

## MEMORANDUM FOR THE RECORD

SUBJECT: Contract No. W912P8-06-C-0089, Emergency Procurement For Temporary Pumps For Three Outfall Canals Shop Inspection for April 18, 2006

1. Per the request of the New Orleans Engineer District, this office was requested to provide support for "TASK FORCE GUARDIAN", in the form of oversight of the manufacturing process, as well as the testing and delivery schedule of 34 temporary, 60 inch diameter hydraulic pumps with power units and 3 additional backup power units. The contract was awarded to MWI Corporation, 201 North Federal Highway, Deerfield Beach, FL 33441-1362, on 27 January 2006.
2. Shop Inspection on April 18, 2006 was performed by [REDACTED] from the South Florida Area Office, Jacksonville Engineer District. The inspection team was joined by Ms. M [REDACTED] oject Engineer - Task Force Guardian and [REDACTED]
3. The Contractor first spoke about the 24-hour test that New Orleans requested. In order to show that the drive units are performing as expected, the New Orleans District has requested that a 24-hour endurance test be conducted. The Contractor will be utilizing their Vero Beach facility to complete this test. They plan on starting this test sometime on Thursday April 20, 2006.
4. The team inquired to the Contractor as to why pump #4579 was sitting in a pool of oil at the warehouse. This is the pump that had already been through a successful full wet test. The Contractor indicated that their crew had not followed appropriate procedures as listed on the Contractor's "Operator In Process Checklist" for Hydraflo Pumps. The crew failed to complete step #3 of the checklist which states - "Hydraulic Oil Purged (approximately 12 oz)". The Contractor indicated that this is why the oil leaked out of the gasket, so they will replace the gasket on this pump. The Contractor indicated that they would put this pump back in the wet tank to test

two points and verify that everything is still working as expected.

The Contractor completed their revised test tank setup. The Contractor decided to move the pump location back towards the edge of the tank in hopes that this would help diminish vortices in the water and pipe and result in better readings. Contractor also indicated that one of their engineers, ██████████ would be collecting additional data during the next wet test to determine how the temperatures on different components of the drive unit are looking after 60 minutes or so.

The Contractor started another wet test at 10:15 a.m. using pump #4584 and drive unit #8839. ██████████ ██████████ from MWI were conducting the test. The Contractor slowed down the rpm in between positions 2 and 3 and positions 5 and 6 on the pitot tube, to allow for settling of the water. After the first full test point was taken, the Contractor did not like the readings that resulted from the test, so they decided to redo this test point at the same static head level. The Contractor was still not satisfied and decided that they would move the pump location back to towards the center of the tank. It was also found that one of the high pressure hydraulic hoses had a leak at the bottom of it. The Contractor will replace this hose and then re-run the test. This test stopped at 10:45 a.m.

While the team waited for the Contractor to reposition the test tank setup back towards the center of the tank, we had a meeting with the Contractor. ██████████ (MWI), discussed some of the temperatures he measured during the previous test just conducted. He also indicated that they plan on having an external temperature sensor to monitor the external temperature of the housing. The Contractor plans on having the automatic shut on/off switch for the Gear Oil Circulation Pump to turn on/off when the Durst ██████████ between 140 - 170 degrees Fahrenheit. ██████████ requested the Contractor to supply a letter from Durst stating what temperature is acceptable for the Durst Drive housing to be running at.

After lunch, there was another meeting to discuss some possible revisions to both the static and dynamic testing procedures. Instead of the current dead head test being used for the static testing, the Contractor suggested a 90-

minute static pressure test, which would use a generator to pressurize the pump versus the drive unit. The pump would be fully loaded to approximately 3000 psi and also there would still be a 6" X 6" piece of lumber in the impellers to dead head it. This test will also help to determine if there are leaks in the pump and also make sure that it is properly balanced by observing and looking out for any extensive vibrations during the test. As far as the dynamic wet test, the drive units would run for 5 hours, fully loaded to 3000 psi and at a speed of 1800 rpm. The Contractor believes that doing 5-hour endurance test on the drive units will allow them to get three done in a day. The Contractor also stated that if this is approved, they will utilize their Vero Beach facility to complete some of the 5 hour endurance tests on the drive units. Also, every 3<sup>rd</sup> or 4<sup>th</sup> pump would be used for the drive unit endurance tests, but all pumps will go through the 90-minute static pressure test. The Contractor indicated that they would forward both these revised testing procedures to New Orleans and await an answer from New Orleans as to whether this will be allowed or not.

Another prop speed test was conducted at 4:15 p.m. at the warehouse. The test used Pump **#4576** and Drive Unit **#8840**. The engine was run at 1799 rpm and the tachometer reading for the impellor speed was 946 rpm. This number was then divided by 3 to account for the three impellor blades, which resulted in approximately 315 rpm. The dead head test was not conducted at this time, because the Contractor was having an electrician work on setting up the generator for the 90-minute pressure test.

At 6:33 p.m., the Contractor was ready to conduct a 5 hour endurance test using pump **#4584** and drive unit **#8839**. For this test, the Contractor will collect data every half an hour. The Contractor indicated that they will also monitor temperatures in the hoses and in the connections. At approximately 6:55 p.m., 20 minutes into the test, the high-pressure hose started to bubble near the connection and also started to have smoke come out of it. The test was ended at this point. The Contractor indicated they were not sure what would make this happen, so they will send this particular hose to the manufacturer and request an analysis to be made. The Contractor indicated that maybe the hose was vibrating at its critical frequency, so it created a weak point. They decided to replace this hose

and try to run another test either late this evening or early the next day.

5. To date, the Contractor's subcontractor is still trying to setup the bridge crane for pump testing in their wet tank. They indicate that this will allow them to cut time out of the setup process. With the crane that is currently being used, the setup has taken approximately 8-10 hours. If they can get the bridge crane installed, the Contractor believes that it will cut setup time down to 4-6 hours.

6. The next shop inspection is scheduled for tomorrow, April 19 and will be attended by [REDACTED]

[REDACTED]  
Civil Engineer