4053

Boi

[redacted]

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Notebook No. CL-1690

Issued To: E. J. WITKOWSKI

Issued By: J. Lovelace

DATE: 3-3-47

RUN 15A; see pages 1-4 (end of run).
RUN 16; see pages 31-53
RUN 17; see pages 91-118 (heels → 121)

scrubber OOS: p 92

[redacted]

[redacted] data as [redacted] or the disclosure of its contents in any manner to an unauthorized person is prohibited"

[redacted]

Box T-294

[redacted]

140# HNO_3
196# H_2SO_4
400# Flake caustic

6188 – Lab Stores
6341 – Regular Stores for 706 D Chemicals

This document has been approved for release to the public by:

Darryl R Hamrin 7/8/96
Technical Information Officer Date
ORNL Site

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Ted Davis 7-8-96
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[redacted]

3-4-47
8-4
WP+WJS

Run 15A

Spec. + Activity analysis

Ba	290 mgs	1925 cs LST
Cr	2.0	
Fe	<0.8	
Ni	4.0	3WFN 33 cs
Pb	<4.0	
Sr	1.6	

Product evaporating in B19 until 5 00 PM. At that time cool + remove to carrier-inspect product via viewing funnel + describe what you see. Then push carrier under chimney + take a sky shine reading-note the reading. Pull carrier back to plug position + suspend plug about 3/4 of the way in the cone-leave for day shift.

The reason for all this is to prevent crap + corruption from getting into our beautiful product.

Clean up building.

Hot S can being melted in 3rd level hood, the melt is collected in a special Al can-when all has been collected remove electric plugs cool + cap the container + insert into lead pig + shipping container. Containers on 3rd level lab bench

2 1

3/4/47 ① Status of Run 15A —
4/2
JEC

Upon lowering the cone at 5^00 P.M. for a peek at ye little damsel (Ba) who doesn't like to be made the following was observed:

Ⓐ Very difficult to observe anything due to dirty light, bad scopes, etc.

Ⓑ Appeared to have some liquid light — E.J.W. was of the opinion that this was an optical illusion, and that it was dry.

Ⓒ Below is a picture of Ba^140 as we saw it.

We took a 13 hr "shyshine" — gave a reading of 12 ~ 13 R indicating ~ 1400 c's from past experience

The plug is now partially lowered into cone — there is to be no "sky-shine" taken on 15-8.

The day shift will observe product to ascertain dryness, and will "sky shine" it then.

(2) Due either to product in S. Hot Lab or P in N. Hot Lab being tracked around — the whole 1st floor area including wash rm, change rm, entrance to bldg, & N stairways was crapped up beyond recognition. With the aid of the chemists, H.P., Bon Ami, & lastly HNO_3 the hottest spots were cleaned up (the floors are to be painted anyway). There are still numerous hot spots around — after floor dries have a complete survey made and grab brooms where we left them.

You might check other levels for as you know this stuff can climb walls —

Bon Voyage

Collier

P.S. Sulfur is being melted in head 3rd level.

3/5/47 4 ① Flushed + drained M11 tank
12-8 ② Sulphur can on 3rd level has not melted
BLAUER a bit.
③ Decontaminated stairs + N hot lab. All clean except the S hot lab which is the chemist's responsibility. 4-12
④ Cleaned up building. JCK
⑤ Did not touch the run per J.E.C.'s note 1C page 2.
⑥ A6 Sp. Gr. recorder shot. Have instrument dept. find the leak.

3-5-47
8-4

B17 H_2O rinse 12 cs
B17 HCl ether waste in lab.

B20T, B24, J1, + B17 rinsed out with 2 shots of 2 liters H_2O each.

First lead waste solution to be removed at 4 pm continue according to procedure.

A6 can not be jetted out to W9 — has one neutralized metal waste in it. hold until another metal waste can be combined with it. Jet should work if tank has large enough heel to start the flow. 12-8 Blauer

[RUN 15A SHIPPED SOME TIME 3/5/47]

P. 143

Please replace full bottles with empties at Pr set up in anti room.

4-12 JCK

1. Need some chart paper in a micromax on PB1 — Day shift take care of this
2. A1 reached temp 104° at 6 00 PM
3. Liquid level indicator for A6 on PB1 not working properly — manometer line plugged, blown on ??
4. S.S Fittings on jet lines A9 — B26 A & B Leak
5. Integron on 3rd Floor + 2nd Floor PB1 showed an increase when the HCl Ether waste was brought into the bldg. Moved HCl Ether waste
6. 3 W.Pb = 13.8 c's at A.T 15 at Ship, T.C
7. Rinsed all cubicle equipment and Cell B equipment once
8. Cleaned up N-Hot Lab in Places
9. A1 — Heel dissolving
10. A6 has enough material in it to neutralize A1, A5 sol'ns

12-8 Blauer

① Rinsed equipment in Cell B several times from B26 — B27 — B12 — B7 — B3 — B10
② Rinsed glassware from B6 — B21R — B21T — B20T — B3, B21T → B17 → B21T → B19, Also rinsed through

B21 Recycle line.
(3) It takes 2 hrs to put 2 liters from B21R to 21F
(4) Housekeep a little.
(5) Heel still dissolving.

3-6-47
8-4
WJS

Cell A vessels rinsed out with H_2O + washes are being held in A-5 until further notice. A6 contains metal waste soln — have hope that the ring balance on A6 can be repaired by the end of this shift. As soon as the liquid level can be ascertained jet soln to W9.

Iodine cubicle W side of cell A has been partly torn down. Continue the wrecking + store lead bricks back of cell B. Water carboy nearest cell A is reading ~ 75 mr/hr. remove + dispose in decontamination room drain.

p 32

P run #22 is settling in N hot lab. Start filtration + continue as per procedure. Procedure for [illegible] is on bench in N hot lab.

Apparatus functioning properly. Use resin column #2 for Fe removal. Regenerated + ready to go.

Cu 1 1600 mls

4-1

12-8
Blau
3/7/4

Pr 143

Continue replacing full bottles with the properly labeled empties. Follow through day + 4-12 shift tomorrow on replacement.

4-12 1. Removed remaining Pb bricks
2. Cleaned up Decontamination room
3. Watched + replaced bottles for Pr 143
4. P32 is to run thru the resin column if the normality is okay Check Lab for results. Sample is labeled P1

12-8
Blauer 3/7/47 ① Had to butt up Phosphorous to .1N from .01N with 8C.C. HCl.
② Cleaned up two hot spots in N hot lab per HP survey sheet
③ Did not jet A6 to W9 because the Sp.G recorder on A6 is out of order. Please get it repaired Cant calculated volume dumped without Sp Gr.

Tony Skraba ÷ The lab unfortunately fouled up the analysis twice by misreading the burette by a factor of 10. The solution was actually .1N to start with. I checked their calculations which came out O.K + accepted their figures both times. I added 8C.C 12N HCl + then 7C.C 12N HCl. The result was still low according to them. I watched them run the next sample + noted that they read the burette in .01's instead of .10's. So we had to dilute with 1847 C.C

of water to give a total of 2867 c.c. of solution. I am sorry this happened because it certainly will delay the run. 3-7-4 4-12 JCK

P1 of Run P22 — 1165 mc's total
.06 mg/ml of Fe or
172 mg's total.

3-7-47 8-4 WHP 1. Jim Collier is sick this morning + will not be in.

2. P22 run still has some solution to go through resin column.

3. Watch Pr 143 bottles please.

3-7-47. J C Kaskie has information on handling isotope carriers. the macassary tools are in my table. Please pass this info from shift to shift.

Carriers to be decontaminated over the weekend are by the middle door. The papers for these are on my desk. Please note the time you spend on decontamination. Use soap and water on the 105 carriers first. Have H.P. check the parts that you work on. You will note from the papers what parts need decontamination. H.P. can help you. 3-8-4 12-8 WJS

Thanks
Lee

4-12. Two corrections in I run sheets. Refer to Run sheets Run 114 pages 3 + 8 JCK

3-7-47
4-12 One isotope container is in decontaminat
JCK room awaiting further decontamination.
Work only on one unit at a time,
so that they won't get mixed.
I-Run 115 is in process at shift
change.
All house keeping items except 1+2
& part of 3 have been completed for
3rd Floor.
2nd Floor level items completed
except No 8 - requires a welder
1st Floor - items No 12+13 have
been completed.

Tank Farm man please return tarp
covering $CaCl_2$ to Maint. It is charged
out to J.C.K.

3-8-48
12-8
WJS Adding oxalic acid to I 116
Finished I 115
Decontaminated 4 carriers to probe -
smear analysis will be run on the 8-4 to
determine whether carriers are ready for
re-shipping.
~ 2 carriers remaining for decontamination -
located on floor next to isotope packing
room.

Run influent through one bottle on Pr column + finish off tygon. 3-9- 8-4 WHP

Did not do anything on housekeeping — short 2 men on shift 4-1 JA

3-8-47 8-4 WHP
1. Finished Safety and Housekeeping report including R.O.'s for maintence items
2. I 117 is ready for first distillate
3. Decontaminated last two carriers but HP hasn't checked them. They are around on the S side of Cell A.

3/8/47 4-12 JK
1. Decontaminating and completed assembled 6 carriers (2 under stairs at East door of 4 in janitorial room). 3-10 12-
2. Completed I-117 and ran I-118 ny
3. Combined samples 114-2A, 115-2A, 115-2B, 116-2A, and 116-2B as per instructions Mr Whitney. Composite sample # 116-2A 3-7
4. Pr column still operating. 8-
5. Hot lab cleaned ready for I-119 WH

3/9/47 12-8 ny
1. Completed I-119 one more to go
2. Pr finished going through column
3. Cleaned up N H-lab for run I-120
4. Gathered up types of Ba sample equipment for study & improvement.

3-9-47 1. FINISHED I_2 RUNS (#120)
8-4
WHP

4-12 1. A-16 fan was shut down at
JCK 4:20 PM. Valves to the standby line at fan house and at the base of the pole in the 205 area were opened + closed. Air activity will be watched.
2. Combined samples 117-2a, 118, 2a, 119-2b, & 120-2b
Composite sample # 120-2BC
3. Check with chemists on day shift for tank farm analysis. There is some question as to the reliability of the results we have.
4. Did some housekeeping

3-10-47 1. Replenished solutions for I^{131}.
12-8 2. Cleaned out right S.S. drum in decon. room
WJS and decontaminated equipment found in it.
3. Air count on 3rd level ok.

3-10-47 1. Started inventorying low storage area.
8-4 2. Delivered one Sulfa can to 105.
WHP 3. Air count ok.
4. Fireman broke window on 1st level at foot of stairs while testing fire hose. Issued R.O. for repairs
5. See E.J.W. or J.B.W. for combination to safe in this office which is used on guard check list.

3-10-47		3-12-4
4-12	P.F. Phillipps will not be in in 12-8	8-4
JCK	shift - sick - notified by telephone	
3-11-47	①	
FZ-8		
W.Y.G		
3-11-47	1. D.C. King has the flu and will be	
8-4	out for a few days. Medical has been notified.	
WHP	2. Finishing up trench by cubicle.	
4-12	Decontaminated 6 isotope carriers.	using p
JCK	Had 1 isotope carrier repaired.	paper
JCP	5 cnts of HCl - 6N - were passed thru	
	the P^{32} column.	
	4 more carriers to be decontaminated.	
3-12-47	① Finished Decontaminating isotope	
12-8	carriers.	3-12
WYG	② Made up work orders for sampling	4-1
	equipment.	Blau
3-12-47	Decontaminated carriers	
8-4	Inventory is still being taken in	
WHP	low storage area.	

3-12-47
8-4

Sulfur can being melted in 3rd level hood. Upon completion turn off top oven + leave for day shift.

Run 200 ml of 6 N HCl through resin column #2 in N hot lab + take 2 100 ml cuts - save for day shift.

Bottle containing soln P22 AR is behind low barricade in N hot lab. pH of soln at present is 8.8 - add 1 N HCl, a few drops at a time + lower pH to 2.0. Add 0.4 ml of 3 mgs $PO_4^{\equiv}$ per ml soln located on $\equiv$ bench in N hot lab, stir. Bring up the pH to 8.0 using pH meter this time, with fresh NaOH soln, filter + submit sample of filtrate to lab. have run for activity T.S., N.V.M., + Cl^-

using pH paper

3-12-47
4-12
Blauer

① Tony Skraba - P22 AR is in earlenmeyer behind low barricade in N hot lab. It has an inverted beaker over the top. It was reduced to PH 2, .4 ml of $PO_4^{\equiv}$ was added, raised to PH 8 with fresh NaOH, vacuum filtered through sintered glass filter sampled + is now marked on earlenmeyer as P22 AR. Final PH = 8.0. Hope it is O.K (Filter disk was discarded.)

Also Put 2-100 ml shots of 6 N HCl through column #2, each shot being caught

in a separate earlenmeyer marked Column #2, 6 N HCl cut 1 + Cut 2. 3-13-4 8-4

(2) maintenance repaired ammonia leaks + steam leak on hi pressure line of PB 4A. Also repaired leaks on building heating fan.

(3) Ira - The head gauge is back in your desk.

(4) REMOVED + discarded to red can the crud filter from cell IV + from the decontamination room. The Red can is tagged + has a danger sign near it.

(5) Emptied A6 to W9 750 gallons. Did not touch A5.

(6) Removed Radioisotope carriers to 105 bldg. as per I.B.W. Those near decontamination room are to be smear counted by H.P. on day shift. 3-13 4-

(7) Shut off oven for sulphur can melt. Blau

13 Mar 47
12-8.
wy 3.

1. Recampled P22AR Final for lab as original sample could not be located. 8-4 [illegible] NOT

2. Wrote up HP exposure rpts.

3-14-
12-8
wy

3-13-47
8-4

No P^{32} tonight however clean up around + inside hood on 3rd level. Save the equipment but remove paper. Try to reduce the radiation if necessary build a small barricade for the hot equipment.

Lead barricade removed from Rupp's P^{131} set up.

Gear box on A9 agitator removed + taken to shop for repair.

3-13-47 ① Decontaminated carrier #36499 + delivered it
4-12 + carrier #37990 to 105 shipping room.
Blauer ② Cleaned up hood + replaced paper in hood on 3rd floor. Still has spots there. Don't loiter.
8-4 ③ A9 sp. gr. manometer won't zero. Will the 8-4 please have it repaired?
Please note
④ Loaded 4 Sulphur cans. They are under 3rd level hood with wgts. of Sulphur marked on cans. Will the 12-8 again clean area at hood + replace paper? Thanx — note hot spots marked by H.P.

3-14-47 1. Cleaned up Hot spots of Hood Third
12-8 level.
wyJ. 2. Prepared for long week end!!!

3-14-47 ① Continue running P^{32} soln. through
8-4 resin column #2 follow with a 100 ml
H_2O rinse - save the effluent for
day shift monday - take sample
label P2 + analyze for Fe + Activity

Not
SKPAB

② Pick up Te sample from 105
and start an iodine run - continue
on 12-8. There are 7 to be run
over week-end.

③ Product carrier returned
from "Y" - Stored over Hot
Lab - please check for
contamination

④ Several "hot" spots on 3rd
level (near head). Readings are
Marked Earth Crayon on floor.

3-15
12-
WH

3-14-47 ① Took all old charts from 3rd floor office to
4-12 low storage + packed in a wood crate
Blower ② Finished I 121 + started I 122.
Continue to run Iodine as continuously as
possible. Seeded I 122 with cut 121 2C (750
mr/hr). Took special preparation on cut 121-23
per T.B.W. That is added 5 ml .3N NaOH +
5 ml KI carrier. Diluted to 50 ml + presented
to lab. to run for Te + I

3/15/
8-
JEC

③ Sampled P23 run of P32. Marked P2 sample in lab for Fe & activity.

Note → No volume was taken of flask contents.

SKPABA The column was not regenerated by us. Flask & contents behind low barricade.

④ Decontaminated 2 cones + 1 plug returned from Y. The carrier is OK. Cones + plug are in cabinet on 3rd level.

⑤ There are 3 more Fe ~~sample~~ containers in carrier under vault.

⑥ Emptied vaults I + II of all contents per I.B.W.

⑦ DON'T FORGET TO CORRECT EACH RUN BOOK ON IODINE — Add step 8 A. 50 ml 36 N H_2SO_4 and continue to take 35 ml cuts until 200 mr/hr is reached.

3-15-47 12-8 WHP

1. Finished I-122 and started I-123.
2. Decontaminated some of the hot spots on 3rd level.

3/15/47 8-2 JEC

① Finished I-123.
② Made up Run books for #16.
③ Finished decontaminating hot spots in Bldg.
④ I-124 — Ready for Step 7 in Equipment Clean-up.
⑤ Run Iodine continuously

(over)

(6) There is a Te sample for I-125 in Carrier near storage vaults in Hot-lab ante-rm. Two remaining Te samples are to be picked up at 105. They have already been signed for

3/15/47 H. Blauer
(1) Started + finished Iodine run #125. Started run 126
(2) There is one more Te sample in container under the vaults.
(3) Repaired leaking valve in washroom.
(4) Did some housekeeping
(5) After finishing the last Iodine run will someone please empty the 18N H_2SO_4 bottle + wash out the ppt. on the bottom.
(6) Seeded Run I-126 with I-125-2A + 2D

3-16-47 12-8 WHP
Finished I126 and Started 127. Adding Oxalic now. (only one man on.)

3/16/47 8-4 Collier & Perry
(1) Completed last Iodine Run — I 127 —
(2) Decontaminated dos tape Carriers.
(3) Composited Iodine Samples — 127-2AC

3/16/47 Blauer
(1) Moore had to go to Memphis as his father is critically ill.
(2) Recuperating from the past strenuous work.
(3) Cleaned hot spots in N. hot lab.

3-17
12-
WHP

3/17
8-
Jec

3/17
4-
Blau

3-18-
12-
WHP

3-17-47 Finished Low Storage Inventory.
12-8
WHP My phone # is 5-3165

3/17/47
8-4 Verbally to Blauer
JEC

3/17/47 ① Only 1 man this shift.
4-12 ② Delivered 4 carriers with isotopes to 105
Blauer shipping room. Delivered 5 empty carriers to 105
shipping room.
③ Finished repairing air trap S side cell & 2nd level.
④ Set up contraption for I.B.W. in N. hot lab.
⑤ Checked 7 "D" building type I sotope carriers + decontaminated one. The other 6 are O.K. for B+G. (The alpha smear counts are to be counted on 8-4 3/18/47)
There are 11 "105" type carriers to be checked.
⑥ There is to be a safety + housekeeping inspection tomorrow according to E.J.W.
⑦ Placed 2 hose reading 10 mr/hr in low storage area

3-18-47 Sampled P23-P3 for lab analysis after
12-8 raising pH to 11.3
WHP

3/18/47 8-4 COLLIER PERRY KING

(1) Decontaminated isotope carriers — carried to 105

(2) Decontaminated N. Hot Lab.

(3) Attempted to clean M-11 — Tank is now MT — as to method of removing sludge — your own discretion.

3/18/47 4-12 Blaier

(1) Washed + drained M11 tank all night. Continue this until M11 is clean.

NOTE COLLIER — M11 coil has a hole in it.

(2) Checked 2 loaded carriers — The long narrow carrier will not pass H.P. specs. It reads 20 mr/hr through the side.

(3) Phosphorous P23 - 24 going through column #2. Follow with 100 ml. of H_2O + let sit till day shift.

(4) Change bottles under Pr. set up as needed.

(5) 8 carriers checked. 5 are O.K. except for smear counts on 8-4 tomorrow. 3 are hot, one of the three has a bottle

#31338 ← Exit + is to be handled by I.B.W. himself according to H.P. There are 4 more to be checked.

3-1 12 WK

3-19- 8-

3-19-47 1. Finished cleaning M-11 and left column
12-8 on coil (which will have to be replaced).
WHP 2. Finished running P23-2A through
column #2 and washed with 100 ml H_2O.
3. Finished P_{32} 143 run and pinched off line
4. Decontaminated carriers #31340 and 31390
(see #5-4 to 17 on 3-18-47).
5. Checked four other carriers. 3 were o.k.
and #36883 also had a bottle in it.
6. Decontaminated hot spots in locker
room and in N. hot lab. N. hot lab
is quite hot around low barricade where
P^{32} is being run.

3-19-47 P^{32}
8-4 P-23 P-2a is evaporating slowly
on steam bath in N hot lab. When
volume gets down to about 200 ml
transfer into a 500 ml erlenmeyer +
evaporate to dryness. Leave for day shift.

Start S melting about 3 or 4 am midnite
shift. Equipment set for melt-can of
S in oven just plug in the two
ovens.

Rinsed glassware. 1 liter goes through from
21R to 21T in 3 min. 1 liter goes through
20R to 20T in 1 min. All other lines ok
except poor visibility in cell T.

19 Mar 47 1. Maint repaired steam leak in I W office
4-12 2. Made qual. transfer from B-23-B20
wy J. to B17 & also to B21 to 17. → B19
3. Decontaminated six carriers.
4. Phn is not down to 200 ml as yet. 3-21

3-20-47 1. Made up 16L 40% K_2CO_3. Lab has sample. 12-
12-8 2. Started S ovens @ 3:00 AM. WH
WHP 3. P^{32} Run 23-2A is not dry - in 500 ml Ehl. 3-21
4. Precipitation showed 25% tolerance @ 6:00 AM 8-4
in N hot lab. Blau

3-20-47
8-14

3-21
HJ

3-20-47 ①. Decontaminated 4 carriers ok'd by HP.
4-12 ② Checked I^{131} set up & found in
wy J. shape for next run. Washed outside
of the entire set up.
③ Made up all Run sheets for I^{131}
in I W office at 3:00
④ Cleaned up the building to a
limited extent & wrote up Housekeeping
items not completed.
⑤ Ran P^{32} from neutralization
through taking samples W-1 & P-1
P25 P1 & W-1 are on W east of barricade

(on floor in N. Hot lab.) Hold for day shift. Did not adjust Ph on P1 as lab has not completed anyalies.

3-21-47 12-8 WHP — 1. P23-2A is dry and still on Steam Bath. 2. Finished housekeeping Items.

3-21-47 8-4 Blauer — (1). M11 coil fixed + tested. Tank cover replaced. (2) Extension cord + trouble light were placed in low storage. (3.) There are ~~300~~ Iodine runs to be made starting on 4-12.

Week End P32

3-21-47 HJ — Continue running P24 through resin column follow with 150 ml H_2O rinse. Sample + have analyzed for activity + Fe. P-2 sample code. Place the 2 lite erlenmeyer on steam bath using 2 radiant lamps as aids in the evaporation. ~~[illegible]~~ Evaporate to ~ 200 ml then transfer into a 500 ml erlenmeyer + continue evaporation to dryness. Heat ½ hour longer + remove flask from steam bath. Add 100 ml of hot distilled water to pick up residue then add

100 ml of cold water - swirl, transfer to 400 ml beaker. Adjust pH to 7.5 - 8.5 on Beckman potentiometer with .3 N NaOH - adding dropwise with stirring. Transfer back to 500 ml erlenmeyer & cover with inverted beaker. Place flask behind high barricade. Do not forget to sample this solution - label run P 24 P 3. Analyze for activity, Cl⁻, T.S. & N.V.M.

Rework P 24 Waste (W-1)

Transfer W-1 solution P 24 into 2 - 4000 ml beakers - place on steam bath and evaporate over week end. 3/21 12 JE

Paper working area.

21 Mar 47 ① Completed I - 128

4-12 ② Two more samples are under vault in Hot lab. - Two additional samples are up at 105 Bold.

wy 3, ③ P-24 finished going through column. Sampled & set on steam bath in N Hot lab.

④ P-24 W-1 in 2-4000 ml beakers on steam bath in N. Hot lab.

(5) Dumped 10 bags Chloride & Carbonate in W-5.

=

12-8

Our I-128-2C race only 250 mr/hr add it to your track for new I-129 etc as per instructions on page 42 other log. Pass this info. on to the next shift.

See phos. instructions on opposite page.

3/22/87
12-8
JEC

(1) Completed I-129 — added 128-2C & 127-2C

(2) Phosphorus product & waste solutions still being evaporated in N. Hat. Lab.
(Note instruction on pp. 23, 24).

(3) One more Te sample in carrier in Hat. Lab. Ante room. Other two are to be picked up at 105.

(4) Regards adding low cut dodines see page 42 in "Instructions to Shifts."

//

3-22-47 ① Completed I-130. Seeded it with I-129-2C + 2B.
8-4 ② Decontaminated carriers. They are now awaiting
Blauer & smear counts.
③ Started I-131. Seeded it with I-130-2C + 2D.
④ Transferred P32 from P24 to 500 ear lemeyer flask.
It is still evap on steam bath
⑤ One more Iodine run to make. Samples in
carriers.

3/22/47 ① Completed. I-131 & 132.
4-12 ② Made set up in packing room
wy3. for weighing out "Vitamin B" weighed out
16 - 50. gm ± (.001 gms)
③ All Phos samples still going down
to dryness in N-Hot lab. When
the flask sample is dry see page
23-24 for instructions
④ PE Phillips went home at 2030 due
to sickness in family
⑤ Cleaned out empty acid bottles on back platform
that some one had set out without
washing.

3/23
12-
JE
&
E.

Attend
d

3/23
8-
Blauer

3/23/47 12-8 JEC & E.L.

① P-24, P3 carried to dryness & dissolved in distilled H_2O. In attempting to adjust pH to 7.5-8.5, three drops of 0.3N NaOH were added in rapid succession which gave a pH of 10.5. Upon contemplating results of adding either HCl or HNO_3 to drop pH it was decided to leave it at pH 10.5 for "powers that be" to decide. Consequently the final sample P24-P3 was not taken.

P24-6, waste solutions were carried to dryness, & steam bath shut off.

② Continued weighing of "B1" — to the tune of 25-50.000 gm samples.

Attention IBW

③ What internal effects might result from the inhalation of excessive amts. of B1? Thats why I am watching you IBW

3/23/47 8-4 Blauer

① Adjusted PH of P24 P3 to 8.6+ sampled.
② Weighed up 3 more bottles of B1 50.0 grams each.
There are no more bottle caps over in the storeroom.

③ Checked + greased the 2 slug carriers.

Bill Gisset ④ Paul E. Phillips won't be in tonight His two babies are very sick. discom

⑤ Made 132-2BC composite from 128-2A, 128-2B, 129-2A, 130-2A, 130-2B, 131-2A, 131-2B + 132-2B Added 5 ml of 1M $NaHSO_3$ neutralized to p.H of 7.2 with ~ 3N NaOH. Sample is in 1AB

⑥ P24 P3 Final sample = T.S = .2 mg/ml. Cl = .02 mg/ml activity = 2.18 mc/ml.

⑦ There are 9 carriers near stairway to instrument shop which are O.K. for α, β, γ. There is one carrier #30749 which is O.K. for α but high for β + γ. The contamination is on the lead shielding

3-23-47 4-12 mjs. ① Cleaned up 1st floor including moving slug carriers to top of R. Lab.

② Decontaminated iso tope carrier that was supposed to be too high.

③ Completed drawings of P.17 sample carrier.

④ Cleaned out phos. glass equipment etc in decontamination room. Most of the gear near is in S.S. drum in a citric acid solution.

⑤ Filled A9 grease gun. 3-24 [illegible]

3/24/47 12-8 Very little to do.

3/24/47 8-4 Blaine ① M11 steam lines were lagged.

② T2 lightning Agitator is under going repair. There is an essential part in the shops for repair

⑤ All jets in Cell A checked for plugging except

A9-B26 jets. The jets checked were
disconnected → A1-W11, A1→A11, A11-A1, A1→A9A, A1-A9B, A9-A8, A9-A8,
(A9-A8), A8-A9, A8-A11, A11-A8, A11→A5, A11→A5, A5-A8,
A8-A11, A11-A1, A1-A6, A1-A11, A11-A6, A8-A5DA, A8-
A5B, A5-W11, A6-A5, A5-A6

A11-A1 is partially plugged + has not been repaired yet.

(3) Hold materials in A5 + A6 as they are. Tank farm not ready for them.

(4) Welded leak in 706-D stack where off gas line joins the stack.

(5) Lead shield placed on line to Iodine set up back of PB1.

(6) Replaced A9 Sp gr manometer.

(7) Removed B21 Reactor to burial ground

(8) 40 L 25% HNO_3 + 2L H_2O_2 in B6 + sparging. Pb removal. Result was 29m of lead.

(9) Replaced B21 Reactor. Note that cubicle is 3700 mr/hr. The clamp is not tight.

(10) M11 Sample is in the lab. 34.8%

3-24-47 Follow P32 the clipped instructions for P24 rework.

(11) All instruments have been checked + repaired made on B3, B1, pipette air flow.

3/24/47
4-12
wy J.

(1) Took 5 carriers to 105 Bld per T.V.
(2) Checked all sample blisters. B-1 is slow & we left circulating. All others OK.
(3) M3 & PB1-8 are OK.
(4) Made up 80 in 4% NaOH in M10
(5) Dumped 2 Drums 800# 76% NaOH in M1 & made up 35% NaOH in M11. Analysis 36.7%.
(6) Filled T-6 with 35% NaOH.
(7) Dumped 1 carboy of HNO_3 in M4.
(8) Processed Phos as far as going column. Still going through column at shift change. Sampled both P1 & a W1 of P24A.
(9) B6 is still sparging.
(10) Put glassware away & removed other wes in N Hot lab & vault rm.

3/25/47
12-8
Reary
King

(1) Pumped 25" H_2SO_4 in T-3.
(2) Unloaded 2 carboys H_2SO_4 & 2 carboys HNO_3.
(3) Tightened clamp on B-21-R. Should be rechecked. Top hood is not in place.
(4) We need SS. washers for taking blister samples.
(5) Evaporating phos soln. as per last step of instructions.
(6) Started 500 ml 6N HCl thru resin column (Phos).
(7) Emptied B-6 & refilled with 40 L. HNO_3 & 2 L. H_2O_2. Lab analysis still shows 2 gm lead. Check analysis to be run on this. B-6 now sparging.

3/2
3-2.5
3-25-
4-12
wy J

3/25/47 (1) Repaired + unplugged A11-A1 jet
8-4 (2) Checked + cleaned scales
Blauer (3) All periscopes used in process were reworked + lenses polished
(4) Coating removal solution in A1 — All steam headers on the board are off
→ (5) Bill Jewel — Changed the testing solution for PH on the A-16 off gas line
(6) Cleaned old sample tubes from all blisters
(7) NOTE that A5 has carbo phosphate in it. A6 has waste for W11. Also A16 water + ammonia are not on although the fan is
(8) One drying tube is cut out. The other is reading 12 R. There are 2 drying tubes in desk drawer opposite glass equipment cabinet
(9) Steam fan on with electric fan

P32 Run P24A

3-25-47 Follow procedure sheet attached to this page for further processing.
Box behind high barricade in N hot lab contains 3-P^{32} samples from Rupp.

3-25-47 (1) Loaded only 273 slugs of removed coating
4-12 of washed. Ready to be dissolved
mjg. up starting at 1:00 A.M. See Sup. Log page 43 for F.J.W. instructions

over

(2) Remove drying tube & took to burial ground Road 7R.

(3) Plus still evaporating.

(4) Two slugs hung up in "A" carrier but came out by a little persuasion in the nature of 10# sledge!

3/26/47
12-8
Collier-
Perry-
King-

(1) Installed glassware drying tubes.

(2) All radiators on East Side bldg. on "fritz" - emergency maintenance contacted & will notify DAY CREW.

(3) Run 16 Status:

Batch "A" - Digesting in A9 @ 80-90°, until 8:15 AM.

Batch "B" - Dissolving.

(4) Please reseat B6 Sparger bubbler. — Terrific leak. —

3/26/47
8-4
Blauer
Russell

(1) Repaired B6 bubbler

(2) Run 16 1MA

326.3 C's at A.T 62.4 slugs
5.23 C's per slug dissolved

3-26
4-1
SJ
&
WH

(3.) T_2 agitator repaired.
(4) IMB results Run 16
332.2 C'S A.T.
5.43 C'S /slug
61.2 slugs dissolved
(5) M_{11} Caustic is 38.7%
(6) NOTE: Batch 1MA in A9 through digesting at 4 20 PM
Batch 1MB in A_{11} ready for A9.
Batch 1MC is dissolving.

3-26-47 1. Jim Collier - have Ogle stop in to
4-12 see Ed Witkowski before he goes home
SJR tomorrow AM. -
+ 2. Decontaminated 3 carriers. They have not been
WHP rechecked by HP.
3. Decontaminated hot spot on sink in N Hot lab.
4. Status of run at end of shift:
Batch A - in A6 cooling for transfer to
A-5 which has Carbophosphate in it.
Apparently A11-A5 is plugged.
Batch B - Settling cold in A9 until 2 45 AM.
Batch C - In A11 waiting for A9.
Batch D - A1 has Coating Removal
Soln in it cooling. Carrier A is
loaded on truck. B is at 105.
5. P^{32} Run P24 A-P3 stored in Vault #3. It was
neutralized to pH 8.8 and contains 89 mc.
6. 1MC - 319 c AT 5.65 Slugs
239 c ST 5.65 C/slug
8WMA 15.8 c AT
11.7 c ST.

3/27/47
12-8
Collier

① Due to difficulty in pushing slugs at 105, slug loading completed at 5^50 AM.

② Carriers stored over hot-labs. –

③ Loaded 377 Slugs (27 extras from 1st loading) adjusted Coating removal Solutions to new figure. –

3-27-
4-1
RIMSHAW AND PENNING

④ Run Status:

BATCH A – W-9'd. –
BATCH B – Settling in All till 9^00 AM.
BATCH C – Settling hot till 8^22 A.M.
Coating Removal – Ready for Washes.

3/28

⑤ Items of interest:

8WMB – 225.0 C's @ A.T.
172.4 " " S.T.

3/27/47
8-4
Blaner

① Perimon 16 1MC is
319C A.T. 58.1 slugs 5.49 C/S/slug

② Run 16 6WMB
9.27 C's AT
7.20 C's S.T.

③ Run 16 1MD is
AT = 491 C's 69.5 slugs
S.T. = 385 C's 7.06 C's/slugs

8 W M-C 257 c's S.T

(4) A11 settling till 7:30 P.M
A9 Settling hot till 6:30 P.M
A1 Dissolving batch E

3-27-47 1. Status of Run #16
4-12 C - In A6 ready for W9-6WMC = 10.2c
RIMSHAW AND PENNINGTON D - Ready to decant A9-A8
E - In A11 Waiting for A9-1ME — 468CAT 69.3 SL. — 371CST 6.8 c/SL.
F - Just diluted in A1

2. Decontaminated 36,243. Waiting for HP & count as is 36,239.

3. Charged NH_3 cylinder @ 11:30 PM

3/28/47 (1) Thermocouple on A9-A8 DA
[12-8] "no work-ee".

(2) Attention Supervisor & Operator. Note Book Containing "Standard Operating Procedures" is now located on desk at PBC.

(3) Items of Interest:

1MF — 377 c's @ S.T.
72.5 Slugs
8WMD — 149.0 c's S.T.

(4) Two drums of flake caustic were made-up in Mill. Concentration hasn't been checked.

(5) Started melting can of sulfur on 3rd level at 3 am.

(6) Run Status:

A1 — Batch G dissolving
A5 — 1 Batch Co - PO_4
A6 — Batch D - Ready for A5
A9 — Batch E — Settling cold till 10:15 AM.
A8 — MT
A11 — Batch F - Awaiting A9.

(7) Air Count rose in Bldg. at ship & change - everyone's clothing was contaminated appreciably - have HP check.

3-28
8-4
WP +
3-2
4-1
SJ
&
WH

3-28-47
8-4
HJ + HJG

1 MG 274 cs
8 WME 137 cs

A1 Ready for batch H dissolving

A9 Batch D settling until 8 25 p.

P32 P-25

S extracted + the sampled acidic extract is in the N hot lab high barricade ready for Fe(OH)3 pptn. as soon as the Fe content of soln. is determined. Add enough Fe to soln. to make 60 mg total of Fe + proceed with instructions page 5 A-11.

3-28-47 1. Status of Run: (Barium)
4-12 Batch H - in A1 diluted & Sampled
SJR " G - in A9 - settling hot until 2AM
& " F - in A11 " until 2 58 AM
WHP

6WME - 18.7 curies
8WMF - 44.0 curies
1MH - 374 curies

2. Iodine:
Completed Run # 133.

3. P^{32} - Cl 1 neutralized to pH 7.2 and stored in vault 3, 550 ml.
Run P25 neutralized, settling in N hot lab. ready for filtration when $Fe(OH)_3$ is settled out.

3-29
8-4
HJ+

12-8 3-29

RP 1. P^{32} in N. hot lab filtered. It is ready for part C of instructions

2. Batch I dissolving in A-1

3. Batch H - Extraction started

4 Batch G in A-8 sampled & ready to go to A-11

5. Floor by sol addition funnels was decontaminated

3-29-47
8-4
HJ + HJG.

Run 16

A1 Dissolving feel

A9 Batch H settling until 5 25 PM

A11 Batch I metal soln.

B-6 Second batch of 25% HNO_3 + H_2O_2 sparging.

I^{131}

Run 135 — adding oxalic acid.
Finished run 134.

P^{32} run P 25

P1 solution going through resin column. Follow procedure - Procedure on top of table in N. hot lab.

ny 3. PB6 Rinse analysis

Old rinse 2.86 gms Pb Total.

New rinse (3 hrs after add 2.2 gms Total.

New rinse added over splash plate.

3-29-47 1. Status of Run 16 at midnite:
4-12 Batch I - Settling in A9 cold until 3:50 AM
SJR Batch H - Settling in A11 until 12:00 N
+ Batch J - Diluted but not sampled in A1.
WHP Batch G - in A6 ready for W-9
2. P25 - ready to be sampled and evaporated

3. Completed I # 135 and 136 - one to go.

4. B6 rinse boiled and cooled. Sample is in lab.

3/30/47 (1) 8 WMH = 45.1 C'S
12.8 (2) Batch G to W-9 432 gals.
H. Blaum (3) One more Iodine run to be done
H. Russell (4) P25 P2 sample in lab. - Run is evaporating on steam bath. 1665 ml total
(5) Column was not regenerated.
(6) B6 for Pb was 32 mg/liter. Total of ~ 1.2 gms
(7) Batch J - Heel dissolving sampled + in lab. 220 C's at A.T. 45 slugs dissolved 4.89 C's/slug
(8) 2nd Pb removal was 356 mg. total.
(9) P25 P2 result was ~~169~~ 195 mc's Fe = .004 mg/ml.
(10) 8 WMI 270 C's lost.
(11) Batch H to W9 — 400 gals. of Metal Waste
(12) 4th Pb removal was 491 mg total
(13) RUN STATUS
A1 HEELS BATCH J SAMPLED
A9 2ND EXTRACTION WATER WASH SETTLING TILL 8:35 A.M.

3/30/47
8-4

A11 — 8WMI - Settling till 10:15 A.M.

3/30/47
8-4

1/ Washed B6 with 3-40L rinses of H_2O (distilled) over splash plate.

2/ Added 35 L 25% HNO_3 sol. & Heated solution:

Pb Analysis:

1.00 - 55 mg/L.

2.30 62 mg/L.

Next shift.

Continue to cook. Sample about every 2 hr & Have Pb run. When Pb levels off get out solution and add 40L on HNO_3 (25%) There is no H_2O_2 to add.

A1 Heel (dissolved).

A9 Starting second metathesis

A11 Contains heel of batch I extraction soln + 8WW soln. Resampled 8WW because of high reading on first sample. Did not have time to wait for resample results so decided to settle it in A11

A8 1st metathesis decant

P^{32} P-25

Continue evaporation in 2 l erlenmeyer until ~ 200 ml then transfer into 500 ml erlenmeyer + evaporate to dryness.

Take up residue in 100 ml water, no more. Adjust pH to 7.5–8.5 + sample.

Cleaned up lead floor on third level. Will you have H.P. take smears + survey area.

3-30-47 SJR & WHP

Run Status:

A9 – Batch J

A11 – Part of combined extracts settling – to be jetted to A9 after Batch J is decanted.

A1, A5, A6 and A8 – MT.

Radioisotopes: P^{32} – Filtrate being evaporated in 2 liter flask was transferred to 500 ml flask, and evaporation was continued

I^{131} – Combined 133-2A, 134-2A, 1352A, 1362A, 1372A and 1372B under code 137-2AC. Added 4.5 ml 1.0 M $NaHSO_3$ and titrated to a PH of 7.3 with 0.3 N NaOH (10 ml). Combined solutions stored in Vault #2.

B6 – Last analysis showed a total of 660 mgs of Pb. B6 is now sparging cold with 25% HNO_3 and 2.0 liters of 30% H_2O_2.

3-31 12 Blau + Russ

A11 contains about 20% of combined extract from A9. We added 60 ml of 20% $Pb(NO_3)_3$ and 125 cc 90% H_2SO_4 to A11 and are now cooling to settle out activity in A11. Settle until about 3:00 A.M (E&W will call about this). Decant to A6 and sample. Hold settled out ppt in A11 until A9 is decanted to A8 and 5:00 A.M. Then sparge heel in A11 and jet to A9. After sampling A8, jet about 1/4 of A8 to A11. Sparge and jet to A9. Settle A9 cold until day shift comes in.

Special A9 sample - showed 2170 C's at shipping time.

8-31-47 ① A6 tank rinsed prior to decant of A11 + sample.
12-8 ② Cleaned up W hot lab a little
Blaser ③ B6 sample from 4-12 shift was 1360 mg Pb Total
+ Russell ④ 12-8 B6 rinse ran 300 mg total 1st SAMPLE
⑤ Sample from A6 after decant from A11 was turned 6 W M T 4 — 20.3 C's A.T.
⑥ A9 settling cold from 6:05 A.M.
⑦ 8 W M T 390 C's at A.T.
⑧ Sample of B6 in lab.

3-31-47 Resettling cold in A9 after picking
8-4 up 8WMJ heel in A11 with 8WMJ-1
soln.

8WMJ-1 380 ½

A8 MT
A11 MT
A9 settling cold until — 10 15/PM
Slug loading tonight!

P32 P-25A.
P25 W-1 + W-1A solns. are being
reworked. Continue filtration in N hot
lab., do not reprecipitate $Fe(OH)_3$;
proceed with product soln. + carry on
as per procedure.
Resin column has been regenerated
+ washed. Swirl flask + take sample,
run for Fe + activity.

3-31-47 Please decontaminate the following carriers:
H.B. O.K. 31399 - S.S. hot ← This one first
OK. 31444 - Lead + S.S.
41743 - Box
Hot Box 5 - Lead
Hot. 41554 - Lead
H.B. OK. 37987 - Lead
Acy

3-31-47 1. Loaded 143 slugs into A 45
4-12 (returned one to 105 which was stuck in A)
SJR Made up books for Standbys K+L and
+ A1 now has second water wash after
WHP Coating Removal.

2. Batch J is settling in A9 until midnight after H_2SO_4 wash.
Note: A8 has not been flushed awaiting results of 8WMJ-2 sampled at 11:05 PM and was very hot.

3. A-11 Settling until 4:30 AM.

4. P25 is all filtered.

5. John Fiser went home sick about 9:00 PM.

4/1/47 ① 8WMJ-2 ran 72 C's G.T.
12-8 ② Tony Skraba - P25A W1-W1A Waste is on the
Blauer floor under the drain line from the stang reactor. The result
+ was 27.3 mc total. P25A W1-W1A P1 was 290 mc's +
Russell .023 mg/ml of Fe for 1000 ml. vol. The solution is now going through column #2
③. No peroxide - couldn't clean B6
④ A8 sampler plugged + delayed our 8WW sample 15 minutes while we unplugged the jet.
⑤ 6WMJ-C or 2 ran 26.9 C's.
Aly ⑥ Decontaminated carrier #31399 - O.K.
#37987 - O.K. Carrier #5 (#38228) still jams the

peake. Pt + carrier #41554 are in citric acid in decontamination room barrel. Carrier #31444 OK.

(7) Run STATUS 8:20 AM

A1 — DILUTED Tope SAMPLED Batch K

A5 — Batch Co_3PO_4 + small amt metal waste from A11

A11 — 4" heel OF 8WMJ

A9 — 1ST METATHESIS SETTLING TILL 10:35 A.M

A8 — 8WW SAMPLE IN LAB → 6.68 C'S A.T.

4-1

4-

SJR

WH

(8) 8W.W 6.68 C'S A.T.

Things are tough all over

4-1-47 p 32

8-4 Run P-25A evaporating on steam bath in N hot lab. Continued with run instead of bringing final volume up to 200 ml for pH adjustment use only 150 ml of H_2O.

B4 140

A9 settling, 1st metathesis waste wash, until 5:40 pm

A1 — dissolved batch K

A8 — 8WC

A11 — heel from 8WMJ2

Just received a carboy of 27.5% H_2O_2. Located on platform right to HNO_3 carboys. Use in next Pt removal in B-6.

4-1-47
4-12
SJR +
WHP.

The Run – Being transferred to Cell B. The last shot from A9 is in B26 and is now filtering. Will soon be ready for B12 sample and electrolysis. Filtration is slow.

B6 Lead Removal:

NaOH and Na tartrate boiling show no lead removal or even any lead on analysis after boiling. The 25% HNO_3 boiling now in B6 however shows a steady increase in Pt from 38 to 72 mg/liter. Continue boiling, sampling each hour until Pt analysis levels off. Then add 25% HNO_3 and peroxide for next B6 wash.

<u>Phosphorus</u>: 1.) P25A on steam bath is ready for transfer to a smaller flask.
2.) Leave other flask on steam bath as is for Dra.
3.) Dra wants hot sulfur in heater on bench on 3rd floor melted down and put into Al can under hood on 3rd floor. Put in 2000 grams, not over. Leave can uncapped for Dra. Get sulfur hot and let cool until it is fluid before pouring.

12 8
4-2-47
Blair
Russell

① B12 P sample — 1353 c's at A.T.
② B6 Pb — 72 mg/L = 1440 mg total
③ A9 wash 2.6 c's Total A.T.
④ Batch K was transferred from A1 to A11 picking up WHT heel to A9. Then 1/2 of A8 washes were added to A9. No water was added to the H_2SO_4 extraction for batch K.
⑤ B12 P resample — 1150 c's at A.T.
⑥ B6 new rinse 1760 mg Pb total 2nd sample 1600 mg Total
⑦ Pond samples running over 500 c/ml/ml. so we cut W6 jet back to 80# pressure
⑧ Ira — 1640 gms "Hot" and I mean "hot" Sulphur loaded into a "Hot" sulphur can. The can is under load on third level.
⑨ B6 2nd rinse 528 mg total. To be sampled at 8:10 AM again
⑩ NOTE THAT A8 has 1/2 8WW + 8WC
⑪ Phosphorous transferred to 500 ml. erlenmeyer & evaporating to dryness.

Run Status

A1 Dissolving Batch L
A8 1/2 8WW + 8WC
A9 letting cool till 11:40 AM
B12 electrotyping till 10:15 AM.
B6 25% HNO_3 + H_2O_2 rinse To be sampled
B3 + B10 Waste.

4-2-47 Ba 140

8-4 B-6 evaporating to 350 ml. after which time we go into glassware

A9 batch L digesting until 4 35 PM

A11 batch K settling until 8 05 PM

P6 analysis - take your choice
558 c's
997
1206
1430
1765

P 32

Run P-25A completed - we are now processing an extraction from cell #5 205 bldg. containing ~ 300 mcs of P32. Fe(OH)3 rinses have been finished + are now ready for product soln. Follow procedure sheet. Resin column has been regenerated + rinsed.

(Coll Doming) JEC

4/2/87
9-12
Collier
Perry
King
Grissel
Blauer
Prassly
Kaskie
Pennington
Witkowski
et al

① 17P (1st Analysis) – 1008 C's est.

② Run Status:

A) 17P in B17 awaiting Spec. analysis. If results are tolerable, the Solution is to be transferred to B19 & evaporated to dryness.

B) BATCH "L" in A9 decants at 12 30. Continue with extraction washes & metathesis.

C) Heel of Batch K (9") in A11 – to be held as is.

D) A8 Contains 9" of (?) to be tossed & rinsed before decantation.

E) B-3 Contains 3 wfn which has been sampled.

F) B-6 Contains B-6 Rinse which has been Sampled.

③ P in N- hot lab — $Fe(OH)_3$ has been washed & is now ready for product solution. — See Skraba's run sheet & note on Page 99. —

4/3/47 Blauer 12.8

① Russell called in — He is sick

② A8 jetted into A11 heel. Tank A8 rinsed & extraction washes + metathesis in A9 contained.

③ Batch K metal waste dumped.

④ Phosphorous from cells is going through resin columns #2. Run sheet is in N. hot lab. Took W1A sample + waste in the graduated cylinder near drain point the strip reactor. The filter disk acts as though it might be very much plugged. There is a lot of what looks like fine sulphur on the disk. Cells 5 Phosphorous W1K = 5.45 mc's

⑤ B17 Presample run for Iron by 706-D laboratory method showed 5.8 mg Fe Total.

⑥ Run Status —

Run is in B17 waiting C. J. W's O.K. for passage to B19 + evaporation. Cone + cone heater are in place.

A11 has 8 WML settling until 8:00 A.M.

A9 has last water wash settling until 8:45 A.M.

B3 has 3WFN 3.67 C's A.T. (Can be discarded with a [illegible])

B6 has B6 Rinse 3.86 C's A.T.

⑦ Had high building air counts. Monitor rose sharply at 12 Mid. and wasn't observed until 2:30 AM. Third + 2nd levels were hot. Second level was safe at 4:30 AM

3rd level still unsafe at 8 A.M.

Counts 6.8 x 10^{-10} on 3rd + 2nd levels were obtained before the building was aired. Masks were worn. Couldn't find the reason for the terrific rise.

(8) 6WMK was 28C'S A.T.
8WML was 388 C'S A.T.

(9) 3Rd LEVEL MASK TOLERANCE
1.6 X 10^{-10} C'S

4/3/47. 8-4. wy 3.

(1) Product going down to dryness in ~B19.
(2) Hold A9 up until EJW says other use
(3)

4/3/47 C12 Collier

(1) Evaporated product to dryness — product appeared to be deposited in tip of cone — a greyish-white color with brownish rings around walls of cone.
Skyshine — ~10R (probe).
(~L.S.T. + 2¢ hrs).

(2) Sampled B17 Rinse. —

(3) Decontaminated isotope carriers. (See other log).

4/9 12 Blan Russ

4-4 8- SJR4

(4) P — N. hot Laboratory
Product solution evaporating to dryness in 500 ml ellenmeyer on steam bath. See Run Sheet.

4/4/47 (1) Results on 8WW = 1.22 C's A.T
12-8 6WML = 34.6 C's A.T
Blauer (2) Cleaned house as best we could
Russell (3) Cleaned hot spots in N. hot lab.
(4) Nothing has been changed since 4-12 4 upt
Phosphorous evaporating to dryness
(5) B-17 Rinse 29.8 C's A.T.

4-4-47
8-4
SJR & WHP. HCl - Ether Waste — The Run was shipped this morning.
Transferred from B24 to Leaded carrier for 706C. Carrier is stored in Decontamination Room and is very hot !!
pb B12 — Removing PbO_2
pb B3 — Contains acid rinses from B12
pb B17 — Tank rinse from B24 (2 liters).
Phosphorous — 1.) Product on steam bath is dry and ready to neutralize.
2.) In West Annex of hot labs is P22, C1 from Cell 5. 1050 ml Filter through a sintered disk to remove crud. Make a separate set-up for this. Take filtrate, make ammoniacal, and filter ppt through Stang reactor. Follow run sheet from here.

Terminated 4-12

4/4/47 4-12 Collier 8

(1) Completed removal of PbO_2 waste from B12.

(2) Disposed of B6 rinse & B24 rinse from B17.

(3) Combined the above waste solutions with metal waste in A6. Ready for W-9.

(4) Washed all glassware (20 & 21) and lines including crud filter.

(5) 3w Pb — 7.0 c's @ S.T.

(6) Completed Phosphorus (one on steam bath) Adjusted pH to 7.57 & stored. Didn't process P22-C1 from Cell 5. This solution is still in W-annex to hot-labs.

(7) Completed I-138.
The remaining iodine samples (2) are at 105 Bldg. There are two more in carrier in N-hot lab.

4-5-
1
M
4-5-
8-
55

4-5-47 — Completed I-139
12-8 One can left in carrier. Two remaining
WJS cans at 105 bldg.

— A1 dissolving tells

— Carriers 31392 + 39091 have been
6. decontaminated; smears were taken - of
OK assemble carrier + put aside

— Cell B vessels have to be pressure
+ waste disposed of in W-11.

P^{32}

Acidic extract from cell 5
(P-22 cell 5) contains much too
much iron. Furthermore the assumed
$Fe(OH)_3$ ppt. will not dissolve in acid.
$Fe(OH)_3$ slurry is in a funny reaction -
try your luck, see what you can
do with it.
Resin column segregated + rinsed.

4-5-47
8-4 I^{131} - completed Run 140.
SJR Carrier - Returned to 105. Two carrier are still
waiting on alpha count.
Cell B - All vessels cleaned and rinsed.
Housekeeping - Cleaned up various details on Housekeeping
Report. See attached sheet.
(over)

Special Extraction in A9

A9 – settling hot until 6:00 p.m.

A5, A6, A8, A11 – empty

A1 – dissolving heels.

A9 contains heels from A8 and A11 which were combined in A9. Run sheet is at P.B2. Process the decant from A9 to A8 in the usual manner. Hold 10" heel in A9 after decantation until further notice. Sample from A9 prior to H_2SO_4 addition showed 481 C's.

4/5/47 4-12 Perry & King

1. Completed Iodine run # 141.
2. Decontaminated 5 carriers. Worked on 706-C's dolly carrier but it still is hot.
3. Cleaned up some according to housekeeping report.
4. 8 W M-KL – Circulating to be taken off soon 10" heel in A-9. Decantate in A-8.

4/6/47 12-8 Wy J.

1. Completed I 142
2. Sample 8 W MKL – Read 133 C's
3. Made up batch carbo-phosphate & pumped to A5.
4. A-1 still dissolving.
5. A11 settling to 9:10 AM.
6. Hand truck from C Building reads less than 5 mr/hr after decontaminating.
7. Glass wear in 1st SS barrel in D-room is steam spraying.

4-6 8- WH

4/6 4- JE

with a soap solution!!

4-6-47 8-4 WHP

1. Composited 138-2A, 139-2A, 140-2A+2B, 141-2A, 142-2A+2B and adjusted to pH 2.2 after adding 6 ml. 1M $NaHSO_3$. Total volume 263 ml ÷ 3 ml sample. Electroscope reading was ca 920 mr/hr @ 18".

2. 21.8 C in 6 M KCl - neutralized and sent to W-9

3. The carbo phosphate batch in make up room needs one bag of Na_3PO_4. A-1 was diluted but not neutralized due to the above.

4. The 706 C dolly truck is ok to be returned.

4/6/47 4-12 JKP

1. Housekeeping; cleaned up decontamination room and north hot lab. 706 c dolly carrier returned. Misc. cleaning
2. Note item 3 on 8-4 shift.

4-7-47
12-8
HJ + EK

Neutralized Al metal waste in A6 + jetted to W9. Obtained TSP from storeroom. Unplugged N hot lab sink + replaced drain screen.

P32

Processed P22 cell 5 batch + only recovered 25 mcs.

Run P23 cell 5 solution going through resin column. Continue as per procedure. P1 analyzed 99 mcs. P23 did not have any insoluble ppts as was witnessed in P22.

4-7-47
8-4
JR + HTR

P32 – Rinse (150 ml dist. H2O) going through column on Run P23 from Cell 5 in north hot lab.

Sulfur for Butler:

Sulfur in Pyrex bottle is melting in oven on 3rd floor. Pour this sulfur in Al can on 3rd floor bench. Butler would like to have this by 8:00 A.M in the morning.

Note the new inventory sheets. Only the 12-8 shift fills out the back of the sheet.

Please clean out M-11 tanks prior to filling with caustic.

4-7-
4-7-
4-1
Blau
+
Perry

4-7-47 Please segregate 706-D carriers (15 mil containers especially) from the carriers that will come in about 4:30 PM. Have HP check them over first and decontaminate them that need it, since we have a lot of packing to do first thing tomorrow morning

Acy

4-7-47 ① A16 Fan shut down. All drain
4-12 valves left open. Water off.
Blauer ② 1176 gms Sulphur poured into
Perry aluminum can for Butts. Can
under hood on 3rd level.
③ Put two strips of lead around cell
ventilation duct. Working time 30 seconds.
Lead strip on cart by HNO_3 carboys. WILL
the 12-8 shift continue to shield the
duct + secure the shielding.
④ Run P23 from cells going down on
steam bath. Column is regenerated
⑤ The two plug taken from East wall of cell A
for Iodine set up are now in the 706-D
scrap corral.
⑥ Relamped the building
⑦ Housekept.
⑧ Tank W 6 to S. Basin jet shut off. Stopped
letting at 4'3".
⑨ Note Housekeeping report. Please complete items
not finished + return list to T. B. W.
⑩ M11 tank rinsed + drained several times. 12-8

Please carry on.

4-8-47
12-8
HJJ & E.K.

Decontaminated 3 carriers
Rinsed out M 11 - removed lid - tank clean.
Covered air duct outside bldg with lead sheet. Radiation on contact 800 mr/hr. Suggest building a barricade with cement blocks.

4/8
4-

P-23 evaporating to dryness on steam bath contains 50 mcs P32. Suggest that the dry residue be picked up in 50 ml H_2O total + pH adjusted.

4-8-47
8-4
SSR & HTR

P32 - Run P23 is almost at dryness.

Crud Filter - (1) Reads 4.5 R on contact and 150 mr/hr at one yard. We are filtering 60% HNO_3 from B26 to B27. See Pressley's write up.

Follow the above procedure for cleaning out B-26.

(2) B-12 has 10 # of water on the jacket. Check the L.L. every once in a while to see if the level rises.

Let the water remain on B-12 until 8:00 AM tomorrow.

(3) The duct is being steamed to give more working time on the ground below. See the write up and water for activity in air and on the ground.

4/8/47 (1) Steamed duct for 2 hours. Hot solution drained out of large hole just beyond the bend.
4-12 Most caught in buckets but some spilled on the ground. Entire section checked by H.P. and hot spots roped off.
(2) Run P23 diluted to 50 ml. and pH brought up to 7.8.
(3) No tank farm sample available tonight. The lab floor has been painted.
(4) Solution runs very slowly from B-26 to B-27. It took until after 11:00 p tonight to get B-26 of soln. put in last shift. Suggest 500 cc cuts of HNO_3 be used as larger volume will cool down before passing through cvd. filter.
(5) B-12 volume was 5 liters at 11:00 p. Jacket water was cut off and soln. in B-27 passed through.

4-9-47
12-8
[illegible] + EK

1. Decontaminated carriers to probe — smear surveys have not been taken.

2. Gave duct 3 intermittent steam sprays catching condensate in red cans. General background still high in 300 m/hr

3. Unplugged line from B26 to B25 HNO_3 now filters at about 3 liters/min. Disc does not seem ruptured but soln pours through it at a terrific rate

4. Turned on jacket water to B-12 after removing the HNO_3 from crude filtration. H_2O turned on at 2:00 AM.

5. Run P-23 cell 5 in 50 ml soln contains 36.8 mils P32 + 0.2 mg/ml T.S. + M.V.M. located behind high barricade in N hot lab.

B-12 with 10# water pressure on the jacket diluted 1700 cc in about 7 hours. 3# of water pressure is sufficient to cool during the electrolysis. It gives no dilution.

4-9-4
8-4
SJR +
(
4-9
(4-1
HP
mg

4-9-47
8-4
STR + HTR

Sample on B6:

(Done 4-12) Take a 150 c.c sample from B6 through sample blister and store in lead vault, noting vault number. Tie a long string on the sample. B6 was sampled and analyzed. Ara figures about 150 ml will satisfy 706-C.

Rinse B26

(See below) Rinse B26 with 4.0 liters of nitric to B27 → B12 → B3 → B10 → A5 to clean up any crud that was taken through the filter by hot 60% nitric. Do twice.

Sulfur for Cell 5

12-8. There is a sulfur can with an Al funnel on bench on 3rd floor. This can contains about 1800 grams dead sulfur. Add 200 grams of active sulfur to this can.

4-9-47 (4-12) HP mg G. ① Rinse B26 with 4 liter of HNO_3 twice but on the second trip B7 became plug. Noted a valve on the vacuum line on PB 4 was cracked. Called maintenance who were going to line up necessary material etc so the 12-8 maint. crew could fix it.

② Took sample (150 ml) of B6. Stored in Vault #12 marked B6 Special & Bld 206-C.

(3) Restacked T.S.P. & Soda ash in make up room & moved 2 Bbls of Flurosilicate to top of Hot lab.

(4)

4-10-47
12-8
[illegible] & C.K.

1. Replaced cracked valve on vacuum pressure system on PB 4 Pipette function properly now.

2. Removed HNO_3 from B-12

3. Introduced 191 gms of hot S to Al can, total S at 1991 gms, located in 3rd floor hood. The remaining hot S is in S.S. jacketed glass beaker in oven in molten condition.

4. Removed lead carrier shields from citric acid decontamination soln. washed, dryed, probed & smeared for 2 counts. Probed OK. 2 counts to be determined on 8-4 shift

4-1
8
5JR-K

4-1
4-

4-10-47 P^{32} Run P26D has been extracted with
8-4 fuming HNO_3 and now being filtered.
SJK HTR After filtration is complete proceed with
washing of the sulfur cake.
Note ~ add 30 mg. Fe (carrier) before submitting
Cl sample to Lab. Proceed with neut.
and precipitation without waiting for
lab. results.

Oil pump on big fan has been
changed from the 110 v. circuit to the
440 v. so big fan will operate independently
of lighting system.

Decontaminated carrier from 706 C.
A new handle is to be welded on this
carrier on 8-4 shift 4-11-47.

R.O. in to repair leaky valves
A-6 to A-5 and A-8 to A-5B.

4-10-47
4-12 ① Proceed P26D up to dissolving up
mg 3. the product in HCl etc. Carry
on from section D. Wash
bottom of strong reactor etc.

② Made up about 2 8" NaOH in
M11 Sample in Lab but no
results. Should be about 42% NaOH.
Please dilute to 35% when Lab
has analysis or go ahead & dump
more caustic. Might just as

will fill M11 as the stuff is on hand.
(3) Decontaminated two carriers ready for HP to count.
(4) made up I^{131} solutions.
(5) Cleaned up around S.S fan. Tools are in Decon. Room in Citric Acid.
Note 12-8 → Wake up Mr. Harris Blauer by calling 5-5841 at 6 30/xx No sooner or later!!!!

Will you please complete the ignition of the Cerium Oxalate according to the attached procedure and store it in covered containers at the designated place with the rest of my junk. Thank you.
WHP

(6) Cleaned up around Cubicals as per I.B.W instructions.
(7) A batch of Cerium Oxalate has just been started in the furnace. Turn heat on full about 2 00 AM.

4-11-47
12-8
W.J.S. & E.R.

(1) P-26 D passing thru resin column. Stang reactor plugged & changed in middle of run. Another reactor being made up by glass blowers.
(2) Decontaminated tools in decontamination room to 5 mr/hr.
(3) Made up 6 drums caustic & jetted to M11.
Analysis of M-11 is 42-43% NaOH.

4-11
8-
Blau
Per

4. Removed one batch of CeO_2 from furnace + transferred into S.S. bucket. Inserted 5 cans of $Ce_2(CaO_4)_3$ into furnace heating in the unstable position for 2 hours time in 7 $\frac{00}{AM}$ time end 9 $\frac{00}{AM}$. Then proceed as per Pennington instructions.

4-11-47 8-4 Blauer Perry

(1) Flushed A16 lines from 205 bldg through to the A16 fan. Drained entire system.
(2) New cutter for Iodine usage
(3) Removed crud filter (Newton + Blauer)
(4) Welded handle on 706-C carrier
(5) Cleaned out vaults #1+2
(6) P32 Run P26D evaporating on steam bath P2 ran 342 mc total + .35 mg Iron total. Added 8.55 mg H_3PO_4 to the solution.
(7) Made up I 131 sulphuric acid.
(8) Knocked down cell IV activity from 8.5 r to 800 mc/hr. Still steaming.
(9) 3 Te samples for Iodine under vault. Iodine run sheets are in the N. hot lab.
(10) P32 Run 24 Cell 5 filtering through Stang Reactor.
(11) P26D R1 has been sampled. Column regenerated.
(12) Cerium oxalate is burning down in furnace on 3rd level. This is the last batch. When finished follow Pennington's instructions + shut off equipment

over

4-11-47 (1) Finished up cerium & shut off the furnace.
4-12 (2) Combined P24 & 25 (cell V) and percussed
wg 3. through the Stang reactor. They are
now going through Resin column.
There is a hellava lot of Fe and
I doubt that the column will take
a great percentage of it out.

(3) Completed I-143 and started
run 144.

(4) Decontaminated three carriers (twice)
as per page 51 other log. HP results
not known. Couldn't locate 204
for carrier 36886. Also
removed cutter from carrier
31441

4-12-
8-4
Blau
Perry

⇒ (5) Prepared carrier for Dummy
evaporation and lowered it
into the cell.

4-12-47 I131 – Finished Run 144. Run 145 is almost done.
12-8
SJR P32 – Run P26D transferred to a smaller flask and
continued evaporation on steam bath.
P24 & P25 still going through column.

Filling Al Cans with Sulfur

We looked all over 706-D and in Cell 5, and found only two Al cans to fill. One is full. The other in hood on third floor is ready to fill. Sulfur is heating in oven on third floor. Mark weight of sulfur in grams on outside of Al can with glass-marking pencil after it is filled.

Carriers – One more carrier decontaminated. Another carrier is about 2000 c/m & needs further decontamination.

4-12-47 8-4 Blaine Perry

① I 131 – Run 146 seeded with 133-2B, 134-2B, 135-2B, 136-2B. Started Run 147 seeded with 138-2B, 139-2C, 140-2C, 141-2C

② P24-25 Cell 5 W1 was 12.7 mc total. Discarded the solution. Threw out P24-25 W1A Cell 5 3.75 mc

P26 D R2 was 137 mc total + 87.75 mg Fe total

③ Tank farm area cleaned up + storage shed straightened out

④ Cell IV surveyed after steaming 24 hrs. 800 mr/hr. at glass joint to crud filter at contact. Steam off.

⑤ Had a small fire. Sulphur oven burst into flames. Electric cord caught fire. Used a CO_2 extinguisher + called fire dep't. to replace the used extinguisher. This occurred at 10:30 A.M.

⑥ Filled Sulphur can. Both Sulphur cans are under hood + are marked with amt of sulphur.

⑦ Attempted to start W5 – W6 jet. It would not pickup.

⑧ Started dummy run evaporation

a) Left plug in cell

b) Removed carrier + cone. Washed cone.
c) Added 100 ml of Barium Chloride solution supplied by lab. made up as 15.64 mg $BaCl_2$ per ml. and diluted to 250 ml. This should give 1.56 gms of $BaCl_2$ or slightly over 1 gr. of Ba. 12-8
d) Lowered carrier into cell + placed under heater.
e) Up to temp. at 3:00 P.M.
Let go to dryness. Call E. J. W. for further instructions.

(9) P24-25 cell 5 run came through resin column very green. So we regenerated column + sampled (R24-25 cell 5 R-1A) and are now sending P24-25 back through the column. If interested note the intense reddish brown color in this R1A.

(10) One more Te sample under vault.

W.Y.G. (11) Moore called + he will be late.

(12) P26D Still going to dryness on steam bath.

4/12/47 4-12 (1) Completed P 26D. Adjusted PH to 7.5 in 150 ml Volumn. 4-13 12-8

wyS. (2) Completed evaporation. Removed carrier from cell. On third level 40 mR through plug 650 mR with plug removed. SJR+

(3) One of the short life lights is burned out.

(4) Completed I-147 & 148

(5) Brought the last two Te samples down from 105 Bld. They are under vault.

12-8 (6) Wake "Mr." Blauer at 6:30 by calling 5-5841.

7. J.L MOORE'S father died tonite. Moore has left for the funeral in Memphis. (Sometime Monday or Tuesday) Any one interested in contributing towards a floral wreath, please give it to your supervisor who in turn will pass it on to Red Bailey or W. Gissel. We hope to send this out early Monday morning.

(8) P 24-25 just finishing going through column for second time. Resample.

4-13-47 I 131

12-8 Finished out I 148 and started and completed I 149.

SJR + NJR

P 32

? (P 24) a) P 24-25, P1A ran only 3 mc. Suspect activity held up in Nalcite column. Regenerated column again, P 24-25, R 1-2. Hold this solution for 12-8 shift. Sample and have lab run for activity.

(over)

P26D Combined P26D, W1 and P26 D, R1 which made a total of 345 mc. P26DR filtering through stang reactor at end of shift (R for Recovery).

Stored 706-C carrier above hot lab. Returned daily to 706-C.

H.P. checking last carrier to be decontaminated.

8-4 ① Completed I 150. See note allow.

Blauer ② Shut down A16 fan, closed off water & drain are open

Perry ③ Run I 150 is fouled up to a "Fare thee well." The 1st cut 2A came over beautifully, 2B came over with Te in it. On inspection of 2A we found Te coating in it. As a result we threw 2A + 2B back in. We washed the receiver + the washings read 5r. We threw that in the dissolver too. Now after many cuts + addition of 100 ml of 36 N H_2SO_4 + many more cuts we still don't get a decent cut. What would you suggest?

④ P26DR - W-1 contains 55 mc in 5500 ml. Run now has first 500 ml rinse in stang reactor for P-1. Nality column has been regenerated.

⑤ Housekept. Note the sparkling appearance of our home!!!!

4/13/47
4-12 ① Took three more cuts on I 150
W.Y.G. no luck — all read less than 150mr.
Tossed it down the drain and
filled condenser + flask with
P. Dichromate & H_2SO_4 cleaning solution.

② P26DR washed out in Stang Reactor
and is now going through column.

③ Steamed cut IV and soused with
$NaHCO_3$

④ Cleaned Stang reactor out with
fuming HNO_3 & aqua regia filtering
a little better now.

⑤ Made composite I^{131} sample. 150 2AC
9.5 ml .348N NaOH added. Vault No 1

⑥ Another composite I^{131} sample is
on steam bath in N. H. Lab. Evaporate
to a volume of 50 ml and set
aside for IBW.

4-14-47 174

12-8 I^{131} composite sample is being evaporated

① to volume of 50 ml. on steam bath in north hot lab.

② Obtained one sulfur can #302 77 from 105 building for I. B. W. Sulfur is now in Al can under hood, 3rd floor.

③ Regenerated Nalcite column, P26D, R1. Wash of 150 ml of distilled water going through now.

④ P26D, P2 evaporating down in N. hot lab. Check with Ira on iron analysis of sample P26DR, P2.

⑤ Fe, Ni and Cr in P24-25, R1A (259 mc/a) was thrown out via NaOH precipitation. This is now filtering under hood in south hot lab. Have activity only run on filtrate, P24-25 Rec Cell 5, F1. Dissolve Fe cake in 6N HCl (use as much as you want) and run activity on the solution. Call P24-25 Rec Cell 5, F2. If F1 contains enough millecuries, proceed by adding 40 mg Fe to the acidified filtrate, neutralizing with NH_4OH and then according to the usual procedure.

4/14/47
8-4
Blaser
Perry

(1) Cleaned the traps and cut out some of the hot tygon lines on the Iodine setup. The other hot lines are to be removed and replaced with new ones. Stop cocks should be greased. An accurate measurement is to be made of the glass unit that includes entrainment separator, condenser and the reciever.

(2) Two filled sulphur cans sent to 105.

(3) Unloaded carrier from "Y." Cone and plug are in barrel and hot water is running into carrier.

(4) Cleaned out hot glass equipment at n hot lab sink. Other glassware being washed.

(5) Replaced steam valves at PB#1-(A6-A5 and A8-A5B.

(6) I^{131} composite is still evaporating in n hot lab (See note ① last shift). Notice high background in n hot lab due to this.

(7) Belts are being changed on the electric fan at 205. Fan will be down until completed.

(8) Some carriers came in that need decontaminating.

p 32

P24-25 F-1 is filtering through Stang reactor. Continue filtration - follow by one 100 ml 1M NH_4OH wash +

dissolve $Fe(OH)_3$ in 20 ml 6 N HCl:
Continue according to procedure
Resin column regenerated + rinsed — ready to be used
P24-25 F1 260 mis

P26 DR P2 reevaporating on steam bath. The first evaporated residue was not completely soluble in H_2O. Added 2 mgs of dead phosphorus in 100 ml of H_2O + 20 ml conc. HCl. When solution is evaporated add 200 ml H_2O in 2 shots + adjust pH to 7.5–8.0 a per instructions

Continue evaporating P131 on steam bath until about 50–100 ml of solution remains. Submit sample for analysis — run for activity, Te, + TS.
Stay out of N hot lab as much as you can so as not to overexpose yourself. A temporary lead shield may help to knock down enough radiation

4/14/47 4-12 my 3. ① Cleaned up carriers as per AK instructions also delivered carriers to 10 J with new cutters in them.

② P24-25 F1 is now going through resin column.

③ P26DR went down to dry nes. 100 ml of H_2O added as there was so much (SiO_2)? that the solution was actually milky. Filtered as suggested by WJS but the activity seemed to stay up in the ppt. However, sampled the filtrate and called: P26DR P 2 1/2. Requested Activity only by Lab. Sample is marked P26DR-P2 & is behind high barricade in N-Hot Lab. The filter with the SiO_2 & P hos(!!) is also behind the high barricade in a beaker & with a beaker over it. It reads 100 R at 4" uncovered.

④ I^{131} set up. Tossed out the rest of the tygon tubing and washed the hood out. Higest reading is about 175 mr at the sample funnel.

(over)

(5) I^{131} Composite is still going down on steam bath, N-1A lab.

(6) Air activity in N-Hot Lab off at 7 PM.

Maint Note:

(1) Seals in make up room is leaking.

(2) Duct from hood in Decont. Room is broken off in storage room on third level. Air is being discharged into the storage Area

4-15-47

12-8 I^{131} Composite — on steam bath is about 100 ml. Will require sampling soon.

HTR

SJR P^{32} — (1) Column is regenerating. Rinse is in. Sample, P24-25 Rec Cells, R1.

(2) P24-25 Rec Cells, P2 is evaporating down in small flask on steam bath.

(3) P26 DR, P2 1/2 ran only 52 mc. Solution is behind barricade in north hot lab. Sintered glass disc containing the rest of the activity was treated with hot HCl (1:20). Activity was knocked down from 100 R/hr to 12 mr/hr. Filtrate, P26 DR, P1A, is being evaporated to dryness. Take up residue in 10 ml 6 N HCl.

Dilute with distilled water to 300 ml. Neutralize a 1 ml aliquot of this solution with N/3 NaOH. If a ppt is noted, presence of Al is indicated. Adjust acidity to 0.1 N HCl and pass through the column again. If no ppt is noted, reevaporate to dryness, take up residue in 100 ml of distilled water and adjust pH to 7.5 per standard procedure.

Made Tygon connection on I^{131} equipment.

4/15/47 8-4 Blaser Perry

(1) Cleaned up stopcocks on iodine apparatus and made measurements per duplicate posts. Filled trays. Lead shields still off waiting for a photographer.

3 mc/ml → Sampled the condensed I^{131} composite

(2) Placed Ba carrier over N hot lab. Come and plug still hot. These are in hand in decontamination room.

(3) Samples from A-5 and A-6 have been taken and are in the lab.

(4) Ordered a roll of the blotting paper but has not arrived at shift change.

(5) Safety bars for drug carriers are in low storage area.

p 32

4-15-47 Decanted final prod. soln. P24-25 rec. + adjusted pH to 8.05. Sample in lab. However there remained behind, in the 500 ml erlenmeyer, a residue (crystalline ppt. probably SiO_2) which was quite hot to the Cutie Pie. Tried dissolving in H_2O + HCl, no luck. Suggest 4-12 shift filter ppt. through sintered glass disc + leech out the activity by repeated hot dil. HCl rinses + combine the rinses with rem P26 DR evaporating on steam bath. Evaporate to about 200 ml + transfer soln. to 500 ml erlenmeyer. Proceed as per procedure. Shoot for 1 mc/1 ml soln in final product (P3)

P24-25 rec, residue + HCl soln in 500 ml erlenmeyer behind low barricade in N hot lab.

4/15/47 4-12 wg J. ① Filtered SiO_2 from P24-25 rec & washed with Hot 1-15 HCl. Added filtrate to P26 DR on steam bath.

② P26 DR still going down on steam bath.

③ Jetted A5 & A6 to W11 after getting ok from AV.

④ Jetted A9 to A8-A11-A5-A6 Hold in A6 until 1st metal waste.

(5) Washed A9 with 100# H_2O and jetted to A8-A11 - A5 & A6.

(7) Added 25 Liters 25% HNO_3 & 4L H_2O_2 - (one at 7 pm the other at 11 pm) Sampled once this shift.

(8) Filled M10 with 4% NaOH.

(9) Diluted M11 to approx 35% 35.7% Sample now in Lab.

(10) Filled T6 - 35% NaOH.

(11) Made up K_2CO_3 sol. Sample in Lab 40.2%

(12) Made up $Pb(NO_3)_2$ solution Sample in Lab 20.00%

(13) Cleared out B-17 & B8 with 25% HNO_3 & H_2O_2. Made 5 passes. Sol. now in B-17 for sampling when B-6 is empty.

(14) Dumped 60% HNO_3 & filled up all HNO_3 tanks.

(15) Decontaminated all AV's carriers no HP results, known at this time.

(16)

H-16-47 12-8. SJR & HTR

Equip Check: Started equipment check in Cell A and Cell B. Bank A of storage batteries is charging until 11 00 A.M. Shut off at 11 00 A.M and start charging Bank B for eight hours.

B6 - Still sparging. Sampled and peroxide added.

P^{32} - P26 DR transferred to a smaller flask on the steam bath.

82

8-4 Blauer Perry

(1) 7:30 P.M. 3/15/42 Sample of B6 rinse for Pb = 1.064 gm total.

(2) B17 + B8 rinse 6 mg tot. or .005 mg/ml. This rinse was sent to B3. The tanks are considered clean.

(3) "B" Bank batteries charging until 7 P.M.

(4) Unplugged B3-B6A jet, A11-A8 jet + A11-A10

(5) B12 cleaned out with another lead removal step.

(6) B6 - 7AM sample - 5848 mg Pb total

(7) $PB(NO_3)_2$ result = 20.00%

(8) Steam engine checked + stacked washed + dressed.

(9) NaOH in M11 = 35.7%

(10) Sink in Make up room repaired

(11) Carrier is ready for the run. Do not disturb it.

(12) 11 A.M. B6 Sample = 0 mg Pb
3 P.M. B6 Sample = 412 mg Pb total —
(Samples are probably contaminated from Pb tops of carriers)

(13) A1 vacuum instrument repaired.

4-12 Strabo King

① Replaced B-20 drying tube. Glass tube & stoppers for drying tube for B-21 are on desk - tube has to be cut.

② K_2CO_3 soln analyzed 40.2%

③ Can of sulfur melted - in molten state in oven. Equipment all set for extraction.

④ Poured 192 gms hot + 1814 gms dead sulfur in Al can for Joe Butler - behind small lead barricade in 3rd level hood.

⑤ Rinsed out B7 + B8 rest wells by sparging with air (via pipettes) + overflowing wells with distilled H_2O.

⑥ Shut off battery charger at 9 PM

⑦ Decontaminated isotope carriers.

⑧ Continue sparging B-6 + sampling every four hours for Pb - do not use top of carrier when carrying sample to Hub. Add 2 liters of H_2O_2 every 4 hours.

B6 #5 91 mgs Pb

B6 #6 48 mgs Pb

Check B6 vol. so as not to overflow tank.

(over)

(9) Continue evaporating the P32 soln until dryness + proceed as per procedure. Contains P24-25 crud rinses, P26 DR crucial rinse etc. 4-

4-17-47 12-8 HTR & SJR

Made up drying tube to replace the remaining one above lead cubicles, but did not install it because exposure time was all used up. Reading above cubicles is 5600 mr/hr. B1 Pe

P32

1.) Attempted to take up P26 DR run in water, but residue of Al probably held up the activity. We filtered, washed residue with hot HCl (1:20). Filtrate was adjusted to 0.1 N HCl and is now going through the resin column. Call effluent from column P26 DR, P2B. Proceed as usual.

2.) Extraction was run on P27 D sulfur. We are boiling acidic filtrate under hood on third floor. Set-up for neutralization with conc. NH_3 is all ready in north hot lab. Note: Add 60 mg Fe before taking Cl sample and proceed without waiting on lab results. Also we have added 500 ml 6W HCl to 6 liter Erlenmeyer which will receive the W1 waste to minimize formation of silica in this waste in case a recovery run is necessary on this waste & R1 solution. 4-17 4-1 MJS

B6 sampled. Sparging continued.

4-17-47 ① ~~Chan~~ Installed drying tube to B21. Cut
Blauer off piece of Tygon - glass tube reading ~ 10R.
Perry ② P27D-C-1 554 mc TOTAL
85 mg Fe TOTAL
③ B6 is M.T. It is to be filled with 40 L. of 25% HNO_3 + held until the runs on.
④ P26DR P2B is evaporating on steam bath
Column is being regenerated.
P27D is filtering through stang reactor.
⑤ Instruments are being repaired + checked.
⑥ The Iodine set up has been photographed + the lead shielding can be replaced.

4-17-47
4-12
MJS + EK

Rigged up Chicago coupling at funnel connection in X mas tree. Steamed for a couple of hours with pot to W11 valve open. Discovered that we were getting positive pressure on A1 + A4 manometers. Checked air activity in bldg. O.K. Shut off valve to W11 + continued steaming with 205 jet on. Cut off jet to stack + are now steaming from 9 PM —

Reading before after
55 - 85 mr/hr. 50 - 75 mr/hr

Filled 3 Al cans with sulfur, wts. marked on cans, capped + ready to insert in pile. Treated in 3rd level hood.

P26DR evaporating to dryness in 500 ml flask.

P27D going thru resin column.

P28 (P-1) waiting to go thru resin column — processed to this point.

Washed + had maintenance ream slug carrier holes. Should be ok. to use.

4-18-47
12-8
HTR &
SJR

P32

1.) P26 DR, P3B neutralized to pH 7.6. Analysis ran 1.14 mc/ml (approx 100 ml solution is stored in Vault #3).

2.) Column regenerating. Follow with 150 ml dist. water rinse and then start P28, P1 which has 600 mc.

3.) P27 DR, P2 transferred to smaller flask is evap. down on steam bath. Contains 305 mc.

I^{131} apparatus — Assembled and in place + Check receiver drain valve. Turns sluggishly.

Xmas tree still steaming.

Decontaminated two carriers. Need checking by H.P.

4/18
8
4-1
4-1

4/18/47
8-4 ① Verbal.

4-18-47
4-12
W.J. + E.K.

② Filled 5 Al cans with sulfur wts. on on the containers.

③ Completed I-151 had some difficulty with the apparatus. Decontaminated the apparatus after run + resealed ground glass joints O.K. now.

③ Moved acid cases to proper location

④ 2-Te cans in lead carriers under vaults in west hot lab.

I-151
2A 210 mr
2B 2000 mr
2C 525 mr
2D 250 mr

⑤ P 28 thru resin column and on hot bath evaporating.

⑥ P 27 D evap. to dryness, redissolved, pH adjusted (8.6), and sampled. P3 279 mes.

⑦ P27D-W1 and P27D-R-1 combined to form P27R. P 27R ppt, 1st part now filtering thru Stang Reactor - 2nd part digesting on hot plate in N Hot Lab.

⑧ The residual sulfur from the last fuming HNO_3 extraction is to be remelted

+ poured into Al container - to be used by J. Butler for reextraction. Can + flask containing the S located under 3rd level hood.

(9) Resin column (Thos) is regenerating with 500 ml HCl after P28 purification.

12-8 (1) Completed I-152 Seeded with I 151-2A, 2C, 2D

4/19/47 (2) Sent carriers # 36234 + 37971 to 105 Bldg.

Blauer (3) J. Butler's Al can filled with 1215 gms of Sulphur which was under 3rd level hood. That was all there was. The can is back under the hood + is not capped.

(4) One Te can left under vault

(5) P27R-W1 — 82.5 mc Total (On floor under stang reactor drain)

(6) P28D-P2 — 317 mc Total.

(7) Barium sample carriers decontaminated + placed in cabinets.

(8) P27R-P2 going through column.

(9) P28D - Going to dryness on steam bath

(10) P27R-P1 — 319 mc.

(11) P28R1 — 156 mc. (The R1 is behind the low barricade)

4/19/47 (1) Completed I-153.

8-4 (2) Picked up the last 3 Te samples

my 3. (3) P27R-P2 sampled & in now on steam bath.

(4) Regenerated column - P27R-R1 is on floor at end of barricade in N-H. Lab.

(5) P28 R-1 - 15.6 m'c } combined in Run
P27 R W-1 - 82.5 m'c } P 27-28. W-1
sample not taken as the volume is about 8 liters. [From recovery run this has less than 40 m'c in it.] P27-28 going through column P-1 = 202 m'c

(6) Low reading I^{131} cuts from Run I-153 are marked with the HP reading to facilitate Next shift in seeding their Run. No sample shuts were made for sample reading less than 1R.

(7) Replaced the Te cutter with a new one from 105 Bld. Old Te cutter is in decontamination room it is N.G. We washed it twice. HP hasn't given us a final reading.

4-19-47
4-12
King

(1) East vacuum pump above Hot Labs repacked (was leaking oil) by Maint.

(2) Completed I-154 (seeded with I-153 - 2D & 2E).

(3) P27R - R-1 contains 122 mc. (On S.S. tray on floor of N. Hot Lab)

(4) P-27-28 - W1 analyzed 422 mc. — discarded.

(5) Resin column regenerated. P-27-28 - R-1 sampled.

(6) P-27-28 evaporating on steam bath (2000 ml flask)

(7) P-27-R evaporating on steam bath (2000 ml flask).

(8) P-28 evaporating to dryness on steam bath (500 ml flask).

(9) No sample sheet turned in on I-154-2D & 2E — low radiation.

4/20/47 12-8 Perry

(1) P-28 evaporated to dryness. Took up with 150 ml. water. Adjusted pH to 7.6. Residue flask still read 5 R/hr at mouth. Transfered part of P-27R into this flask. P-3 Analysis of sum P-28 — 2.07 mc/ml or 306 mc total. Cl⁻ - 0.
(2) Completed I-155. Seeded with I-154-2D & 2E
(3) P-27R - Evaporating on steam bath (2000 cc flask, 1500 cc flask)
(4) P-27-28 - Evaporating on steam bath (2000 cc flask)
(5) No sample sheets turned in on I-155-2C, 2D, & 2E.
(6) P-27-28-R-1 - analyzed 61 mc total.

4/20/47 8-4

(1) Completed I-156.
(2) P27R & P27-28 still evaporating on steambath.
(3) Cleaned up around Phx. set up in N-Hot Lab. Don't put any paper down. With present set up any hot stuff & dust can be washed away easily!
(4) Decontaminated carrier found still Hot by H.P.
(5) Held safety meeting.

4-20-47 ① Added 136# 60% HNO_3 to A-1.

4-12 ② Composited I-156-2AC & adjusted pH to 7.2.

King ③ Composited I-156-2BC, added $NaHSO_3$, adjusted pH & set on steam bath to steam to 50-100 mh. (as per instr. of Ira Whitney). Run not sampled. Composited of runs 152-2B, 152-2C, 153-2B, 154-2B, 154-2C, 155-2B, 156-2B, 156-2C, 156-2D, 156-2E. pH adjusted to 7.3.

④ Ed Witkowski called - said go ahead with run as soon as ready - i.e. don't wait until 8 AM to start loading slugs, strip coats, but do not start dissolving until 8 AM.

⑤ Maint. contacted - will send slug truck down first of 12-8 shift.

⑥ P 27 R & P 27-28 still evaporating on steam bath.

4-21-47 ① Moved some new Isotope carrier boxes from

12-8 outside to above hot labs near low storage

Blauer ② Steam jan turned on.

Perry ③ Cleaned off East Platform for painters to work on.

④ Loaded 289 slugs

⑤ A4-205 off gas line will not drain properly. So Drain extra well before dissolving.

⑥ A1 L.L. is off by at least 14". Will the 8-4 shift attempt to get it repaired.

⑦ Run Status

92 Batch A ready for solution.

(8) P-27R-P-3 Took up residue in 1.25 ml. Adjusted pH to 7.5. Analysed 1.33 mc/ml or 166 mc total.

(9) P27-28 - Evaporating to dryness on steam bath.

(10) 1-156.2BC On steam bath to be sampled at 50-100 ml volume.

4-21/47 1. Batch A still dissolving.

8-14 2. Unable to get sufficient vacuum on

wgs. A1. See E.J.W for further instructions after A-1 comes up to gravity.

3. Pit is dry. Doesn't seem to help the system any (A4)

4. Have had trouble with A1 Ring balance all day OK now(?)

5. High air count experienced on 3rd Level due to A4 - off gas system being in fritz.

(1) P27-28R1
P27R-R1
P27B
} Combined and now in stang reactor. Call This P27C

Wash with 6M NH4OH take up in HCl reppt etc.

4-21

4-1

Skim & Ring

(7) I 156 composit is in a 1L erl behind High barricade (75 ml approx) see I BW for disposition.

4-21-47
4-12
Shrabe & King

(1) Encountered vacuum trouble on A-1, possibly line to 205 stack filling with liquid. Xmas tree was temporarily put back in line. Xmas tree trap drain is make-shift setup until end of run — caution must be used when draining. Check area for radiation during draining & drain slowly enough to avoid spilling on ground — Area is hot — Drain trap into small funnel connected to old drain line under trap.

(2) Results of 1st dissolving: A.T. = 453 c's; S.T. = 302 c's; 74 slugs dissolved with 6.1 c's/slug.

(3) P-27-28 redissolved in 100 ml water after evaporating to dryness. pH has not been adjusted — it is setting on hot plate behind N. Hot Lab barricade labeled P-27-28. P-2 —

(4) Sample sheet submitted to lab for I-156-2AC — to be analyzed as final product.

(5) Two carriers decontaminated — have not been rechecked by H.P.

(6) Run Status: Batch A settling til 12:00 M hot in A-9, then settling cold til 5:00 PM.
Batch B dissolving in A-1.

(7) Replaced following steam valves:
Jet - A1 to A11
Jet - A1 to A6
Jet - Pot to W-11.

One carrier apparently still hot - Pb + a.s. Container in bucket of citric acid. Should be cleaned + checked.

(8) P-27-C going thru resin column. P-1 contains 453 mg of iron; effluent is coming thru column tinted. It will probably be necessary to pass the run thru resin column (after column regeneration) a second time to remove above amount of iron.

4-22-47 Blaine Perry [12-8]

(1) 1 MB - 67.3 slugs
5.9 C's/slug
399 C's at H.T.
271 C's at S.T.

P-27-28, P-3

(2) Adjusted pH to 7.8 analysis - 1.05 mc/ml or a total of 105 mc's.

(3) I-156-2BC Analysis 2.84 mc/ml. Total volume of approx 67 ml.

(4) Decontaminated carrier. HP instruments check at OK but a smear hasn't been taken.

(5) P-27C - P-2 in flask next to column. To be run through column again as soon as regeneration is complete. Not Sampled

P-27C - R-1A - 1st regenerate after P-2 ran through, going through column. Rinse not added yet.

(6) Filled 2 sulphur cans. They are capped + on 3rd floor bench

(7) 8 WMA — 69 C'S A.T.

(8) Run Status.
Batch A - Settling in A-1 till 11:30 A.M
Batch B - digesting until 8:15 A.M
Batch C - Dissolving

4/22/47 8-4 wjS.

(1) Batch B settling to 4:15

(2) Batch A jetted to Tank farm.

(3) Batch C in A-1 with 9 loads of slugs loaded. Hoist Broke down an we were unable to complete loading.

(4) There is a full load of slugs on truck

(5) P27c P2 going through column for second time.

(6) P27c-R1 read very high over 200 m/c and should be reprocessed.

4-22-47 4-12 WJS + E.K.

(1) Hoist temporarily repaired. Finished loading slugs

(2) Emptied two Chicago waste carriers into Tank W-4. Carrier #3 seems to have a plugged outlet (either leg plugged or gunk in bottom of carrier). It was necessary to apply approx 30# pressure to initially empty carrier and also to remove the wash water. Top of carrier was not bolted on - left open for inspection by Day Shift.

③ Phosphorous resin column regenerating.
④ P-27-C-P-2 on hot bath. Evaporate to dryness + take up in enough H_2O to make ~ 1 mc/ml; based on P2 analyses.

⑤ Suggest P27-C R1 soln. be run by Stan Rimshaw's method using NaOH to ppt. out tri valent cations. Leave soln. for Rimshaw since he has the procedure.
P27-C-R1 - 281 mls - 406 mgs total Fe.

Stan →

Run Status

A9 settling till 3 30 AM batch C

A11 settling till 12 00 mid batch B - suggest that you do not decant this until A9 is decanting.

A1 batch D dissolved + diluted - being cooled for sampling.

Suggest that air header be turned off + blown down before settling extractions.

⑥ Filled two Al cans with sulfur, 3 more to go, making a total of 7 cans to be submitted to 105 bldg. 12-8 shift Friday morning. Please do not forget.

4-23-47 (1) 1MD - 405.8 A.T. Total C's —
12-8 291.4 S.T. Total C's

Blauer
Perry

(2) P27C — P2 — 90.5mC's Evaporating on steam bath.
(3) 8WMC — 102.3C's A.T.
(4) W-11 jet failed again tonight. Caught it just in time. Will the 8-4 ask Vallado to have it checked.
(5) Took 7 carriers to 105 bldg.
(6) P-27CR (Combined Regenerates from P-27C) now going through nafite column.
8-4 shift will be able to decide if this P-27CR-R2 is good or if the NaOH method is necessary before Rimshaw comes in on 4-12. See last 4-12 Item (5)
(7) Repaired leak on S. distilled water apparatus
(8) Filled 3 Sulphur cans. The oven used for this is burned out so it was necessary to use one of the new cerium ovens for this.
(9) Disposed of P-27C-W-1 - Approx 8 mC's
(10) 6WMB - 23 C's analysis time.
(11) Run Status
(a) Batch E diluted to be sampled 8 00/A in A-1.
(b) " D in A9 settling hot til 10 00/A.
(c) " C " A-11 settling til 9 50/A

4/23/47 8-4. HP W.Y.G.

(1) P27CR-P2 45 m'c & P27C 90 m'c on steam bath.

(2) P27CR W-1 to drain read only 2.36 m'c,

(3) All the activity seems to stay in the column. P27CR-R-1 going through column needs 150 ml H_2O See what you can do S.J.R. This has high Cr & Ni (from looking at it & knowing that it came from Cell V). There should be about 250 m'c in this).

(4) Batch F - just starting to Add 390# HNO_3.

(5) All to be jetted to A9 at 3:55 All Heels from Batch C

(6) Batch D in A8 just sampled 3:45

(7) Batch E in A9 ready for All at 3:55 120 ml $Pb(NO_3)_2$ added.

(8) Neutralized metal waste in A6 ready to go to farm

(9) 350 (?) NaOH in M-11 - samp. in lab.

(10) JME 288 cs ST 637 slugs 6.3c/slug

(12) Repaired distilled Water leak and reset still at 60#

4-23-
4-12
S.J.R.

4-2
12
Bla
Pu

4-23-47 ① Placed a 5 ml sample of S32 H-3 in
4-12 vault #2 for H.C.V. Sample sheet in lab.
S.J.R. H.J.R. ② A9 Batch E settling cold until 2:20 A.M.
③ A1 Batch F waiting on A9 - diluted and sampled.
④ A11 Heel of batch D
⑤ A5 Batch D agitating - Neutralized.
⑥ Repaired W-11 jet.
⑦ Decontaminated Carriers #37977, #36233 #36245 and #36199. Smears have been taken on these carriers. Results not back this shift.
⑧ P27 C P-3 evaporating on steam bath.
⑨ P27 CR P3 Transferred to small flasks evaporating on steam bath.
⑩ P27 CR-R1 - Filtering NaOH ppt in south hot lab. Add 40 mg Fe to acidified filtrate and carry down product by neutralizing with NH_4OH.
⑪ P29, C1 - Contained 1397 mc P^{32}, Fe = 99 mg, Ni = 2 mg and Cr = 13 mg. The Fe ppt is filtering in north hot lab thru Stany reactor. Continue with step #14, page 3 of procedure.

4-24-47 ① 6WMD - 8.2 C's A.T.
12-8 ② P29 W1 A 3.1 mc's Tot. } discarded
Blaue P29 W1 2.6 mc's Tot } Fe = 2.001 mg/ml
Perry ③ 1 MF 400 C's A.T
298.8 C's S.T
66.1 Slugs
6.05 C's/slug

(4) Combined P-2 sample of runs P27C and P27CR. Resultant P-3 is very crappy looking. No sample submitted of this. Await decision on disposition of this stuff. Residue taken up with 100 ml water and pH adjusted to 7.5. There is a white precipitate in the bottle.

(5) Named P27CR-R-1 run # P27CR2. The HCl dissolving of NaOH heel is discarded. ~~[illegible]~~ P-1 Waiting for nalcite column. Analyses Fe = .048 mg/ml, 875 mc's total. W-1 - 161 mc's.

(6) P29 P1 — 1460 mc's total. Rinse of P-2 going through nalcite column. Fe - .11 gm tot.

(7) Run Status:

Batch G - in A-1. Sample in lab. Holding for A-9.

" E - in A-11 settling tel 8 40/A.

" F - in A-9 Settling hot tel 8 32/A.

NOTE 8 WME = 440.4 C'S A.J.

4/24/47 8-4 HP

(1) Cleaned up high barricade in N-Hot Lab.

(2) P29 P-2 going down on steam boiler. No analysis as yet.

(3) P27CR2 - P1 Behind low barricade to go through column.

(4) P29 R-1 to be sampled 150 ml H2O now going through column.

4-24- HTR

Status of Run:

A-1 Batch H dissolving
A9 Batch G digesting until 4 45/22 (approx)
A11 Batch F settling until 8 00 PM (approx)

⑥ Slugs to be loaded into diluted Batch H.
Maint. Note:

Done 4-12 ⑦ A2 coil 2 is not working as soon as dissolving is completed (Batch H) call maint.

⑧ Neutralized P32-H-3 to pH 7.2 with 25 ml NaOH.

4-24-47 HTR & (4-12) S&R. Miscellaneous

1) Five sulfur cans taken to 105 bldg.
2) Replaced A9-A8DB steam jet valve and unplugged water valve on A2 Coil 2 at P.B. #1.
3) Decontaminated Carrier No. J7977. H.P. smeared it. Waiting for day shift to count.
4) Transferred one liter of solution used to test crud filter from B27 → B12 → B3 → B10 → A5 (combined with CO_3-PO_4 solution in A5).
5) 8WMF had 1022 C's A.T and 798 C's S.T. Heel from this hot waste is in A11. 6WMF is 7.4 C's.
6) W11 automatic jet works O.K. We checked it several times with a Maintenance man by elevating and depressing the float. The automatic jet worked each time.

7) Dropped ten loads of slugs.

8) T6 was filled with caustic from M-11.

Run Status

A1 - Batch H - diluted and sampled.
A5 - One Batch CO_3-PO_4
A6 - 6WMF - Ready to be neutralized - Waiting until all slugs are dropped.
A9 - Batch D - Settling cold until 12^{45} A.M.
A11 - Hot heel from Batch F (8WMF - 1022 C's).
A8 - MT

Phosphorus

1) P27 CR2 - P2 going thru Nalcite column. Contains 875 mc's.
2) P29 - P3 - transferred to a smaller flask. Evaporating down on steam bath.
3) P29 - R1 (695 mc's) was combined with P27 CR2 - W1 (144 mc's) and processed. P29R - P1 (approx 800 mc's) has been diluted and sampled, and is ready to go thru the column. Note that column must be regenerated before putting P29R-P1 thru.
4) P29R - W1 - 15 mc - discarded.

4/25/47 (1) Unloaded 25 slugs. Carriers over N Hot Lab
12-8 (2) P-29-P-3 Read 58 R/hr in dry state.
Blaver Took up residue in 100 ml. water and left
Perry behind barricade not sampled. This is too hot to work with.
(3) P29R-P-1 - Analyses - 985 mc's total. Going thru column. Fe = .10 mg/ml.
(4) P-27CR2-P2 Evaporating on steam bath. Analysis is Fe = 0 575 mc's Total activity
(5) 8WMG = 1182 C's A.T. Read it + weep.

Run Status

A1 - Batch I - Cooling - To be sampled.
A5 - Co_3PO_4 -
A6 - 6WMG - Started to Decant + stopped (plug Geel jet)
A9 - Batch H - settling cold till 12 10 P.M
A11 - Hot heel of Batch G (8WMG - 1182 C's) Plugged jet stopped decant.

Listen to my tale of woe. Started A11 - A6 D. Showed pressure in A6 and jetted very very slowly. Finally found pressure in A11 and shut off jet. So - we probably have many curies in A6 - What a G - D - Mess. The plug from all indications is in the cell.

4-25-47
8-4
WJS + E.K.

Run Status

① A1 Batch J dissolving
A9 Batch I settling hot till 6 35 pm
A11 Batch H settling till 6 45 pm
A6 Batch G

② Phosphorous Nalcite column regenerating (P29R-R-1)
③ P29R-P-2 evaporating on steam bath
④ P29 leach - P-2 evaporating on steam bath.
This run is made up of P27CR2-P-2 and a leach of glass filter used to filter P-29-P-3.
⑤ PH adjusted on P-29-P-3 after filtering thru sint. glass disc. pH to 7.3
⑥ P-27CR2-R-1 still in N. Hot Lab (42 mc) - undisturbed.

4-25-47
4-12
HTR &
SJR

Run Status:

A1 - Batch K - started dissolving at 11 00 p.m.

A5 - MT
A6 - Batch H - Neutralized
A8 - Batch I - jetting from A9.
A9 - Batch I - Starting decanting to A8 at 11 35 p.m.
A11 - Batch J - To go to A9 after Batch I is decanted.

205
6312

Isotopes

A.) I^{131} - Finished Run 157. Started Run 158.
Just about finished adding oxalic acid.

B.) P^{32} 1.) Discarded P-27CR2-R-1. This discolored solution contained approx. 42 m'c.

2.) P29R-P2 - Transferred to smaller flask on steam bath.

3.) P29 leach - P2 - Adjusted to 0.1 N HCl. Going thru resin column.

4.) P30-C1 - Filtered off sulfur. Made NaOH strike. To filtrate (P30-F1) added 40 mg Fe & brought down with NH_4OH. Now filtering through Stany reactor in north hot lab. Fe, Na, Cr ppt (710R at 6 inches) was dissolved in hot HCl (20 c.c. 6N HCl) and sampled (P30-F2). Hold for analysis.

5.) P29R-R1 - Sample in lab.

Miscellaneous:

1.) Started rinsing glassware.

2.) Note: Sample A9 before H_2SO_4 addition.

4-26-47 12-8 WHP

1. Status of Run:

BATCH K - Dissolved & Diluted in A-1

Batch J - Settling cold until 10 PM - A-9

Batch I - In A 6 Sample in lab.

2. Sampled A9 before H_2SO_4 addition to J. lab results 3169 CST.!

3. Leave I in A6 until you get lab results on 8 WM I and 6 AM I (we may have stirred up A11 while attempting to get A11-A5 DB. Tried A-11 to A6 and it worked okay.

4. Neutralized P29R-P3 to pH 7.5 and sampled for lab. Rest of P^{32} is as above!

5. Finished I 158 and 159.
6. Had high air counts from 1 00 A to 2 00 A.M.
7. Moore out sick. Kept Ferguson 3 3/5 hrs

4-26-47 Phosphorus Status:

Skraba & King

① P-30 - P-1 waiting to go thru column
② P-29 leach - P-2 on steam bath evaporating
③ Column regenerating — P29 leach - R-1.

{8-4}

Iodine Status:

① Started & finished Run I-160.
② Started Run I-161. Adding oxalic acid at 4 PM.

4-26-
4-12
Rimsh
&
Russe

Run Status:

A-1 - Dissolving Batch L.
A-9 - Settling hot until 5 00 PM — then settles cold 5 hrs.
A-8 - MT.
A-11 - Batch J settling. { 8WMJ 1615 cs S.T.

Followed thru on glassware washing from step #9 thru step #19 (see inst sheet by Pressley).

A9 + K 2963 cs S.T.
8WMJ 1615 " "

Use A9-A8 DB jet during next decantation, EJW instructions, decant to 10" heel.

2 00 AM
3/5 hrs

105 bldg. personnel had ruptured a slug in the canal. Canal H_2O analyzes 1894 c/m/ml. This sample was taken from bottom of canal so theoretically should not effect settling basin. However to play safe draw off a sample on diversion box as soon as possible.

4-26-47
4-12
Rimshaw & Russell

Run Status

A1 - Slug Heels. Did not start another dissolving.
A5 - MT
A6 - Batch J - Neutralized
A8 - Batch K - being transferred to A11
A9 - Batch L - digesting until 12:10 A.M. (one half hour digestion).
A11 - Batch K - receiving from A8.

Isotopes

I^{131} - Finished 161. Started and finished 162.)
P^{32} - 1.) P^{32} Leach - P3 - evap. to dryness on steam bath. Reads 3500 mr/hr at 8" thru the glass. Contains 1380 mc according to lab analysis.
2.) P30R-C1 is a composite of following:

P30-F2 - 173 mc
P30-W1 - 160 mc
P29 Leach-R1 - 798 mc
P29R-R1 - 238 mc
Total - 1365 mc

Made NaOH ppttation on composite. To acidic filtrate added 75 mg Fe, sampled and called P30R-C1.

4 PM

15
S.T.

P30R-C1 is in north hot lab on hot plate and is ready for NH4OH pptation.

3.) Precipitate from NaOH strike is in south hot lab being dissolved up with 6N HCl. Continue. Call sample P30R, F2.

4.) P30, P1F going thru resin column.

Misc.

1.) Due to ruptured slug in 105 canal diversion box ran 875 c/m/md. We cut off W6 jet to drop count to 315 c/m/md. Check water samples and turn W6 jet back on when it is safe to do so.

2.) A9 agitator developed a loud knock. It sounds better now. However, digest Batch L for one-half hour only.

3.) 6WMJ - 6.3 C's.

4-27-47 Ba 140
12-8
WHP

1. Status of Run #17

A-1 Heels

A-5 } Batch K which has been neutralized
A-6 } in A5 and is being transferred to A6.

A-8 - MT

A-9 - Batch L - Settling cold until 8 15 AM

A-11 - About 325 C's of Batch K waste - we hope!

8WMK - 332 c's ST.

6WMK - 7.4 c's ST.

J 131

1. Run run #163 - one to go!

P^{32}

1. P-29 Leach - Evaporated and neutralized to pH 7.6 and sampled for lab.

2. a. P30R-C1 - Neutralized with NH_4OH to $Fe(OH)_3$ ppt and added 100 ml excess - ca 125 ml total NH_4OH. No color change was noted. Tony it's still on the hot plate in N lab.

b. Ppt. from NaOH strike is still in S lab as Stan left it.

3. P30-P1 - First evaporation on steam bath now going on. Has been sampled.

4. Nalcite resin Column - HCl (1:1) is now passing through it for regeneration.

Misc. - Diversion Box is now ok. Had w-6 jet on but it wouldn't jet solution. Will 8-4 please check.

4-27-47
8-4

Phosphorous Status:

① P29 Leach P-3 and P-29 R P-3 combined to form P Composite P-3. This was filtered thru sint. glass disc & sample submitted to lab. (549 mis)

② P30R was filtered & redissolved. P-1 now going thru resin column.

③ P30R F2 dissolved in 6N HCl & a sample submitted to lab.

④ P30 - P-2 evaporating on steam bath.

⑤ P-3 flasks and filter used in step ① above were washed with 100 ml 6N HCl to form P Rinse - Combine this with next run before striking with NH_4OH.

Iodine Status:

① I-164 started & completed.

Barium Status:

A1 - Heels

A9 - 3rd H_2O wash (extraction cake washes) settling till 3^{55} pm.

A11 - batch L settling until you have time to get rid of it.

Had packing gland tightened on vacuum pump above hot labs, still leaking slowly.

Keep an eye on N hot lab fan. Kicked off sometime last nite caused high air count 2nd level (next to supervisors office).

4-2
4-12
Rim
&
Rus

4-27-47 Ba^{140} Run Status

4-12 P.M.

Rimshaw & Russell

A-1 Heels

A-9 Second metathesis settling until 2:17 AM

A-11 Heel from batch L

A-8 First metathesis wash - HNO_3 added.

A 5 Carbophosphate and 8WW waste (10.7 curie

A 6 Batch L ready to be neutralized

Isotopes

I^{131} - 164-2AC composite made up and stored in Vault in shipping room. Need a resample so that lab can run I^{131} activity again.

I^{131} Composite - 145.7 mc - Added 1.0 ml of 1N $NaHSO_3$ and neutralized to PH 7.4 - Evaporate to 50-100 ml on steam bath.

P^{32} (1) P30-P3 - transferred to smaller flask - waiting on I^{131} composite evaporation

(2) P30R-P2 - Added 150 ml rinse to column.

Miscellaneous

1.) 8WW - 10.6 Curies.

2.) Started cleaning up north hot lab. Sweepings from floor jammed portable counter at 3 feet. So we scrubbed and hosed down floor. Changed papers on counters, and cleaned up s.s. pan and sink. Air counts rising continuously all shift.

4×10^{-11} - 4^{30} to 5^{00} P.M.

8×10^{-11} - 7^{45} to 8^{15} P.M

1×10^{-10} - 9^{07} to 9^{37} P.M

2×10^{-10} - 11^{03} to 11^{33} P.M.

Can figure it out!!

4-28-47 Ba^{140}
12-8
Pennington + Gissel

1. A-1 - HEELS
A5 - CO_3-PO_4 + 8WW WASTE
A6 - BATCH L READY TO BE NEUTRALIZED.
A8 - K_2CO_3 WASHES FROM A9
A9 - 2ND MET. CAKE WASH SETTLING UNTIL 7:45 AM.
B-6 - SAMPLE IN LAB FOR PB
2. FINISHED WASHING GLASSWARE AS PER PROCEDURE.
3. 8W-C 176 Co S.T.

I^{131}

1. 164-2AC RESAMPLED.
2. 164-2BC EVAPORATING TO CA. 50-100ML ON STEAM BATH.

P^{32}

1. FILLED 2 CANS WITH S
2. P30R-P2 SAMPLED AND READY FOR STEAM BATH. COLUMN NOT REGENERATED.
3. P30P3 IN 500 ML FLASK READY FOR STEAM BATH.

4-28-47 Phosphorous Status:
Skraba + King
① P-30-R-P-2 on steam bath.
② P30-P2 in 500 ml flask on steam bath
③ Resin column regenerated.
④ P-31-G-1 received - awaiting lab analysis.
Iodine Status:
① 164-2BC evaporated to 50-100 ml on

8-4

4-28-
4-
Russ
Rim

Iso

steam bath; to be sampled & pass filtered (see Whitney).
② Started & completed I-165; started I-166.

Run Status:
① B-92 started plating @ 10:00 AM
② A1 dissolving heels (batch M) — dilute sample & get to AH-hold.
③ B6 40 l 25% KNO_3 + 1½ liters H_2O_2 sparging.

4-28-47
4-12
Russell & Rimshaw

Run Status -
Run in B6 evaporating - Analysis 3695 C's at S.T. Pb-245 mg/l. Glassware checked as per outline in Run Book. First evap. will be completed around 12:00 midnight.

Isotopes - Iodine -
1.) IRA would like to have iodine cuts on present series combined so that final solution will be 7 1.5 mc/ml. Neutralize in usual fashion, sample & store in shipping room. The remainder of the cuts that look worthwhile should be combined, neutralized and evap. on the steam bath. Add about 1.0 ml 1M $NaHSO_3$.
2.) Sampled I-164-2BC - stored in shipping room. Completed Run 166. Started Run 167. Cooling prior to oxalic acid addition.

Phosphorus
1.) P30-P3 - Ready to neutralize. No time left on this shift.
2.) P30R-P3 - evap. on steam bath.
3.) P31 & P32 were combined in one run. Filtering product ppt thru Stang reactor.

Miscellaneous

1) Wells Stanley turned in some platinum from a plug to hold for him on day shift. It is in the filing cabinet in S.S. office. 4-28-8-4

2) B6 sample for lead — 2596 mg Total.

3) Lead plug on third floor with Koroseal gasket glued on with Glyptal.

4) Will the 8-4 shift please request a colored bottle washer to wash up two crocks of glassware in the north hot lab.

5) Air count in north hot lab showed a sudden rise around 10⁰⁰ P.M., but this was due to the collapse of filter paper holder which brought activity closer to the counter. Check with portable air counter showed only 1×10^{-11} count.

4/29/47 Run Status:

HP (1) Product in B17 — 165 ml. waiting for anyalics.

ay 3 (2) B24 — HCl ether waste

12-8 (3) B-3 HNO_3 waste.

B-6 recample (2691 curie)

127

(4) Completed II-167. Lab is pushing (!) anyalics

(5) P30 - P3 was taken up in 100 ml H_2O — there is a ppt after bringing temp up in steam bath. Did not carry on any further. It is sitting behind High Barricade

(6) See E.J.W before transfering product to B 19.

4-28-48
8-4

(1) 17 P 2478 C
(2) spec analysis good
(3) Al dissolving heels until N

Evaporating Ba 140 in cone - finish at 5:15 pm. Take a skyphine as soon as evaporation is complete. Hang plug half way in cone + leave for day shift. Turn off skyphine equipment when finished

Phosphorous Status:
(1) P31 + 32 - P-1 - going thru column.
(2) P30 R - P3 - going to dryness on steam bath.
(3) P30 - P3 - pH adjusted to 7.5 after filtering.

Composited 167 AC did not take sample pH 7.25. Which samples?
The following I is to be composited

165 2A
166 2A
2C
167 2B
2C

use 0.1 ml $NaHSO_3$ + neutralize with 0.3 N NaOH + evaporate on steam bath to 50 ml.
N hot lab - hot! Scrubbed and not enough

4-~~4~~9-47 Run Status:
4-12
SJR

1.) Finished evap. the Run. Inspection showed a white globule of ppt in the center with a white film of ppt on the sides tinged slightly yellow with iron. Sky shine reading at 6^{00} P.M. gave 48R. Carrier is in the Cell with plug inserted halfway.

jetted to w 9 ~~[illegible]~~ 2.) Batch M in A11 was neutralized in A5 and transferred to A6. Contains 3WFN (122C's) sent over from Cell B.

neutralized & in A5 wg 3.) A11 – Batch N from A1.

4.) A1 – Heels dissolving

Cell B 1.) B3 – 3W Pb from B12 – Two shots in. One 4.5 liter rinse being transferred. To be sampled.

compute

2.) B6 – B6 Rinse – 26.5 C's – undisturbed.

3.) B24 – HCl – ether waste.

Iodine – 1.) Sampled I-167-2AC – Stored in shipping room.

2.) Made up composite I-167-2BC from 165-2A, 166-2A, 166-2C, 167-2B and 167-2C. Added 0.1 ml 1M $NaHSO_3$, neutralized. Evap. to 50 ml on steam bath.

Phosphorus – 1.) Neutralized P30R-P3 after filtering. Sampled and stored in shipping room. Washed ppt with hot 5% HCl and added to P Rinse flask.

2.) Sampled P31 & 32, P2 – Start evaporating on steam bath when I composite is thru.

3.) Regenerating column.

Misc: 1.) Scrubbed north hot lab and front of I hood. Laid down papers. Smears on hottest part of floor were low.

2.) Save a neutralized waste metal solution in A5 to take care of subsequent rinses from Cell B tanks. It is O.K. to neutralize Batch N in A11.

4/30
12
H
W.

4/30
8-
W.S.
E.K.

3.) Decontaminated eight carriers.

4/30/47 12-8 HP W.Y.G.

① Batch M jetted to W9.
② Batch N neutralized and now in A-5
③ Heels in A-1 still dissolving = 170
④ Clean those carrier found still hot by shift HP.
⑤ Completed washing of B12 and took sample B3 - 3WPb (14.57 C's S.T)
⑥ Cleaned up two cases of dirty acid bottles on E. plat/vm. Somebody is still not washing out the bottles before replacing them in case.
⑦ I^{131} composite still on steam bath volume about 75 ml.
⑧ Column is being washed with 150 ml H_2O; To be sampled when complete (P-31 & 32 R-1)
⑨ P30 R P3
Activity = 2.72 m'c/ml. NUM .1 mg/ml.
T.S. .2 mg/ml. Cl^- .2 mg/ml.
⑩ Put 3 containers in bucket C-2 in canal at 105 bldg.

Iodine:

4/30/47 8-4 W.S. E.K.

① Sampled I-167-2BC for analysis. It is now back of barricade in N. Hot lab.

Phosphorous:

① P31 & 32-P2 evaporating on steam bath.
② Column regen complete & P31+32-R-1 sampled.

Bldg. Status -

① ~~Ba~~ Ran is gone! 170

② A-1 - heel dissolving is diluted & cooling

③ HCl - ether waste was sampled & transferred to carrier - now on N. side cell B. It is hot - reads 26 R at 2 in. over top; 550 mr/hr on 2nd floor.

④ Charabelle washed glassware in N. Hot Lab. Hot sample bottles & tops are soaking in bucket of HCl behind barricade before washing.

⑤ Replaced valve M1 - M11

⑥ Trying to get riggers to remove HCl ether waste to garden before shift change.

4/30/47 (1) Sodium compound I-167-2BC analyzed
4-12 100.3 mc of Sr. This is in a bottle
Blaney in the isotope shipping room
Perry (2) P-31 & 32 transferred to 500 ml flask & evaporating to dryness

(3) Scrubbed third floor

(4) Changed NH_3 cylinders

(5) Sent 4 carriers to 105. Decontaminated one carrier. H.P. has taken smears.

Tony V. - Carrett 37370 sent to 105 had no cutter. New cutter installed.

(6) Steam jam shut off.

(7) Rinsed glassware and stored scopes

(8) The carrier with the HCl ether waste is in the garden and is to be shielded with lead bricks. Use Caution and avoid

over-exposure as the carrier is very hot and getting hotter.

(9) Decontaminated tools and rinse pan lift the barrel in Decontam. room. Bench is still hot. Decontaminated hot spots in front of Cell A. Note that tools, sample tongs carriers etc. have not been stored for lack of time. Will 12-8 please put them away.

(10) Status of Cells A + B.

A1 – M.W. to go to A5 when CO_3PO_4 from A + B tanks is back in A5.

A5 – 3" 25% HNO_3 from Cell B

A6 MT

A9 – 30" of CO_3PO_4 to go to A11 (A9 has already been boiled)

A8 – 42" of CO_3PO_4 to boil one hour (not boiling yet)

A11 – 20" of CO_3PO_4 to be boiled one hour as soon as you get enough stuff from A8 or A9 to fill tank

B1 – 35" of CO_3PO_4 boiling till 12:40 A.M.

B6 – 35" " " " 12:35 A.M.

B3 – 17" " " " 12:20 A.M.

B10 – 13" 25% HNO_3 Boiling till 12:15 A.M.

Send B10 to A5. B3, B6, B1, A8, A11, A9 when through go to A5. Then neutralized M.W. from A1 in A5 on this boiled CO_3PO_4 & send it all to W-9 See R.S. Pressley's note in other log.

This will constitute 1st CO_3PO_4 wash for all tanks. The 1st acid wash for B tanks was done previously to this CO_3PO_4 wash

5/1/47 12-8 HP W.Y.G

① All carbo phosphate to A5 then added A-1 (needs) and jetted to W9.

② New batch of carbo in A5 now.

③ Made two pans of sol from A9 → B26 → B27 → B12 → B-7 to B-3

④ Filled B1, B3, B6 & B10 with 25% Acid and heated & sparged each tank three times so far as the sol is being passed from one tank to another.

⑤ Started Carbo through B1 following the Acid. See shift inventory for exact contents of each tank. At B10 all solutions can be moved up one tank.

⑥ A11 - A8 & A9 have 25% HNO_3.

⑦ Washed up hot spots on 3rd Level, near Sink & Bench and also in front of PB near B10-A5 Jet.

⑧

5-1-47 8-4 Hjl + E.K.

A1 Dissolving heel batch P - upon completion sample

M-1 Dissolving 2 drums flake caustic - jet to M11 to be used for cell A decontamination
dil. to 35% (11.2" in M11)

Phosphorous Status:

① P30R-W1, P30-R1, P31+32-R1, and P31+32-W1 discarded.

② P30R-R1 and P31+32-F1 combined to form P32 Composite. This run is going thru column.

③ P31+32-P3 was taken up in 125 ml water, filtered, and pH adjusted to 7.5.

Pressley had spray nozzle made up to spray cell A - assembly is on 3rd floor & hose to hook into hot water on 1st floor.

Instrument man working on A5 ring balance

5-1-47 Blanc Perry 4-1-47

① Washed up hot spots on 2nd + 1st levels. 2nd level is O.K. 1st level?

② Re decontaminated carrier # 30750. Sent 4 carriers to 105 bldg.

③ A5 L.L. seems to be O.K. now.

④ Unplugged A5 sampler.

⑤ Shielded Strontium carrier in 706-C garden. Will 12-8 continue shielding if possible. Used all our exposure time. NO!!!

⑥ Pulled plug over A4 & started spraying wall with hot water. Filled sump to 10" twice sent to A5

(7) M11 has 34% Caustic in it. L.L. manometer blown. 5/2

(8) Sampled A1 at 8 P.M. It is to be sampled again at 4 A.M. Heels dissolving. 12-

(9) Note that we started all decontamination solutions from A9 because A1 has a dissolving solution in it. H W.Y

(10) A5-1 A sample of the Carbo phosphate washes of Cell A + B + Acid washes of A + B + Run wastes ran 269.7C's using our factor. So by C.J.W's permission it is to go to W-9

(11) Iodine setup at east side of Cell A has been steaming most of the shift and is still steaming.

(12) Phosphorus + P-32 - composite + P-2 now evaporating on Steam bath. R-1 going through column.

(13) Status:

A1 - Heel dissolving resample at 4 A.M

A9 - Acid (not yet boiling) This is second part of decontamination schedule

A8 - Caustic (not yet boiling) First part of decontamination schedule.

A5 - Water from cell sumps from washings (Sampled + called A5-2. Sample in lab.

MOVE

5/2/47 12-8 HP W.46.

① H_2O rinse going through resin column.
② P.32 composite P-2 still on steam bath.

A cell

① 4-12 washing of A cell & sump was 25.8 curies jetted to W9.

② our washing of A cell & sump read 26.4 curies and was jetted to W9.

③ Tank have been washed again on out side and 10" of H_2O are now in sump — Couldn't continue as A5 is being used for tank rinses.

④ See clip board on decontamination of cell A for next steps in jetting solutions. Columns at left hand side give steps that have been completed and those to be done next. At shift change all sol are ready for cooling & jetting. Start with A5 and work up the page. A5 soon as A11 gets in A5 take a sample. See shift inventory if any doubt is in your mind as to exactly what is in A cell Tank.

⑤ A 8^{15}/PM & a 4^{00} AM sample of A-1 are in the lab. The anyalsis are complete but you can't tell if A-1 has any more slugs undissolved or not. Maybe lab should recheck their anyalsis.

5-2-47 **Decontamination**

8-4 1.) Opened Cell A Door. Reading 7.6 R at doorway
HTR + JOR to Cell entrance. After hosing reading was
3.4 R. Omit hosing for awhile since W5
is being decontaminated. Continue with tank
decontamination.

2.) A1 - HNO_3 acid
A9 - Caustic (NaOH)
A8 - HNO_3 acid
A11 - Caustic (NaOH)
A5 - HNO_3 acid
} coming up to boil at shift change.
A6 - MT

Bring all tanks to a boil and cool all tanks at the same time, if possible. then, move over me.

3.) Switch to 20% Na_2CO_3 on next addition to A1. Pump to sulfuric tank on third floor from M1. Rinse out tanks with water. (Per R.S. Priestly).

Miscellaneous

1.) A1 sampled & disposed of. A1 is now ready for decont. with the rest of Cell A tanks.
2.) All lights in Cell A are burned out (checked by electrician). We lowered an extension light thru to plug on the 3rd floor. This is the only light in the Cell. Be careful with it.
3.) Three Sulfur cans taken to 105 bldg.
4.) Washed up hot spots on first floor.

Phosphorous - 1.) P32 Composite - P2 - still on steam bath.
2.) Sampled P32 composite - R1.

5/2/47 4-72 Blauer & Perry

(1) Noticed at start of Iodine run that N hot lab hood fan would not come on. Since Phosphorus had been evaporating a precipitation test was run. This showed area to be O.K. Repaired motor by replacing belt. Started Iodine run at 7 30/A

Note - DO NOT ENTER "A" cell while Iodine is being run. The vacuum pump exhausts there.

(2) I^{131} - Got 3 Te slugs from 105. Two are in carrier under sample storage safe. Run 168 almost complete.

(3) P-32-Comp - - P-2 analysed 61 mc's total. Added the dead P according to IBW's note in Instructions.
- R-1 - Contained 331 mc's total. Named this P-32-R1A and precipitated with NH_4OH & started back through the cycle.

(4) Stopped steaming Iodine set up on E. side of cells to preserve vacuum in A1.

(5) We have already started to use the M-9 pump to T3 tank. Lines & tanks were flushed before Na_2CO_3 was sent up.

(6) I.B.W. says it is O.K. to use the oxalic other than the C.P. stuff.

(7) See inventory for Tank status

5-3-47 ① Completed I-168; started & completed I-169. 5-3-4

Started I-170. 8-4

12-4 King ② Phosphorous status: SJR +1

① Nitrite column regenerating.

② P32 Composite - P-2 evaporating on steam bath.

③ P31-32 RIA - P-2 evaporating on steam bath; dead phos. not added yet — to be added when P-2 analysis recd.

③ Scrubbed floor, sink, cabinets, and bench in N. Hot lab to clean up hot spots. Unable to get hot spot off bench.

④ Decontaminated 4 isotope carriers; they have not been rechecked by H.P.

⑤ Decontamination status:

A-1 - Acid heating

A-9 - Na_2CO_3 heating

A-8 - Acid heating

A-11 - Na_2CO_3 heating

A-5 - Neutralized waste - cooling - not sampled yet.

A-6 - Neutralized waste.

5-3-47 Decontamination Status

8-4 A-1 Na_2CO_3 going into tank - Ready to heat.

SJR + HTR A-9 HNO_3 heating

A-8 Na_2CO_3 heating

A-11 HNO_3 heating

A-5 Na_2CO_3 heating

A-6 MT

Iodine

1) Completed Run 170
2) Started & Completed I-171.
3) Combined I-168-2B and I-169-2B with Iodine Run 171.

Phosphorus

1) Transferred P-32 Composite P-2 to a 200 ml flask. Evaporating on steam bath.
2) Regenerated Nalcite column. The sample P-31-32 R-1A R-1 is in the lab. Reading at top of flask on this R-1 was 1600 mr/hr.
3) P31-32 R-1A-P-2 analysis, 25 mc's. Set aside behind high barricade.

Miscellaneous

The four isotope carriers have been rechecked and OK'd by H.P.
Reading inside Cell A, 2' in, 4' off floor, 2800 mr/hr.

5/3/47 4-12 Blauer / Perry

(1) Iodine @ Run 172 started and completed. Seeded with 170-2C, 171-2C, 171-2D, and 171-2E.

(b) Run 173 Started. Seeded with 172-2C, 172-2B, 163-2C, and 166-2D.

(2) Phosphorus @ Poured P-32-comp into P-31-32-R-1A-P-2 and placed on steam bath. This should contain 86 mc's total.

(b) P-31/32, R-1A. R-1. Made a NaOH strike on this. Solution buffered itself at 10.2 pH. Filtered in 5 hot lab

(3) Decontamination

A-1 Mt - Ready for Na_2CO_3
A-9 HNO_3 heating
A-8 Na_2CO_3 heating
A-11 HNO_3 heating
A-5 Na_2CO_3 heating
A-6 Neutralized waste. Boiling until 12 oo/p

(4) Misc @ There is a leak in the Iodine setup drain line. A beaker has been set under it and will bear watching lest it run over. Floor in N hot lab is hot in spots from this leak.

(b) East A cell Iodine setup has been steaming most of shift and still steaming.

5-4-4 12-8 HJS.

5.c

5-4-47
12-8
HJS.

I^{131}

Finished I-173 started & completed run 174. One more to go.

P^{32}

P31+32 F-1 analyzed 268 mcs assayed added Fe & ppted W1-113 mcs
P1-168

P1 of P31+32F passed through resin column is being followed by H_2O wash.

Cell A Decontamination.

A1 MT
A9 HNO_3
A8 Carbonate
A11 HNO_3
A5 Carbonate
A6 neutralized waste

} hot

The above tanks are ready to cool & shift.

5.c

5-4-47 Decontamination Status

SJR ~ HTR	A-1	HNO_3	Heating
8-4	A-9	Na_2CO_3	"
	A-8	HNO_3	"
	A-11	Na_2CO_3	"
	A-5	Neutralized waste going to A-6.	
	A-6	Neutralized waste	

Iodine

Started and completed Run 175.

Phosphorus

1) P' of P 31 & 32 F-1 P-2 evaporating on steam bath contains 156 mc's. carrier added.
2) P 31 32 R1A P-2 transferred to 500 ml. flask, evaporating to dryness on steam bath.
3) Nalcite column being regenerated, HCl going through at end shift - P31 32 F-1 R-1.

Miscellaneous

1) Emptied all 1 and 3 iodine samples from last 30 runs.
2) Began cleaning up N. hot lab.

5-4-47 (1) Made composite of I-175-2AC. Consisted of
4-12 168-2A, 169-2A, 170-2A, 171-2A, 171-2B, 172-2A, 173-2A, 173-2B,
BRAUER 174-2A, 174-2B, 175-2A, 175-2B. Total of 584.9 mc's, 420
Perry ml. Added 8.70 ml of 1M $NaHSO_3$, 11.7 ml of .34N NaOH
adjusted to Pb of 7.2. Composite is in shipping room
vault. Analysis: 1.42 mc's/ml (S.T) and 597.8 mc's tot (S.T.)
(2) Sent 2 carriers #36235 + 30750 to 105 bldg
(3) Something new has been added. I suppose
everybody has noticed that when you get to W11
the solution backsup the hot sink & the hot drain
from the Iodine set up & leaks onto the floor.
What's the use of trying to clean the floor??
(4) The crud from the NaOH strike on P-31-32
F-1 is still in S hot lab. Reads well
in excess of 8 R/hr. We got our exposure
before getting to this.
(5) In order to keep a decent vacuum in
1 Cell A the duct to Sump jet should
stay on.
(6) Combined P-31 & 32 F-1 P2 with P-31 32
R 1A - P-2. (Kept "F-1" name) This should
give 242 mc's total on the product.
(7) Combined P-31 & 32 F-1 W-1 with the R-1 and
made a NH_4OH strike. Called this P31 & 32 F-2. Now
going through the Stang reactor. Should
contain 138 mc's.
(8) Cleaned N hot lab some. Hot spots remain
on floor, bench, and assorted glassware.

5/5/47 12-8 WJ + CK

Removed hot glassware from underneath hood + barricade in N hot lab + stored temporarily in S.S. tray in decontamination room. Hosed the floor with hot water + scrubbed with liquid soap. Knocked down radiation to 40 mr/hr underneath I^{131} hood. This should give the welder sufficient time to repair leak in drain line.

Removed UX1 set up + stored in low storage area.

Hosed down all of 1st floor, it sure needed it.

Filtered P31-32 F-1 P-2 thru sintered glass disc to remove white ppt. Apparently filter retained little activity as Cutic Pie showed same radiation before + after filtering. P31-32 F-1 P-2 is evaporating on steam bath.

P31-32 F-2 P-2 is going thru resin column — 150 ml wash water has been added.

Repaired steam leak on cell B air intake heater.

Decontamination Status.

A1 Acid boiling til 8 AM
A9 Na_2CO_3 cooling
A8 Acid cooling
A11 Na_2CO_3 cooling
A5 MT
A6 Neutralized waste

5-5-
8-4
SJR-

5-47 Phosphorous
-4
TR-HTR

1) P 31-32 F-2 P-2 evaporating on steam bath.
2) Transferred P 31-32 F-1 P-2 to a 500 ml flask. Evaporating to dryness on steam bath.
3) Regenerated Nalcite column.

Decontamination

A-1 HNO_3 -(weak) Cooling
A-9 800# 207° Na_2CO_3 } Heating
A-8 800# 207° Na_2CO_3 } Cycle 17
A-11 607° HNO_3 600# } Heating
A-5 MT
A-6 Neutralized Waste

Miscellaneous -

1) Made weld to stop leak in drain line from iodine hood, north hot lab.
2) Made weld to stop leak in H_2SO_4 line from T-3 to T-8.
3) The new red 5-gallon gasoline can is charged to 706-D.
4) Began pumping water washes from Cell A to the settling basin @ 10:20 A.M.

Note: 5) Sample A-5 when Cycle 17 is neutralized in that tank. Note cycle 17 consists of two 800# batches of 207° Na_2CO_3 and one 600# batch of 607° HNO_3.

6) Reading inside Cell A door, 2100 mr/hr.

5/5/47 4-12 Blauer & Perry

(1) Removed Xmas Tree and replaced with straight line. Vacuum in A-1 very poor now.
(2) P-3132-F-2-R-1 analyzed 32.5 mc's. Discarded.
(3) The fire hose that was in cell A broke. When this was surveyed it read 100 mr/hr in spots. Hose rolled up and put into hot can. Replaced with new hose.
(4) Reading inside cell A 2' in 4' up about 2000 mr/hr.
(5) P-3132-F2-W-1 analyzed 56 mc's. Discarded.
(6) Carrier #31372 was decontaminated. Can't locate #38900.
(7) Hosed Cell all shift.
(8) P-31-32 F-1 P-2 - Evaporating to dryness
P-31-32 F2 P2 - Evaporating on steam bath.

5-6
8-
RJR

12-8 5-6-47 Shaka & King

(1) P31-32 F-1 P-2 was evap to dryness & was taken up in water. It contained a ppt. Run was filtered & filtrate added to P-31-32 F-2 P-2. Ppt was discarded - low radiation.
(2) P-31-32 F-2 P-2 evaporating to dryness.

Hosed cell A on + off depending on sump pump. Could not get pump to work for more than 5 minutes without it kicking off. The trouble seems to be in the carburetor [Check]

Dumped a sack of carbonate on cell A floor via plug hole 3rd floor & hosed with H_2O

Hooked up hose to carbonate pump & sprayed cell A equipment on that we could until exposure time was used up. M1 → pump → hose.

Constant air monitor hot working 3rd floor.

5-6-47 Decontamination Cell A

8-4 A-1 Na_2CO_3 Cooling

RJR~HTR A-9 HNO_3 "

A-8 Na_2CO_3 "

A-11 HNO_3 "

A-5 Na_2CO_3

A-6 Neut. Waste

Phosphorus

1) P-31-32, F-2, P-2 evaporating to dryness.

Miscellaneous

1) Repaired pump 8:30 A.M. and pumped continuously from Cell A to settling basin.
2) Began decontaminating iodine set up. Flushed system with water, removed Pb shields and "hot" tygon tubing, and flushed down with hot water. Background reading 50 mr/hr. Continue decontaminating iodine glass ware and hood. Change in equipment to be made.
3) C.P. reading 4" off floor Cell A, 4 r/hr.
4) Received P-33, placed on table west annex.

5/6/47 Blaner & Perry

(1) Filled A-16 scrubber with carbonate and ran steam through. Splashed acid into cell floor and washed floor and walls by moving hose into the cell farther. Reading 3' inside door went from 4 R/hr. to 560 mr/hr. Everyone got his dose of radioactivity.

(2) P-31 & 32 F2 P2 transferred to 500 ml flask and evaporating to dryness now.

(3) P-33 - C-1 analyzed 39.6 mc's total. It was high in Fe and Ni so a NaOH strike was made. Solu. inside barricade in N hot lab. Reads 100 R/hr at 1 foot.

Fe 218 mg
Ni 32.7 mg
Cr. 27.3 mg

(4) Changed hot floor paper west of Cell A and in N Hot lab.

(5) Took 3 carriers to 105 bldg.

(6) Decontaminated 6 carriers and these are OK, and tagged.

(7) Made up cleaning solution and filled Iodine setup receiver and allowed this to sit.

(8) A-1 boiling HNO_3
A-19 - cooling Na_2CO_3
A-8 cooling HNO_3
A-11 cooling Na_2CO_3
A-5 Na_2CO_3 cold
A-6 Neutralized waste

5-7-
12-
NJS

5-7-47
12-8
HJ+EK.

Decontaminated iodine equipment, snapped draw off line - will have to be welded by glass blower.

Dissolved F-2 ppt. for P-33 in 6 N HCl & sampled for activity.

Acidified F-1 for P-33, added 60 mg Fe, ppt., and redissolved in HCl. Now going thru Nalcite column.

P31-32 P-3 was evaporated to dryness; when redissolved (50 ml water) it showed a light brown-to-yellow color and contained a ppt. It was filtered & pH adjusted to 7.2. The final solution looks slightly colloidal. It will probably have to be processed further - either refiltered, or put in next C-1, etc.

Filled cell A tanks to capacity with H_2O + boiled for most of shift, cooled + jetted tanks dry at end of shift.

Shoveled 2 bags of TSP into cell A + filled floor with water, let sit for 1 hr. then proceeded with hosing + pumping off to S.B.

Constant air monitors are not working.

Cell A cutie pie readings varied depending on the amount of H_2O in floor. 500 - 800 mr/hr.

Paul Phillips could not come in today sickness in family

5-7-47 Decontamination Cell A

8-4 A1 MT

SJR-HTR A5 MT

A8 H_2O } Tanks cooling. Off gas system being
A11 H_2O } steamed down. Sample A-6
A9 H_2O } composite after steaming is finished.
A6 H_2O }

Phosphorous

sampled mg 1) Regenerated Nalcite Column. H_2O going thru.
2) Made NaOH strike to P33, F-2. Called the filtrate P-33, F-1A, the ppt. P-33, F-2A.
still there mg 3) P-33, W-1 contains 75 mc's.
4) P-33, P-2 evaporating on steam bath.
in column 4-12 WYG 5) P-33, F-1A has been filtered thru Stang Reactor, and the ppt washed with 100 ml. 1 M NH_4OH. The filtrate was called P-33, F-1A, W-1. Not sampled.
still there mg 6) P-33, F-2A is behind high barricade and has been sampled. (In HCl solution)
7) P-31-32 P-3 contains 128 mc's.

Miscellaneous

1) Unplugged pump and placed screen filter over intake line to pump.
2) Installed scaler at Cell A door, E. side.
3) Repaired two monotrons on third floor.
4) Hosed down loading platform, east side bldg.
5) Decontaminated hot spots 2nd floor.
6) Steaming tanks A-6, A-8, A-9 and A-11.

Note: P-34 received now on table west annex. Filter off sulfur and make NaOH strike, etc. Runs 34 + 35 are to be combined as per I.B.W.

7) Pb shielding was placed around iodine product receiver this shift.

8) Instrument men checked thermocouple in Iodine dissolver + found it ok.

5/7/47 ① A16 still steaming.

4-12 ② The following Readings in cell A were taken.

mg 3.

Left side of step			Right side of step	
0" in	3' in		0" in	3' in.
450 m/R	800 m/R	4' from floor	370 m/R	700 m/R
430	800	2' from floor	410 m/R	800 m/R.
800	1.6 R	2" from floor	800 m/R	1.2 R

3. On Treating the floor with dilute HNO_3 & sodium bicarbonate the reading 2" from floor are.

340 m/R 600 m/R 340 m/R 500 m/R

Since the above readings were taken the cell floor has been flooded again and it may be possible that the contamination has increased at these points.

Plus

4. P-33 FIA-P1 is now going through column below with water runs.

5/ P34 & 35 were combined and the S filtered off. Ready for Cr & Ni separation. Located behind High barricade in 2L Erl. flask - almost running over!

6/ Butler brought still another phos over - it is located on floor behind plexiglass at W. side of Phos set up in N-Hot lab.

7. Unloaded new I carriers.

5-8-47
12-8
Shrabar & King

Phosphorus status:

① P33 F1A-P2 evaporating on steam bath.

② P33-P-2 transferred to 500ml flask - evap to dryness on steam bath.

③ Discarded P33-W1 (75mc), P33-F2A (43mc), & P33-R1 (7mc).

④ Made NaOH strike on P34+35. Acidified F-1, added 60mg Fe, ppt with NH_4OH, redissolved in acid - now going thru Nodcite column (after regeneration). F-2 was dissolved in 6N HCl & acidified.

⑤ Sulfur was filtered off P-36 - it is now behind high barricade.

(1) Had maintenance make a s.s. nozzle which was used to spray cell A from opening in roof with acid + caustic.

(2) Had a nipple + reducer piped into caustic line from caustic head tank. Used this method to spray cell A with caustic.

(3) To spray cell with acid hook up s.s. nozzle to a piece of tygon + onto hand acid pump in a carboy of acid. Get a fairly good spray.

(4) Steaming A16, took a sample beginning of shift - no chemist in tonight to run it.

(5) The sump pump blew out a connecting rod about 5 $\frac{oc}{AM}$. Disconnected hose on both sides of the pump + hosed down pump with hot H_2O. Stan see if you can get an electric pump to do the job rather than another gasoline pump.

Cell A Entire Pie Readings

1. L side doorway, 2' above floor, flush with step, 280 mr/hr

2. L side doorway, 2' above floor, 3' inside 650 mr/hr

3. R side doorway, 2' above floor, flush with step, 245. mr/hr

(over)

4. R. side of doorway, 2' above floor, 3 minutes, 3.60 mr/hr

5-8-47 Decontamination Cell A

S.J.R.-H.T.R. A-1 MT

8-4 A-5 MT

A-8 MT

A-11 MT

A-9 MT

A-6 MT

5/8/47
4-12
wy S

Phosphorus

1) Made NaOH strike P-36, filtered, etc. The product P36-F1-P1 has been sampled. Now behind barricade ready for Nalcite 1N.
2) The filtrate P36 F1 W1 has been sampled.
3) P36 F2 has been sampled and is now behind high barricade in HCl solution.
4) Nalcite column being regenerated. HCl now going through.
5) Combined P 33-P2 with P 33-F1A-P2 Now on steam bath.
6) P 34+35, P-2 evaporating on steam bath.
7) Awaiting analysis on P 34+35 F2 & P 36 F2. These two are behind high barricade. Awaiting analysis also on P-33 F1A R-1, P 34+35 W-1, P 33 F1A W-1 and P 36 F1 W-1.

Miscellaneous

1) Sump pump could not be repaired. So far unable to get another pump.
2) Ordered two sections fire hose.
3) Settling basin counts per min > 1000.

5/8/47 4-12 wy S. Cell A.

① New pump set up about 7.00 pm. Finally decided to change over from a 1½" Line to a 3" line on the intake side. New line installed by 10.00 and pumping a lot faster.

② Both hoses maint brought over are very hot. Little one 1½ Line reads 400 mR or more. 12-8 please dispose of it as we haven't any more time. We worked with it for 2 hrs before we realized it was even hot!! Might be well to wash down the alley way with the small water hose.

③ Readings taken show that very little has been accomplished in knocking the radiation down. Hosing doesn't seem to be doing the trick. Reading were taken in the same spots as last nite & they are as follows:

one

5-9-47
12-8
[illegible] & E.K.

At Left of Door.		Dist from Floor.	At Right of Door.	
At Step	3' In		At Step	3' In.
450	790	4'	340	500
395	790	2'	365	540
790	800	2"	790	1.1.

(4) Seems to me the best thing to do is through Carbonate of T.S.P. etc all over the cell & let set for a few hours before hosing down.

Phn

(1) column regenerated & P34-35 R1 sample taken.

(2) P36 F1-P1 now going through column. There is more solution to add to sep. funnel.

(3) P33 F1 A (W1) 111 m'c } should
P36 F1 W-1 398 m'c }
be combined & Fe added & reprocessed. There are a lot of other m'c that can be salvaged if you have the exposure time.

4-9-
8-1
Blau
Perry

Misc:

(1) Five sulphur cans filled and are now on the third level bench. These damn cans read as high as 1.4 R!!!

5-9-47
12-8
HJ + C.K.

1. Sprayed cell intermittently from plug openings with 60% HNO_3 35% NaOH followed by pressure hosing & pumping.
2. Decontaminated 2 carriers for ACV
3. Made up cleaning soln. in N hot lab. crock.
4. Phosphorous status:
   ① Combined P33F1A-W1, P36F1-W1, and P34-35-W1 to form P36A. P36A-P1 now waiting for Nakite column.
   ② P36F1-P-1 in column - 150 ml rinse water now going thru.
   ③ Discarded P-33-R1 (7.3 mc.)
   ④ P34+35-P2 and (P33-P2 + P33F1A-P2) on steam bath.

⑤ Cell A Radiation 7 AM:

RS flush door	2' above floor		195 mr/hr
" 3' inside	"	"	290
LS flush door	2'	"	225
" 3' inside	2'	"	390
Center 3' inside	5'	"	490

4-9-47 ① Hosed cell in direction of A1 all shift.
8-4 ② Pulled plugs of A6 + A5 steamed
Blaur + tanks from roof, threw down T.S.P. to top of
Perry both tanks & then steamed some more.
(3) Put contaminated hose in carbonate tank to decontaminate it.

(4) Made up solutions for the next Iodine run. 5/9/4
(5) Phosphorus 4-12
P-36A - W-1A - 59.4 mc's (discarded) ny S.
W-1B - 35.88 mc's (discarded)
P-1 - 380 mc's
(a) P-2 - going through Nalcite column
(b) P-34-35 F-2 - 184 mc. Behind barricade
R-1 - 49.5 mc (discarded)
(c) P-2 - 92.4 mc (on Steam bath)
P-36 F-1 - R-1 - 41.7 mc (discarded)
P-1 - 37.4 mc
(d) P-2 - 265 mc (on steam bath)
P-36-F-2 - 50.6 mc (discarded)
(e) P-33-F-1A - P-2 - 152 mc (on steam bath)
Ready to turn on mass
(6) Distilled water is temporarily off for connections to Iodine setup.
(7) The pump that broke down is on east platform and tagged. It reads 4 R/hr
(8) A sample of radioactive Fe is evaporating to dryness on steam bath per IBW.
(9) A-1 - acid
A-8 - carbonate
A-11 acid
A-9 Mt
A-5 carbonate
A-6 waste
A-6 tank reads 400 mr/hr
cell floor reads 1 R

5/9/47 4-12 my 3.

① All A cell tank MT.

② Pulled plugs over All A cell Tanks & loaded 100# TSP To top of each tank.

③ All A cell manometers equalized except cell A vacuum & A-1 vacuum.

④ Closed off cell vacuum inlet with paper. A cell vacuum only reads "8" but probably due to Duct being full have jetted it all shift.

⑤ All steam line in A cell are on (Except those going to B cell)

⑥ Pptron reading at 9:00 pm read 1.9×10^{-11}. (Hope it stays this Low) 1.6×10^{-11} at 10:30

⑦ Cell still steaming at shift change. about 10½" H_2O in A sump. Too hot (0) for jet to pick up. Suggest steaming until 13" of H_2O are in sump. & Hooking up pump if S.B is cool enough.

Phor.

P36A-R1 — HCl going through column.

P36A-P2 to go on steam bath

when there is room for it.
Fe sample - now on steam bath (500 ml flask) When dry set behind high barricade for I.B.W.

Cleaned out Decon Room. & put 3" Hose formed pump set up in wire enclosure on E side of building. Read about 100 mr/hr.

5-10-47
12-8
SJR

Phosphorus & Fe 1.) Took off Whitney's Fe and stored behind high barricade in north hot lab.
2.) Four phosphorus runs evap. on steam bath.
3.) Column still regenerating.

Cell A Decont

S.B. samples were 1080 c/min/ml at 11^00 P.M, 945 c/min/ml at 1^30 A.M and 640 c/min/ml at 4^00 A.M. We jetted Cell A Sump to Will and put pump into operation. The pump is taking the water out of the Cell about as fast as you can throw it in with the fire line. Watch S.B. results. Continue just plain hosing for a while without chemical treatment until you are sure that S.B. results will be O.K.

We had to discontinue steaming the Cell at 2^30 A.M because fristers in 706A were buzzing. Air count in bldg went up only slightly.

Alternate steaming and hosing down the Cell should give results now.

Cell A dosing - 150 mr/hr

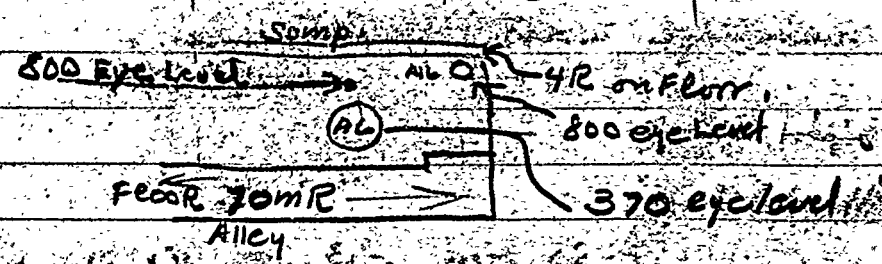
5/10/4
8-4
Glove
Perm
Added
PO4 U

5/10/47 (1) The two-ton hoist at W-4 has been replaced by a 3-ton hoist.
8-4
Glaver (2) Added P-33-34 P-2 to P-33 F-1 A = 244.4 mc
Perry (3) Sent janitor's floor brush to maintenance shop to replace bearing
Added PO4 Liner
(4) Maint. worked on Iodine hood all shift.
(5) Removed plugs above all tanks through down Na_2CO_3 + NaOH, steamed + hosed. General background hasn't dropped much. The rusty looking stuff on the floor is very hot.
(6) Put Acid into A-16. Drained to W11 followed by H_2O
(7) Repaired steam leak in low storage, emergency drop cord light, replaced fuse in line to all H.P. integrons.
(8) Hosing has been done through the plugs on roof directly over each tank
(9) Phosphorus
(a) P-33 F1A - P-2 On Steam Bath
(b) P-36 F-1 - P-2 " " "
(c) P-36 A - P-2 " "
(d) P-36 RF - Solutions of P-34-35 F-2 and P-36-F1-R-1 were added together
Total mc's 392 - Made NaOH strike, Soln buffered at pH 9.0. Soln. settling for cmd filter behind high barricade.
(10) Housekept 1st + 2nd levels + East platform
Smeared floor by cell A entrance. It is O.K.

5/10/47 ① Ran 2 batches of Fluo (5%) HNO_3 (10%)
4-12 sol. in A Cell Tanks and Hosed
Gmf. tanks from Third level.

② The following readings were taken before steaming the cell:

Left Side of Step		Dist from	Right Side of Step	
At Step	3' In	floor	At Step	3' In.
190	280		175	250
190	230	4'	130	190
150	150	2'	150	230
		2"		



5-11-49
12-8
H.T.R.

③ All manometers equalized and started to steam A cell at 11:00 PM. Steam for 4 or 5 hrs & hose down. Watch S.B

Phos:

① P33 FIA P2 behind high barricade with beaker over it — has gone to dryness & taken up in 100 ml of H_2O. Needs to be filtered (w/ O_2 present) PH adjusted for shipping. You can add more H_2O as this has about 244 m/c.

② P36RF is filtering into suction flask behind high barricade. This is Cr & Ni extraction. Carry on from here by making acid with HCl and Fe neutralize with NH_4OH etc.

5-11-47
12-8
H.T.R.

Phosphorus

1) Filtered P-33 FIA P-3 to remove SiO_2 and adjusted pH to 7.8 (190 ml.)
2) Completed filtration of P-36 RF. Called filtrate P-36 RF1, ppt. P-36 RF2. Took up ppt. in 150 ml. hot 6N. HCl, now behind high barricade. Sample is in lab.
3) P-36A P-2 evaporating on steam bath.
4) P-36F1 P-2 " " " "
5) P-36RF1 P-1 going through Nalcite column.
6) P-36RF1 W-1 Sample is in lab.

Note: Analysis P-36 RF1 P-1 = 1.3 mc's. Suggest this be resampled before discarding. Should be ~ 1500 mc's. (OVER)

6550

Decontamination Cell A

Diversion box sample 11:45 PM >2000 c/m/ml.
S.B. sample at 11:45 PM was >700 c/m/ml.
Continued steaming down cell for 5 hrs, then jetted soluting to W-11. Highest cutie pie reading in corridor was a hot spot of 50 mr/hr. Reading at top of steps Cell A was 80 mr/hr.
Thoroughly hosed down walls, ceiling and equipment in cell and began pumping the water to settling basin. Air count in building remained almost constant during entire steaming process.
C.P. reading after hosing down was 180 four feet above floor near A-6.
Na_2CO_3 has been added Cell A and is now steaming down.

PO4 Not Ad

Note → W-11 to W-5 steam jet partially plugged.

8-4 5-11-47 Blauer + Perry

(1) 220 + 440 V shutdown at 9 A.M. Hood fans + cell ventilation fan off. Stopped steaming at 8:45 A.M. because of this. Stopped steam bath at 9:00 A.

(2) Power back on at 11:45 A.M. Put $NaHCO_3$ on tanks through the roof. Steamed for one hour + hosed cell.

(3) Cell readings at 9:00 A.M.
@ Floor of corridor — average 70 mr/hr.

(b) at steps inside cell floor - average 225 mr/hr
(c) Inside cell at 3' high - average - 365 mr/hr
(d) around bottom of A-6 - average - 375 mr/hr
(e) at top of A-6 - average - 225 mr/hr
(f) On cyclone separator average - 1 R/hr
(g) On tank A-9 average - 2 R/hr
(h) General Area around A-5 - Average - 1.7 R/hr

(4) Housekept 3rd level from sink back to Phosphorous shovel.

(5) Phosphorus.

PO4 Not Added
(a) P-36 F-1 - P2 - Evaporating to dryness
(b) P-36 A - P-2 " "

(c) P-36 RF-1 - P-1 - analyzed 1.3 mc total a check gave - 3.3 mc total. Disposed of this solution and regenerated column.

(d) P-36 RF-1 - W-1 - analyzed - 5.08 mc total with No Fe. Started to acidify and found solution to be acidic. added 60 mg Fe and ppted with NH_4OH. a white ppt. resulted. 20 cc 6N HCl will not dissolve this. Lab showed no Ni, No Cr, but a good bit of Al. Proceed as you see fit. This soln. labeled P-36 RF/A - - -

P-36 RF/A - W1 analyzed 270 mc total

5/11/47
4-12
ng 5:

① We continued to hose the cell until 2215. Final hosing was done by placing the hose at S end of sump & hosing towards the sump hose inlet. This was done to remove the sand etc from sump which was reading 10R. We got readings at the pump of 275 mR.

② The cell in now steaming with the big fan on. E.J.W. suggested we turn it off but Penninsifer is working on third level. Wait until he is finished & turn it off. E.J.W said they would get the sand blasters tomorrow in days.

Phos.

P36 F-P2 } Phos added
P36A P2

.025 mg (approx) / Curie.

① P36RF1-W1 that the other shift had so much trouble with is now called P36B. Another NaOH strike was made indevering to get rid of supposed SiO_2 and not Al. This seemed to be

ok but it is going through the new stang reactor very slowly. The W-1 filtered through ok but this is very slow ???? (W-1 sampled

(2) P36B W-1 has been sampled and is on floor on W side of bench.

(3) P36RF1A-W-1 was not touched on this shift.

Europium Separation Operations:

The two 5 gal SS beakers in the left side of 3rd level hood contain 70% HNO_3 and $Ce(NO_3)_4$. Unless you use the hood please leave the fan off as it will cause excessive evaporation if left running. Please do not disturb these but check occasionally for leaks as the pan will not hold the entire volume.

The Conical tank contains a $Ce(NH_4)_2(NO_3)_6$ ppt. which is settling please do not turn the agitator on.

Thanks.

5-12-47 Phosphorus

S.J.R.-H.T.R. 1) Disc in new stang reactor appeared
12-8 completely fused as would result from a basic solution of NaOH upon the disc. Replaced old reactor and solution filters thru very slowly.

2) Combined P-36 B W-1 and P-36 RF1A W-1 making a total of 397.5 mc's and called P-36 B W-1. Reducing volume on steam bath now.

3) Combined precipitates P-36 RF2 and P 36 Br (in HCl) and sampled. Total mc's 65. Since this solution contained all the Fe, Ni and Cr from P-36 it was discarded.

4) P 36 B1 P-2 going thru Nalcite.

5) P-36 A P-3 and P-36 F1 P-3 evaporating to dryness on steam bath.

Cell Decontamination:

After cutting off steam to cell, we loved steadily for most of the night. Readings in the Cell were quite low. Please have day shift H.P. survey the cells more thoroughly. We are leaving Cell A dry and empty at shift change. Reading at door ~~entrance~~ 80-90 mr and highest reading on top of A8 and A9 was 80-90 mr also. Highest reading in the cell was the north sump at 1000 mr/hr. Center sump was 630 mr/hr. These readings should be checked. Suggest steaming an hour or two with large fan off and having intensively for further decontamination.

8-4
Blau
Perry

Readings in Cell A

5-12-47 8:30 A.M.

Doorway 4' from floor 2' inside 180 mr/hr

Sump A-6 { N end 4. R/hr
{ Central 3. R/hr

4" Middle 290 mr/hr

4" Floor 560 mr/hr

top 500 mr/hr

A-5

top S. side 1700 mr/hr

S. side 3500 mr/hr

Bottom 5800 mr/hr

Top 800 mr/hr

A-4

2' from floor 10 R/hr

5' " " 4 R/hr

A-1

Bottom 8.5 R/hr

top 1.2 R/hr

S side 5. R/hr

A-16

1" from bottom 370 mr/hr

8-4 Blauer Perry

① Spread Acid behind + around A1, A4, A5 Hosed these spots. Activity coming down slowly.

② A4 at contact at bottom is >10R 4" above

158 floor 1' from A4 is >10R.
Behind A1 – 2100R.
(3) Phosphorus
P-36 A P-3 – thy on steam bath – Ready for pH adjustment.
P-36 B-1 – P-2 – Evaporating on steam bath
Column regenerating.
(4) C-14 – Observed run startup and part of run
(5) N hot lab has hot spot at goose neck in drain from Iodine setup and another one at pH meter.

5/12/47 4-12 wyS. ① Steam line connected to A4 inlet, on second level, A-4 steamed all shift. 5-13-A 12-8 SJR-HTI

② Used the sand blast to through carbonate over the cell. Steamed cell (with fans down) for three hours and used every one available time (including lab) to hose the cell down.

③ The sand blast is now freed with carbonate for the 12-8 to repeat the above process.

Maint fixed shower on second level.

Check Sample
Lock Sample

Phos:

(1) P36AP3 adjusted to PH 7.5. 4.6 mg P^{31} had been added; Sample now in Vault in ship'ping room.

(2) Water rinse now going through column — Two phos on steam bath.

Note:

Manometers on PB 4 (AS LL & AS Sp. Gr.) blew during steaming.

5-13-47 Phosphorus

12-8 1) P-36 B1, P-2 on steam bath.

S.J.R.~H.T.R. 2) P-36 B W-1, P-2 " " "

3) Discarded P 36 B1, R-1 containing 9.5 mc's.

4) P-36B W1, P-1 ran 22 mc's before going thru Nalcite. Has been sampled after Nalcite as P-2.

5) P-36 B W1, W-1 analyzed 1500 mc's. Resampled.

6) Regenerated Nalcite. Water going through.

Cell A Decontamination

Hosing down east wall Cell A.

A-5 is full of 10% HNO_3 boiling

A-4 is steaming.

check sample

check sample

Analysis - 160 mc's } Suggest these be rechecked.

" - 161 mc's }

5/13/47
8-4
Blaver
& Perry

(1) Placed Iodine duplicate glassware in middle drawer of office cabinet to avoid breakage -

(2) Phosphorus -
(a) P-36 B1 P2 on steam bath (500 ml. flask)
(b) P-36-W-1-P-2 on steam bath (4 liter flask)
(c) P-36-C - The W-1 sample from P-36-W-1 contained 150 mc total. The R-1 contained 20 mc and 59.8 mg Fe. These were combined and made basic with NH_4OH. Ppt settling on floor next to Stang reactor -

(3) Scattered $CaCl_2$ and acid in the cell. Sand blasted with Na_2CO_3. The highest radiation (>10 R/hr) comes from the floor next to the tanks. The major work needed is A-9 & we didn't get a reading on it. Have HP check the walk way and A-9 as the other hot spots might be shielded with lead. Started another cycle through the tanks.

(4) Working on manometers A-4 & A-5.

Survey Cell A - 9:00 AM 161 13-47

	Top	B.	M.
A-6			
S. side	190	735	225
N. side	250	725	
A-5			
S. side	800	4R	800
N "	420	800	225
A-4			
N. side	4500		4400
S. side	1200	5400	1700
A-11		400	
A-8		560	
A-1			
N side	400	4R	800
S "	800		800

Sump

N. end 4R

S end 1300

Middle 3500

5/13/47 (1) Acid blew out of manometer tubing that instrument had left open in back of PB-1, while jetting. We cleaned this up with carbonate. 5-14-47

(2) Reconnected Water line (Rotormeter to cell) 12-8 S.J.R.-H.T.R.

(3) Continued passing HNO_3 & Carbonate, sol. through tanks.

(4) Laid lead plate in the cell until all our exposure time was up. We have another hand truck full of plate for the next shift to put into the cell also.

(5) Sand blasted with citric acid, & it is now ready to steam - after jetting AS to farm.

(6) Cleaned up 1st & second level in preparation for the visiting of irmen due tomorrow.

(7) Completed on carrier decon. as per A.V. in other log, no HP report

(8) P36C is in Stacy reactor ready

for 1st NH_4OH wash.

5-14-47 Phosphorus
12-8
S.J.R.-H.T.R.

1) Evaporated P-36 B1 P-3 to dryness, took up in H_2O, adjusted pH to 7.9, sampled and placed in shipping room behind high barricade. 104 mc's.
2) P-36 C W-1 was found to have a ppt in a basic (NH_4OH) solution and is now waiting to be filtered through Stang reactor.
3) P-36 C P-1 is filtering very slowly thru stang reactor.
4) P-36 W1 P2 is on steam bath.

Decontamination Cell A

1) Pump went out at 4 a.m. Connecting rod bearing on crank shaft frozen.
2) Cell was steamed and hosed and is now clean and dry.
3) C.P. readings were as follows in Cell A:

	A-1	top 800 mr.	bottom	4.93 r.
	A-5	" 357 mr.	"	378 mr.
West side	A-6	" 378 mr.	"	245 mr.
East side	A-9	" 154 mr.	"	483 mr.
	A-8	" 300 mr.	"	635 mr.

Sump averaged 3 r.

(over)

4) The hot spots around A-1 and A-4 and between A-5 and A-6 have been partially shielded with lead.
5) Have pump repaired today so we can continue decontamination processes tonight.

5/14/47 (1) Phosphorus -
8-4 @ P-36 C - W-1 - Contained a small precipitate in approx. 6 liters solution. Disposed of this per I.B.W. No sample taken.
Blauer
Perry
(b) P-36 C - P-1 - Contain 39 mc's and 34 mg Fe. This is to be added to the next P-1 on another run. Solution behind high barricade.
(c) P-36 W-1 P-2 Evaporating (500 ml. flask)
(2) Cell A decontamination - Replaced bearings on the pump - Lead sheets were hauled to east platform and are waiting for riggers to pull A cell chimney to put them in cell. The walk way needs the shielding.
(3) Cell I decontamination - Used 2 carboys citric acid with intermittant steaming. Progress not good.
(4) Note that C-21 B22 jet, B22-B10 jet is on. Don't jet to A5. Keep A sump drained to W11. Don't let A get hot from Cubicle decontamination.
(5) Iodine apparatus removed and laid on bench. Maintenance men needed the whole cubicle for some work.

5-14-
4-1
[illegible]
5-15-
12-8
Rimsh
+
Russe
8-
Blau
Perr

5-14-47
4-12
WJ + EK

Removed cell A chimney plugs + groped off area. 10 mr/hr

Shielded hot spot in cell A with lead sheets.

Decontamination cubicle I - used 5% soda ash soln follow by H2O followed by more soda ash + then by steaming.

Adjusted pH on P36BW-1-P-3 to 7.4.

5-15-47 Decontamination status

12-8
Rimshaw + Russell

Since all waste tanks in Cell B are full, we discontinued steaming cubicle #1 to prevent further contamination of Cell A. Solution on the floor in Cell B drains into the duct which in turn would contaminate Cell A.

Conducted safety meeting discussing hazards in 706D building and safety precautions that should be used various jobs. Also reviewed operational procedures, chemicals used and reactions that take place during the operations.

8-4
Blauer + Perry

① A9 was hot this morning It was cleaned again + should be left M.T. Maint goes in

166 tomorrow.

(2) Floor had additional shielding placed on it.

(3) Hot pipe from Cell B to A 5 was shielded where maint. would step across it. You can continue shielding the rest of its length if you can. Used all our exposure time.

Readings in cell A

A-9 top	—	150 mr
A-9 bottom	—	560 mr
sump	N	1300 mr.

5-15-47 4-12 shift Skraba + King

(1) Filled two sulfur cans with sulfur; these two cans plus 3rd can are in hood on 3rd level.

(2) Cleaned iodine hood in N. Hot lab.

(3) Do not disturb A 4 off gas system during shift check; test is being run to see if 9.5" vacuum can be maintained in A1 until day shift.

(4) Repaired oil leak in vacuum pump above hot lab.

5-16-47 SJR ~ DJR 12-8

Vacuum A-1 remained at 10" entire shift.

W-6 manhole analysis, 75000 c/m/ml.

W-6 jetting to settling basin.

Added 5 drums NaOH to W-10.

5-16-47 8-4 WYG WMP RSP ETC

1. Time and manpower permitting please continue filtering the soln. in the conical tank on the 3rd level according to the separate procedure. Thanks.
2. See RSP for cell work.

5-16-47 4-12 Skraba & E.K.

① Moved A-9 to decontamination room, removed top & pulled lines part-way out. Continued decontamination of A-9 with hot water and steam.

② Continued filtering Ce solution on 3rd level as requested by H. Penn. (see separate sheet).

③ Put iodine set-up back together. Oxidation-reduction flask draw-off (drain) is broken and capped; a draw-off line to draw off thru funnel has been made for this run - is in N. Hot lab. Broken condenser and product receiver has been replaced by spare. Equipment has not been checked & tested for leaks, etc.

④ Iodine evaporation and pH adjustment equipment has been temporarily completed by I.B.W. He requests you call him at hospital when you are about ½ way thru reduction stage of first run; he wants to follow 1st run thru new equipment.

5/17/47 (1) Completed Iodine run # 176. Two cuts of
12-8 approx. 50 ml. apiece were added to the
Remy vessel in the new cubicle. NOTE:
Pennington: call Whitney when oxalic acid addition is started. He wants to be present when distilling starts.
(2) Europium - Filtering very slowly.
(3) Steamed and ran hot water in A-9 all shift.

5/17/47 (1) Finished Taking A-9 apart & Tagged
8-4 hot spots. Other shifts please try
mys. to get this clean for Monday morning.

(2) Cleaned carries. HP haven't given us a report on them.

(3) Finished Run I-177 & Started Run I-178. Call I.B.W. in time for him to get here before you start to distill off the I.

(4) Replaced Vacuume pump in Cell. We cleaned old pump up to go out of the area for maint but no HP smear count yet.

5-17-47 ① Decontaminated hot spots on A-9 top.
4-12 The highest spot now reads 275 mr/hr.; rest 50.
Strauber & King mr/hr. Also agitator blades still hot - 400-500 mr/hr.

② Per N. Penn. - discontinue Europium filtering - Penn will take care of it tomorrow.

③ Finished run I-178; completed I-179

④ Lines into top of A-9 have been marked with a file - paper tags may be destroyed.
⑤ Bolts & nuts from top of A-9 still hot - are soaking in citric acid in decontamination room.
⑥ Whitney requests Blauer call him when start adding oxalic acid to next iodine run.

5-18-47 ① A 16 fan is shut down.
12-8 ② Used all time on decontamination A9 gas.
Blauer Scrubbed with citric, ran hot water ~~+steam~~ through pipes + over inside. It came down a little. Highest reading is 650 mr/hr. Bucket of bolts was treated several times with hot water + citric acid.
③ Redecontamin Vacuum pumps in make up room. It is now O.K to leave the bldg.
④ Started + finished I-180. Started I-181
⑤ Nothing done on Europium

5/18/47 8-4 wy's. ① Completed runs I/181 & 182 one more to go

② Decontaminated A9 all shift with steam through the various line of HNO_3. We didn't take any readings to see if we were accomplishing anything.

③ There are still two carriers that didn't respond to our clean up.

5-18-47 4-12 Skrabel & King ① Completed I-183.

② Cleaned up decontamination room. Decontaminated tools. Hosed down back platform.

③ Tried acid, caustic, & elbow on A-9 agitator — very little help - still reads 350-400 mr/hr on middle set of blades.

④ Scrubbed floor of N Hot lab - soap & hot water.

⑤ Decontaminated hot carriers.

5-19-47 12-8 Blauer ① Sampled I-183 AC with aid of I.B.W & W.J.S. That new set up is really the nuts.

② Jetted all cell B tanks to A5. Jetted A5 to W11

Flushed line from B10 to A5 + A5 to W11.
We did this in order to decontaminate Cell I of cubicles. Be sure to read A5 + lines from Cell B to A5 before working in Cell A once more.
On jetting W5 – W11 we lost vacuum in A1. W11 – W5 jet was blowing + sending pressure back through A4 lines.

(3). Used our effective time trying to decontaminate agitator blades + hot pipes. Didn't do much good. Activity seems to be in the welds on the blades.

(4) Results on I-183 AC = 1.78 mc/ml A.T + 1.60 mc/ml S.T.

(5) Made up 18N H_2SO_4 + CrO_3 acid for Iodine

(6) Replaced 5 steam valves on P.B. #3

(7) W11 – W5 jet is not operating well. It blows steam + refuses to jet automatically. It has been jetted by hand on this shift.

(8) Finished cleaning N Hot lab.

(9) Passed acid through B21 to B3. There is a line blown off transfer vessel so no further filtering can be done although solutions can be blown from transfer vessel to cell liner. The reading inside cubicle is 1600 mr/hr.

5-19-47

8-4 1. Checked W-11 line
W+P
RSP 2. Iodine runs going on #184
One more to go.
3. Leave Ev. Operations as is tonight.
4. Removed A9 Agitator and did some Decontamination

5/19/47 Skraba & King (4 to 12)

172

① Started & completed I-185. Sampled I-185-2AC.

② Phosphorous:

Made NaOH ppt & then NH_4OH ppt. on P-37. Sampled P-1, F-1, F-2, W-1. P-37-P1 now going thru column.

③ Carriers #36240, 36251, 36234, 36246, and 30862 were sent to 105 bldg.

④ A-5 was filled with water to cut down radiation for maintenance to work in Cell A.

⑤ No rough ends of pipes left when A-9 was taken out were cut (as per "instructions to shifts") by maintenance because all of the men were overexposed to radiation by work at 115 fan house.

6. 3 cans of sulfur to be taken to 105 bldg. so that they can be inserted into pile Tues. morn. Cans in 3rd floor hood.

5/20/47 Blauer 12-8

① Took 3 sulphur cans to 105 bldg.

② Passed acid through both B21 & B20. B20 cubicle reads 150 mr/hr at clamp holding reactor. B21 reads 600 mr/hr at clamp. The acid was passed through all lines to clean out Cell II also. There is some acid still in B24.

③ Washed hot spots in hallway & sink in N. hot lab. Hot Spot is in concrete we found after removing a lot of paint.

(4) L.B.W's Calcium is still filtering
(5) Phosphorous evaporating on steam bath. No carrier added.
(6) $P_{37}W_1$ – 7 mc. total Discarded
$P_{37}F_2$ – 9.1 mc Total discarded
$P_{37}F_1$ – 32.7 mc Total
$P_{37}P_1$ – 26 mc. Total.
(7) R_1 going through column.
(8) Maintenance sawed the lines as instructed. Some are not cut exactly square because of difficulty in reaching them

5-20

8-4
Maintenance work in the cell
(a) A9-A8DA & A11-A6D jets interchanged
(b) A9-A8DB replaced with a new jet.
(c) The old A9-A8DB is to be swapped with A6-A5 jet.

P-39 ready to receive. 2L Erl. on flow at W side of barricade – N. Hot lab.

After the Ca which is filtering in the NHLab, is through remove the ppt. into a beaker, label and save. Wash the filter with Cleaning Soln

and set up on 3rd level for Eu filtration.

Nalcite column is regenerated and washed.

Phos. is evap. with no carrier added. Anal. P37 P-2 2.3 mg. Fe + 21.2 mc.

One Iodine is ready to be started.

Europium Operations:

Please continue to worry the 20 liters of red solution through the filters. Don't let any go dry before you are through. Wash total with not more than 8 l of distilled H_2O.

5/20/47. Skrabal & King

① Phosphorus:

1. P38 & P39 were sampled for C-1 and combined. NaOH strike & ammonia strike made. P-38+39-P-1 going thru nalcite column.

2. P37-P-2 contains only 36 mc. I.B.W. says do not transfer to 500 ml flask, but pour P38+39-P2 in with P37-P2.

3. P37-R-1, P38+39-F2, P38+39-F2 sampled.

② Worked on housekeeping - inspection made by Day Shift - see separate sheet.

③ Replaced part of burned out lights in Cell A. Electricians

used up their exposure time. Will next shift please continue.

(4) Removed section of line which replaces old Xmas line in A-4 to 205 stack line. Allowed line to drain for two hours, replaced, jetted pot; vacuum now at 7 in.

(5) Continued filtering Europium as per request of H. Penn.

(6) Made sketch of top of A-9 as requested by Pressley — page #176.

(7) Cut off remaining 3 lines burned off on top A-9

(8) Whitney's calcium is still filtering.

5 Apr/47 (1) Filtering Pennington's Europium. Still going

12-8 (2) Finished housekeeping report.

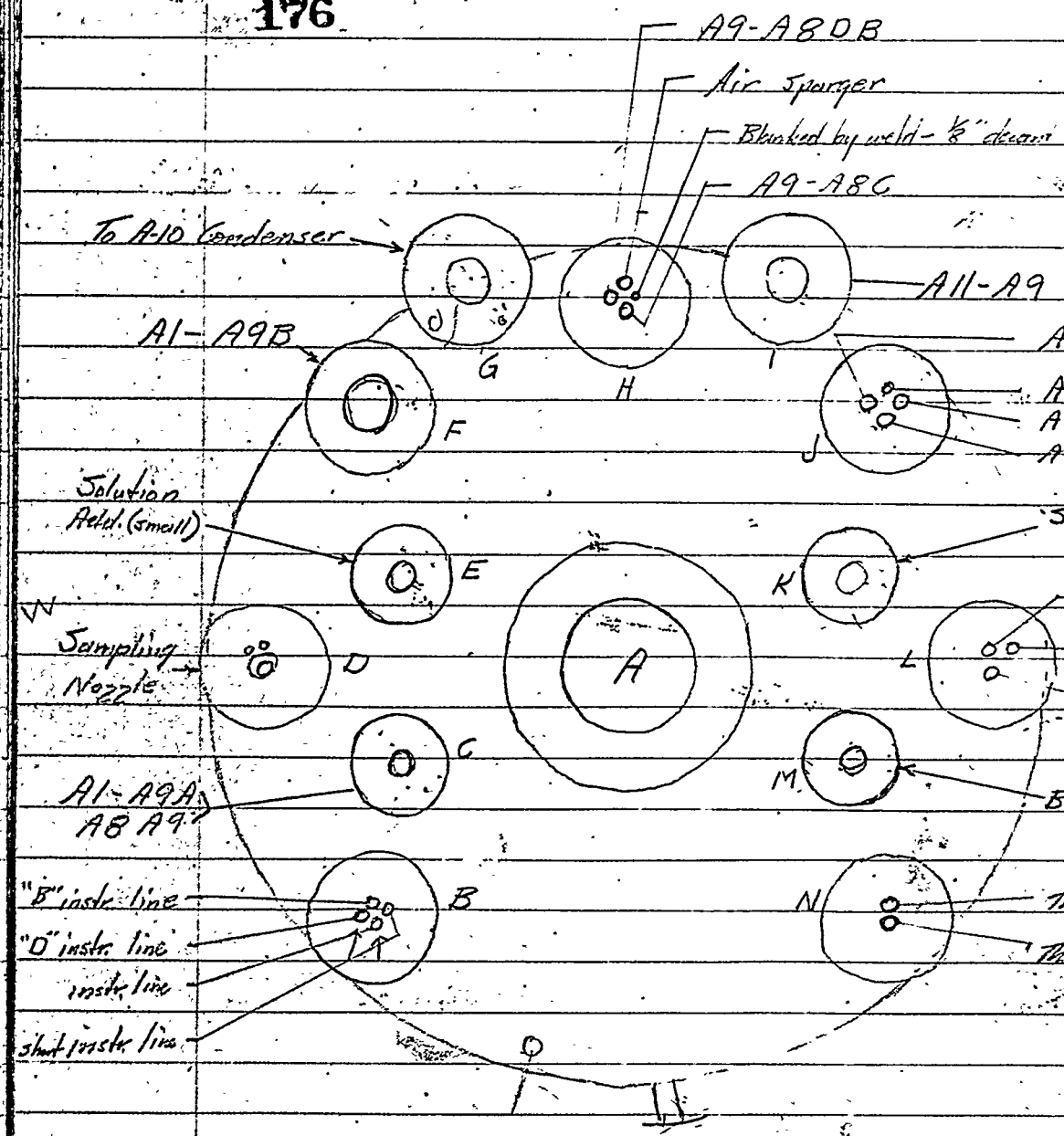
Blower (3) Maintenance finished replacing lights but two still don't operate. Maintenance used all their exposure time so they couldn't locate trouble.

(4) Phosphorous results

P38-39 W1 = 53 mc
38-39 F2 = 82 mc
37 R1 = 17 mc
} Combined

38-39 F1 = 362 mc
38-39 P1 = 292 mc
P39 C1 = 119 mc

(5) To R.S. Pressley. — All the tanks in the cell are cold thermally. As you know the air comes into the cell A labyrinth and is pulled


A9-A8DB
Air Sparger
Blanked by weld - 1/8" drain line
A9-A8C
To A-10 Condenser
A11-A9
A1-A9B
A9-B26B
A9-B1DD
A9-B12
A9-B26A
Solution Add. (small)
Sol'n Add. (Large)
A9-A8D.7
Sampling Nozzle
A9-B1DC
T8-A9
A1-A9A
A8 A9
B10-A9
"B" instr. line
"D" instr. line
instr. line
shut instr. line
Thermocouple line
Thermocouple line
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O

Top of A-9

Nozzle No.	Filed Notches on Pipe	No. Appearing on Tag	Description of nozzle or lines to nozzle.
A			Agitator connections
B	I	B	instrument line (extends to 1" fr bottom)
	II	D	instrument line (extends to approx 6" fr bottom)
	III	No tag	instrument line (extends 1" below top)
	IIII	No tag	instrument line (extend to 1" fr bottom)
C		#5 & #8	A1-A9A (Tag #5), and A8-A9 (Tag #8)
D			Sampling nozzle
E		#13	Small solution addition line
F		#6	A1-A9B
G			To A-10
H	I	#4	Air sparger
	II	#2	A9-A8DB
	III	#3	A9-A8C
	IIII	No Tag	Blanked by weld - 1/8" down line to 1" from bottom
I		#7	A11-A9
J	I	#9	A9-B26A
	II	#16	A9-B1DD
	III	#10	A9-B26B
	IIII	#14	A9-B12
K		#12	Large solution addition line
L	I	#15	A9-B1DC
	II	#1 No tag	A9-A8DA (deduced by elimination)
	III	#11 No tag	T8-A9 (by elimination)
M		#17	B10-A9
N	I	No Tag	Thermocouple line
	II	No Tag	" line

5/21/47

12-8 (cont) 178 through the entrance to the cell + out the bottom of the cell floor. Since the cell A duct is flooded it is pulling only .1" ~~air~~ water instead of the usual .9". The flow being cut down so low + the blocks being pulled from the ceiling prevent a good sweep through the cell. We checked the air at top + bottom of cell. At the top it is stagnant + at the bottom it is cool. I recommend replacing bottom block, closing cell door, jetting AD – AS + letting cell cool down this way.

(6) Will 8-4 please get the janitress to clean the glassware?

(7) Column is regenerating

(8) Combined P37-R1, P38-39 F2 + P38-39 W1 + made a caustic strike. It is now filtering in N. hot lab

(9) Whitney's Calcium is still filtering.

(10) Decontaminated 8 carriers # 42230, 36241, 30865, 42,220, 30757, 31338, 30981, 41743. H.P. has taken smears.

5-21-
4-1
S.J.R.

5/21/47 8-4 WHP

1. P37, 38, 39 P-2 still evaporating on st. bath in 2 l Ehul.

2. Still filtering P37, 38, 39 R. F-2 - 2nd part of it. See # 8 above

3. Column is regenerated.

4. Leave Europium as it is.

5. Maintenance work going on in cell

(a) A.4. drain to W-11 valve is out.

(b) A5 - vent valve is out.

(c) without A.9 - A8 DB pot.

5-21-47
4-12
S.J.R. ~ H.T.R.

Phosphorus

1) Sampled & discarded P 38 39 R-1 containing 42 mc's.

2) Completed filtration of P 37 38 39 R F-2; made acidic with 6N. HCl, sampled (360 mc's) added Fe and added NH4OH to ppt. Called P-7-8-9. Now filtering through Stang reactor into flask containing sufficient 6N. HCl to make the P-7-8-9, W-1 approx. 0.1 normal.

3) One flask on steam bath in 2 l. Elm going down to 200 ml.

Cell A Decontamination

1) The floor in Cell A is covered with approx 1" water. We attempted to pump this water to S. B, Pump leaked badly. Had maintenance make repairs - pump still leaks. Should be repaired and water pumped out of Cell A.

(over)

Continued:

Miscellaneous

1) Replaced the following valves:

A-8 A-5DA
A-5 W-11
A-5 A-6
A-6 W-11

Two high pressure by-pass valves.

2) Vented zinc drums of NaOH on platform of W-10. Considerable pressure had built up in all these drums.

3) Decontaminated four carriers.

5/22/47 12-8 Blauer (annual)

① Maintenance replaced union + nipple on A8-A5 DA, valve + nipple on A5-A6 jet.

② Repaired cell pump. Had to pump cell dry because A5-W11 just throws water back into cell from W11 vent.

③ Europium filtering

④ Phosphorous

a) Transferred P37,38,39 to 500 ml. erlenmeyer, added carrier + it is now going to dryness.

b) P37,38,39 R — Rinse (150 ml H_2O) going through nalite column

c) P40 going through Stang reactor. 500 ml Acid in balloon flask.

d) P37-38-39 W1 — 60 mc's Total Discarded
37-38-39 P1 — 70 mc's Total 70 mg Fe
37-38-39 F1 — 8 mc's Total Discarded.

e) P40 — F1 sample in lab — solution is in vacuum flask behind high barricade.

(5) Please janitress clean some glassware
(6) Had a slight accident in n. hot lab. Knocked over a suction flask marked Ca^{++}. It is active. Igness. We cleaned up a little as best we could. Couldn't pick up activity on probe or walkie talkie. The spilled material is still in the tray if it is to be saved. How about relaying some info on this. Is it the .2 MEV beta 140 day ½ life Ca^{++}? Was the material spilled a waste or a product? What are its dangers besides its radioactivity?

5-22-47 8-4 WHP WT

1. The phosphorus is as the 12-8 left it. There are procedure books made up for all runs in progress as well as 41 + 42.

2. Please keep the Europium filtration and centrifugation going as lined up with Stan.

3. The P-40 ppt. on the Starg Reactor disc is to be dissolved in acid and used in the next run for Fe. F-1 was 47 mc.

5-22-47 Phosphorus

4-12 1) Regenerated Nalcite Column.

Rimshaw 2) P-37 38 39 P3 evaporating to 200 ml.

Russell 3) Took up the P-40 P-1 (Stang Reactor) in 6N. HCl and set aside behind barricade for use in next run. C.P. reading 4000 mr/hr @ top flask. Sampled.

4) P-40, W-1 ran 50 mc's. Discarded.

5) P-37 38 39 P-2 ran 88 mc's. Evaporating.

6) Analysis of this solution P-40 P-1 showed 335 mc's. The normality of this soln. adjusted to 0.1 and is now going thru Nalcite Column.

7) P-40, R-1 was discarded with 13 mc's.

Miscellaneous

1) Removed both transfer vessels. The racks for these vessels are in the decontamination room.

Europium

Continue centrifugation for H.P. as per verbal instructions.
Operate centrifuge at 15 on rheostat.
Use approx 60 cc. H_2O for wash.
Made glass skimmer and plow with rubber stopper for washing and transfering ppt.
Save filtrate and recentrifuge at higher speed after this centrifugation has finished.

Transfer ppt to s.s. beaker provided.

5-23-47 ① Took a hot can reading 1040 mr/hr to
12-8 burial grounds. Had cut tygon from cells I II, III.
Blaier ② Pennington's Europium centrifuged. Now recentrifuging 1st filtrate.
③ P37, 38, 39 taken up in 200 ml. of H_2O. PH adjusted to 8.2, sample in lab, Product in vault in shipping room. Contained what looked like a little ppt, was colorless & had 7 mg. of carrier added.
④ P37, 38, 39 R going to dryness no carrier added yet P40 going through column since going through [illegible]
⑤ Used all our time on cubicles.
⑥ Decontaminated one carrier. H.P. smeared it.
⑦ The following cell readings were obtained. They look too high so maybe they should be checked. H.P. has more than used his time limit

A4 - W11 valve - 1360 mr/hr
A1 Top - 720
" Bottom 720
A3 - A5 vent valve 5200 mr (Believe this was the gasket)
A11 top 2480
" Bottom 4800
A8 top 6400
A8 Bottom 3600
A9 Top 105
A9 Bottom 200

⑧ Maintenance finished A4 - W11 valve + inserted gasket. They only had time to scrape old gasket from A3 - A5 valve lines. So this job of replacing valve remains to be done.

184 ① P37,8,9 R P-2 evaporating on steam bath

5/23/47 ② P-40 P-2 evaporating on steam bath. This can be added to P37,8,9 R when volume small enough — P37,8,9 R only 88 mc and P40 - P-2 144 mc.

EK

③ Pennington's Europium 1st filtrate was recentrifuged — very little solids removed by 2nd centrifuging.

④ A5 agitator was electrically reconnected.

⑤ No dead P added to P-40 or P37,8,9 R.

⑥ P-41 received — no processing started.

⑦ A3 - A5 valve partially put in — lower bolts in both flanges started.

⑧ Maintenance changed valves at Xmas tree — installed gate valves.

5-23-47 Phosphorus

4-12 Rimshaw & Russell

1) Discarded P-40 R-1 with 2.5 mc's.
2) P-37,8,9,R P-2 evaporating (88 mc's)
3) P-40, P-2 evaporating (144 mc's)
4) Dead P has not been added to P-2's above.
5) P-41 (1232 mc's) was made slightly acid (by adding NaOH), heated to near boiling and slowly added to an excess of hot 15% NaOH to ppt. Fe, Ni and Cr in a 2.5% solution of NaOH. After boiling, the solution was filtered using suction flask and a fine filter disc. The precipitate was dissolved in approx 5% hot HCl and sampled as F-2. The analysis was 48 mc's. F-2 was discarded.

The filtrate, F-1, ran 1050 mc's and was processed as usual, NH_4OH ppt. etc. The W-1 contains 432 mc's. The P-1 contained 670 mcs and is now going through the column.

Iodine

1) Installed new condenser and receiving flask. Was necessary to bore three holes in Pb shields for valve stems. Installing chain valve to receiver flask at end of shift. Valve stem extension is needed on this valve — and nine iodine runs are waiting!
2) Three Te samples were obtained from 105 building and stored under vault in hot lab. annex, in carrier.
3) Placed Pb shields around G.M. Tube

Cell A

Installed valve A-3 - A-5.
Vacuum A-1 off scale, Pressey.
Flushed Cell A with water and pumped to S.B.

5/24/47 Phosphorus:
12-8 (1) Added dead P to P-37-38-39-R-P-2. on steam
Perry bath in 500 ml flask.
(2) added dead P to P-40 P-2 On steam bath
(3) P-41-P-2 on steam bath - No dead P added.
Column regenerating.
Iodine
Completed I-186
Started I-187
Note - Maintenance plans to put the water off at approx 8:00 A.M. Distilled water must be used for cooling until end of run or until water is turned on again. The G.M. tube readings are parallel with G.P. readings when Iodine starts distilling. There is a bad leak around the stopcock that vents the reactor vessel. Probably needs grease.
C.

5-2
4-
Rim
Rus

5/24/47 (1) Phosphorus:
8-4 (1) Column regenerated. P41-R-1 sampled.
King (2) Started another run with P41-W1 (432 mis) - called run # P41R. P-1 of this run is now going thru column.
(3) P-37-38-39R-P-2, P-40-P2, and P41-P2 are on steam bath. Added dead P to P-41-P-2. (all now have dead P added).
(2) Iodine:
Completed 187 and 188.

③ Reamed out lead holder for iodine cutter — suggest SS sleeve for lead holder.

④ Water & steam were cut off at 8 15 AM. Water was back on at 2 55 PM. Steam on 3 30 PM.

⑤ Pressley called (2 45 PM) and requested that we put condensate in R-4 to 205 line to test line drainage. He requested turning on a steam jet jetting to R-1 (from empty tank) and see how long R-1 will hold vacuum; then drain system & see how much condensate has been collected.

Steam on A-11 to A-1 jet 3 30 PM

5-24-47 Phosphorus
4-12
Rimshaw
Russell

1) Combined P-41, R-1 and P-41R, W-1 and called P-41B. A NH_4OH ppt. was made and processed as usual.
2) P-41B, P-2 is going thru column.
3) P-40, P-2 evaporating to 200 ml.
4) P-41, P-2 " " 200 "
5) P-37 38 39, P-2 is almost dry.
6) P-41A, P-2 is behind barricade waiting on steam bath.
7) P-41B, W-1A containing 55 mls and P-41A, R-1 " 45.5 " are being held for processing with P-41B, R-1.

(over)

Iodine

Started and completed run 189 and started 190.

Misc.

1.) The Fe ppt on steam bath is to go to complete dryness.

2.) Cut off A11-A1 jet due to pressure in A1. A1 has no vacuum because of condensate in A3 and A4 which cannot drain to WN.

5-25-47 Phos:

12-8 1. P41-B P-2 is evap. to 200 ml

WHP P 40 P-2 " " " "

WET P 41 P-2 " " " "

P 41 A P-2 " " " "

Column is not regenerated.

2. P37+38+39 P-3 sample in lab.

Iodine:

Finished 190 and started 191.

Europium:

Please allow the two open top tanks to settle until midnite.

Misc:

Iron ppt. is dry.

5/23/47 E.R. Phosphorus:

① P41-P2 transf to 500 ml beaker on steam bath.
② P41A-P2 transf to 500 " " " " ".
③ Dead P added to P41B-P-2.
④ P40 P-2 was added to P41B-P2 to give total of 264 mc in run marked P41B-P2.

Iodine:

Completed Iodine runs #191 & 192.

Misc.

Pumped water from floor of Cell R to floor drain outside cell door.

Whitney requests midnight shift call him when they come in.

Fe behind high barricade was taken up in 10 ml conc HCl, trans to 50 ml plastic top bottle, and diluted to 30 ml with water washes.

Shut off 205 jet and jetted pot to W-11. When 205 jet was turned on again, vacuum on A-1 went off scale.

5-25-47 Phosphorus
4-12
Russell

1) Regenerated nalcite column. H_2O going thru.
2) Combined P-41A, P-2 containing 444 mc's with P-41B, P-2 containing 83 mc's, and called P-41A, P-2, total 527 mc's.
3) P-41, P-2 going to dryness; 650 mc's.

(OVER)

Iodine

1) Started and completed run 193.
2) Started run 194, the 9th run.

Miscellaneous

1) Decontaminated hot spots on third floor; at Cell A door; and at cubicles.
2) No vacuum A-1 again.

5-26-47 12-8 WHP + WET

PHOS:
P41-P2 - pH ADJUSTED, SAMPLE IN LAB

IODINE:
COMPLETED RUN #194 AND STARTED EVAPORATING COMPOSITE TO 475 ML, pH BEFORE EVAP. 9.3.

EUROPIUM - LEAVE LARGE TANK SETTLING.

5/26/47 DAY & Ning

① Iodine:
Evaporated I-194-2AC to 550 ml, ph 9.9, mo = 800.

② Phosphorous
1. P41A-P2 evaporating in 500 ml flask.
2. P42 rec'd - to be processed by Russell by special method.

③ Misc.
1. Unloaded, drained, washed chicago carrier #4
Chain hoist in N. Tank farm doesn't work - new one

to be installed.

2. A-9 is back in cell A; connections are not complete.

3. Decontaminated glassware stands removed from cubites.

5-26-47 Phosphorus

9-12 1) Discarded P-41.B R-1, 13 mc's.

N.J.R. 2) Filtered sulfur off P-42. There was very little sulfur in this run.

Analysis of C-1, 1203 mc's.

Fresh NaOH solution was added to C-1 to slightly on the acid side, and the solution heated to boil and slowly added to a hot solution of 15% NaOH to precipitate Fe, Ni and Cr in a 2.5% solution of NaOH. After boiling the solution was filtered through filter disc (fine) into a suction flask. The ppt F-2 was dissolved in 5% hot HCl and sampled. The filtrate F-1 was dropped into enough 6N HCl in suction flask to make slightly acid. After Fe addition and heating to a boil, the filtrate F-1 was made .1 N. with NH_4OH, and boiled again. The ppt was allowed to settle and filtration made thru Stang reactor. The cake on disc in Stang reactor was washed with NH_4Cl. W-1 and W-1A have been sampled.

P-42, P-2 is now going thru nalcite.
Analysis of P-42, P-1 ; 1068 mc's.
" " P-42, W-1 45 "
" " P-42, W-1A 22 "
" " P-42, F-2 50 "

3) P-41A, P-3 on steam bath is almost dry and contains an excessive amount of salts. Crystallization began while volume was above 100 ml.

Cubicle Decontamination

1) Removed the upper valve, recycle and draw off to Cell 2. Used long handle brush and citric acid on walls of cubicle. C.P. reading came down almost half. Hottest spot reads 500 mr. with 130 mr @ door.
2) Sprayed one carboy of citric acid in Cell II
3) Emptied B-10 and B-22 tanks into A-5. No radiation in Cell A.
4) Steaming Cell III @ end shift.

Miscellaneous

1) Combined 3 iodines for Vallado.
2) Washed floor south side Cell A 1st floor.
3) Two cans of thyo are partially filled with sulfur. Molton sulfur is in oven 3rd floor.

5-2
12
W
W

4) Devoted latter part of shift cleaning house ~ yes, company tomorrow.

Note- 5) The drain line from our hot sinks is disconnected just outside west end of building.

6) Maintained good vacuum on A-1 by jetting pot to W-11. A-5 is under system also.

7) There was no detectible radiation around tank A-5 after jetting solution from B-10 and B-22 to A-5.

5-27-47 PHOSPHORUS:

12-8 P41A-P3 WAS EVAPORATED TO DRYNESS.

WHP IT WAS NOT TAKEN UP IN H_2O DUE TO LARGE

+ AMT. OF SALTS PRESENT. HAVE WHITNEY LOOK AT

WET IT.

P42, P2 going thru nalcite column.

Misc:

Decontamination of cubicles. Washed cells I, II & III with citric acid. Steamed I & II.

Checked valve racks after citric treatment. 6R. Put it in dilute HNO_3.

Decontaminated hot spots on floor 1st level.

5/27/47
8-4

194 ① Phosphorous:

① P.42-P2 on steam bath
② P41 A-P3 pH adjusted to 7.6.
③ R.43 recd.
④ Column regenerating

② Decontaminated valves removed from cubicles.
③ Attempted further decontamination of cubicles - steam, hot water, etc.
④ Maintenance continued work on A-9. It is now mounted & pipe connections & agitator are being installed.
⑤ W-11 line is still being worked on - not fixed yet.
Note - Do not jet pot to W-11 or pour solutions in W-11 drain.

P43 & P44 C-1 are in N Hot Lab. P43 may not have enough to make it worth while to run so check lab's analysis.

5-27-47
4-12
NJR

Phosphorus

1) Discarded P-42, W-1 containing 45 mc's.
2) " P-42, W-1A " 22 "
3) " P-42, F-2 " 50 "
4) Regeneration of column completed and the R-1 was processed for active P^{32}, NH_4OH precipitation, NH_4Cl wash, etc.
5) P-42, R-1 analysis not in yet.

6) Analysis of P-42A, P-1, not in yet
Expect around 300 mc's in P-1.
7) P-42, P-2 is going down to 200 ml.
8) P-42A, P-2 has gone thru column.
150 ml. H_2O now going thru.

Miscellaneous

1) Removed three pieces of tygon tubing from Cell I. The reading was 6 R at this point while three inches beyond the tygon tubing, the reading was 10 R. The pieces of tubing removed from the cell read only 175 mr/hr at one inch.
2) Steamed Cell I about all shift with occasional hosing down.
3) Sprayed Cell II with water.
4) Cell I at innerfacing of door reads 1400 mr/hr. The hood reads 3400 mr/hr. There is a hot spot of over 8 R in the lower right hand corner Cell I
5) Reading at door Cell II is 150 mr/hr. Hottest spot in Cell II where lines go into Cell B reads 1400 mr/hr.
6) Continued decontamination using steam and citric acid on Cell I.
7) Used water and citric on Cell II.
8) Now steaming Cell I.

9) No activity noted in Cell A due to jetting from B10 to A5
10) Jets C20 & C21 and jets B22 to B10 to A5 are on @ end sh. A.

5-28-47 Plus
12-8 P42A, P-2 evap. on st. bath, no carrier
WHP added.
+ P42, P-2 evap on st. bath.
WET

3 banks of valves in Decontamination Room are reading 100 mr/hr and under. 1 valve which is loose from the rack is reading 3600 mr/hr and is in citric acid solution boiling also a small stainless steel supports which is reading 600 mr/hr.

The cell floor is covered with liquid. We tried for 2 hours to pump it out Maint claims it has to be packed before it will pump. We're letting A5 → A6 at shift change so that you can jet pump to A5 if necessary.

No citric acid for cubicles. Steamed and washed cell shift.

3/28/47 Phosphorous:
PAY & E.K.

① P42-P2 and P42A-P2 evaporating on steam bath.

② P43 & 44 were combined & caustic strike made by "Russell" method, i.e. heated to boiling & poured slowly into hot 15% NaOH, finishing up with approx 2.5% caustic sol'n. P42A-R-1 was added before NH4OH strike. P43+44-P1 is now going thru column.

③ Continued decontamination of Cells 1, 2, 3.

④ Gasoline pump at Cell 1 is no good - rec'd electric pump - now being hooked up by maintenance.

⑤ No lines connected on A-9 yet.

⑥ ~~[illegible] to W-11 at [illegible]~~

3/28/47 (1) Phosphorus.
4-12
JEP

(a) P-42-P-2 - Analysis 708.4 mc. Transferred to 500 ml. flask and added carrier.

(b) P-42A-P-2 - Analysis 89.4 mc. Transferred to 500 ml. flask & added carrier.

(c) P-43-44. - W-1 analyses - 72 mc. Did not discard because all hot sinks were tagged out.
P-2 - Sampled. On steam bath.
R-1 - Acid going thru column.

(d.) P-45 - C-1 - Analyzed _____ mc.
Made NaOH strike. Sampled F-1. Did not sample - F-2, still running through cond filter

F-1 settling after acidifying, adding 60 mg Fe and neutralizing with NH_4OH. Should be read for Stang reactor at 12⁰⁰/m.
(2) Decontaminated cells I and II. Backgrounds are fairly decent but localized spots still read 500 mr/hr.
(3) Decontaminated 4 carriers
(4) Cleaned up some glassware in N hot lab.
(5) Note air count in N hot lab.

5-29-47 12-8

12-8 Sunney Cell A

WHP Bottom A9 — 300 mr/hr.
& top A9 — 225 mr/hr.
WET A5-W11 — 280 mr/hr.

Phosphorus:

P-42, P2; P42A, P2 and P43-44 W-1 all on steam bath.
P45, P1 going thru column.
" R1 Sampled
" F2 Sampled

Cubicles:

Treated Cell I alternately with citric acid and steam. Reads about

3R at hood and ca 170 mr at floor

5/29/47 8-4 DAY & E.K.

① Phosphorous:

① P42-P2, P42A-P2, P43+44-P2 on steam bath.

② Column being washed with 150 ml water after P45-P1.

② Cell A - Continued heading up lines on top of A-9.

③ Cubicles:

Started installing valves, etc. in cubicles.

④ Obtained vac pump & filters for - H. Penn - are on 3rd level.

5/29/47 4-12 JEP.

① Phosphorus -

ⓐ P-42-P-3 - Took up dry residue with 300 ml water adjusted pH to 7.6. After pouring into sample bottle a small heap of crystals were left in beaker. These were not very hot & were discarded

analysis → 804.0 mc

ⓑ P-42A-P-3 - Took up residue with 75 ml water. Adjusted pH to 7.6. Product dis

Analysis 87.8 mc →

14 W-1

(c) P43-44-P-2 - Transferred to 500 ml flask on steam bath.

W-1 - 72 mc. Discarded

(d) P-45-P-2 - On steam bath 2000 ml flask

R-1 - Acid going through column -

(e) P-45 WR - Contains P-45-W-1 (353 mc) and P43-44

R-1 (374 mc) = Total 727 mc. Main

through Stang reactor -

200

(f) Discarded:

P-43-44-F-2 - 40 mr.

P-45 F2 - 53 mr.

(2) Cell A:

(a) Removed and cleaned all strainers in the steam lines to the cell at P.B.1 (PB 2 Next)

(b) Checked following jet lines & Tagged leaks -

(1) A-9 A8 DA - Jets - 45#/min - Jet thermocouple N.G. Jet and line O.K.

(2) A-9 A8 D-B - Jets 21#/min - Union leaks at inlet side of jet.

(3) A-1 A8 C - Leaks at inlet side of jet.

(4) A-9 B26A - Leaks at union in cell and at union at plug in wall outside cell.

(5) A-9 B26 B - Jet O.K. leaks at union at plug in wall outside cell.

(6) A-9-B-12 - Partially plugged at P.B. Otherwise jet & line O.K.

(7) A-9-B-1DD - Leaks in weld at top of small condensate pot. Also partially plugged at P.B.

(8) A-9-B-1DC - Leaks just inside cell wall.

(c) Taped instrument line holes over A-9 and thermometers checked O.K.

(d) Agitator in A-9 kicks up an awful racket with an empt. tank. Testing with 250# water is still loud but ammeter registers only 0.9 amps.

note: (3) Hood for cubicle #1 is behind P.B. #3 reads 75 mr/hr. Decontaminated tools and small parts.

planning

5-30-47 -12-8 Pennington

(201)

Phosphorus:

P43+44 P2 Evap. on St. bath.

P45 P2 " " " "

P45 WR Going through Nalcite Column.

Cell A:

Maintenance checked all strainers on PB-2 jet lines as per (2) @ p200.

Europium Operations:

1. Made Oxalate precipitation and filtration on Batch I. Delivered ppt. to 706 C annex and discarded filtrate.

2. Made first basic nitrate precipitation on Batch II. Please leave it settle in D8. I'll be in tomorrow to filter it.

Misc:

Please check crock of Cleaning Solution in N. Hot. Lab. It is air sparging row.

VERNON ROYAL LINE
1143 X

202

5-30-47
8-4
MR

Phosphorus

1) P-43 & 44 P-2 on steam bath
2) P-45 P-2. steam bath
3) P-45A, P-2 (P-45WR) on steam bath.
4) Regenerated nalcite column.
All samples have been taken.

Miscellaneous

Made up pipe connections with valve and began transfering the NaOH from In drums to steel drums.
Assisted Brother Blauer with installation of Equipment Cell II & III.

5/30/47
7-12
JEP

(1) Phosphorus
(a) Combined P-43-44 P-3 (44 mc.) with P-45-P-3. for a total of 345 mc. added dead p. On steam bath.
(b) P-45-A-P-2 - No analysis but on steam bath.

(2) Iodine. Nothing but trouble.
(a) Completed I-195 with highest cut (50 ml) reading 700 mr/hr. The two highest cuts were saved for seed in beaker in vault.
(b) Repaired leak in vacuum line and several things on setup. The sparger stays

203

Order		Code
Kimpacks from Bittl 706-A	6188	2-58
Chemicals from Brown	6341	2-58

on at all times since the new condenser interferes with turning it off. Suggest this may be reason for no Iodine on Run 195.

(2) Instrument man reconnected a wire to the battery set on the new monitor

(3) Spent some time making connections for the Ba glassware.

(4) No sample results on last three shifts. Hope tank farm is O.K.

See page 89

in Supervisor Log