



# pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

## BUREAU OF MINE SAFETY

May 4, 2010

Mr. Jeremy Rohrbaugh  
Rhomac, Inc.  
P O Box 335  
Mt. Storm, WV 26739

Re: Rhomac Model DP 602 Hydraulic Power Pack utilizing a Deutz F4L2011 engine MSHA ID 07-ENA040012 de-rated to 60.8 HP@ 2800 RPM with a CleanAIR Assure DOC Model CFD0566BCCN oxidation catalyst and an ENK Pure Air DPM filter Model 25-19175

Dear Mr. Rohrbaugh

On November 2, 2009 Rhomac, Inc. submitted a request to the Bureau of Mine Safety (BMS) for approval of a Rhomac Model DP 602 Hydraulic Power Pack utilizing a Deutz F4L2011 engine MSHA ID 07-ENA040012 de-rated to 60.8 HP@ 2800 RPM with a CleanAIR Assure DOC Model CFD0566BCCN oxidation catalyst and an ENK Pure Air DPM filter Model 25-19175.

On November 3, 2009 BMS requested the TAC evaluate the Rhomac Model DP 602 Hydraulic Power Pack and to advise the Department regarding the TAC's recommendation as to whether the referenced equipment meets requirements of Section 403 of the Act.

On March 15, 2010 the TAC and DEP traveled to Rhomac to inspect and evaluate the engine and exhaust emissions package. Emissions testing as well as exhaust gas temperature monitoring and a stall test procedure were performed. An alternate method of inducing an engine stall was needed. The engine stall test was achieved by bringing the engine up to operating temperature and while at full throttle, engaging both levers to operate both stages of the hydraulic pump. This produced a repeatable stall test for this unit.

The exhaust gas temperature is cooled by directing it through a water tank equipped with a low level shut off device. In order to ensure maximum availability of the water in the tank, it was agreed that during the pre-op inspection the water tank would be filled prior to each use. Additionally, the skid mounted unit must be set up level and a diffuser added to the exhaust pipe to direct the exhaust air away from blowing directly on the rib or floor.

The exhaust gas temperature was 55° F; the maximum surface temperature was 240° F; the maximum engine oil temperature was 202° F; and the maximum engine coolant temperature was 202° F, all within acceptable limits of the Act.

The exhaust after-treatment system is fitted with an ENK Pure Air DPM filter Model 25-19175-7197 rated at a 95% efficiency. The engine and filter extrapolations show that the diesel power package will result in an average ambient concentration of .06396 mg/m<sup>3</sup> of diesel particulate matter when diluted by 100% of the MSHA approval plate ventilation rate for this engine, which is well below the .12 mg/m<sup>3</sup> requirement of Section 403 (a)(1) the Act.

The TAC's recommendation is based upon the data supplied by Rhomac, Inc, the results of their tests, as well as the data acquired and observations made during the investigation. The TAC has determined that the Deutz F4L2011 engine MSHA ID 07-ENA040012 de-rated to 60.8 HP@ 2800 RPM with a CleanAIR

Assure DOC Model CFD0566BCCN oxidation catalyst and an ENK Pure Air DPM filter Model 25-19175 meets all requirements of Section 403 of Chapter 4 of the Pennsylvania Bituminous Coal Mine Safety Act. The TAC recommended approval of the above described diesel power package with the following stipulations for the Rhomac Model DP 602 Hydraulic Power Pack. This recommendation is provided with the understanding that the General Specification Sheet (Attachment 1) be strictly adhered to.


**Additional TAC stipulations for approval:**

- To ensure equal water distribution in the tank, the hydraulic unit must be set up level
- The pre op inspection will include filling the water tank prior to each use and ensuring that the tank is setting level.
- After the unit is running the operator should check the water tank cover and filter door gaskets for exhaust leaks. This will be included in the pre op checklist. This check should also be part of the 100 hour maintenance. Any leaks should be repaired prior to use, since the leaks would be comprised of untreated exhaust gases.
- The unit must be attended during operation as required in Section 401(b) of the Act.
- Since this unit is not a mobile unit, a fire hose and portable foam generator pack must be available at the hydraulic unit.

Based upon the TAC's recommendation and their additional stipulations for approval, the Bureau approves the Rhomac Model DP 602 Hydraulic Power Pack provided the General Specifications Sheet and additional stipulations are strictly complied with.

If you have any questions on this request, please contact me at [jsbaffoni@state.pa.us](mailto:jsbaffoni@state.pa.us) or at 724-439-7469.

Sincerely,

  
Joseph A. Sbaffoni  
Director  
Bureau of Deep Mine Safety

cc: Bowersox  
Borchick

JAS/WBB/cd

bcc: Martin  
McCaffrey  
Antoon  
Gaida

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