

**SPF**Water Engineering, LLC
water resource consultants

WA

RECEIVED**APR 22 2008****DEPARTMENT OF
WATER RESOURCES**

April 21, 2008

Mathew Weaver
Idaho Department of Water Resources
PO Box 83720
Boise, ID 83720

Re: Beneficial Use Field Exam Review Comments, Permits 63-12569, 63-31261, 65-13933

Dear Mathew:

The following information is in response to your review comments and provides the additional information that you requested to fully evaluate the beneficial uses recommended for licensing the above permits.

Permit 63-31261

Item 1:

The development period for permit 63-13933 started in 2000 and for permit 63-31261, 2001. As evidenced on the 2004 GIS aerial photo, the SWNE tract in Section 7 is irrigated for pasture when stock are rotated. Stock are rotated several times each season.

Item 2:

See attached signed and corrected Application for Amendment of Permit 63-31261.

Item 3:

As specified in the Beneficial Use Field Report narrative, Linda McCommell with Black Canyon Irrigation District confirmed that Dan Hansen is assessed for 126 acres BCID surface water for irrigation of a 3/4ths nine-tower pivot and three pivot corners in the NE and a pivot corner in the SENW, Section 18. The ground water supplements BCID water only on the pivot corners in Section 18 for a total of 32 acres. The other 363 acres are irrigated only with ground water.

Items 4 & 5:

Pump Capacity. The supplied pump curve shows 1800 gpm at 180 feet per stage. The pump has two stages, therefore it should produce 180 gpm at 360 feet TDH (i.e., 2 times 180 feet).

Pumping Level. The Well Report shows 2200 gpm with 73 feet of drawdown (30.1 gpm/ft of drawdown). At 1800 gpm, the drawdown will be 60 feet (1800 gpm/30.1 gpm/ft). Static water level was reported as 176 feet. Pumping level is calculated to be 236 feet (176 feet static plus 60 feet drawdown). To be conservative, the pumping level is assumed to be 250 feet.

Friction Loss. The submersible pump is set at 350 feet with 10-inch drop pipe. Calculated friction loss in 350 feet of 8-inch steel pipe (C value 130 for new steel pipe) is 5.5 feet per 100 feet, or 19 feet total. We assumed 20 feet for calculation purposes.

Discharge pressure = TDH (360 feet) – pumping water level (250 feet) – friction loss (20 feet) = 90 feet = 39 psi

Item 6:

See attached performance curve with requested information indicated.

Items 7 a-d:

The attached pressure irrigation plan is the most current copy available and has been increased to a larger and easier to read size. The scale is approximately 1" = 650'. Location of well #2 is indicated.

Item 7 e:

See Booster Diagram No. 2 and photograph of Booster No. 2. Black Canyon water is boosted from the pond to the pivot and pivot corners. The pond can be isolated to allow well water to be used for handline sprinklers in pivot corners.

Item 8:

The small pump is set on a pitless adapter with underground discharge into the well house. Therefore, the pump discharge was not visible in the photographs of the well head. This prevents the water line from freezing during the non irrigation season.

Permit 63-12569

Item 1:

See attached signed Application for Amendment of Permit 63-12569.

Items 2 & 3:

Pump Capacity. The pump curve shows 50 gpm at 420 feet TDH.

Pumping Level. The Well Report shows 2200 gpm with 73 feet drawdown (30.1 gpm/ft of drawdown). At 50 gpm, the drawdown will be 2 feet (50 gpm/30.1 gpm/ft). Static water level was reported as 176 feet. Pumping level is calculated to be 178 feet (178 feet static plus 2 feet drawdown). To be conservative, the pumping level is assumed to be 200 feet.

Friction Loss. The submersible pump is set at 325 feet with 2-inch drop pipe. Calculated friction loss in 325 feet of 2-inch steel pipe (C value 130 for new steel pipe) is 6 feet per 100 feet, or 20 feet total.

Discharge pressure = TDH (420 feet) – pumping water level (200 feet) – friction loss (20 feet) = 200 feet = 86 psi

Note that the discharge pressure will decrease by 20 to 25 psi when the large pump (63-31261) is running at full capacity due to additional drawdown.

Item 4:

See attached performance curve with requested information indicated.

Permit 65-13933**Item 1:**

See response to Item 1, Permit 63-31261.

Item 2:

See attached signed Application for Amendment of Permit 65-13933.

Item 3:

See response to Item 3, Permit 63-31261.

Items 4 & 5:

Pump Capacity. Pump curve shows 2250 gpm at 86 feet per stage. The pump has four stages, therefore it should produce 2250 gpm at 344 feet TDH (4 times 86 feet)

Pumping Level. Original pumping test data submitted to IDWR on December 18, 2000, shows 1825 gpm with 58.1 feet drawdown (31.4 gpm/ft of drawdown) after 8 hours of pumping. At 2250 gpm, drawdown will be 72 feet (2250 gpm/31.4 gpm/ft). Static water level reported as 205 feet. Pumping level calculated to be 277 feet (205' static plus 72 feet drawdown). Pumping level is assumed to be 285 feet (rather than 290 assumed in original field exam).

Friction Loss. Line-shaft turbine pump is set at 350 feet with 10-inch column pipe. Calculated friction loss in 350 feet of 10-inch column with 2.5-inch oil tube is 6.5 feet per 100 feet, or 23 feet total. We assumed 20 feet for the original calculation, which was somewhat short.

Discharge pressure = TDH (344 feet) – pumping water level (285 feet) – friction loss (23 feet) = 36 feet = 15.6 psi

Item 6:

See attached performance curve with requested information indicated.

Item 7:

See responses to Item 7, Permit 63-31261.

A check for \$100 is included for the two enclosed licensing amendments for Permits 65-13933 and 63-12569. The fee for the enclosed (corrected) licensing amendment for Permit 63-31261 was previously paid when the field exam package was submitted to IDWR.

Please let me know if you have any further questions Mathew. Thank you for your attention to this matter.

Sincerely,



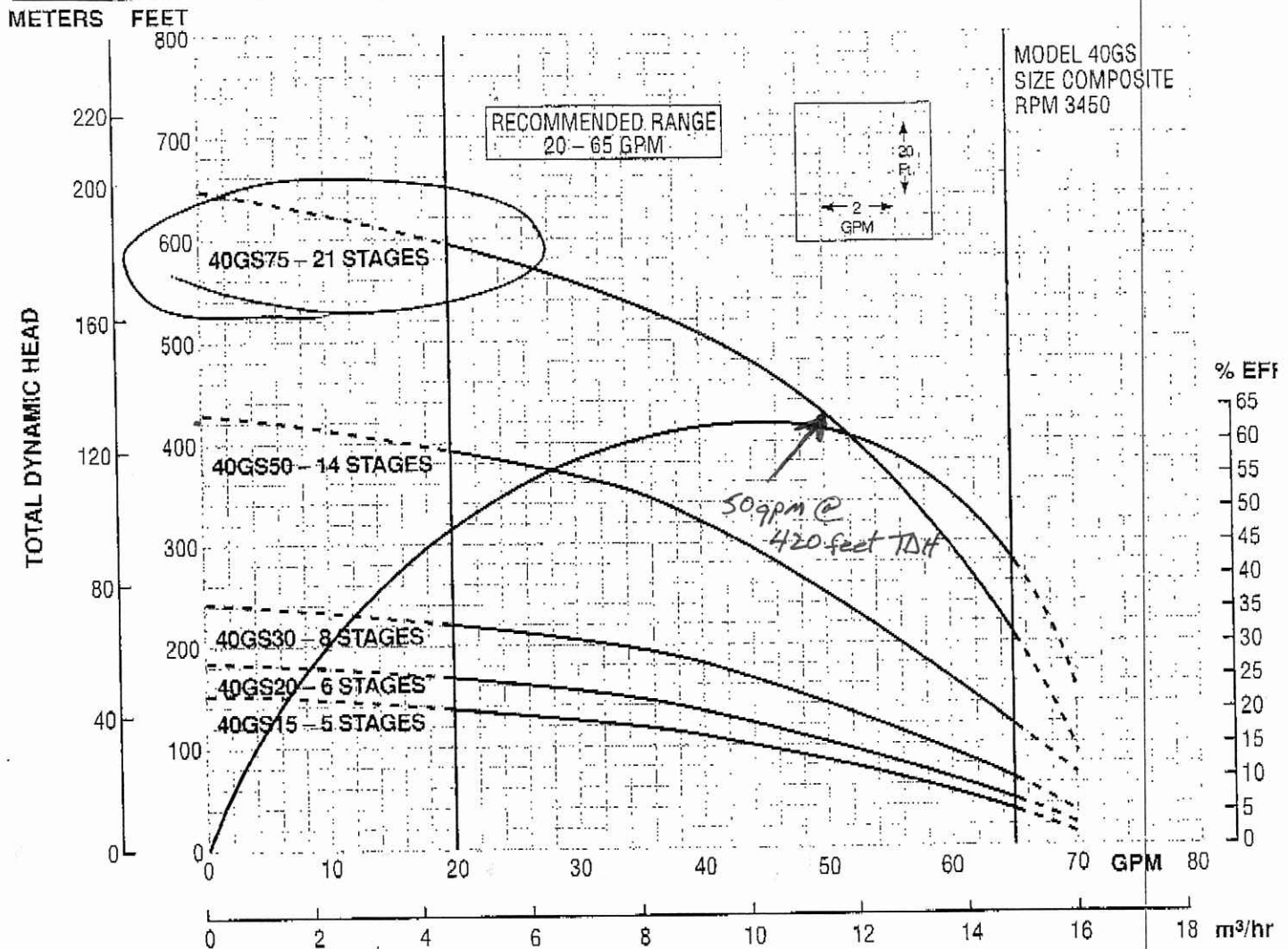
Lori Graves
Water Rights Specialist



Terry Scanlan, P.E., P.G.
Certified Water Right Examiner 9-129

Enclosures

SPF Job No.: 216.0010



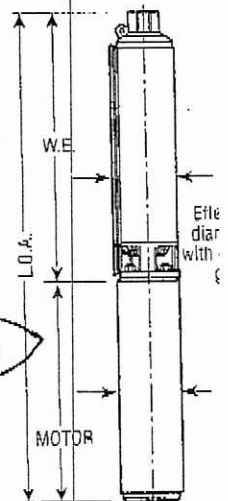
Pump set AT 325" 50 GPM AT 420 TDH

DIMENSIONS AND WEIGHTS

Model	HP	Phase	Stages	Length (Inches)			Weight (lbs.)		
				W.E. ①	Motor	L.O.A. ②	W.E.	Motor	Total
40GS15412	1½	1	5	13.0	13.6	26.6	7.5	28.0	35.5
40GS15432, 34	1½	3	5	13.0	11.8	24.8	7.5	23.0	30.5
40GS20412	2	1	6	14.2	15.1	29.3	8.1	30.0	37.1
40GS20432, 34	2	3	6	14.2	13.6	27.8	8.1	28.0	35.1
40GS30412	3	1	8	16.6	23.5	40.1	9.4	52.0	61.4
40GS30432, 34	3	3	8	16.6	20.6	37.2	9.4	43.0	52.4
40GS50412	5	1	14	24.0	29.5	53.5	13.2	69.0	82.2
40GS50432, 34	5	3	14	24.0	23.6	47.6	13.2	53.0	66.2
40GS75432, 34	7½	3	21	34.0	29.6	63.6	18.4	66.0	84.4

① W.E. = water end or pump without motor.

② L.O.A. = length of assembly - complete pump - water end and motor.



ATT - Lori