Idaho Dept of Water Resources
ESPA Spring Diversion Inventory

District 36A **Date** 7/12/04

Basin _____ **Ditch or users association** Em Bell

Diversion Name _____ **POD Number** 410006

Spring Name _____ **Tributary to** _____

GPS site ID Missing? **Inventory Examiner** C. Knowles

Owner Brad Gisler ? **Operator** _____

Measuring Device Data			
Type of Device or Method		Standard	Non-standard
If non-standard describe:	RATED Section		

Discharge and Measurement Method	
How Measurement was taken: (Staff gauge, current meter, polysonic meter)	
Staff gauge Head Reading silted in	Current Meter/or poly-sonic measurement:
Time of Day	
Table used for Q Rating by CE Brockway dated 4/16/1981	Meter Measurement Confidence 2% 5% 10% +10%
Total Flow =	Does device meet IDWR standards? YES (NO)
Discharge notes attached? YES NO	Measurement Taken by:
Calculations Attached? YES NO	Is follow-up Needed? (YES) NO

Concerns about measuring device: gage silted in, rating table too old & not maintained at any frequency. Recommend order for installing new measuring device.

Current meter measurement

Site: E.M. Bell Ditch
Date: 7/13/2004
WMIS ID: 7/22/3022
Source: Billingsley Creek

Staff gage readings: 1.04 feet @ 7:45 AM
1.04 feet @ 8:15 AM

Meter type: Old rated section, rating not maintained, staff gage silted in
Rating curve: Brockway, 1981, rating table only extends to 0.50 feet, equation is Q = 47.55*h^1.42
Meter discharge: 50.27 ft^3/s

Measured inside tunnel, approximately 1/3 from entrance

	Distance feet	Depth feet	Obs Depth	Velocity ft/sec	Width feet	Area ft^2	Discharge ft^3/s
REW	0.0	0.25	~~0.6~~ este wall 1.14	~~1.31~~	0.25	0.0625	~~0.0819~~ 0.0713
	0.5	0.25	0.6	1.75	0.5	0.125	0.2188
	1	0.55	0.6	1.89	0.75	0.4125	0.7796
	2.0	0.55	0.6	1.70	1	0.55	0.9350
	3	0.55	0.6	1.56	1	0.55	0.8580
	4	0.55	0.6	1.87	1	0.55	1.0285
	5	0.52	0.6	1.87	1	0.52	0.9724
	6	0.55	0.6	1.79	1	0.55	0.9845
	7	0.53	0.6	1.66	1	0.53	0.8798
	8	0.55	0.6	1.79	1	0.55	0.9845
	9	0.55	0.6	2.4	0.75	0.4125	0.9900
	9.5	0.25	0.6	1.28	0.5	0.125	0.1600
LEW	10	0.25	~~0.6~~ este wall 0.83	~~0.98~~	0.25	0.0625	~~0.0600~~ 0.0519
Total					10	5	~~8.93~~ 8.91
Error							462.8%

Average Velocity = 1.79 ft/sec

STATE OF IDAHO

Meas. No. _____

DEPARTMENT OF WATER RESOURCES

Water District 36A

Comp. by TL

DISCHARGE MEASUREMENT NOTES

Checked by JB

Sta. No. _____

EM Bell Ditch

Date 7-13-04 Party T Wike

Width 10 ft Area 3.104 ^{2} Vel. 1.81 G. H. 1.04' Disch. 5.61 cfs

Method 26 No. secs. 13 G. H. change 0 in _____ hrs. Susp. _____

Method coef. _____ Hor. angle coef. _____ Susp. coef. _____ Meter No. _____

Type of meter Swoffer 2100

Date rated _____ for rod, other.

Meter _____ ft. above bottom of weight.

Spin before meas. OK after OK

Meas. plots ____ % diff. from rating _____

(Wading), cable, ice, boat, upstr., downstr., side bridge _____ feet, mile, above, below gage, and _____

Check-bar, found _____

changed to _____ at _____

Correct _____

Levels obtained _____

GAGE READINGS				
Time		Recorder	Inside	Outside
745	am			1.04
815	am			1.04
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Measurement rated excellent (2%), (good (5%)), fair (8%), poor (over 8%), based on following conditions: Cross section concrete - flat bottom

Flow laminar, steady flow Weather sunny/warm

Other _____ Air _____ °F@ _____

Gage _____ Water _____ °F@ _____

_____ Record removed _____ Intake flushed U

Observer _____

_____

Control _____

_____

Remarks Meas inside tonnel ≈ 1/3 from entrance, recorded higher velocity @ 9 ft from RBW, re-measured & confirmed this velocity.

G. H. of zero flow _____ ft.

.0 .10 .20 .30 .40 .50 .60 .70 .75

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY: At point	VELOCITY: Mean in vertical	Adjusted for hor. angle or ----	Area	Discharge
REW	0	.25	.25				~~1.44~~ ~~1.31~~			.06	~~0.07~~ ~~0.08~~
	.5	.5	.25				1.75			.125	.22
	1.0	.75	.55				1.89			.4125	.78
	2.0	0.5	.55				1.70			.55 .275	.94 .47
	3.0	0.5	.55				1.56			.55 .275	.86 .43
	4.0	0.5	.55				1.87			.55 .275	1.03 .51
	5.0	0.5	.52				1.87			.52 .260	.97 .49
	6.0	0.5	.55				1.79			.55 .275	.98 .49
	7.0	0.5	.53				1.66			.53 .265	.91 .44
	8.0	0.5	.55				1.79			.55 .275	.98 .49
	9.0	.75	.55				2.40			.4125	.99
	9.5	.5	.25				1.28			.125	.16
LEW	10.0	.25	.25				~~0.96~~	0.83		.06	~~0.07~~ ~~0.06~~
						T =	1.78	fps		3.10	~~5.61~~ cfs
⊙											~~8.96~~ cfs

8.94 cfs

REW V@ 2.0d = 1.75

V_w = 0.65(1.75) = 1.14

LEW V@ 2.0d = ~~0.96~~ 1.28

V_w = 0.65(1.28) = 0.83

.0 .10 .20 .30 .40 .50 .60 .70 .75