



Uploaded to VFC Website

~ November 2012 ~

This Document has been provided to you courtesy of Veterans-For-Change!

Feel free to pass to any veteran who might be able to use this information!

For thousands more files like this and hundreds of links to useful information, and hundreds of "Frequently Asked Questions, please go to:

[Veterans-For-Change](#)

*Veterans-For-Change is a 501(c)(3) Non-Profit Corporation
Tax ID #27-3820181*

If Veteran's don't help Veteran's, who will?

We appreciate all donations to continue to provide information and services to Veterans and their families.

https://www.paypal.com/cgi-bin/webscr?cmd=_s-xclick&hosted_button_id=WGT2M5UTB9A78

Note:

VFC is not liable for source information in this document, it is merely provided as a courtesy to our members.

Item ID Number 03858 ☐ **Not Scanned**

Author

Corporate Author United States Air Force Academy, Department of Life an

Report/Article Title Memorandum: From Alvin L. Young, Capt., and Eugene L. Arnold, Major regarding Trip Report to university of Hawaii and Johnston Island with two graphs and a chart for Data (ppm) from Analysis of Johnston Island Soil Samples included

Journal/Book Title

Year 1974

Month/Day August

Color ☐

Number of Images 5

Description Notes

UNITED STATES AIR FORCE ACADEMY
DEPARTMENT OF LIFE AND BEHAVIORAL SCIENCES

Subject: Trip report, University of Hawaii and Johnston Island.

To: HERBICIDE ORANGE CONFERENCE, 21-22 August 74

1. University of Hawaii: Dr. Bert Koch, Assistant Professor of Agronomy and Soil Sciences was visited on 6 Aug 1974. Dr. Koch has been conducting research on the degradation of the herbicide, 2,4-D in Hawaiian soils and in coral samples which he has obtained from the Orange storage area on Johnston Island. He has used an isotopically-labeled herbicide procedure where the rate of herbicide breakdown is calculated by measurement of the labeled carbon dioxide which is formed. Initial studies have revealed a rapid degradation of 2,4-D in the coral samples, particularly those samples taken from the area around the current re-drumming area where considerable spillage of Orange has occurred (see atch). The initial concentrations of unlabeled herbicide orange in these coral samples is not known, however portions of these samples were returned to the USAFA for analysis.

2. The possibility of Dr. Koch performing additional degradation studies on 2,4,5-T was investigated. We were advised that while his present analytical apparatus is in use for other research, it was constructed in the laboratory from ordinary laboratory glassware and a second apparatus could be constructed quickly and at a minimal cost. His major concern was in securing labeled 2,4,5-T since he did not know whether this compound was commercially available. He did however express a willingness to continue research if it was desired by the USAF. University contracting procedures were also discussed and the names of individuals to contact were obtained. In our opinion, Dr Koch's past work is very relevant to the Orange disposal project and would add a great deal to the biodegradation report if it were continued.

3. Johnston Island: Johnston Island was visited on 30-31 July 1974. Personnel contacted included: Col John L. Jeff, Commander; Mr. R.L. Murphy, resident manager, Holmes & Narver Inc; Dr. L.C. Spillman, Jr. Chief Medical Officer and Mr. D.J. Kinslow, Supervisor, Medical Services. A thorough survey of the herbicide drum storage area was conducted and samples were taken (see atch). No evidence was found to indicate contamination of the ocean with Orange herbicide. Certain species of salt water algae, a sensitive indicator of herbicide presence were found close to the shore in the vicinity of the storage area. Observations made of the ocean floor at various points near the island revealed no significant differences in biological activity. Some evidence of herbicide effect (vapor effect) could be detected as slight deformation (twisting) in a plant species (Erigeron sp.) in an area approximately 75 yards down wind from the storage site.

4. Two employee's of Holmes and Narver who were engaged in screening and re-drumming operations were interviewed. They stated that the entire inventory (24,788 drums) was screened daily and "leakers" were identified and removed to the re-drumming area. Re-drumming occurred on Saturday mornings for all drums

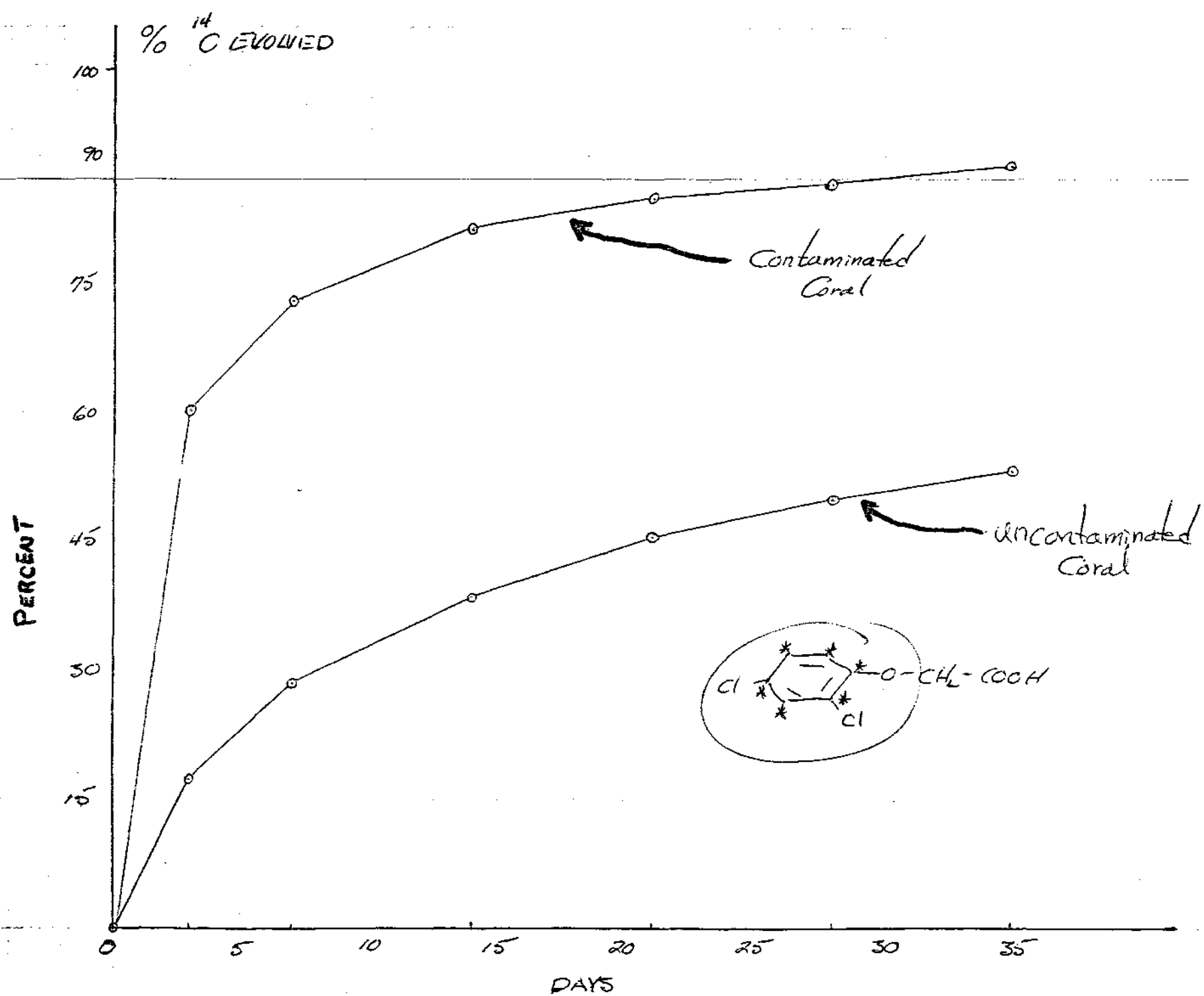
identified during the week. Records which are kept indicate that the present extent of the re-drumming operation is from 15-25 drums per week. We were informed that this is down considerable from six months ago. The condition of the storage area provided evidence of the rapid identification of leakers; since few spill areas were observed. Two areas where drum ruptures had occurred were identified and core samples taken for analysis. Ruptures had occurred 2 to 5 months ago. In securing these core samples it was noted that penetration of the herbicide was minimal due to the extremely hard-packed condition of the coral. This was also apparent when a small spill occurred during re-drumming. As late as eight hours after the spill, penetration had still not occurred to any appreciable extent.

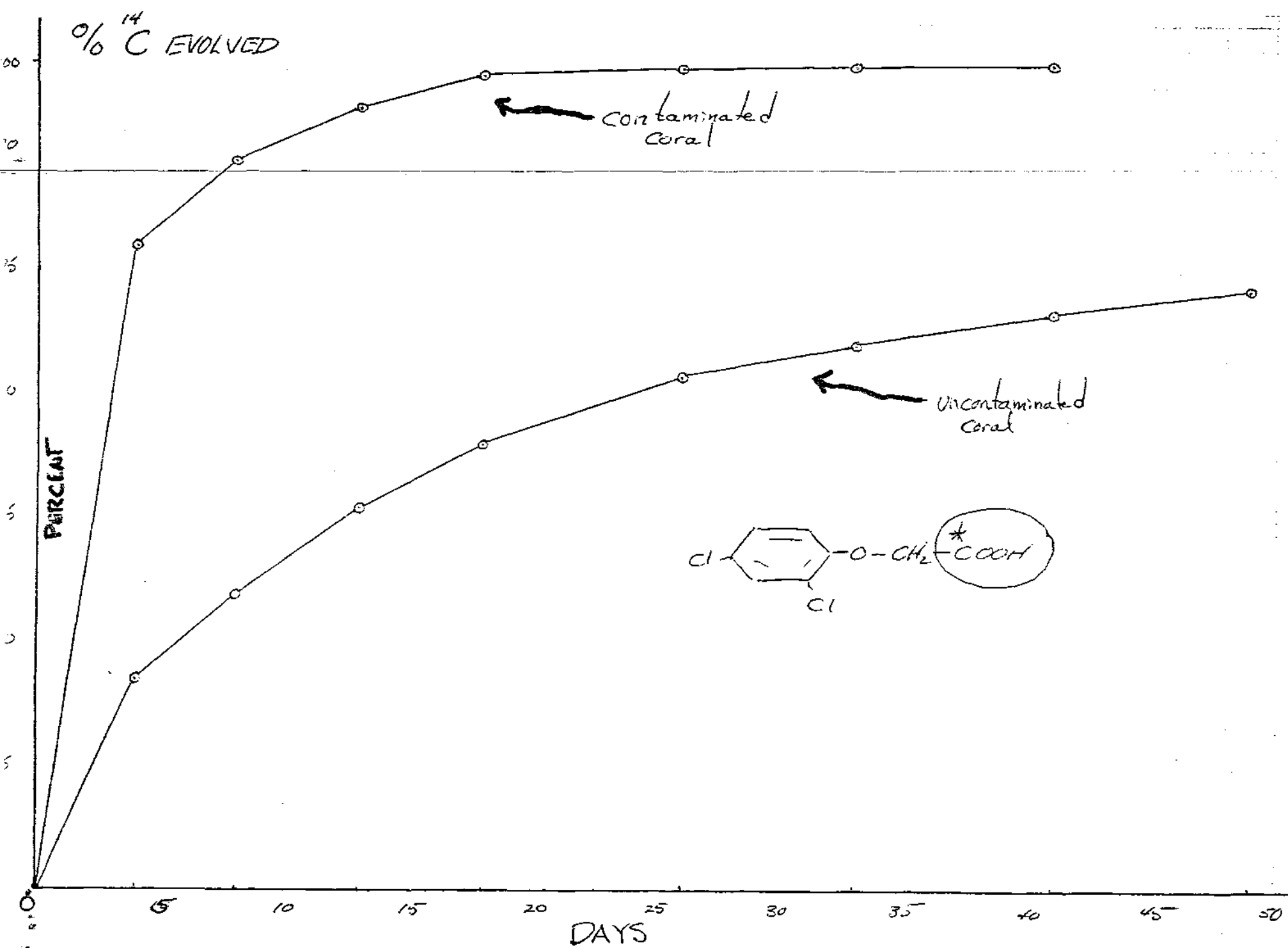
5. Samples which were collected for analysis included coral from the area of the re-drumming operation, coral from the ocean floor adjacent to the storage area, snails found on the sea wall near the storage area and ten herbicide samples taken from random drums scheduled for re-drumming.

6. On 31 July 74 a meeting was held with Mr. R.L. Murphy, Resident Manager, H & N Inc. A copy of the minutes of this meeting are attached. Mr. Murphy was extremely cooperative and stated that he would anticipate no problems if it was decided that the saleable herbicide should be sampled, identified, and shipped to CONUS.

7. Two meetings were held with Col Jeff. He was appraised of the purposes of our visit initially and later advised of the results of our investigation of the area and our meeting with Mr. Murphy.

Captain Alvin L. Young, Ph.D.
Major Eugene L. Arnold, Ph.D.





UNITED STATES AIR FORCE ACADEMY
DEPARTMENT OF LIFE AND BEHAVIORAL SCIENCES

Subject: Data (PPM) From Analysis of Johnston Island Soil Samples

1. Sample U-2* (2 months following herbicide spill)

Depth	<u>2,4-D</u>		<u>2,4,5-T</u>		Total
(Inches)	<u>Acid</u>	<u>Ester</u>	<u>Acid</u>	<u>Ester</u>	(ppm)
0-2	11,600	7,600	14,000	10,000	43,200
2-4	1,000	1,400	950	2,100	5,650
4-6	240	220	160	310	930**
6-8	150	<100	160	<100	510**
8-10	200	<100	310	<100	710**
10-12	360	120	400	180	1,060**

2. Sample N-2* (5 months following herbicide spill)

Depth	<u>2,4-D</u>		<u>2,4,5-T</u>		Total
(Inches)	<u>Acid</u>	<u>Ester</u>	<u>Acid</u>	<u>Ester</u>	(PPM)
0-2	3,300	2,100	2,600	2,600	10,600
2-4	100	<100	250	100	550**
4-6	560	400	300	650	1,910**

* Inventory site

** Probable contamination from upper depths during sample collection, 31 July 1974.