

RFP 2022-07
Dewatering Pump
Questions & Answers

- 1) The pump is listed in your spec is a 3-stage. The attached pump that I would like to discuss is 4-stages. Would you be open to discussing this?
 - A. The 3-stage section title in the spec sheet is a typo. All pumps will be considered (regardless of stages or style) as long as they meet the criteria listed in the spec sheet (while not a complete list of the spec sheet, the big ones being API 610 requirements listed in the spec, packing style seals, section 3.01 items (page 5)). The graphic provided on page 6 was to just provide a general idea of the orientation we were anticipating once installed. The actual connection of the piping could be adjusted some depending on the actual inlet and discharge locations of the supplied pump. In general, the spec was to provide the vendors with the minimum requirements and general layout we needed and let the vendors propose their best solution.

- 2) Are you available for an in-person meeting I would like to understand what your setup is?
 - A. We try to keep 1 on 1 meetings limited during the RFP process to prevent companies from getting an unfair advantage. This can be re-evaluated depending on the questions that are received.

- 3) What is the driver for API 610 requirements?
 - A. The API 610 requirement was selected for the more robust design for aggressive environments. The legacy pumps that are running now meet API 610. These pumps do not handle oil/gas refinery items where something like this is normally used. But the robust design helps them operate in the harsh environment and loads that these pumps are subjected to underground.

- 4) What material construction is required on the pump(s)? I don't see in the specs an API designation or material such as carbon steel or stainless steel called out.
 - A. The revised pump spec (Pump Spec 4-12-22.pdf) that was sent to bidders was revised to include the material requirement of API S-6. Please see question 8 about the material coatings discussion.

- 5) Is there preferred motor manufacture or seal manufacture?
 - A. There is no preferred motor or seal manufacturer. Please note that we don't want mechanical seals. We want a stuffing box with packing (item E on page 4 of the pump spec)

- 6) Would it be possible to get any information on the current installed pumps or look at them? Curves, drawings, seal flush plans etc.
 - A. Please note that the entire piping configuration and layout will change as noted in the RFP. This entire area will be demoed and replaced with new piping and pumps.
 1. Drawings of the existing pump?
 - a. The only drawings we have are for the existing baseplate. However, this project will completely remove the old pumps and baseplates and replace

them with the units supplied by the vendor for this contract. Meaning there won't be a requirement for the new pumps to match the existing pumps. I have included some additional uncompressed closeup photos of the existing pump to show more detail of the existing setup. Note the red hoses in the photo provide clean city water from the surface for cooling and gland seals. This water just drains on the pump room floor.

2. Pump & system curves?
 - a. We do not have the pump curves for these pumps. Note that the entire piping network will change with different sizes and path. Vendors must provide pumps that meet the requirements in the spec sheet. The engineering firm calculated this operating point with some factor of safety.
 3. Seal flush plans?
 - a. We do not have a seal flush plan for the existing pump. This has been reconfigured a few times. What has worked best is using clean city water for cooling and gland seals
 - b. For new pumps we would like them to be API Seal Flush Plan 32 to be utilized with the clean water provided from the surface by SURF. This was intentionally left a little vague to allow the pump manufacturer to chime in on recommendations. Previously, pump discharge water was used instead of clean city water and we had frequent plugging issues until it was converted.
 4. Pump material construction?
 - a. S-6 This was added to the pump spec (pump spec 4-12-2022.pdf) and emailed out to bidders. Please see question 8 about the material coatings discussion.
- 7) There was a request for a water analysis to better determine the need or lack of need for abrasion resistant measures within the pump. Is there a water analysis and will we have access to the data?
- A. Please see the attached Midcontinent water sample reports that were taken from the deep pool from 2009-2019. When pumping was restarted in the 2009 the water was stagnant from 2002 when the mine shutdown. As time progressed the water started being primarily from water inflows that reach the underground.
- 8) There was discussion concerning the idea of purchasing the pumps without abrasive coating with the knowledge that abrasive resistant measures could be implemented if and when the need was recognized. Do we quote considering the need for or without abrasion resistant coatings showing an adder for the protection?
- A. Please quote the pumps without the abrasive coating noted in the spec (hard surface overlay on all parts in contact with transfer media). Do not provide the cost of the coating as an adder. Please note if the manufacturer has the capabilities of providing this coating in the future if needed.
- 9) Do you know the max temperature of the water to be pumped? Is it 104 F?
- A. Pumped water temperature varies between the pump rooms. In general, SDSTA does not want this to drive costs because there can be substantial variability between levels so more information will be prided showing where this comes from. 104 F water temp comes from the underground wall rock temperature gradient. Please see Wall

Rock Temperature Gradient R1.pdf. Note the following wall rock temperatures at the following pump rooms and deep pool:

1. 1250L = 53 degrees
2. 2450L = 65 degrees
3. 3650L = 75 degrees
4. 5000L = 96 degrees
5. Deep Pool = 110 degrees

The water that is pumped from the deep pool (large submersible pump not part of this project) will cool as it makes its way to the surface. As shown above, the only room that experiences the elevated temperatures is the 5000L. If this is related to meeting NPSH requirements at 104F, please note that the 1250L, 3650L, & 5000L are all flooded suction and have much more NPSH available than the 2450L. The 2450L is suction lift. The NPSH listed in the spec sheet is what is required on the 2450L and is the worst case. Since the supplied pumps must function at all the pump rooms interchangeably, the worst case TDH, NPSH, & temperature were provided from the different levels.

10) Is the water clean? Any solids like sand/grit to speak of?

A. Please see the attached testing reports for detailed lab data. In general, the pumped water does not have large solids (slime, sand, mud etc) that can be felt by hand. The water will look cloudy when sitting in the storage sumps (see 3650 sump picture).

11) Seal Flush/Support: We are assuming single mechanical seals. Please let us know if dual seals are required. Assuming single seal; Is there an outside clean water source for seal flush (API Plan 32) or will a product flush from pump discharge be used (API Plan 11)? I ask this because in the pictures it looks like there is an outside water source on the existing pumps.

A. SDSTA does not want mechanical seals. We require a stuffing box with packing. Additionally, clean city water from the surface is used to lubricate the packing and will be available to the new pumps. SDSTA does not want the packing to be flushed with the pump discharge water. This setup was used previously and resulted in issues.

12) Please clarify from specs: I. Seal Flush: Provide API 610 piping for primary seal flush, secondary seal flush, and cooling water. Would you like us to provide API plan 65 seal leak detection?

A. Please use API plan 32. Clean city water is available in the pump room for this and is what is used currently for the packing on the existing pumps. SDSTA does not require leak detection.

13) Instrumentation: This is our standard instrumentation package. Does this meet your requirements? Standard Instrumentation Package (NEMA 4X):

(2) Sleeve Bearing RTD's. One per bearing. Minco 100 ohm platinum dual element type.

(1) Case RTD With Thermowell. Minco 100 ohm platinum dual element type.

(2) Metrix Vibration Transmitters. Model number ST5491E-054-00-20-00. One each pump bearing housing

A. In general, this level of monitoring is what was expected. Additionally, SDSTA understands that there are multiple bearing combinations (sleeve/ball bearings & ball/ball bearings) that may have different monitoring requirements. SDSTA requests the bearing combination and provided monitoring work for the vendor proposed configuration. Additionally, SDSTA requests the bearing configuration that allows for easiest field changing and maintenance. If there is no tradeoff for maintenance, then SDSTA would like the manufacturer recommended configuration and monitoring.

14) Bearing support: We currently have the pumps set up with ball/sleeve bearings, ring lubrication and fan cooled. Other options would be product cooled where some of the pumped water is pumped through a heat exchanger in the bearing housing, product cooled and fans, or a full ancillary bearing support system (requires more space and is expensive). Please clarify if the standard ring lube will be sufficient.

A. The existing pumps use the standard ring lube. SDSTA does not require anything exotic unless there is a vendor recommended reason to do so.

15) Will the pumps/motors be on a VFD?

A. No VFDs will be used for this project. Soft starters are used on all levels for pump startup.

16) Baseplate design – The specification calls for two separated baseplates for purposes of mine entry.

- a. Will Sanford Lab mount the two separate baseplates on a single sub-structure?
- b. Will Sanford Lab be responsible for the baseplate and shaft to shaft alignment?
- c. Should the manufacturer ensure connection and alignment of the two baseplates and then separate for shipping?

A. After reviewing this SDSTA will provide the following guidance:

1. SDSTA wants to avoid using separate baseplates.
2. SDSTA would like a single compact baseplate if at all possible and is open to custom solutions. Additionally, the maximum length stated on the spec sheet (143”) was the limit to ride within the mine elevator. However, SDSTA can sling a longer baseplate below the cage.
3. SDSTA will allow a baseplate up to 16 feet (192”) long to be slung under the cage
4. If baseplates are to be slung under the cage vendors/manufacturers shall provide rated rigging points and pulling points on the baseplates that allow them to be slung under the cage and pulled out on the stations. The detailed locations of these points can be worked out in the shop drawing phase, but vendors must include this cost in the submitted bid
5. If a single baseplate still is not possible then SDSTA would like more vendor feedback and education about the challenges and requirements involved with using separate baseplates.