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NCBC GULFPORT
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LETTER FROM U S AIR FORCE REGARDING CONSTRUCTION AND USE OF DRUM RINSE
EXPERIMENTS FOR HERBICIDE ORANGE NCBC GULFPORT MS
4/18/1975
U S AIR FORCE

DEPARTMENT OF THE AIR FORCE
USAF ENVIRONMENTAL HEALTH LABORATORY (AFLC)
KELLY AIR FORCE BASE, TEXAS 78241



REPLY TO
ATTN OF:

CC

18 April 1975

SUBJECT:

Naval Construction Battalion Center, Gulfport MS - Trip Report.

TO:

Commander, USAF EHL/CC, Kelly AFB TX 78241
AFLC/SGB, Wright-Patterson AFB OH 45433
IN TURN

1. Place: Naval Construction Battalion Center, Gulfport MS.
2. Inclusive Dates of Travel: 6-13 April 1975.
3. Persons Making Trip: Mr. Thomas S. Sulkowski
Capt Stephen G. TerMaath
1/Lt Richard A. Virost
MSgt Earl E. O'Carroll
A1C Gregory S. Knerl
A1C Russell G. Townsend
A1C Nelson J. Garcia
A1C Mark K. Lee
4. Primary Mode of Transportation: Commercial Plane.
5. Purpose: To conduct drum rinse experiments in support of the Orange herbicide disposal project (SP 72-46). In addition, AFLC/DST requested that the drums in open storage be inspected for evidence of deterioration.
6. Persons Contacted: Mr. Claude Anderson, NCBC
Mr. Gene Sherrer, NCBC
Mr. Ted Sullivan, NOS/NOL
Mr. Frank Bewley, NOS/NOL
MSgt Dory, Photographic Svcs/TTS, Keesler AFB
7. Observations:

a. Drum rinse experiments. These experiments were performed with a total of 35 drums. A spray rinse was used to clean 16 notched drums and 16 deheaded drums. The remaining three drums were rinsed by the same method employed during the drum rinsing experiments of Sep 1974. Analyses of samples collected during the spray rinse experiments are being analyzed by EHL(K) personnel utilizing laboratory facilities at the USDA Environmental Monitoring Lab, Gulfport. Mr. Sulkowski and A1C Knerl remained in Gulfport to complete the analyses and are expected to return

about 17 April. A complete report on the experiments will be finalized when all the analytical analyses are completed.

b. De-drum facility/equipment/procedures. Portions of the de-drum facility and the equipment for the de-drum operation were utilized during the course of the drum rinse experiments. Certain potential problem areas were identified and are described below:

(1) Drum deheader. The handle which is used to maintain pressure of the cutting wheel against the drum broke loose from the shaft. A new handle from another deheader was used as a replacement but it also broke on the first drum. A poor weld between the handle and threaded shaft was apparently the cause. The welds on the handles of three other deheaders appeared to be no better. The cutting wheel also required replacement after 23 drums due to large nicks and dullness. It is not known whether the above problems were due to manufacturer defects or improper technique on our part.

(2) Rubber gloves. The rubber gloves procured for the de-drum phase became extremely slippery when coated with either Orange herbicide or diesel fuel. The handling of simple tools, lifting drums, and operating the deheader was not possible with the slippery gloves. Furthermore, the surface of the gloves were tacky after wiping the gloves dry with cloth rags.

(3) Protective clothing.

(a) Rubberized toxicological suits have been procured for all personnel who will be working inside the de-drum facility. These suits will be very hot to work in, especially during the summer months. No protective clothing has been procured for personnel handling drums of Orange outside the facility. The possibility of herbicide spillage and the unusually dirty conditions associated with the herbicide drum handling dictate the need for cloth coveralls as a minimum for all Operations Division personnel working inside or outside the de-drum facility.

(b) The toxicological boots which are to be used by Operations Division personnel inside the de-drum facility were worn out after approximately 14 hours usage by EHL(K) personnel. Such a short useful life will probably require daily replacement of boots. Furthermore, personnel involved in handling the drums outside the de-drum facility will undoubtedly come in contact with ground areas contaminated with herbicide, and therefore, they should wear heavy duty butyl rubber boots.

(4) Canvas siding for the de-drum facility. Each of the large canvas panels will be secured on all four sides but six of the eight panels do not have center bracing to prevent inward billowing. This billowing can be caused by the wind or by the negative pressure which will be developed by

the exhaust ventilation system. Cross bracing with taut wire or other material should prevent the inward billowing and subsequent loss of working area near the drum crushers and conveyor lines.

(5) Operational problems.

(a) Drum lids dropped into the drum immediately after deheading. Although we were working with nearly empty drums, the same problem seems likely to happen with full drums.

(b) Although present plans call for drums to be deheaded with the bung end down (i.e., the "bottom" of a drum is removed), disfigured drums may not permit this procedure. One alternative method would be to remove the bung end after using a sledge hammer to pound bungs out of the way. Some drums in storage are disfigured to the extent that a deheader will not work, therefore alternate opening methods will be required.

c. Condition of the herbicide drums in storage.

(1) An inspection of the drums was conducted on 12 April, and photographs were taken to document the condition of drums. Four active leakers were observed during the inspection - three were leaking from the bung and one from a small pinhole in the lowest point of curved side of the drum. However, there did not appear to be any widespread contamination of the storage area with Orange from previous leakers.

(2) Overall condition of drum surfaces which are "exposed" was good; however, some superficial corrosion was noted. The worst corrosion was confined to unexposed surfaces of a drum; i.e., void spaces which are formed by stacking drums on their sides (Atch 1). Corrosion on these lower surfaces is probably due to water droplets from rainfall, dew, fog, etc. This moisture may remain on the surface for many hours since the void spaces are protected from the drying action of the sun or wind. As noted above, one active leaker was due to a small hole, and it could have developed as a result of pitting corrosion since the integrity of the drum was otherwise sound. The location of the corroded areas of drums prohibited close examination.

8. Conclusions/Recommendations:

a. De-drum facility/equipment/procedures.

(1) Mr. Sullivan, NOS/NOL, has contacted the manufacturer of the deheader who indicates that the handles are designed to break rather than permit excessive pressure on the cutting wheel. If this is true, extreme care must be exercised by personnel operating the deheader to prevent breakage and shortened lifetime of the cutting wheels and handles.

(2) The slipperiness of the rubber gloves should be corrected by either procurement of butyl rubber gloves with a rough textured surface or possibly wearing cloth gloves over small rubber gloves to protect them from being cut.

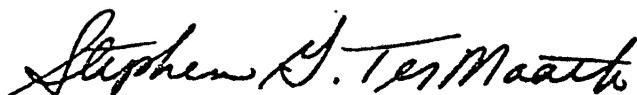
(3) Cloth coveralls should be available to all Operations Division personnel. Cloth coveralls and aprons may be used by personnel inside the de-drum facility in lieu of rubberized toxicological suits. The EHL(M) recommendations for protective equipment are presented in Attachment 2.

(4) The toxicological boots will have a shorter life expectancy than anticipated and additional boots should be procured. However, NOS/NOL should consider using heavy duty, pullover butyl rubber boots with a much longer life span to replace the toxicological boots. Furthermore, butyl rubber boots should be used by Operations Division personnel working both inside and outside the facility.

(5) Inward billowing of the canvas sides should be corrected if it may cause operational problems.

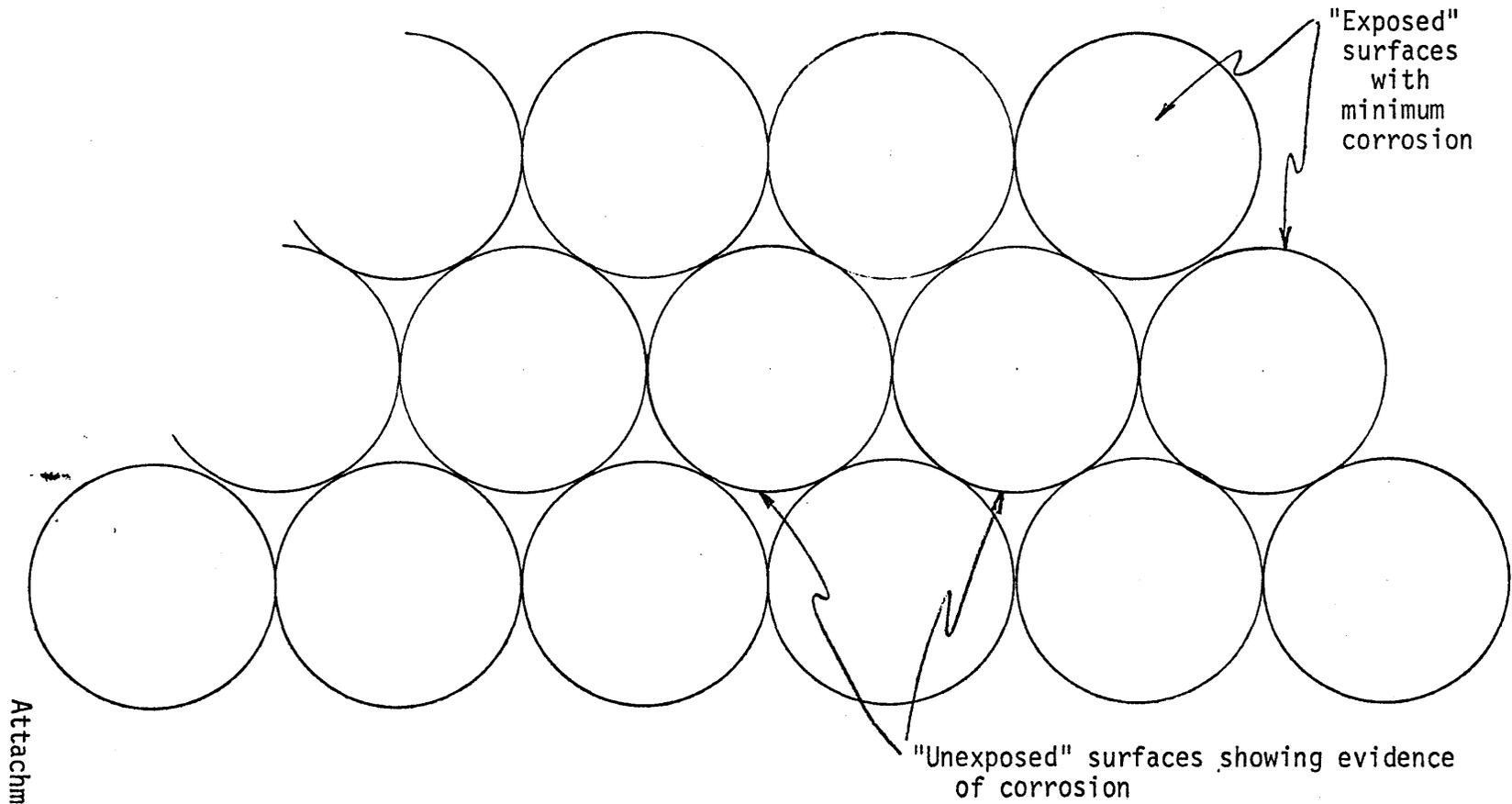
(6) A method of preventing drum heads from falling into the drum should be developed. A procedure for deheading badly disfigured drums is also necessary.

b. Inspection of the drum storage area. This inspection did not result in definite conclusions as regards deterioration of the drums. Someone with extensive experience with corrosion should examine drums after they have been removed from the stack if a more precise determination of the condition of drums is desired.


STEPHEN G. TerMAATH, Capt, USAF, BSC
Gulfport NCBC Project Officer

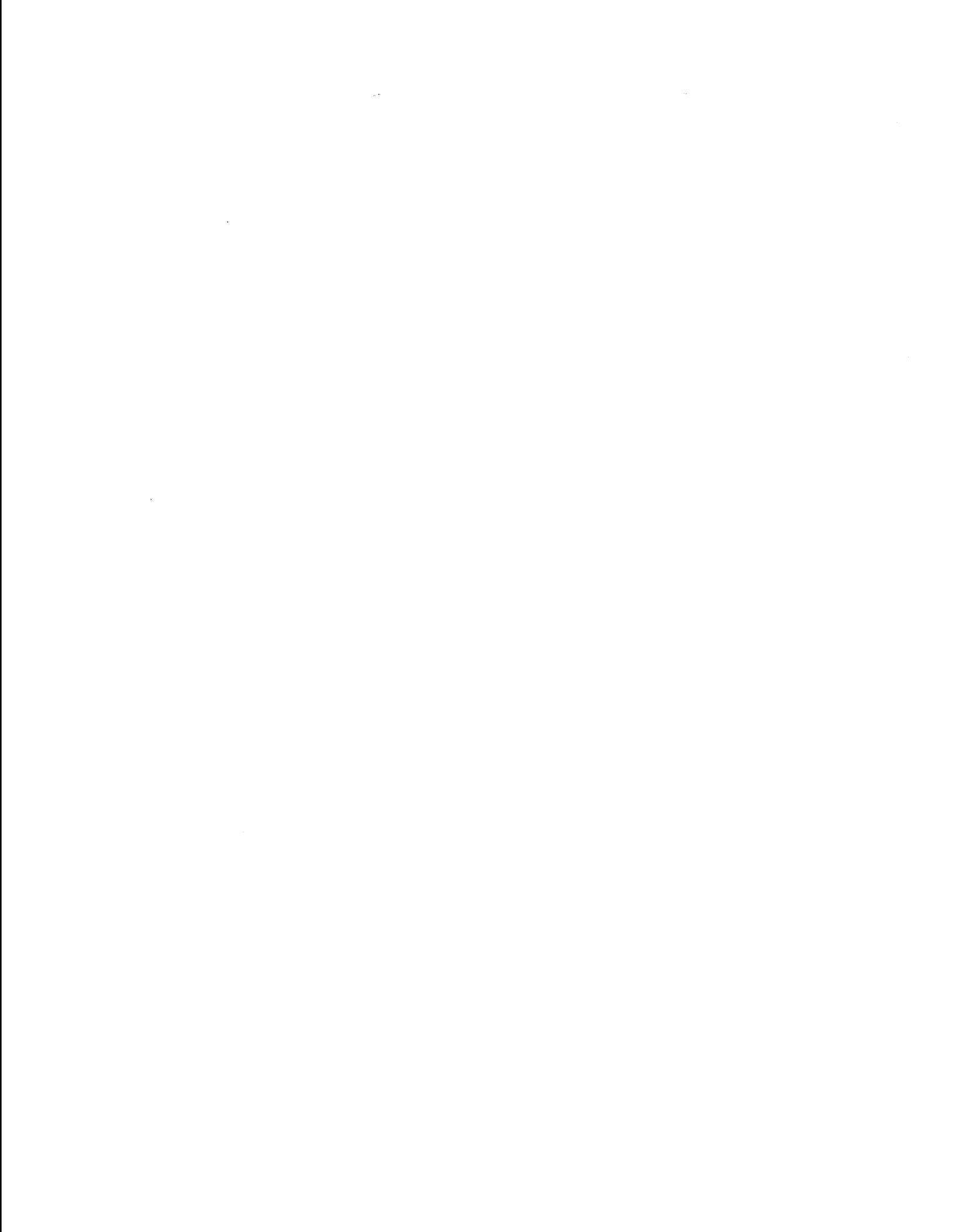
2 Atch
1. Drum Stacking Diagram
2. EHL(M) Recommendations

Cy to: SAF/ILE
AFLC/DS
NOS/NOL 251
USAF EHL/CC, McClellan
AFB CA 95652



Attachment 1

FIGURE 1. Diagram of Stacked Drums and Location of Corrosion



H-C 15.

17 OCT 1974

SFQH/Mr Beard/mer/17 Oct 1974

SFQ

Protective Equipment for Orange Herbicide Disposal

Commanding Officer
US Naval Ordnance Station/Code 251
Indian Head MD 20640

Forwarded for your action are Environmental Health Laboratory recommendations for protective equipment to be used at Gulfport and Johnston Island. In addition to the equipment listed, a survey is being undertaken to obtain boot/shoe sizes of personnel from Kelly AFB (2954th CLSS) to be assigned to this task. It can be assumed that the data for approximately 30 people can be statistically expanded to cover the force at both Gulfport and Johnston Island.

FOR THE COMMANDER

WAS

WILLIAM A. STANFORD
Quality Division
Directorate of Aerospace Fuels

1 Atch
Cy USAFENL Ltr, 10 Oct 1974

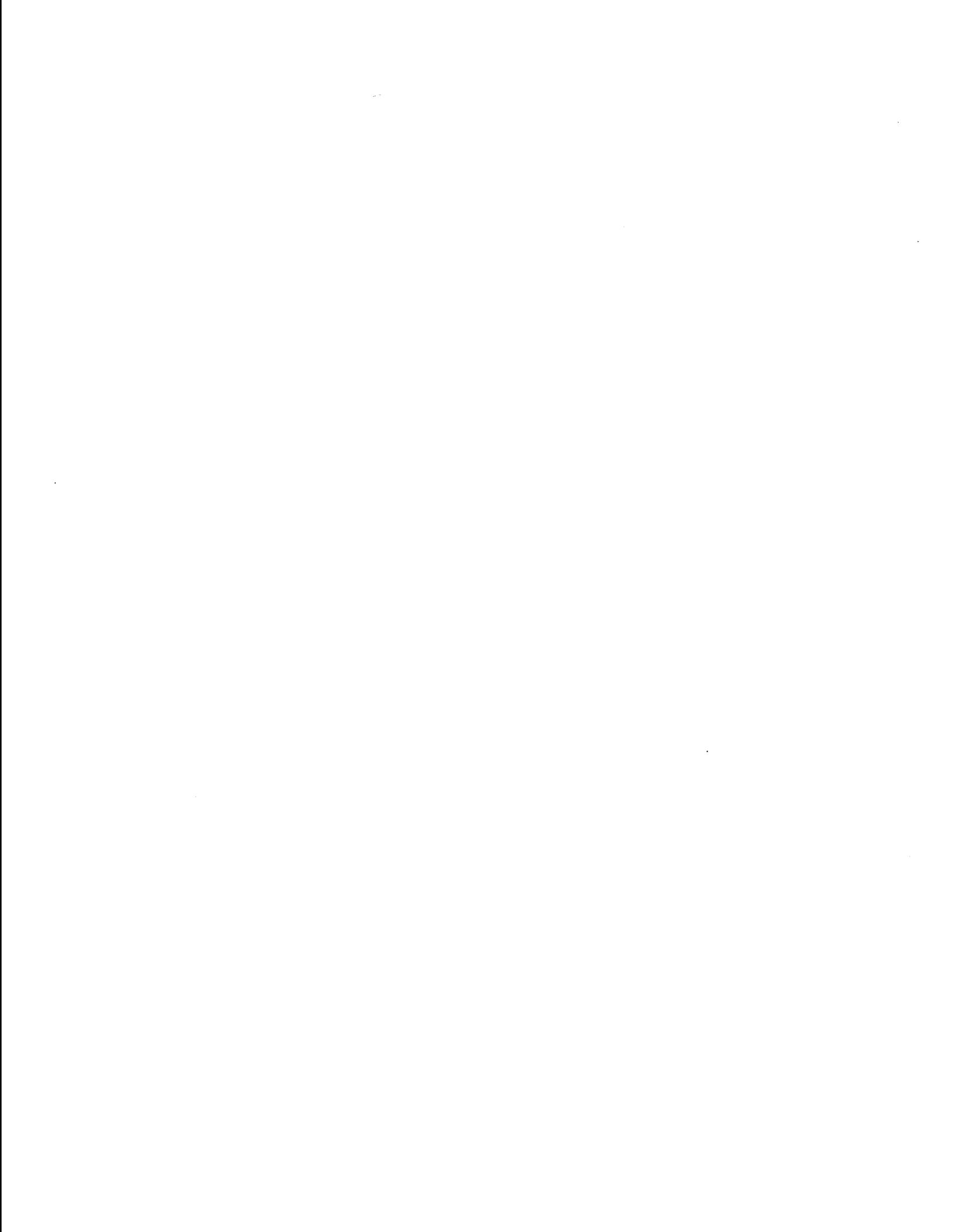
Cy to: San Antonio ALC/DSMPP
Kelly AFB TX 78241

OFFICIAL FILE

SFQH
JEAN 10/16

SFQT
W. W. ...
SFA Byrne

Atch 2



DEPARTMENT OF THE AIR FORCE
USAF ENVIRONMENTAL HEALTH LABORATORY (AFLC)
McCLELLAN AIR FORCE BASE, CALIFORNIA 95652



30 OCT 1974

REPLY TO
ATTN OF: USAFEHL (Capt Jackson)

SUBJECT: Worker Protective Equipment

TO: San Antonio ALC/SFQH
Kelly AFB TX 78241

1. Per telecon request from Mr Beard (SFQH), 8 October 1974, the following list of recommended protective equipment for workers directly involved in the transfer of "Orange" Herbicide at Gulfport, MS is provided.

a. Each worker should wear:

- (1) Full cover overalls, white cotton.
- (2) "Butyl" rubber gloves.
- (3) "Butyl" rubber apron.
- (4) "Butyl" rubber boots.

b. Each worker should have the option of wearing an organic vapor respirator. A respirator will not be required for the control of toxic levels of herbicide vapor but may be desired by individual workers for odor control. There should be two spare cartridge (activated carbon) sets per mask.

2. Natural and neoprene rubber is not resistant to "Orange" Herbicide. Butyl rubber or a material impervious and resistant to "Orange" must be used for gloves, apron and boots.

3. Boots can be either of two types, the type worn over shoes or the type worn in place of shoes. In either case, the footwear must provide approved safety guards.

4. Attachment 1 shows the style of gloves, apron and respirator desirable.

5. In addition to protective equipment requirements, workers should be required to shower and don fresh clothing before leaving the general work area. They should also have at least one spare set of coveralls per shift in the event of excessive spillage.

FOR THE COMMANDER



JOHN J. GOKELMAN
Major, USAF, BSC
Chief, Environmental Protection
Engrg Division

1 Atch
As stated

Cy to: AFLC/SGB w/Atch
USAF Envmt Health Lab,
Kelly AFB TX w/Atch