

Addendum No. 2

IMPROVEMENT PLANS FOR DOUBLE DIAMOND WELL 3

PWP Bid No. WA-2016-221
TMWA WO# 15-0016
August 11, 2016

The following information, clarifications, changes and modifications are by reference incorporated into the bid documents for the above referenced project. Any work item or contract provision not changed or modified will remain in full force and effect. The bid date and time and construction schedule remain the same.

QUESTIONS, RESPONSES and CLARIFICATIONS

QUESTIONS AND RESPONSES

Question No. 1: I work for an electrical distributor and was wondering if TMWA will or intends to purchase any of the electrical items or motor items directly?

Response to Question No. 1: TMWA will pre-purchase certain control/monitoring/telemetry equipment as indicated on the plans, while no motors shall be pre-purchased.

Question No. 2: Attached is our best fit curve for this pump. Can you please confirm that this is acceptable and then list Floway as an allowable manufacturer for this?

Response to Question No. 2: No equipment submittals are reviewed/approved during the bid period for this Contract.

Question No. 3: Floway can offer complete NSF61 certified pumps for this. In order to do so there would be the following material deviations. If these deviations are not acceptable we can provide calculations showing that we conform to NSF372.

- a) 2.01.J.2 – This paragraph requires the bowl bearings to be steel backed rubber bearings. Our NSF61 approved materials for the bowl bearings are either Bismuth Tin Bronze (UNS C89835) or Vesconite.
- b) 2.01.J.3 – Requires the line shaft to be 1045 Steel. Our approved material is 416SS, which is an upgrade to the 1045 steel.

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- c) 2.04.1 & 2.04.2– Requires the bearing retainers to be silicon bronze. Our NSF61 approved material is Ductile Iron coated with Carboguard 891 epoxy.

Response to Question No. 3:

- a) Steel backed rubber is preferred due to better resistance to abrasion from sand. Pump manufactures shall need to obtain NSF 61 certification for your rubber material or solicit an exemption from the Nevada Bureau of Safe Drinking Water to allow without.
- b) Stainless steel shall be acceptable and 1045 steel shall not. The material table in paragraph 2.01.J.3 shall have C1045 removed and 416 SS inserted as the required line shaft material. Also, paragraph 2.04.2 shall be modified accordingly, see response to C, below. The shaft size listed in section 11214 is the minimum diameter required and the pump supplier shall submit shaft stretch calculations and impeller trim values for verification prior to acceptance.

Bowls	Cast iron per ASTM A48, Class 30
Impellers	Bronze per ASTM B584
Column pipe	Steel per ASTM A53, Grade B, minimum Schedule 30 40
Head shaft	Stainless steel per ASTM A582, Type 416
Line shaft	C1045 416 SS with 304 SS Sleeves
Cone strainer	Type 316 stainless steel
Other materials	Selected by pump manufacturer for the intended service

- c) Ductile iron bearing retainers are acceptable with an 8 mil fusion epoxy coating. Replace paragraph 1 and 2 within 2.04 of Technical Section 11214 with the following:

1. The discharge column shall be *fusion epoxy lined and coated steel per AWWA C200*. The pipe shall be furnished in interchangeable lengths of 10 feet with machined ends of 8-thread per inch, 3/16-inch taper per foot and standard sleeve-type couplings providing perfect alignment. Top and bottom sections shall be 5 feet in length. Column shall be fusion bonded epoxy lined and coated per AWWA C213 at 8 mils dry film thickness *with an NSF 61 certified coating*.

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Couplings shall be epoxy coated per AWWA C210. Pipes shall be of ASTM A53 grade B steel. Weight shall be not less than Schedule 40. The end of the pipe segments shall face parallel to but against the centering spiders of ASTM B584 silicon bronze to for accurate alignments. *Centering spiders made of ductile iron with an 8 mil fusion epoxy coating per AWWA C213 shall be acceptable in lieu of silicon bronze.*

2. The lineshaft shall be of precision-turned, ground and polished ~~C1045~~ 416 SST steel sized to transmit the full horsepower load and starting and stopping torque without distortion or vibration. The minimum diameter of the lineshaft shall be 1-15/16 inches or as required by the pump manufacturer with a thread pattern of 10 threads per inch. The lineshaft shall be furnished in interchangeable lengths of 10 feet. Ends shall be machine-finished and undercut for proper butting. All threads shall be lathe-cut and left-handed to tighten during pump operation. Sleeve-type threaded couplings shall be of the same material as the lineshaft. Lineshaft shall be straight, providing a maximum total indicator reading of 3 mils (0.003 inches). Line shaft bearings shall consist of rubber with bronze integral bearing retainers at each joint. *Alternatively, bearing retainers can be fusion epoxy coated ductile iron.* The shaft seal shall consist of packing with lantern ring. Shaft couplings shall be designed per AWWA E101 Standard.

Question No. 4: 2.04.1 – The 1st sentence of the paragraph mentions that “the column shall be epoxy coated steel.” This would suggest our standard epoxy on just the OD. The 4th sentence of this same paragraph mentions that the column pipe shall be fusion bonded epoxy on the ID & OD. Can you have TMWA advise which is desired?

Response to Question No. 4: Fusion epoxy lined and coated steel is required, see response to 3-c above for corresponding paragraph revisions.

Question No. 5: 2.04.1 – Requires the column pipe to be Sch40 thickness which contradicts 2.01.J.3 which mentioned Sch 30. Can you have TMWA advise which is desired?

Response to Question No. 5: The column pipe shall be schedule 40 per AWWA C200 with an NSF 61 fusion bonded epoxy coating and lining.

Question No. 6: Any steel pipe in this project ? (CML&C Steel pipe)

Response to Question No. 6: No, we only have small diameter FEL&C steel pipe ($\leq 10''$) within the building.

Question No. 7: What is the depth of the existing 10'' water main to be removed?

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Response to Question No. 7: For the purposes of the bid assume 5-feet to top of water main. For water main depths in excess of the assumed by 2-feet or more (7-feet to top of water main) the Contractor shall notify the TMWA Representative prior to proceeding with the work if deemed by the Contractor that additional compensation is warranted.

Question No. 8: What is the depth of the existing 14'' water main at the 10'' pump discharge connection point

Response to Question No. 8: Refer to the response to question number 7.

Question No. 9: Please provide a detail of the existing vault where the new 1'' sample line is to penetrate as stated on sheet C2.

Response to Question No. 9: This will be detailed as part of the plan revisions in-progress to coordinate with the development of the adjacent parcels.

Question No. 10: Where will we be able to procure construction water for dust control & moisture conditioning?

Response to Question No. 10: Refer to TMWA's website at following address for information on the availability of construction water: http://tmwa.com/customer_services/constructionwater/

Question No. 11: Can you provide the manufacture and model number for the hypochlorite tank that specification section 11231 was written around? I'm having trouble finding a tank that meets this specification.

- 11231 2.01 2. Calls for a closed top. The tanks I'm finding all have a manway on the top as this is where the mold is vented.
- Domed top with manway does not allow vertical port for level controller?
- 11231 2.01 E. 1. All fittings would be bolted type as the tanks I'm finding do not come with welded fittings.

Response to Question No. 11: A suitable tank is available from Snyder Industries, model ASM TK 300VFT X 36. This tank does have a closed top and would allow for vertical port for the level controller. The outlet cannot be molded or welded for a tank this size with a closed top, so the requirement 11231-2.01(E)-1 shall be deleted from Section 11231-2.01(E)-1:

E. Fittings: Provide fittings for pipe and instrument connections as shown on the Drawings.

~~1. The tank outlet fitting shall be welded to the tank wall. Other fittings may be welded to the wall or top or may be bolted type.~~

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2. Pipe connections shall be PVC socket type for solvent weld joints.
3. Bolted fittings shall be as follows:
 - i. Bolts and washers: Hastelloy C-276 with polyethylene encapsulated heads.
 - ii. Gaskets: Viton.

CLARIFICATION ITEMS

Clarification #1: For this Contract, TMWA does not require the well pump discharge column pipe to be provided by the pump Manufacture.

Clarification #2: The 18-inch diameter well casing shall need to be enlarged when extended to the sole plate within the pump pedestal to allow for the discharge head/column pipe coupling, recharge line and sounder tube. Final sizing shall be determined based on the pump and well equipment provided and submitted for approval per 11214-1.03.

End of Addendum #2