5 - 7	May-01	< 0.2	383	0.06	178	< 0.010	3.8	11.2	254	< 0.05	3	< 0.01	0.021	1580
SPR 16 & 17	May-01	< 0.2	502	< 0.05	465	0.070	15.0	67.0	411	< 0.05	11	< 0.01	0.007	3050
SE 23	May-01	< 0.2	341	< 0.02	188	< 0.010	6.0	14.1	401	< 0.05	4	< 0.01	0.009	1380
SPR 1	May-02	< 0.06	486	< 0.02	385	1.240	10.2	41.8	286	< 0.01	6	< 0.01	0.022	2730
SPR 3	May-02	< 0.06	416	< 0.02	180	< 0.010	2.6	9.6	278	< 0.01	3	< 0.01	0.031	1450
SPR 5 - 7	May-02	< 0.06	433	< 0.02	189	< 0.010	4.4	11.0	208	< 0.01	3	< 0.01	0.032	1720
SPR 12	May-02	< 0.02	522	< 0.01	478	0.073	14.0	73.0	284	< 0.01	12	< 0.01	0.035	3150
SPR 1	May-03	< 0.06	491	< 0.02	389	0.700	6.2	42.0	337	< 0.01	6	< 0.01	< 0.01	2680
SPR 3	May-03	< 0.03	287	< 0.02	131	< 0.010	2.7	10.1	272	< 0.01	4	< 0.01	0.02	900
SPR 5 - 7	May-03	< 0.03	238	< 0.02	204	< 0.010	4.5	11.2	236	< 0.01	2	< 0.01	0.02	1410
SPR 14	May-03	< 0.06	486	< 0.02	479	0.020	6.7	64.0	407	< 0.01	11	< 0.01	0.01	3070
SE 23	May-03	< 0.03	183	< 0.02	211	< 0.010	6.3	13.7	363	< 0.01	4	< 0.01	< 0.01	1140

Table 15. Spring and Seep Laboratory Water Quality

Spring/Seep	Date	Diss. Al (mg/l)	Ca (mg/l)	Fe (mg/l)	Mg (mg/l)	Diss. Mn (mg/l)	K (mg/l)	Na (mg/l)	HCO_3 (mg/l)	NH_3 (mg/l)	Cl (mg/l)	NO_2 (mg/l)	Ortho-P (mg/l)	SO_4 (mg/l)
SPR 1	May-04	< 0.03	501	< 0.01	385	1.090	9.2	36.2	339	< 0.01	6	< 0.01	0.01	2870
SPR 5-7	May-04	0.04	405	0.03	184	< 0.005	3.9	10.9	269	< 0.01	2	< 0.01	0.03	1570
SPR 1	May-05	< 0.03	485	< 0.01	401	1.240	10.6	43.8	354	0.20	6	< 0.01	< 0.01	2510
SPR 3	May-05	< 0.03	200	0.03	84.3	0.084	3	8.1	219	< 0.05	3	0.01	0.02	590
SPR 5-7	May-05	< 0.03	409	< 0.01	197	< 0.005	4.6	11.7	260	< 0.05	3	< 0.01	0.01	1590
SPR 11	May-05	< 0.03	489	< 0.01	498	0.033	15.9	74.5	395	0.08	13	< 0.01	< 0.01	2080
SPR 1	May-06	< 0.06	505	< 0.04	432	0.810	10.9	43.8	330	< 0.05	5	< 0.01	< 0.01	2630
SPR 3	May-06	< 0.03	317	< 0.02	146	< 0.005	2.6	10.7	333	< 0.01	4	0.01	0.01	1050
SPR 5	May-06	< 0.06	426	< 0.04	206	< 0.010	4.7	12.1	272	< 0.01	3	0.01	0.01	1600
SPR 11	May-06	< 0.2	494	< 0.10	503	< 0.030	15	71.0	401	< 0.01	13	0.01	< 0.01	2930
SPR 1	May-07	< 0.2	465	< 0.1	386	0.950	10	37	331	< 0.05	5	< 0.01	0.01	2610
SPR 3	May-07	< 0.03	311	< 0.02	147	< 0.005	2.3	9.9	316	< 0.05	3	< 0.01	0.02	1060
SPR 5	May-07	< 0.06	401	< 0.04	195	< 0.010	4.1	11.2	269	< 0.05	2	< 0.01	0.02	1540
SPR 11	May-07	< 0.2	471	< 0.1	469	0.070	14	68	371	< 0.05	12	< 0.01	0.01	2870
SE 23	May-07	< 0.06	341	< 0.04	213	< 0.010	5.5	15.8	435	< 0.05	5	< 0.01	< 0.01	1430
SPR 1	May-08	0.09	518	< 0.04	461	0.730	11.6	47.7	292	< 0.01	4	< 0.01	0.01	2400
SPR 3	May-08	0.06	244	< 0.02	112	< 0.005	3.7	8.9	254	< 0.01	3	< 0.01	0.02	720
SPR 5	May-08	0.03	395	< 0.02	207	< 0.005	5.3	11.6	223	< 0.01	2	< 0.01	0.03	1370
SPR 11	May-08	< 0.06	502	< 0.04	540	< 0.010	15.6	64.8	368	< 0.01	8	< 0.01	0.01	2800
SE 23	May-08	0.03	342	< 0.02	224	< 0.005	7	15.3	318	< 0.01	3	< 0.01	0.01	1250
SPR 1	May-09	< 0.03	452	< 0.02	416	0.496	9.6	40.2	311	< 0.05	4	< 0.01	< 0.01	2300
SPR 3	May-09	0.07	261	0.19	121	0.007	2.1	9.3	262	< 0.01	3	< 0.01	0.02	770
SPR 5	May-09	< 0.03	389	< 0.02	200	< 0.005	4.2	11.8	217	< 0.01	2	< 0.01	0.02	1400
SPR 11	May-09	< 0.03	443	< 0.02	499	< 0.005	13.9	64.4	362	< 0.01	9	< 0.01	0.01	2800
SE 23	May-09	0.04	308	< 0.02	210	< 0.005	5.9	14.8	337	< 0.01	3	0.10	< 0.01	1200

Springs and Seeps with Flow Greater than 20 gpm

Table 16. Moffat Stability Monument Survey

	Date	Surveyed Coordinates			Δ from Initial Survey		
		Northing (feet)	Easting (feet)	Elevation (feet)	Northing (feet)	Easting (feet)	Elevation (feet)
SM-1	11/05/97	372660.78	1590514.65	7189.03	-	-	-
	03/13/98	372660.78	1590514.65	7188.99	0.00	0.00	-0.04
	06/26/98	372660.72	1590514.59	7188.49	0.06	0.06	-0.54
	09/28/98	372660.75	1590514.58	7188.40	0.03	0.07	-0.63
	10/13/99	372660.79	1590514.62	7187.92	-0.01	0.03	-1.11
	09/25/00	372660.78	1590514.70	7187.64	0.00	-0.05	-1.39
	09/21/01	372660.79	1590514.68	7187.64	0.00	-0.03	-1.39
	09/16/02	372660.83	1590514.58	7187.63	-0.05	0.07	-1.40
	09/12/03			7187.58	-	-	-1.45
	09/17/04	372660.91	1590514.54	7187.53	-0.13	0.11	-1.50
	09/20/05	372660.90	1590514.56	7187.74	-0.12	0.09	-1.29
	09/06/06	372660.92	1590514.55	7187.54	-0.14	0.10	-1.49
	08/24/07	372660.85	1590514.57	7187.53	-0.14	0.08	-1.50
	09/22/08	372660.92	1590514.50	7187.62	-0.14	0.15	-1.41
	08/12/09	372660.89	1590514.45	7187.64	-0.14	0.20	-1.39
SM-2	11/05/97	372458.06	1590451.58	7208.34	-	-	-
	03/13/98	372458.05	1590451.61	7208.38	0.01	-0.03	0.04
	06/26/98	372458.03	1590451.58	7208.33	0.03	0.00	-0.01
	09/28/98	372458.04	1590451.57	7208.30	0.02	0.01	-0.04
	10/13/99	372457.99	1590451.49	7208.22	0.07	0.09	-0.12
	09/25/00	372457.96	1590451.61	7207.82	0.10	-0.03	-0.52
	09/21/01	372457.98	1590451.54	7207.72	0.09	0.04	-0.62
	09/16/02	372458.01	1590451.46	7207.65	0.05	0.12	-0.69
	09/12/03			7207.48	-	-	-0.86
	09/17/04	372457.98	1590451.41	7207.22	0.08	0.17	-1.12
	09/20/05	372458.03	1590451.35	7207.38	0.03	0.23	-0.96
	09/06/06	372457.99	1590451.33	7207.08	0.08	0.25	-1.26
	08/24/07	372457.97	1590451.32	7206.96	0.09	0.26	-1.38
	09/22/08	372458.00	1590451.23	7207.06	0.06	0.35	-1.28
	08/12/09	372457.94	1590451.19	7207.01	0.12	0.39	-1.33
SM-3	11/05/97	372597.33	1591009.48	7258.66	-	-	-
	03/13/98	372597.35	1591009.46	7258.60	-0.02	0.02	-0.06
	06/26/98	372597.42	1591009.38	7257.89	-0.09	0.10	-0.77
	09/28/98	372597.46	1591009.38	7257.81	-0.13	0.10	-0.85
	10/13/99	372597.47	1591009.43	7257.60	-0.14	0.05	-1.06
	09/25/00	372597.45	1591009.56	7257.42	-0.12	-0.08	-1.24
	09/21/01	372597.54	1591009.56	7257.42	-0.20	-0.08	-1.24
	09/16/02	372597.58	1591009.49	7257.41	-0.25	-0.01	-1.25
	09/12/03			7257.39	-	-	-1.27
	09/17/04	372597.65	1591009.45	7257.30	-0.32	0.03	-1.36
	09/20/05	372597.66	1591009.47	7257.49	-0.33	0.01	-1.17
	09/06/06	372597.66	1591009.45	7257.27	-0.33	0.03	-1.39
	08/24/07	372597.65	1591009.48	7257.25	-0.32	0.00	-1.41
	09/22/08	372597.69	1591009.44	7257.41	-0.36	0.04	-1.25
	08/12/09	372597.64	1591009.43	7257.27	-0.31	0.05	-1.39

Table 16. Moffat Stability Monument Survey

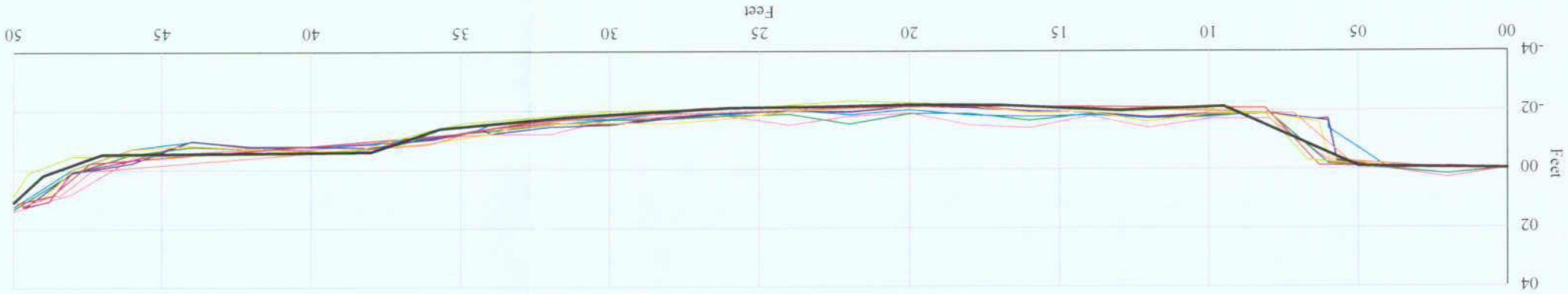
	Date	Surveyed Coordinates			Δ from Initial Survey		
		Northing (feet)	Easting (feet)	Elevation (feet)	Northing (feet)	Easting (feet)	Elevation (feet)
SM-4	11/05/97	372388.45	1590956.14	7276.78	-	-	-
	03/13/98	372388.44	1590956.12	7276.75	0.01	0.02	-0.03
	06/26/98	372388.38	1590956.07	7276.45	0.07	0.07	-0.33
	09/28/98	372388.37	1590956.04	7276.36	0.08	0.10	-0.42
	10/13/99	372388.25	1590955.99	7276.13	0.20	0.15	-0.65
	09/25/00	372388.23	1590956.02	7275.71	0.22	0.12	-1.07
	09/21/01	372388.24	1590955.93	7275.62	0.21	0.21	-1.16
	09/16/02	372388.26	1590955.82	7275.54	0.19	0.32	-1.24
	09/12/03			7275.49	-	-	-1.29
	09/17/04	372388.28	1590955.70	7275.27	0.17	0.44	-1.51
	09/20/05	372388.26	1590955.62	7275.40	0.19	0.52	-1.38
	09/06/06	372388.28	1590955.61	7275.17	0.17	0.53	-1.61
	08/24/07	372388.28	1590955.55	7275.11	0.17	0.59	-1.67
	09/22/08	372388.30	1590955.52	7275.24	0.15	0.62	-1.54
	08/12/09	372388.24	1590955.45	7275.16	0.21	0.69	-1.62
SM-5	11/05/97	372451.43	1591657.64	7348.69	-	-	-
	03/13/98	372451.50	1591657.57	7348.69	-0.07	0.07	0.00
	06/26/98	372451.51	1591657.55	7348.51	-0.08	0.09	-0.18
	09/28/98	372451.53	1591657.55	7348.45	-0.10	0.09	-0.24
	10/13/99	372451.50	1591657.47	7348.29	-0.07	0.17	-0.40
	09/25/00	372451.41	1591657.49	7348.23	0.02	0.15	-0.46
	09/21/01	372451.43	1591657.52	7348.23	0.00	0.12	-0.46
	09/16/02	372451.51	1591657.52	7348.20	-0.08	0.12	-0.49
	09/12/03			7348.19	-	-	-0.50
	09/17/04	372451.54	1591657.41	7348.08	-0.11	0.23	-0.61
	09/20/05	372451.49	1591657.43	7348.22	-0.06	0.21	-0.47
	09/06/06	372451.50	1591657.44	7348.05	-0.07	0.20	-0.64
	08/24/07	372451.51	1591657.42	7347.96	-0.08	0.22	-0.73
	09/22/08	372451.50	1591657.42	7348.15	-0.07	0.22	-0.54
	08/12/09	372451.48	1591657.38	7348.12	-0.05	0.26	-0.57
SM-6	11/05/97	372257.93	1591585.79	7359.12	-	-	-
	03/13/98	372257.92	1591585.78	7359.12	0.01	0.01	0.00
	06/26/98	372257.97	1591585.71	7358.88	-0.04	0.08	-0.24
	09/28/98	372257.99	1591585.67	7358.81	-0.06	0.12	-0.31
	10/13/99	372257.92	1591585.60	7358.63	0.01	0.19	-0.49
	09/25/00	372257.98	1591585.61	7358.27	-0.05	0.18	-0.85
	09/21/01	372257.98	1591585.49	7358.19	-0.05	0.30	-0.93
	09/16/02	372258.03	1591585.37	7358.09	-0.10	0.42	-1.03
	09/12/03			7358.03	-	-	-1.09
	09/17/04	372258.04	1591585.22	7357.73	-0.11	0.57	-1.39
	09/20/05	372258.08	1591585.19	7357.83	-0.15	0.60	-1.29
	09/06/06	372258.05	1591585.16	7357.58	-0.12	0.63	-1.54
	08/24/07	372258.08	1591585.12	7357.52	-0.15	0.67	-1.60
	09/22/08	372258.07	1591585.05	7357.70	-0.14	0.74	-1.42
	08/12/09	372258.03	1591585.04	7357.59	-0.10	0.75	-1.53

Note: Survey coordinates are based upon a Local coordinate system.

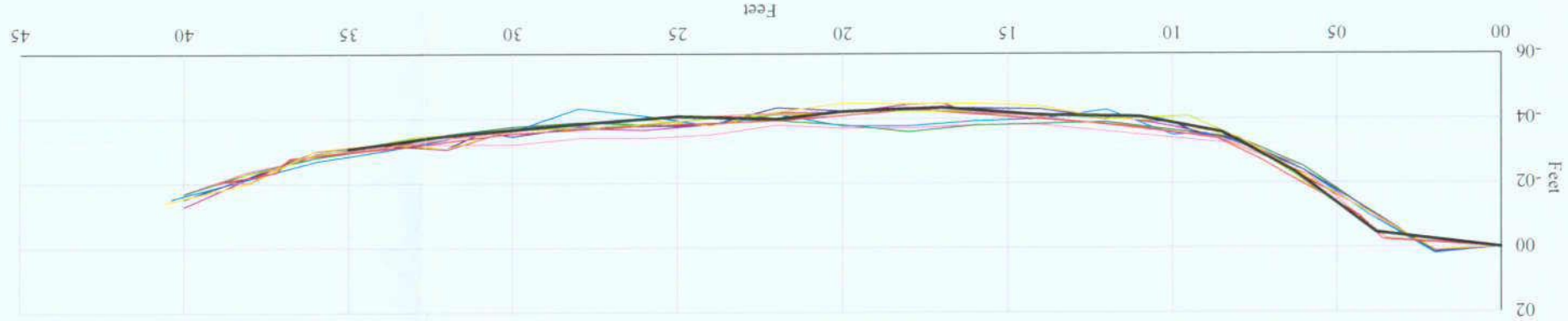
FIGURES

K:\Chevron\1999-1441_EdnaMineReports\Annual Hydrology Report\2009\CADD\XSECS.dwg, P-P, 2/17/2010 8:31:05 AM

CROSS-SECTION TR-b



CROSS-SECTION TR-a



LEGEND

- 1999 PROFILE
- 2000 PROFILE
- 2001 PROFILE
- 2002 PROFILE
- 2003 PROFILE
- 2004 PROFILE
- 2005 PROFILE
- 2006 PROFILE
- 2007 PROFILE
- 2008 PROFILE
- 2009 PROFILE

SCALE

0 5'

DESIGNED BY: TNS
DRAWN BY: TNS
CHECKED BY: TNS
DATE: 02/10

FIGURE 1

SHEET 1 OF 1

CHANNEL CROSS-SECTIONS

EDNA MINE
CHEVRON MINING INC

WWC ENGINEERING

NO.	REVISIONS	DATE

PLATES

Civil/Water Resource Engineering

- Pumps and pipelines
- Surface and groundwater modeling
- FEMA floodplain assessments
- Hydraulic and hydrologic analysis and design
- Dam design and rehabilitation
- Water supply, treatment and distribution
- Wastewater treatment and disposal
- Irrigation systems
- GPS and conventional surveying
- Civil engineering design, plans and specifications
- Construction engineering
- Water rights
- Computer-aided design and drafting (CADD)
- GIS mapping
- Stormwater management
- Geotechnical sampling
- 404 permits

Transportation Services

- Reconnaissance reports
- Surveys (right of way, ground control, construction)
- Bridge hydraulics, scour analysis, structure selection
- Design of urban streets, rural roadways and interstate reconstruction
- Streetscape enhancements
- Utility replacement
- Drainage design
- Bicycle/pedestrian pathways
- Parking facilities
- Construction administration

Mine Services

- NEPA compliance documents
- Baseline studies (climatology, geology, hydrology, wetlands and AVF assessments)
- GPS and conventional surveying
- Drilling and monitoring services
- Mining and reclamation design and permitting
- Hydrologic control plans
- Reservoir and dam design
- Haulroads and stream crossings
- Annual reports and bond calculations
- Blast monitoring and reporting
- Assessment of probable hydrologic consequences
- Mine simulation modeling
- Postmine topography design
- Reclaimed stream channels, AVF reclamation and wetland mitigation design
- Abandoned mine land reclamation

Environmental Services

- Environmental compliance and best management practices
- Environmental impact analysis and regulatory permitting
- Environmental site assessments
- Geomorphologic investigations
- Hydrocarbon product recovery system design
- Hydrologic and water quality monitoring
- Hazardous and non-hazardous waste management planning
- Site remediation planning and design
- Soil and groundwater cleanup plans
- Underground storage tanks investigation and removal plans
- NEPA compliance documents
- Environmental audits
- Wetland delineation and mitigation

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