2982

OAK RIDGE Y-12 PLANT INFORMATION CONTROL FORM

DOCUMENT DESCRIPTION (Completed By Requesting Organization)

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☒ Other (Specify): To Be Released to ChemRisk, Phase II

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Document has been previously released ☑ No ☐ Yes (Reference)

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Signature 10/20/95 Date

Signature Date

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J R Bayless
Y-12 Classification Office 10/26/95 Date

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☐ Date

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SECRET

THIS DOCUMENT CONSISTS OF 109 PAGES.
NO. 1 OF 1 COPIES, SERIES A

INVENTORI
2/11/8
9/28/87

Transferred to
L. O. Vaughan
9/22/89

NOTEBOOK NO. ~~Y/NB-5007~~

ISSUED TO ~~H. L. Fellers~~ Y/EXT-00150/DEL REV

ON April 23 19 85

DEPARTMENT 2362

RETURNED 19

10/4/88
9/22/89
11/14/91 HLF
10/2/92 HF

YNB 5007 1 1A

YNB 5007 1 1A

Classified Data from Tennessee Air Pollution Control Board Permits and Applications.
9215, 9212, 9206, 9204-4, 9201-5, 9998, 9818 ~~(W)~~

Derivative Classifier H L Fellers
Name
Date 10/21/92 Title Mgr, CAP

SCIENTIFIC NOTEBOOK CO.
5007 WEST DONNA DRIVE
STEVENSVILLE, MICHIGAN 49127

RESTRICTED DATA
This document contains Restricted Data as defined in the Atomic Energy Act of 1954. Unauthorized disclosure subject to Administrative and Criminal Sanctions.

SECRET

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	APC 21		APC 22								
	Material	Input Rate lb./hr.	Air Contaminate	Average Emissions lb./hr.	Maximum Emissions lb./hr.	Concentration	Average Emissions T/Y	Estimated Method	Control Devices	Efficiency	Monitored
Y-9215-B(5,10,18,20)	U Metal										
											Samp 4
Y-9215-B(5)			Particulates					1 ~~and 4~~	016	80%	Yes ~~see note 1~~
Y-9215-B(10)			Particulates					4	999	99.95%	
Y-9215-B(20)			Particulates					1 ~~2~~	011/015	Unknown	Samp. # 1
B(18	OVEN							1			Samp # 2
Y-9215-C(2,3,11,16,	U Metal										
17,19)	Steel										
	Aluminum										
	Tantalum										
Y-9215-C(11)			Depleted U					2	999	99.97%	
Y-9215-C(2)			Particulates					2	000	—	
Y-9215-C(10)			Particulates					4	008/017	95%	
Y-9215-E(6,7,8)	U Metal										
	Be Metal										
Y-9215-E(8)			Particulates					2	017/999	99.97%	
Y9215 A(1)	E11		Particulate							20 BOX	
										see STACK 3	

(1) An isokinetic rake-type particulate sampler is used to monitor emissions. # 11FF05

Project No.

	APC 21		APC 22								
	Material	Input Rate lb./hr.	Air Contaminate	Average Emissions lb./hr.	Maximum Emissions lb./hr.	Concentration	Average Emissions T/Y	Estimated Method	Control Devices	Efficiency	Monitored
Y-9215-D(11,12,13,	U Metal										
14,15)	Al Metal	4.4									
	Steel	5.3									
Y-9215-D(12)			Dep. U Metal					2	000	NA	
Y-9215-D(13)			Dep. U Metal					2	000	NA	
Y-9215-D(14)			Dep. U Metal					2	000	NA	
Y-9215-D(15)			Dep. U Metal					2	999(2)	99.97%	
Y-9215-E,EA,CB,EC	U		U-Part.								

Project No.

(1) Drains/SCF.
(2) Control device is a high efficiency particulate air (HEPA) filter.

12

From

Witnes

	APC 21		APC 22								
	Material	Input Rate lb/hr	Air Contam.	Avg Emissions	Max Emissions	Concentration	Avg Emiss T/Y	Method	Control Devices	Effic	Monitored
Y-9212-A(1-28)	HF U-Cont. Solids U-Cont. Liquids Ca										Sampler O
A(1)			U-oxides					2	017	80%	// NF03
A(2)			//					2	999	99.97	// NF04
A(3)			//					2	999	99.97	// NF14
A(4)			//					2	999	99.97	
A(5)			Part.					4	999	99.97	
A(6)			U-oxide					2	017	80	// NF25
A(7)			//					2	999	99.97	// NF27
A(8)			//					2	999	99.97	// NF28
A(9)			HF					2	001	95%	
A(10)			UF_4					4	999	99.97	// NF21
A(11)			—					—	—	—	—
A(12)			U-Oxide					2	017	80	// NF35
A(13)			//					2	999	99.97	// NF07
A(14)			//					2			
A(15)			—					—	—	—	—
A(16)			U-oxide					2			
A(17)			//					2	999	95(est)	
A(18)			//					2	999	95(est)	
A(19)			—					—	—	—	
A(20)			U-oxides					2			// NF22 & // NF23
A(21)								2			

Project

APC 21 | APC 22

	Material	Input Rate	Air Contam.	Avg Emissions	Max Emissions	Concentration	Avg Emiss T/Y	Method	Control Devices	Effic	Monitored
Y-9212-A(22)			U-oxides						1/2" H.E.P.A.	80/99	
A(23)			U-oxides					2	017	90(est)	11NF16
A(25)			U-oxides								
A(24)			U-oxides					2	999	99.97	11NF01
A(26)											
A(27)											
Y-9212-B(1-9)	U-Metal										
1			U-oxides					2		99.97	#38
2			U-oxides					2		99.97	#48
3			U-oxides						—	—	#43
4			U-oxides								#40
5			U-oxides								
6			U-oxides								
9			TANK NOT IN USE								
Y-9212-C(1-23)	U metal										
1	Cont. Scrap		U-oxides							99.97	—
2	U-oxides		U-oxides						SEE PAGE 5		
23			U-oxides								11NF50
14											

Recorded By

Project No.

	APC 21		APC 22								
	Material	Input Rate	Air Contam.	Avg Emissions #/HR.	Max Emissions	Concentration	Avg Emiss T/Y	Method	Control Devices	Effic	Monitored
Y-9212 F([illegible])			DU					2			#57
Cat 5, 89 F([illegible])			~~DU~~					~~2~~	(NOW TIED TO F(4)		
F(1-5) F([illegible])			DU					2			#53
see page 6 F([illegible])			DU					2			#54
F([illegible])			DU					2			#56
E([illegible])			DU					2			
E([illegible])			DU					2			
9212-D			D is NOT CLASSIFIED - SEE APPLICATION -								
9212-C	HF										
11/88 update	U-Metal										
	Cont. Sump										
	U-Compd.										
C(1)			U-Oxides						HEPA + pre FILTER	99.97	#26
C(2)			U-Oxides								
C(3)			U-Oxides								11NF-50
C(4)			U-Oxides								#45
C(5)			U-Oxides								#47
C(6)			U-Oxides								#46
C(7)			U-Oxides								#113
C(7)			Fluorides					1 and 4	001	99.5	

Witnessed and understood by me, Date

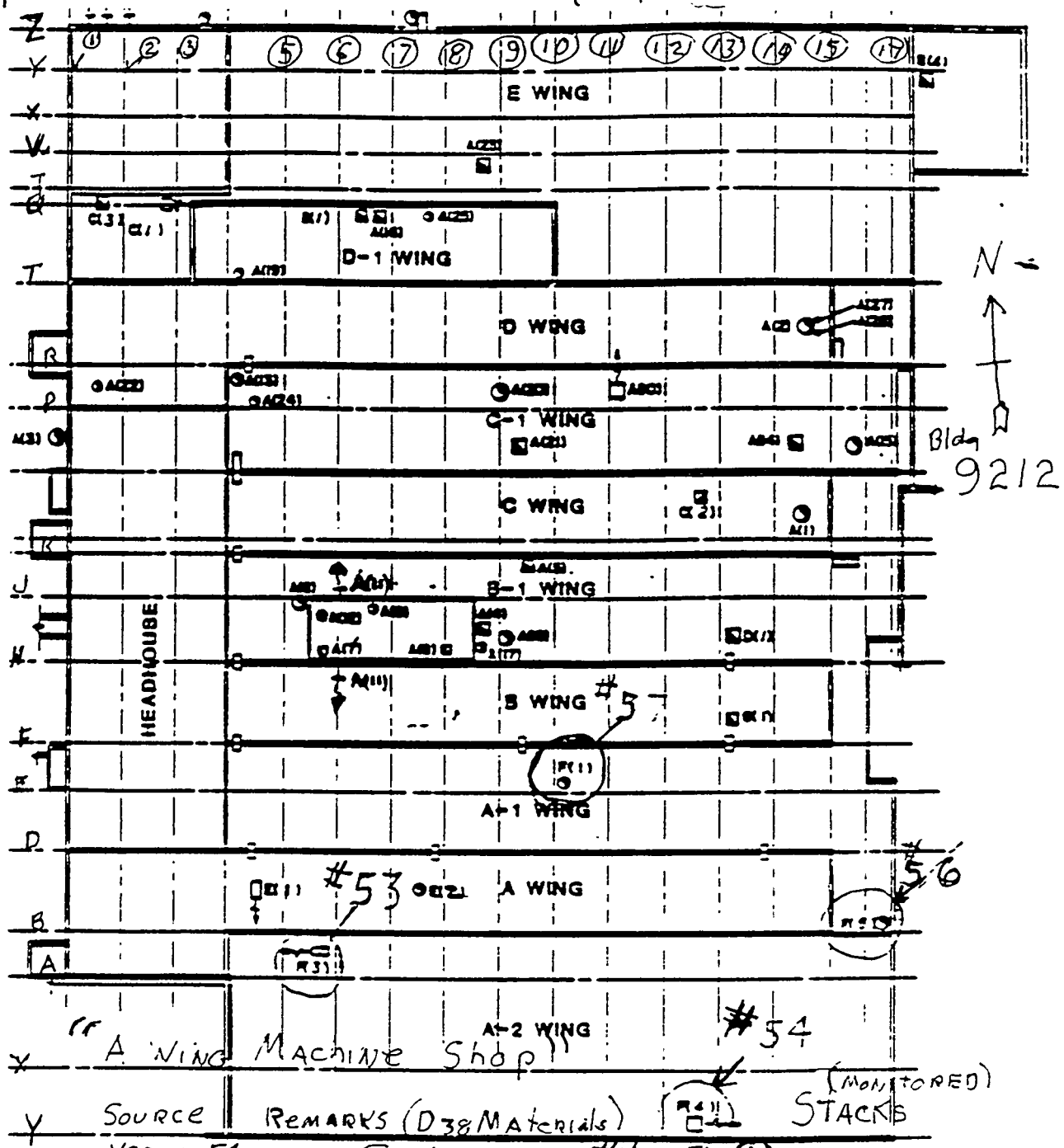
Invented by Date

Recorded by

16 (9212 sup 5) Project No. _____
Book No. _____ TITLE _____

Field Audit - (completed) Oct 10, 1989

From I



"A" WING MACHINE SHOP

Source	Remarks (D38 Materials)		Stacks (Monitored)
Y9212 F1	Grinding	→	(1) #57
Y9212 F(2,4)	Lathe OD	→	#54
Y9212 F3	Lathe Operation	→	#53
Y9212 F5	Lathe Operation	→	#56

Contact: "Buck" Bloomer 10/5/89

Recorder John Gregory 41713

* This information was furnished by Buck Bloomer (on 43446)

(1) These weights depend on production schedule.

Witnes

20

9206-B(6) Stack #15

	Avg.	Max	CFM o.r	Permit
Particulates			144,000	

Monthly Reports — Iris Darling 11-20-89

	CFM o.r	
July	78,100	Actual
Aug		
Sept		
Oct		

9206-C(2) Stack #116 — IRIS DARLING 11-20-89

	Avg.	Max	CFM o.r	Permit
Particulates	10,CFM		6,315	

Monthly Reports

	CFM o.r	
July.	8100	Actual
Aug.		
Sept.		
Oct.		

TITLE 9206

Project No.

Book No.

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Draft Applications

Source Code	APC Form #	Line #	Classified Data
~~Y-9206-I(15)~~	21	8	Input Rate for Freon 113 ;
	22	3	~~Freon 113~~ Pollutant Emission lb/hr AVG MAX Concentration Avg Emission
			Organic Compound Freon 113
~~Y-9206-AD(12)~~	21	8	Process Material Input ; Uranium Alloy Rate ;
~~Y-9206-C~~, D(2)	21	8	Process Material Input ; Uranium Oxide Rate ;
	22	8	Pollutant U-Particulates Emissions AVG Max Concent. Avg Emissions Tons

Data for Combined Process Application

Y-9206-B(4-11) U Recovery Process	21	8	Process Material Input Rates
			Uranyl Nitrate lb/hr
			Uranium-Metal lb/hr
			Uranium Oxide UO_3 lb/hr
			Hydrogen Flouride lb/hr
			Potassium Hydroxide lb/hr
	22	8	Emission Rates Avg Max Conc. Ton/yr
B(4)			Uranium Particulates
B(6)			Uranium Particulates
B(8)			Uranium Particulates
B(10)			Uranium Particulates
B(9)			Uranium Particulates
Y-9206-C(1,2)	21	8	Process Material Input Rate
			Depleted Uranium lb/hr

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(New information in Classified file)

(1988 update LN)

9206-B (1-13)

APC-21

Sodium Fluoride	LBS/HR	
Uranyl Nitrate	LBS/HR	
HF	LBS/HR	
U Metal	LBS/HR.	
Calcium	LBS/HR.	
U oxides	LBS/HR	

Notation on Incinerator (Sept. 89 LN) Combustibles to B(7) include polyethlene bags; PVC for filter bags; dibutyl carbitol, freon; Perc; Amsco (kerosene); & Tributyl phosphate & Trichlorethylene can be on mops/rags - up to per yr. & should be combusted fully.

	Pollutant	Avg.	Max.	TPY
B (1)	U oxides			
B (2)	-U			
B (2)	-HF			
B (3)			KOH Tanks	
B (4)			KOH Tanks	
B (5)			Not Classified - See Application	
B (6)			Sampler # 15	NOx not Classified
B (7)			Sampler # 13	1988 Incinerator Emission = MAX ORGANIC EMISSION = 200#/yr fully COMBUSTIBLE - SO NEAR 0.
B (8)			Nitric Acid Tank	
B (9)			< 0.1 LBS/HR. Non Haz. Tank	
B (10)			New Stack	
B (11)			Tank	
B (12)			Tank	
B (13)				

(scrubber failure) → only in case of emergency & until shutdown, HF should not normally get to

from Jon Kugk

9206-C SEE APPLICATION IN FILE. (CLASSIFIED PROCESS)

9206-C Calciner | HR Normal | HR MAX. > D. Uranium

Locate on C Stack Renamed E

To Page No._____

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Assembly	APC 21 Material	APC 21 Input Rate lb/hr	APC 22 Air Contam.	Avg Emissions	Max Emissions	Concentration	Avg Emiss T/Y	Method	Control Devices	Effic %	Monitored
Y-9204-4-B(1-)	D Uran, E Uran, Lithium										
Y-9204-4-B(2)			Particulates						999	99.97	

9204-4

Forming Process	APC 21 Material	APC 21 Input Rate #/hr	APC 22 Air Contam.	Avg Emissions lb/hr	Max Emissions	Concentration gr/ft³	Avg Emiss T/Y	Method	Control Devices	Effic	Monitored
	DU										
Y-9204-4-A(1) ✓			DU					1	017	95	#88
A(2)			No DU. Past.								
A(3) ✓								1	000	N/A	#86
A(4) ✓								1	000	N/A	#87
A(5) ✓								1	000	N/A	#85
A(6)								4	000	N/A	
A(7) ✓			DU					4	999	99.95	#94
A(8) ✓			DU/SI					1	017	80	#93
A(9)								4	000	N/A	#90
A(10)								4	000	N/A	#89
A(11)								4	000	N/A	#92
A(13)											#95
A(14)											#91
A(15)											

NEGLIGIBLE

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Assembly	APC 21 Material	APC 21 Input Rate lb/hr	APC 22 Air Contam.	Avg Emissions	Max Emissions	Concentration	Avg Emiss T/Y	Method	Control Devices	Effic %	Monitored
Y-9204-4-B(1-)	D Uran. E Uran. Lithium										
Y-9204-4-B(2)			Particulates					2	999	99.97	

9204-4

	APC 21 Material	APC 21 Input Rate #/hr	APC 22 Air Contam.	Avg Emissions lb/hr	Max Emissions	Concentration gr/ft³	Avg Emiss T/Y	Method	Control Devices	Effic	Monitored
Forming Process	DU										
Y-9204-4-A(1) ✓			DU					1	017	95	#88
A(2)			No								
A(3) ✓			D.U. Part.					1	000	N/A	#86
A(4) ✓								1	000	N/A	#87
A(5) ✓								1	000	N/A	#85
A(6) ✓								4	000	N/A	
A(7) ✓			DU					4	999	99.95	#94
A(8) ✓			DU/s					1	017	80	#93
A(9)								4	000	N/A	#90
A(10)								[illegible]	000	N/A	#89
A(11)								[illegible]	000	N/A	#92
A(13)											#95
A(14)											#91
A(15)											

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(Y-9201-5-G(1) - operating permit)

Y-9201-5-I (24) Const. Permit for Abrasive Saw (Estimate)

Uranium Input rate — lbs/hr based on annual production
Uranium Emission rate —

Y-9201-5H-A(1,2)
Uranium Input rate —
Uranium Input rate —
Uranium Emission rate Stk 1 —
Uranium Emission rate Stk 2 —

Calculations for Y-9201-5-E(1-7)

Y

Matl. Input Rate

Y-9201-5-E(1-7)

Y-9201-5-E(1) - Development Lab Area (See Secret Sheet)

A(

	Matl.	lb/HR AVG	lb/HR	Gr/ft3	T/Y	Method	Control	Effic.
Y-9201-5-E(1)	BeO(							
H(2)								
H(3)								
H(6)								
H(7)								
H(8)								
E(2)								

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APC 21

APC 22

	Material	Input Rate lb./hr.	Air Contaminate	Average Emissions lb./hr.	Maximum Emissions lb./hr.	Concentration	Average Emissions T/Y	Estimated Method	Control Devices	Efficiency	Monitored
Y-9201-5-I(1)	Uranium		Uranium					1	999	99.97	Yes-Pe. tically
Y-9201-5 E(1)											
Y. 9201-5 B	Be & BeO		Be								
			U								
B(1)	Be		Stack 71						999	99.97	Yes
B(2)	Be		Stack 72						999	99.97	"
B(4)			SEE STACK # 73								
B(5)			Discontinued								
*	From Stack Tests Report Dated April 1990										

TITLE _____ Project No. _____ Book No. _____ 33

(1-7)

9201-5B permit

Be and Depleated U are machined in this shop

wt parts machined Before after

BeO parts

wt Before(g) wt after(g) removed

Recorded by

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9720-5 Wipe Hood for tear down EU PARTS
MAY HAVE Pu
Emission Neg. Fellers has DATA FOR NESHAP letter

9720-5

To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by	

CONFIDENTIAL

MARTIN MARIETTA

Internal Correspondence

9720-5-A

MARTIN MARIETTA ENERGY SYSTEMS, INC

September 15, 1989

I. V. Darling, 9704-1, MS-8060

Results of Analyses of Stack #130

The results of the analysis of the stack air filters for stack #130 are as follows:

DATE	TIME
07-27-89	11:00 a.m.
08-04-89	10:30 a.m.
08-11-89	1:00 p.m.
08-17-89	----

	APC 21		APC 22								
	Material	Input Rate #/hr	Air Contam.	Avg Emissions	Max Emissions	Concentration	Avg Emiss T/Y	Method	Control Devices	Effic	Monitored
9998 A	DU		DU								
Note → 1	—	—	→ Note: 1 Atest data			Oct 3, 89 (see p 27).			HEPA		#60
2								4	HEPA		
3					NON EMITTING				—		
4			(NOx)	see APPLICATION		DU	SEE MONITOR		—		#64
5			CARBON	see Application		- DU - see		MONITOR	HEPA		#62
6			DU	(oil MIST @ VAC. Pump			possiBLE)		B-2000		#61

* Room Exhaust for Swaging Machine. Based on Emission @ other D.U. samplers.

* Hyd. OIL MIST FROM FURNACE VACUUM PUMP A(6) Believed << 0.1 LBS/HR

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Witnessed & Understood by me,

Recorded by

Date

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From Page No.__

Oct 3, 1989

Field Audit

Contact: Tommy Thompson

Recorded by: John GREGORY (41713)

Source: WIRE Swedging Machines (Total of 5), Description U238 and U235 WIRE produced.

U238 AND U235 — ARE separately USED in THIS AREA, (ie; one or the other).

Some special production alloys AS Nb/U ARE RUN — but very seldom.

All 5 swedging Machines ARE completely Enclosed, AND vented/Exhausted to a MONITORED stack (#60). This STACK (#60) is only used during production operations.

Bases of Calculations(1)

Source	Material	1988 #/MO	1988 #/yr	1989 #/MO	1989 #/yr	Exhaust Stack
Y9998A-(1239)	URANIUM stack					
	U238					#60
	U235					#60

(1) These numbers ARE based on swedging production RECORDS, AND ARE subject to change

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TITLE 9401-5 Project No._____ Book No._____

From Page No.___ (chip oxidizer)

See 9401-5 File

Source Code Y-9401-5-A(1) APC 21 Line 8A Depleted U input Rate max is

G.S. 1-8-92

Y-9401-5-A(1) Emission Rate APC 22

	Avg lb/hr	Ton/YR	Method	Control	Eff
UO_2 Particulate			Test Burns	6 Prefilters	85%
				6 Pre-filters	30%
				6 HEPA	99.97%

Source Code Y-9809-A(1) APC 21 Line 8A Depleted U, Scrap Metal & Uranium Ox

APC 22 Line 8 Avg. Emission Rate Concentration

Avg Emissions

For more info. See pages 51-53

To Page N

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by	

No.

	APC 21		APC 22									
	Material	Input Rate lbs/hr	Air Contam.	Avg Emissions lbs/hr.	Max Emissions lb/hr	Concentration	Avg Emiss T/Y	Method	Control Devices	Effic	Monitored
Y-9204-2-E(68-81)											
Y-9204-2-E(68)			Particulates					2	018	99.97	
Y-9204-2-E(70)			Particulates					4	018,018	75	
Y-9204-2-E(72)								4	000	0	
Y-9204-2-E(73)			Particulates					4	018	99.97	
Y-9204-2-E(74)			Particulates					4	000	0	
~~Y-9204-2-E(75)~~			~~Particulate~~					4	~~000~~	~~0~~	
Y-9204-2-E(76)			Particulates					4	018	99.97	
Y-9204-2-E(77)			Particulates					4	018	99.97	
Y-9204-2-E(78)			Particulates					4	000	0	
Y-9204-2-E(79)			Particulates					4	000	0	
Y-9204-2-E(80)								4	000	0	
Y-9204-2-E(102)								4	99.7	99.97	

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From F

TITLE

Recorded by

Project No.

	APC 21		APC 22								
	Material	Input Rate	Air Contam.	Avg Emissions lb/hr	Max Emissions	Concentration	Avg Emiss T/Y	Method	Control Devices	Effic	Monitored
Y-9204-2-B	Chlorine NaOH										
B(18)			Cl_2	0.4	2.0	40 wtppm	1.75	4	001	95	No
B(19)			"	"	"	"	"	4	"	"	"
B(23)			"	"	"	"	"	4	"	"	"
B(24)			"	"	"	"	"	4	"	"	"
Y-9204-2-F (Press & Degreasing)				see classified 1981 permit application							
Y-9204-2-D	LiOH HCl										

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Date

Recorded by

Project No.

APC 21

APC 22

	Material	Input Rate lb/hr	Air Contam.	Avg Emissions	Max Emissions	Concentration	Avg Emiss T/Y	Method	Control Devices	Effic	Monitored
Y-9204-2E-C(12,13)	Lithium Duteride Lithium Hydride										
~~Y-9204-2E-C(12)~~	Uranium Depleted										
Y-9204-2E-A(1-11,14,18)								1	C00	N/A	
Y-9204-2E-A(6)								1	000	N/A	
Y-9204-2E-A(7)								2	999	99.97	
Y-9204-2E-A(5)			V-Uran D-Uran					2	000	N/A	
Y-9204-2E-A(16)											
A(17)											

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Y-9204-2E
A(20)

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Witnessed & Under

TITLE

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Project No.

Book No.

Witnessed & Unc...

	APC 21		APC 22								
	Material	Input Rate lb/hr	Air Contam.	Avg Emissions lb/hr	Max Emissions	Concen Tration	Avg Emiss T/Y	Method	Control Devices	Effic	Monitored
Y-9012-A	Uranil Nitrate										
Y-9204-2-C (29-51)	Lithium Compounds										
Y-9204-2-G	salt (Li)										
" -2-H											

SEE permit in classified file. - 1987

Invented by

Recorded by

Date

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Project No._____
Book No._____ TITLE Y-9204-4-A(7)

From Page No._ Y-9204-4-A(7) Forming Facility

Material Input Rates:

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Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by	1/11/91

TITLE 9980 Quality Lab

Project No.

Book No.

From Page No.

Evaluation of 9980 Quality Lab Information submitted to the Clean Air Program Office in the following letter;

L.A. Lewis to C.A. Washington June 11, 1991

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Yr.
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"

This source, which exhausts to stack #34, is exempt from air permitting requirements.

To Page N

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by	

	Material	Input Rate lb./hr.	Air Contaminate	Average Emissions lb./hr.	Maximum Emissions lb./hr.	Concentration	Average Emissions T/Y	Estimated Method	Control Devices	Efficiency
Y-9401-5-A(1)	DU		Depleted U					Sample	Filter/Filter/HEPA 85% 30%	99.97%
Y-9809-A(1)	DU		Depleted U					Judgement	B-2000	95%
								Based on 8 hr/day, 260 d/yr operation.		
Y-9404-11-A(1-										
								Judgement	D.M.	
A(1)										
A(2)				Neg.						
A(3)				Neg.						
A(4)				Neg.						

Calculations for 9401-5 + 9809 Input;
Input Rates based on 2/3/86 report by Y.C. Childs to M.A. Manuel. (single shift operation.)

I.H. TEST
@ 9404-11

4/19 A(1)
4/20 A(2
5/11 I Hygi - Guy Fowler

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GENERAL DESIGN AND COMPUTATION SHEET

JOB		DATE	SHEET
			of
ESO NO.	COMPUTED	CHECKED BY	