

November 13, 2017

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

Re: Well 21

Mr. Leible:

The Well 21 Byron Jackson submersible pump has been removed due to meg readings of “dead short” at the well head. The pump has been removed and the Byron Jackson 350 HP, 2300V, Type H submersible motor’s windings are confirmed as failed.

The motor is not eligible for field service. Layne recommends returning the motor to Flowserve for factory inspection, report, and repair/replace recommendations.

The well’s total depth has been measured at 1425’ which compares to the original total depth of 1447’ and the 2009 total depth of 1428’. ISWS Bulletin 60 logs the major water producing Ironton Galesville strata from 1387’ to 1427’.

The column pipe and pitless adapter have been field inspected (no sandblast clean). While thorough pipe repair evaluation is hindered by (common) iron deposition on the interiors and exteriors, the pipe appears to be in very good condition. Layne recommends “dusting” of the threads for inspection and power wash of the interiors. Until then, this estimate includes contingency pipe repairs based upon reasonable assumptions from the pipe’s field inspection. Column pipe replacement, if necessary, is not included in the estimates as the City maintains a fair stock of good 10” extra heavy column.

Layne recommends a Phase II scope of work to include

- Ship motor to Flowserve for inspection, report, and repair/replace recommendations
- Disassemble, clean, inspect bowl assembly, report and provide observations, recommendations, and repair estimate.
- Sandblast pipe threads for inspection, power wash iron deposition from the pipe interiors, replace two surge control valves
- HyPot test cable
- Sand bail well

WATER RESOURCES

- Televise well
- Reinstall and test


Prior to complete inspection results on the bowl and motor, total project estimates are as follows:

1. Labor and equipment to date to remove and field inspect components	\$ 24,700	\$ 24,700
2. Pipe		
a. (2) 10" 8RND surge control valves	\$ 3,526	\$ 3,526
b. Sandblast threads, power wash interior	\$ 5,000	\$ 5,000
c. Pipe repair contingency (file threads, (5) cut and rethread, (5) new couplings, handling		\$ 5,000
3. Bowl assembly		
a. Bowl assembly rebuild estimate	\$ 13,000	
b. New replacement bowl assembly		\$ 27,900
4. Factory exchange 350 HP Byron Jackson submersible motor, 2300V, 17", Type M	\$124,375	\$124,375
5. Motor guide cone modification, estimate	\$ 2,000	\$ 2,000
6. Cable		
a. HyPot test	\$ 1,035	\$ 1,035
b. New flat cable motor link	\$	\$ 6,950
c. New #2 cable, 1000' at \$20/ft		\$ 20,000
7. Televise well	\$ 1,350	\$ 1,350
8. Sand Bail		
a. 3 days	\$ 10,800	
b. 5 days		\$ 18,000
9. Miscellaneous consumables (airline, banding, etc.), estimate	\$ 1,500	\$ 1,500
10. Material handling, reinstall, test, estimate	\$ 40,000	\$ 40,000
 Total Project Estimated Range	 \$227,286	 \$281,336

The estimates in this letter include the PSA stipulated 5% deduct applied toward labor and 10% deduct applied toward special services.

Thank you for the opportunity to present this information. If you have any questions, or if Layne may be of any service, please do not hesitate to contact me.

Layne Christensen Company



William Balluff, P.E.

GLG Business Development Manager

cc Michael McDonald, Layne Account Manager

