



Layne Christensen Company  
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Aurora, IL 60506

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[graniteconstruction.com](http://graniteconstruction.com)

May 4, 2021

Mr. Robert Leible  
City of Aurora  
44 E. Downer Place  
Aurora, IL 60507

Re: Well 28

Mr. Leible:

The Aurora Well 28 Byron Jackson submersible pump has been removed due to excessive amp draw on start up. The motor, bowl, pipe, and cable have been inspected.

Motor

Byron Jackson 400 HP, 2300V, 17", Type H.

The motor windings meg in the 500s. The motor drive shaft is extremely difficult to turn and does not meet specification. The motor has a mechanical issue, likely a damaged thrust bearing. It must be returned to Flowserve for tear down, inspection, and report.

Due to the critical need for this well to be online, Layne recommends replacing the motor with a duplicate factory exchange unit that is stored in Layne's yard. As with all factory exchange units, this motor is covered with full warranty.

Bowl Assembly

Byron Jackson 13 stage 13MQ/12MQH, all bronze.

The bowl assembly had heavy deposition of iron in the interior. While this is not considered a factor in the motor's failure, due to the iron accumulation and the nature of the thrust bearing failure, Layne recommends disassembling the bowl for inspection to thoroughly clean and inspect. From preliminary inspection, no rehab to the bowl's wear rings, bushings, etc. is anticipated.

Line Pipe

The 1008' of 10" Line Pipe has been inspected on site and no rehabilitation is anticipated.

Cable

The motor/cable assembly megged 570/601/627 at the surface. The motor megged 588/618/655 on its own. The similarities in value indicate that the cable is suitable for reinstallation.

Based upon the above recommendations , estimated project cost is as follows:

1. Labor and equipment to remove pump,	\$ 26,283
2. Byron Jackson 400 HP, 17", 2300V, Type M exchange motor from stock in Layne Aurora yard	\$160,400
3. Bowl assembly clean and reassemble	\$ 9,400
4. Miscellaneous consumables (airline, banding, etc.) estimate	\$ 1,500
5. Remobilize, set and test pump, estimate	\$ 35,000
6. PSA Labor Discount, estimate	<u>\$ (3,500)</u>

Total Project Estimate	\$229,083
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If you have any questions or comments, please do not hesitate to contact me.

Layne Christensen Company

A handwritten signature in black ink, appearing to read "W M Balluff". The signature is fluid and cursive, with a large, stylized "B".

William Balluff, P.E.  
Account Manager III