

70714

From: "Richard F Thomas" <rfthomas@gba-inc.com>
To: "John Szeligowski" <szel@tamsconsultants.com>
Date: 3/26/01 12:34PM
Subject: Fw: Noise on 1000HP dredge engines.

----- Original Message -----

From: "Richard F Thomas" <rfthomas@gba-inc.com>
To: "John Szeligowski" <szel@tamsconsultants.com>
Sent: Friday, February 02, 2001 6:32 PM
Subject: Fw: Noise on 1000HP dredge engines.

>

> ----- Original Message -----

> From: "Brian Melani" <bmelani@albancat.com>
> To: <rfthomas@gba-inc.com>
> Sent: Thursday, January 25, 2001 10:07 AM
> Subject: Noise on 1000HP dredge engines.

>

>

>> Hello Mr. Thomas,

>>

>> I am responding to your request for sound information on 1000HP

> Caterpillar

>> engines for your dredge project. Below I have listed the mechanical and

>> exhaust noise levels for the 3512 model industrial engine at it's rating

> of

>> 1020HP at 1200 RPM - continuous duty. These sound levels are for the

> engine

>> by itself and do not take into account any associated noise levels from

> the

>> machinery that the engine would be driving. We can provide sound

> attenuated

>> enclosures that reduce noise, but we would need to know what parameters

>> (i.e. maximum physical dimensions of enclosure, airflow requirements,

> etc.)

>> we are working under to determine what sound level we could achieve. If

> we

>> can be of further assistance to you, please contact us. Thank you for

> your

>> time.

>>

>> Overall exhaust sound level at 4.9 feet - 110 dbA

>> Overall mechanical sound level at 3.2 feet - 101 dbA

>>

>> Overall exhaust sound level at 22.9 feet - 97 dbA

>> Overall mechanical sound level at 22.9 feet - 89 dbA

>>

>> Brian Melani

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From GBA 6/15/01

Noise Mitigation

Standard diesel-driven dredges are routinely guaranteed by their manufacturer to meet certain defined decibel values. A hydraulic dredge comparable to one proposed for this project was guaranteed "not to exceed 85 decibels (dBA) at 300 feet." A number of ordinary things encountered in daily life produce decibel ratings at or above the OSHA 85 dBA threshold. Among these are vacuum cleaners, power lawn mowers and a baby crying.¹

For this report, actual real world measurements of dBA levels were recorded on an operating 600HP hydraulic dredge. A level of 97 dBA was recorded on the dredge while a level of 60 dBA was recorded at 100 meters distance from it.

Several approaches can be employed to mitigate noise produced during dredging operations. The effects of this noise can be abated at the source through isolation. Materials and technologies exist that can be used to isolate the noise source thereby greatly reducing the impact of that noise on the outside environment. Sound-deadening barriers can be constructed around the source to dampen the dredge noise. The dredge could also use an electrical power source thereby considerably reducing engine noise. Needed power could be obtained from the local utility or possibly from a remote generation system. Either option would likely provide the desired level of noise mitigation.

V/Hudon/FS/Decibels/RespSum/Whitepapers/Noise/noise mitigation.doc

¹ A comparative examination of noise levels in our environment can be found at <http://www.lhh.org/noise/decibel.htm>