p50: pressure drop across AY
p.91: "Praise allah"

4049

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NOTEBOOK NO.: CL-915

ISSUED TO: William P. Bigler

ISSUED BY: Jane Porter

DATE: May 21, 1945

Hot Run #1 in 7060 - see pp 23-40.

Hot Run #2 see pp 48-91.

DUMMY RUN: see pages 116-125

Run #3: See pages 132-159

RUN #4 (1st Part) See pages 196-200.

"This document consists of 203 pages.
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Bre T-270

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

David R Hamrin 7/17/96

Technical Information Officer Date
ORNL Site

~~SECRET~~

5/21/45 NOTE
8-4 All cell B tanks & funnels have
JAW gauze over the openings. Be sure &
remove prior to using.

Run S-7 discarded per WAR's
instruction. Dumped after
electrolysis & prior to volume reduction.

B-6 apart for replacement of line
B-6 - B11 B6 in Room 9 cleaned
ready for reinstallation.

Cell B walls & pipes are to be
cleaned of all water soluble paint
which is now crapping up things.
Carry on where we left off. (WAR)
Started on the walls but did not finish

JH - D-5-D settling in A-9 until 5:00 PM
ready for step d Pg 14-2 then.
(this includes the keels from A,B,C,&D, which were brought
back from A8 to A9. The 25% H_2SO_4 wash was added
to A8 & transferred to A9 all this is now settling).

W.P.B 5/21/45 3 pm

706-C is going to start up again in the
morning which requires the 205 off gas line. Our
tags have been removed and as soon as you are

thru in A5, turn off 706-D to 205 valve North of 706-C, notify 706-C that the set up is theirs, and tag off the affected instruments on PB #1.

"Don't Say it Write it" slip from WPB has some items to be completed. Enclosed in book

B-12 First coating removal soln in tank — S-7 ready to remove as soon as maintenance is out of cell B See special instructions attached in folder from WPB.

Jets BS-A5A, BS-A5B and A5-W11 all going. Turn off when assump is MT and A-5-MT.

The work to be done in Cell B consists of

1. Cap line on B1
2. Install new line B6 to B11
3. Put descent bottom on line B6 — B3DA

When Maint is thru start up S-8 duplicate of S7.
Run D5 thru metathesis. Hold in A9. Do not run metathesis Tell Maint is out of Cell B so B1 can be used.

There was only one report from 12-8 on cafeteria ??.

Only one ate!

5-21-45
4-12
LRM.

Sample 8WMD+W on mn D5D is a mixture of H_2SO_4 wash + 3 H_2O washes. There is no metal waste in the sample as the code would indicate. The M.W. was dumped + sampled earlier, see page 14.

B12 was empty when we tried to remove the first coating (PbO_2) removal soln. to B3. apparently the stuff in B-3 was it. This we had dumped, not knowing what it was. Lab has a sample on it, taken about 11AM.

New line B6 → B11 installed thru original jet suction (capped) line to B4. It was intended to remove the old line B6 → B11 but it was impossible to get a drill near enough to the flange to drill out the old line. Instead, an elongated drill was put up the lower end as far as the constriction and the burrs, etc removed by drilling. This line is capped outside + will serve as a space. Koroseal gaskets were installed on B11, B6, + B6 overflow. The first two were cut back. The probe was run down to zero after tank was in place → no light, (switch on).

EJW.

Tank B6 was filled with water & leaks repaired. There were many. and yet B~~6~~-B3DA (the one with the brand new decant slot) and it worked O.K., slow as expected. We will attempt to check the workability of the new line B6-B11 before shift change. 12-8 pls. be sure it works before going ahead with 5-8.

Sheets for 5-8, 5-9, 5-10 made up. Soln for 5-8 is made up, tracer added.

12-8 - pls. remove cheesecloth from funnels, tanks in cell B before proceeding with 5-8.

2nd PbO_2 cleanout in B-12, ready to be sampled & dumped.

B17 probe seems to be bass ackward. Top light works before the bottom!

Painted various valves correct color. Need some brown paint. & brush. List on clip. bd.

D-5-D - Step W page 14-3 completed.

B6 - full H_2S testing for leaks.

Check for Cheese Cloth

A hasty check on new line B6-B11 took 10 min. to pull 1000 cc from B6. P.A. system gave indication. O.K. so far!!

5-22-45
12-8 RUN STATUS:
ACV

D-5D IN A-9 METATHESIS STEP 31
2ND METATHESIS SETTLING UNTIL
9:00 AM

S-8 IN B-12 ELECTROLYSIS RUNNING
@ 25 AMP UNTIL 10:35 AM WHEN TIME
FOR 12P-7 hr SAMPLE STEP 19

MICROMAX PB1-15 NEEDS REPAIRING.

W.A.R. WE NEED SOME CIRCULAR CHARTS FOR MICROMAX
ON PB-1.

ACV

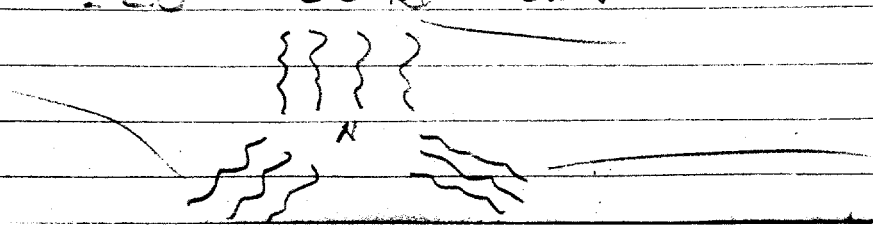
5/22/45 EJW
8-4 ① PB-2 steam headers are off + vented to prevent any leakage into A9 which contains metathesis cake D5
② Jet A9-B1DD acted somewhat plugged, (see run sheets of D5)
EJW ③ Run Status
D5 — metathesis cake in A9. Accidental metathesis cake wash in B1. Hold both as
MPB

they are for further instructions.

S8 — Settling vol. reduction carbonate cake until 4:27 P.
B12 has been cleaned (steps F12 – F15) but not flushed with water. Second PbO_2 soln from B12 is in B3 ready to sample, 3WPbB, and discard.

S9. — Run sheets on top floor, solution made up but no tracer added (on soln make-up bench). Tracer is ready in lab.

Note remarks in re schedule on Black Board.
We plan to load dissolver Sat.
Start up run Monday AM
Start S-10 when convenient.
Allow D5 to sit until morning.
Run synthetic evaporation in B19.
Switches ① and ② control a single heater each thru a Variac. Stop on variac so they should not burn out. The other 10 are connected in Y across the 3Φ 220 like thus



5-22
4-

Eg W

Thank you!

They are all connected in thru the push button. The other switches are dead.

Steam has been connected to jackets of condensers of B1 and B6. Use during evaporations.

W.A.R.

5-22-45
4-12

The new decant line B6-B3DA gave a lower heel (173 cc) than the old line, ~230cc. This was contrary to expectations. Pls. note in subsequent decantations whether this data is verified.

1 hr. 15 min. of heating B6 (before installation of steam to condensers) evaporated 173cc to 80cc.

The practice of dropping cuds and cigs in the trench on 3rd floor continues to provide WPA employment.

Status

D5D returned to A9. Settling til 8AM.

5-8 in B6. Step 14 in progress. B3 to be probed when cool.

5-9 electrolysis to be sample 12-P-7h at 12th

EJW
WPB

B19 dummy run evaporation. Inspect after 4 & 5 hours, etc.

8

WAR
WPB

The fan motors, 2nd floor above hot cells, need angle iron supports underneath according to Mayfield (Maint.). The north fan bearing had been mis-aligned and started to vibrate. Motor is temporarily blocked up with a brick. P/S. invest. + write order if needed.

The B19 heater coil temp is to be recorded on potentiometer. We spent all nite looking for inst man. He is now looking for a direct reading pot. + prob. 12-8 man will bring one over.

OK →

5-23-45
12-8
ACJ

RUN STATUS:

A-9 D-5 J METATHESIS CAKE SETTLING UNTIL 8:00AM.

B-12 S-9 12 P AWAITING LAB ANALYSIS ON 12P-12hr. + B-6 12P-7hr GAVE 22 mg Pb/L.

B-17 S-8 17 P SAMPLED, READY FOR TRANSFER TO LAB. STEP 33.

B-19 EVAPORATED DUMMY LEFT FOR VISUAL INSPECTION

EJW

ACJ

Please Do NOT hose down the top of the cells !!!!!

Please determine the heels left in B12 and B17 by both B7 and B8.

5/23/45 EJW
8-4

Taken out by vac pump

Pipette B8 —

	Probe Inches	Probe Vol	actual Vol	
Heel in B17 —	.7	20cc	0	[illegible]
Heel in B12 —	.2	50cc	30cc	

Pipette B7

Heel in B17 —	1.4"	50-55cc	50-55cc	[illegible]
Heel in B12 —	.5"	85cc	60cc	

Run Status

→ D5 — metathesis cake in A9, water decanted from metathesis cake in B1, awaiting further instructions before discarding.

→ S9 — Settling volume reduction carbonate cake until 4:00PM, in B6. Before decanting however, move .5N HNO_3 from B12 to B3 and sample B3 combined PbO_2 waste and wash then discard.

→ Special run in B19

Evaporating until 5:00PM, inspect at that time.

EJW

When using movable pipettes B7 or B8, keep more than 10" vacuum during swinging them or — they drip.

Before starting B10 we wish to try to find the cause of high Pb and Fe in final sample.

① Possibly there is Pb in the rest wells. Please MT the rest wells out into a bottle. Sample for Pb and Fe. Rinse twice and sample both. Fill with water.

done

② Cover B6 and B17, Swab out the go-devil shields and wipe off the go-devils. Grease the shields lightly with Vaseline. Then remove covers.

done

③ Rinse out B6 with distilled water. Jet to B3. Add 1000cc f. HNO_3 over 30 minute period to B6 thru funnel B6. Sample for Pb and Fe. Agitate 1 hour and Take another Fe, Pb sample. Discard to B3.

Repeat this experiment using funnel B6 SP.

Rev

(4) Start Run 8-10 about 5 hours
done before the above program is
calculated to be finished.

(5) Throw out all nitric acid
solutions (40%, 25%, 20%) on
done hand. Make up new solutions.
Store in 9# acid bottles.
Submit samples to anal for
Pb and Fe.

(6) MAKE UP ALL SOLUTIONS
✓ FOR CELL B WITH
AQUA DISTILLATA.

(7) Do not allow HNO_3 solutions
to come in contact with
rubber as per present
dispensing set up.

(8) Still hold the A9 and B1
per solutions. B1 appears to have
much product in it.

WAR

WPB
Cog N

12

5-23-45
4-12

B12 heel using B8 found to be 30cc.

MTied, sampled, wrinsed, etc. B7, B8 restwells. There will be no sample on original B-8 well water because the well was dry.

B6 & B17 probes were removed, the plungers removed from shield and vaseline applied.

Would have started S-10 sooner but lab had difficulty filtering tracer soln.

Status:

S-9 in B6. 2nd F.N. shot ready to be decanted. Step 14.

S-10 in B12. 3H sample at 12 45 A.

B-19 - Dummy Run completed. Left for visual inspection. Soln for next run is made up on 3rd floor lab table.

70, 25, 40% acid solns tossed out. Made up new solns in 9# bottles, sampled.

5-24-45 W.A.R. *

12-8 AFTER ADDING ANOTHER DUMMY RUN TO

ACY B-19 WE CHECKED THE VACUUM ON A-16. WE WERE UNABLE TO GET ANY AT ALL. THE OFF GAS FAN TO A-16 APPEARED TO BE THE SOURCE OF THE TROUBLE. AN ELECTRICIAN CHECKED THE FAN AND SUGGESTED THAT MILLWRIGHTS TAKE THE CASING OFF. WHEN THE CASING WAS REMOVED THE IMPELLER FELL OUT. THE IMPELLER WAS SHOT. ABOUT A QUART OF VISCOUS YELLOWISH - BROWN LIQUID RAN OUT OF THE CASING OF WHICH WE HAVE A SMALL SAMPLE.

Before transferring S-9 to B-17, B17 was probed and found to contain approximately 100 cc. of "You name it" - Sampled as SNAFU for analysis. Could this be hell left from testing of pipettes B-7 & B-8.? Inventory sheets recorded B-17 as MT.

FARMAKES MADE A SURVEY IN FAN HOUSE. ACTIVITY IS A COUPLE MR at the son.

RUN STATUS:

A-9 D-5 METATHESIS CAKE AWAITING FURTHER INSTRUCTIONS.

WPB

EJ

B-1 1WCD WAITING FURTHER INSTRUCTIONS. 5/2

B-3 THIRD 2L. PORTION OF ½N HNO_3 RINSE OF B-6 TO SET TO A-6

B-12 S-10 3.55 L. 12P-7A+ SAMPLE GAVE 3 mg Pb/L. READY FOR STEP 20 TO TRANSFER TO B-6.

B-17 S-9 180 cc SAMPLED READY FOR STEP 33 + 34

B-19 250 cc DUMMY SOLN. HOLD-UP UNTIL A-16 OFF GAS FAN REPAIRED

ACM

EGW

5/24/45 8-4 shift EJW

Probe wire measurement

	Long.	Short	
B1	1 7/16"	1 1/4	
B12	1 15/32"	1 7/32	NO PIN
B3	1 13/32	1 7/32	
B6	1 7/16	1 7/32	
B17	1 15/32	1 7/32	

Plug samplers now have rubber stoppers on them made to fit graduated test tubes PLEASE DO NOT REMOVE OR MOVE THEM UP OR DOWN AS THEY ARE SET TO GIVE A 1 cc SAMPLE. If larger test tube samples are necessary at any time use a larger rubber stopper placed below the present ones without removing these. JH.

Probe Samplers —

	Capillary Below Lower Wire	Metal holder below plastic	
B6	OK	1/32"	
B3	1/8"	1/16"	
B1	3/32"	1/16"	
B12	OK	OK	NO PIN
B17	1/32"	1/32"	

NPB

EJW

Black iron nuts in bonnets of valves in gas lines A8-A16 & A10-A16

STATUS

A-9 D5 carbonate reprecipitation. Started settling 1:00 pm. Awaiting further instructions 5-2 4

S10 B6 - Ready to evap. to 500cc, omitting V.R. Lead analysis was low. Held up until vacuum system is tied up to 205 system.

B19 Dummy run ready to go when vacuum system is ready.

Program
1. Deliver cone to 70C C. Clean.
2. Plug lines open on both sides of cell walls with rubber stoppers.
3. Clean out cell B
4. Start up S10 when off gas line is available. Add 1 hour to settling time of first fuming nitric.
5. D5-1 settle 8 hours. Det carefully

to B1. Sample and hold for analysis.

(6) Make up run sheets for D5 Electrolysis as per S9. Carry in to B1 as soon as analysis indicate not more than 10% loss in B1. Start electrolysis.

5-24-75
4-12 B-1 probe binds as it starts down. At times it gives a flickering light. Trouble seems to be in wiring at top of probe.

Off Gas partnership incorporated at 8 P.M. However, C's needs require all the capacity about 50% of the time (for coating removal and dissolving) and part of the capacity the rest of the time. Due to C's needs, the evaporation in B-4 was run part of the time without benefit of off-Gas. Due to off gas trouble, any further dummy runs in B-19 were given up, cone cleaned and delivered to 704C, as per page 1p.

D5D re-transferred to B1. An unknown heel of 600cc was found in B-1. Since this might be a part of D5, but we could not be sure, it was jetted to B3, sampled, probed, dumped. (3-W-U)

Decanting from A9 was stopped at 1."

Status

D5 Metath cake in A9.

B6 Run 510. Step 19.

B1 Run D5 decantate waiting analysis.

5-25-46

12-8 1 WCC SAMPLE FROM D-5 IN B-1

Acy GAVE → 120 mg Pb/L

3.85 x 10^5 COUNTS / ML.

AS RESULTS WERE LESS THAN 10% LOSS. SOLN. IN B-1 WAS JETTED TO W-H VIA A-5.

RUN STATUS:

A-9 – D-5 METATHESIS CAKE AND ABOUT 1800 cc K_2CO_3 SOLN. SETTLING PRIOR TO DECANTING TO B-1?. SEE W.A.R.

B-6 – 5-10 STEP 9 SETTLING UNTIL 10:00 AM. (FUMING NITRIC PRECIPITATION)

AT 6:00 AM BUBBLERS ON A-9 WERE SHUT DOWN TO ONE BUBBLE / SECOND PRIOR TO DECANTING XS K_2CO_3 TO B-1.

5/25/45 R:— Make-up of 65% H_2SO_4 + 2.7% HNO_3
8-4 It takes approximately 11.5 lb 70% HNO_3 or 13.5 lb. 60% HNO_3 added to each 200 lb carboy of H_2SO_4 added to M6. If each shift cooperates in putting acid into M6 this way, we can't go wrong in our acid make-up. The acid in M6 at present has been adjusted to these proportions. The 65% approx. H_2SO_4 in T4 has no nitric and must be added to scale tank before using.

WAR Jet B1-B3D (emergency jet) was used in decanting material in run D5 special procedure.

RUN STATUS

B1 — D5 metathasis cake dissolved in HNO_3. Evap. to 2 L per special instructions prior to electrolysis.

B6 — S10 Evap. to 2 L per instructions prior to settling & decanting.

A1 Dissolving slug heel. Sample at 5 00 PM. Last analysis showed 15.3 slugs dissolved. Keep dissolving until constant analysis is obtained.

MJ
LM
MPB

This dissolving of the heels is as follows.

1. 150# HNO_3 add to A1
2. Lab says that 166 slugs of the original 200 were dissolved.
3. A1 heated & reacted one hr.; had to shut down due to 216-C requirements.
4. 150# more of HNO_3 add to A1. Reaction started up again.
5. 5 00/P should give us about 4 hrs dissolving time.
6. at 5 00/P cool (100°-90°) add 100# H_2O, agitate, cool further & sample. Have analyzed for U (UNH). Unless WAR wants it, jet to A5, neutralize, jet to A6 & to W9.
7. Follow with 100# HNO_3 to A1 heat & note any reaction.

5-25-45
4-12

A-1 dissolved continued until 6 25 P. when gravity remained constant. MTied to A5. 250# HNO_3 put in A-1, heated as per step 7 above.

D5 - dilution acid for B12 (to 4L. at 2.5N.) was chased thru A9 → B1 → B12 Dilution terrific. 1000cc acid wash added to A9 increased to 1650cc in B12.

Cell fan was off. Turned on.

per EJW

WPB
per

Run sheets for the maiden voyage are complete thru metatheses except for mistakes which you may catch. Please read carefully.

The dissolver will be loaded on 8-4 and 4-12 tomorrow. Run will start at midnight Sunday night. Sunday off. The inference is clear.

On this run fill in every blank -- even if it seems superfluous. Every item is to be signed by the person doing the step and by the person checking. CHECKING IS TO BE DONE BEFORE THE FACT -- SIGNING AFTER.

Try to have dissolver clean and MT by 8⁰⁰ AM. Likewise all vessels in cell A (possible exception: A5)

Finish up S-10 and get as far along as possible with D-5.

Pls keep overhead building ventilation on as much as possible. It keeps air flowing from D into C rather than vice versa.

WPB

LRM, ACV -- Don't forget Weekly Report.

EJW -- Yours is due at 8⁰⁰ AM too!!!

WAR.

420 cc of unknown found in B17 dumped.

Status

A-1 250# acid boiling to remove any heels. Can be neut. & dumped soon along with M.W. (heels) in A6

5-10 Evaporation in progress, before Step G18. Should be dry about 1^15 to 1^30 A.M.

D5 Electrolysis. Sample-TH at 2^00 A.M.

5-26-46

12-8 W.A.R. THERMOCOUPLE ON B-6 DOESN'T WORK. SHIFT INSTRUMENT MAN CHECKED LINE FROM PANEL BOARD TO JUNCTION BOX TO TOP OF TANK O.K. TROUBLE APPARENTLY BETWEEN TOP OF TANK AND BOTTOM OF WELL. SUPPOSE ACID CORRODED TIP OF WELL INSIDE TANK?

RUN STATUS:

A-1 MT? TESTED OUT UNK SOLN
LAB. ANALYSIS GAVE 32,500 mg U/L.
TOTAL VOL. = 33.6 GAL.

B-6 D-5 12P-7 hr SAMPLE Pb

IS NIL. READY TO BE EVAPORATED TO 500 CC HEEL THEN STEP 1 PAGE 28. 706-C NOW USING OFF GAS LINE TO 205.

B-12 PLATE REMOVAL SOLN. TO BE REMOVED @ 8:20 AM. (D-5 RUN) STEP 14 PAGE 26.

AOY

EJW

5-26-45 Definitely B6 TC well leaked.
8-4 Pulled out TC wires & — yes-no end.
JW Therefore - D5 discarded ~~via~~ B3 and A5 To W11.

N.B. Cell B vessels covered with cloth, please remove before dropping jetties or probes.

Bubbler tubes to tank T6 need taking out and cleaning or else — manometer will be blown out.

Run Status :—

130 slugs + $Na(NO)_3$ in A1. Step A12 in progress.

Cell A cleaned out, sump brought up to proper level, ladder removed, all unnecessary junk out. Lights in cell are out.

EJV

Slug carrier gives off with powerful beam when shelf is pulled out while dropping hot slugs. New long handled clamps are now on 3rd floor

5-26-45 78 hot slugs added to A1. Total 208.
4-12

H.P. reports cell A sensitivity. All outside spots remarkably cool. Very little background. In labyrinth, at end of walk, just under tolerance. At step-down into cell — 260 mr.

3 lead plugs; bottoms lined with Pt are in safe, also 2 upper pieces.

Off 225 to C cut off. New fan motor installed except for elec. hook-up. Electricians to work 12-8. Cell fan motor also bearing cooling water. to be cut off at mid-nite so they can tie in 440 V. for small fan motor.

See yellow sheet for procedure in B6. Step 3 complete. B6 also tested for leaks at top.

EJW Keys to cell A, B in safe.

5-28-45
12-8

5/27/45, not 5/28

Will supervisors (since nobody else seems to assume responsibility) please see that special requests are complied with. FOR INSTANCE on Pg 15 a request was made not to move stoppers inserted to give 1cc samples. Today we find B-6 stopper pulled down by someone. Considerable difficulty was encountered putting these on + hot hand count beyond tolerance. Please let's pay a little attention & not endanger anyone more than necessary. GH. Any comments?

Sampling Procedure

Until we learn better please follow the following sampling procedure.

1. Have HP man present or if he is unavailable, the shift Supervisor with our Lauritzen. Cover floor with paper.
2. Use rubber gloves and tongs.
3. Label 15cc vial before using.
4. Blow down air line on sampler
5. Insert vial (with tongs) and turn on air.
6. As soon as you ascertain that sampler is going to work close door.
7. Circulate for 15 min. Agitation should be on the tank being sampled during this time.
8. After 15 min turn off air.

EJW

MB

(9) Open door and remove sample using tongs. Deposit at once in sample carrier and cover. 5/28/ J.T.W.

(10) Deliver sample and sample sheet to Lab. Turn over to a chemist personally and record name of chemist receiving sample in Run sheets

(11) Rinse out inside of sampler with a wash bottle. 5-28 8-

(12) Have HP survey of area. ACV

TWAR

I would like to suggest having the janitors clean up the fan house floor. The rust spots on floor are slightly warm so they better wear rubbers.

Maintenance jobs to be done:—

(a) PB1-1 blue pen inking poorly, partially plugged.

(b) Header air Taylor recorder (S side of cells) not operating.

(c) Bubbler tube to T6 plugged.

OK ACV

Run Status:—

Hot #1 — Metal soln in A1, diluted and agitating above 80° for 15 min. — Step B:14

S11 — electrolyzing, 1st sample to be taken at 11:00 AM. Keep an eye on amperage. It drifts some. approx 0.5 ~/hr.

ACV EJW

EJ WP

5/28/45 The cone received 5/27/45 was monitored
J. J. Wells and found to have 60 mr/hr with instrument viewing inside of cone; also instrument window open. Same relation with window closed gave 30 mr/hr. After allowing just the cone flange to be in ~1 N HNO_3 for 2 hours the entire cone was at background.

5-28-45

8-4 RUN STATUS:

ACW CELL A

A-1 HOT P-1B STEP 15 PAGE 10 SOLN DILUTED, AGITATING & COOLING TO 40°C TO BE SAMPLED @ 4:30 PM

A-9 HOT P-1A EXTRACTION STEP 15 & COLD SETTLING UNTIL 8:08 PM

CELL B

B-6 - S-11 WAITING ANALYSIS OF GP STEP 21 PAGE 24

B-12 PLATE REMOVAL SOLN READY TO MOVE TO B-3 THROUGH B-7 STEP 12 PAGE 26

MADE UP 65% H_2SO_4 22% HNO_3 IN T-4 FOR SECOND EXTRACTION NOT ANALYZED.

EMPTIED T-7 AND NEUTRALIZED.

EJW
WPB

EJW MAINTENANCE UNPLUG LONG LIQUID LEVEL LINE IN T-G

EJW PB1-1 BLUE PEN REPLACED.

EJW INSTRUMENT SAYS HEADER AIR RECORDER OK.

SYNTHETIC S-12 SOLN. IS MADE UP AND SAMPLED READY FOR B-12 WHEN B-12 O.K. SOLN. IS ON THIRD FLOOR LAB. TABLE.

ACM

5-28-45 4-12 1700 cc in B17, reported MT, dumped.

The spotlites for cake inspection in B19 have a life of 20 hours. They are to be used one at a time and only for the actual time needed for inspection.

Status

A1 P-1-C - Starting to dissolve.
A9 9MB - Extraction. H_2SO_4 addition in progress.
A8 8MWA - to be neut. when O.K.
B6 S-11 - Step G9 at 12:20.
B19 dummy evap. in progress.
B12 S-12 at 25 amps.

EJW

W.P.B. 10 00 P 6/28/45

E.J.W. — There is one cone plug in Office #1. Have this up at Central Shops at 7 45 A 5/29/45. 3/4" has to be cut off the top. See either C. Harp or Gosnell. They are supposed to start on it at 7 45 A. R.O. is attached here.

— Replace all circular charts as #1 job when coming on.

— Probes are to be kept on at all times. The only exception being when the sampler head is being inserted or removed.

5/29/45 12-8 E J W

① 125# steam header on PB-2 is turned off and bypassed. A9 agitator is locked out at main switch board — key is in WPB's desk drawer.

② Before probing B3, please instruct all operators to check B3 temp. B3 liquid is usually around 95-100°C after jitting from B6 and the operating instructions do not caution against this.

③ We are out of 50% NaOH drums and we better get some in a hurry to make up some 4% NaOH in M10.

Guilty? This has been standard practice by all operators.

E J W

WPB

(4) Run Status:

1C — Metal solution, diluted and sampled.

1B — Settling extraction cake until 9:20AM.

1A — Neutralized metal waste in A6

S12 — Electrolysis complete, ready to go to B6 when it is emptied.

S11 — Dissolving $Ba(NO_3)_2$, 1st portion ready to be transferred to B17 — B11 is plugged.

(5) Is there any reason besides curiosity in taking HP reading of sample itself for sample sheet? The radiation is usually very high and it takes time to get a reading.....

(6) A4-205 stack line cut off and drained for about 2 minutes — very little effect on action of manometer registering pressure drop across A4.

(7) Completed B19 run sheet enclosed.

(8) 65% H_2SO_4 + HNO_3 is in T9 — it was put into this weigh tank because a 65% H_2SO_4 heel was left in there from previous batch.

(9) Re: — note #3 — we went 1 drum short into M10 but all water was added — add 1 drum caustic to M10 and you'll have enough 4%

5-29-
8-
AC

caustic for next batch — add
no more water.

5-29-45 RUN STATUS:
8-4
ACY

A-1 1-D STEP 11 PAGE 9
DISSOLVING IN PROCESS. NEXT READING
@ 4:05 PM.

A-9 1-C HOT SETTLING UNTIL
5:00 PM STEP 14 PAGE 13.

B-6 5-12 STEP 21 PAGE 24
WAITING ANALYSIS OF GP.

B-12 PLATE REMOVAL IN PROGRESS.
STEP 14 PAGE 26
READY FOR STEP 15.

B-17 PROBE CABLE REPAIRED. (SEE p 33 - WPB)

ACY

EJW
WPB

5-29-45 Cell A lights P.B.-I Switch 7, 8, 9.
4-12 " " Emergency Lights - H-4
Cell B lights PB-I Switch 5, 6.
" " Emergency lights - H-3.

Slug carrier yoke re-bent so that it will drop free of handles.

Cone collar drilled and pins provided with screwers to aid in removing pins. These screwers are in 3rd floor desk - south.

Cone light funnel given more bracing to better hold its position. This is now positioned don't fool with it.

How's about a routine H.P. check sheet for the H.P. man to fill out each shift ??

8-4 Have instrument man check battery on PB1-12.

Status:

S 12 in B6 decant 1st F.N. at 12:10
8MWC in A8 waiting analysis.
1MD in A-1

A full batch of carbonate solution has been jetted back and forth between A5 + A6 to accommodate B sump waters. It is now in A-5 and contains the full 2800# carbonate.

EJW

W.P.B. 5/29/45 11 45 P.

J.T.W. 1. The 32' level hoist should have the lower pully removed & greased. Also the cable has aquired a curl which makes difficult probing for the carrier in cell B chimney.

E.J.W. 2. An addition of Cu cable has been welded on the end of B17. This now needs re-zeroing. Zero by emptying B17, add a known vol., turn dial until the reading for that vol. corresponds to the chart & secure the end.

5/30/45
12-8 Started to calibrate B17 as above but —

The section of soldering where the two cables are joined is too stiff & takes the radius of the drum when wound up. When unwound it gradually straightens out giving erroneous readings. Therefore - the two peices of cable should be replaced with one piece only

E.J.W. 250cc INTO MTIED B17 — READING ADJ. TO 2.75
500cc - - - - NEW - 3.65 CURVE - 3.80
750cc - - - - - - 4.60 - - 4.70
1000cc - - - - - - 5.50 - - 5.65
1250cc - - - - - - 6.40 - - 6.60

W.P.B.

B17 MTIED WITH B8 - HEEL BY PROBE - 70cc - ACTUAL HEEL - 3cc

Run Status at 8 00/AM

1D settling extraction until 11:17AM

S12 — Ready to transfer 1st fraction from B6 to B17 — if you can get either B9 or B11 working. The reason that it didn't work for us is not lack of patience.

B7, B1, B12 and B3 cleaned out with acid and water. B6, B11, B9, B17 and B8 need to be washed yet.

Cone in carrier washed out thoroughly and covered with paper towel.

5-30-46 RUN STATUS
8-4
AM

A-8 8WM9 READY TO GO TO A-5
CO_3 + PO_4 ALREADY IN A-5.

A-9 RUN 9 READY TO DECANT TO A-8 AS SOON AS A-8 MT.
STEP d PAGE 14-2.

B-6 RUNNING SPECIAL WASH.
SEE ENCLOSED SHEETS.
2 L. F. N. AGITATING @ 20°C
UNTIL 4^45 PM.

RCM

5-30-45 See loose sheet for "special" in
4-12 B6-B17-B19. B11 appeared to be plugged.
Blew back and she opened up nicely.
In fact, we picked up additional volume
on each transfer.

The yoke for carrier is sprung again,
will not fall free. New one being made.

Status.
A9- Metathesis. Step D9 in progress.
cell B- ready for page 21a checking.

5/31/45 Equalizing valve on B1 Sp. Gr. men.
12-8 is open.

EJW

5/31/45 12-8 B17 air sparger is not low enough in the tank to pick up a sparge 1200 cc.

Run #1 Status:

A9 — Dissolving metathesis cake — 1st shot.
B1 — Metathesis (2nd waste) ok to jet to A5

Please see that HP man checks rubber gloves used for sampling. We got high hand count when using them. Also have him check rubber gloves lying around decontamination room.

ACY

5-31-45 8-4 ACY RUN STATUS:

B-12 RUN 1 ELECTROLYZING @ 25 AMP. UNTIL 6:37 PM. THEN MOVE TO B-6.

5-31 4-1

MADE-UP SOLUTIONS FOR REMAINDER OF HOT RUN.

40% K_2CO_3 IN T-1
40% HNO_3
25% HNO_3
20% HNO_3
} ON SOLN TABLE

EGM

H_2O_2 (30%) in Hood

The spreading of contamination can very easily commonplace with the resulting hazard. Hereafter observe the following procedures.

1. Wear only "green" rubbers in the decon. room.
2. Check your own rubbers at least weekly.
3. Check all equipment used for sampling then either throw away, send to laundry, clean it yourself or merely return. But do not leave anything laying around – blisters, oper. areas, labs. etc.
4. Clean gloves for sampling are now supposed to be paired, sized, & powdered for your use.

Also, use good judgment when any radiation is being handled. W.P.B. 5/31/45 4 p.m.

5-31-45
4-12

Status:

H-1 evap in B-6 in lieu of carbonate reduction. Step F(2) 6. Stop at 2" on manometer for checking, or 5 hours, whichever is first.

B-12 has PbO_2 removal shot. Hold.
B-17 needs to be MTied with B8 to get last 100 cc of wash.

A5, B1, A9, A8 untouched this shift.

WPB

6/1/45
12-8
JW

① Valve in line to 205 stack, the one in the pit outside of #1 office is closed. It was necessary to do this in order to get some vacuum at A16 scrubber.

② Run Status

B6 — 2nd fuming nitric settling until 10:05 A.M.

B12 — 1st PbO_2 lead removal solution in — see instructions F14, page 26.

B3 — 1 FNA, awaiting lab analysis

PB-4A — H.P. steam header off

6/1/45
8-4

B-3 - 1st $HNO_3-H_2O_2$ Waste from B12, to be combined with other Washes & sampled

B-12 Second $HNO_3-H_2O_2$ Waste, ready to go to B-3, when run is in B19.

There are 200# water in A1 agitating. Record volume and sample. Call A1 Water Board. Submit for metal and Ra analysis. WAR.

6/1/45 Run Data — Cont'd.

Run #1 Evaporating in B-6
See Run Book — Evaporation Complete ?

6-1-45
4-12

No inventory made as nothing has been moved except H-1.

B-12 still contains 2nd H_2O_2 shot. Would hold as per instructions until H-1 is in B-19.

Took only 10 samples of 17P. We have hot hands and prob. hot balls. Area around B6, B17 probes warm. Also at landing 3rd floor and near sink 3rd floor. Have used citric acid on these spots. Have H.P. make thoro check.

Run is held up in B17 for further instructions.

B-8 was used to agitate B-17, moved to B19 & left with Vac. On.

Much of delay due to attempts to operate polarograph, which seems to have given inconclusive results.

MMB

40

6-2-45

12-8

① Most of the hot spots on 3rd floor were cleaned up. The one around B6 probe was worked on but it is still warm. Spot in front of PB-4A (under sign is also still warm)

Run Status

Product in carrier in cell B. Ready for everybody's observation.

Status of Special procedure for decontamination and product tracing:—

Instruction #4 on yellow sheet.

A1 — Cooking HNO_3, ready for cooling, sampling and neutralizing. CO_3-PO_4 solution is ready in A5.

Instruction #3 on yellow sheet

A9 — 40% K_2CO_3 digestion complete, started settling and cooling at 7:45AM.

B12 — ready to add water wash.

The three HNO_3 washes are all in B3 (see instruction #2 on yellow page)

B17 — 400 ml H_2O wash ready for sampling (see instruction #5 on yellow sheet.

6-2-45 DECONTAMINATION GOING ON IN
8-4 CELL A & B.
ACY TRIED TO ENTER CELL A.
4 r BEAM AT INSIDE CORNER.
NEED MORE DECONTAMINATION.

A1, 5, 6 TO BE FILLED 1/2 FULL WITH 30% HNO_3 & SPARGED, RECYCLED, (JET) AND CIRCULATED THRU SAMPLERS.

A8 & A9 - SAME AS ABOVE EXCEPT ABOUT 4/5 FULL WITH 30% HNO_3.

BE SURE CHECK OFF GAS BEFORE SPARGING & CIRCULATING.

FAN HOUSE WASHED DOWN SOMEWHAT ACTIVITY DOWN TO APPROX. ONE HOUR WORKING TIME. CLEANED OUT INSIDE OF BIG FAN HOUSING.

EVERYWHERE PROCEED WITH CAUTION HOT !!

ACY

WPB

6-2-45
9-12

The hot area on 3rd floor cement will prove a problem for decontamination. Does anyone still question the necessity of painting all cement surfaces? I can hear those cement air hammers now!

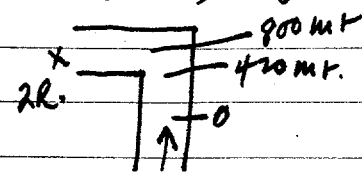
Hungerford's jet with performance data is on WPB's desk & typewriter desk.

Run S-13 sheets made up. E.J.W., p/s. edit. In case of doubt follow procedure of S12 or H-1. Run sheets for S-14 are on file in Room 1., corrections to be added, identical to S-13.

With the present inadequate off-gas system, when dissolving in A-1, the valve in temporary line to 706-C Xmas tree (from A16) must be closed or almost closed in order to provide vacuum. 6/

Got 12 carboys HNO_3 from 205.

See typed sheet for programme. Cell A. after first round of acid treatments surveyed:



Cell A to be given more treatment with 30%. See inventory. A9 Heating, A8 coming up at 12 00.

Cell B:

Samples taken (for Fe, Pb) on B1, B3, B6. B3 untied, B1 MTing, B6 to be MTied. B12, B17, to be sampled and MTied. B17 is to be sampled in B3 after B3 is rinsed out. All tanks then to received rinse and repeat acid (60%) treatment.

Off-gas line on A16 is off. Can be & should be on if you don't run A-1.

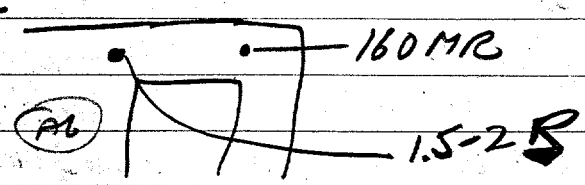
6/3/45 Eg W
12-8 (1) B8 leaves heel of 1.7" or 800 cc in B17. — according to chart anyway.

(2) Suggestion for decontamination:
It seems we'd had more luck with plain soap powder and brush on concrete than anything else. It also appears that if HNO_3 is used first, without trying soap, the contamination can't be picked up with anything else if the HNO_3 fails to remove it.

(3) 3rd floor hot spots scrubbed down but not H Pinson here to make survey.

please check hot spots when HP man becomes available.

(4) Cell A decontamination (see yellow sheet)
Procedure as outlined on yellow sheet was followed a 2nd time today. In the absence of a HP man the best estimate we have is —



(5) B6 probe found acting screwy, investigation showed cable and electric wire off both pulleys. After putting both back on we were unable to check it again because of hot solution in B6. Please check this probe — it lighted when it was still definitely above B6 vessel.

Status of Run S-13
Evaporation vol. reduction started but stopped after one hour of evaporation, due to shift change.

(6) Cell B decontamination (see yellow sheet)
Everything completed. B7 and B8 both have 6 liters 70% HNO_3 ready for discharging to B3 when B3 is MT'ed and rinsed.

6/3/
H-1

(7) Vacuum from 205 stack is on both A16 and A4

6/3/45
11-12

(1) 12 carboys acid procured from hell
(2) Third decontamination of Cell A as per yellow sheet on clip board.
A9 done
A8 at 60°C agitating until 12 45/A
A1 465# of cooled acid soln awaiting A5.
A6 MT
(3) Rinse tanks when all are MT and have HP survey made.
(4) S13 evaporating to 500 cc slowly in B6.
(5) Have HP survey of building and clean up any hot spots
(6) Work on B3 sampler
(7) Cell A sump appears to need cleaning. Jet to A5 and rinse sump with acid and water and refill. Get HP survey of cell A as soon as possible. If there is no improvement please call me. If there is some but activity still is over 500 mr / hour try repeating some or all of this

MPB

program. I think that sump cleaning is important.
DO NOT PUT FLUOSILICATE IN A9.

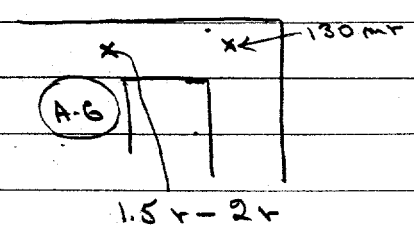
OK (B) Sample the solution in B7 and B8 as per yellow sheet on clip board in my office.

6-4-46
12-8
ACY

FILTERED WATER PLANT WAS DOWN UNTIL 2:30 AM. SO WE HAD TO CUT WATER DOWN TO A MINIMUM OR BE CUT OFF ALTOGETHER.

JETTED LIQUID IN CELL A SUMP TO A-6 AND NEUTRALIZED.

HP TOOK READING IN CELL ENTRANCE



PUT WATER INTO CELL A SUMP AS WE WERE UNABLE TO GET INTO CELL WITH ACID.

S-13 IN B-6 EVAPORATING TO 500 cc REEL OR 1.5" ON MANOMETER ALMOST THERE STEP 6
1000 cc FUMING HNO3 IN GRADUATE

UNDER ADDITION TRAY

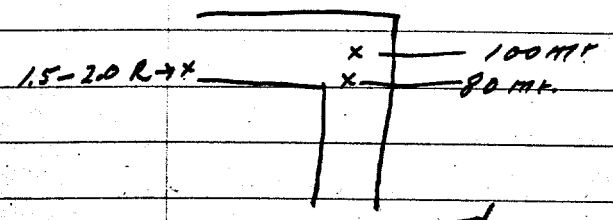
AEM

6-4-45
8-4

One stool found to be hot. The use of stools and chairs for standing should definetly be stopped.

After using a hand brush for scrubbing a hot spot, the brush should be dumped in a hot can by the person who used it. Let's not economize on brushes.

9 A.M. cell A sensitivety after MTing cell:



There are several pairs of surgical gloves in safe for assignment to individuals who need them.

B3 probe was found to have a broken coupling when we tried to use it. what's the story?

See yellow sheet for odd jobs. B-3 blister is warm. If there is a leak, the whole " will prob. have to be removed.

Cleaned at hot spot over chimney. N.G. Still 160-200 mr.

MB

AEM

48

S-13 2nd F.N. shot ready to be decanted when thru trying to decontaminate A16 and the cell A + B off Gas lines which enter A16. Off-Gas line to B6 is off to protect S-13 from possible H_2O dilution. It is thought that a goodly part of cell A heat is due to A16 & off gas lines.

The small fan in fan house is off for conservation reasons, per W.P.B. Use it when needed for runs.

When, and if, the off-Gas lines get flushed out with water, repeat treatment with 60% HNO_3, keeping "4" valve closed, then open, dropping acid thru A-16 to W11.

6/4/45 EJW

4-12 ① B3 sampler (blister) decontaminated down to 67 MR/hr. with open door. Maintenance permit on WAR's desk.

Program & Notes

① Load 208 slugs in A1. Get solutions ready to remove coats & proceed with coating removal when feasible.

OK

② Keep synthetic runs going along in cell B. These are important. Get sample 17P analyzed for Fe, Pb, Cr + Ni.

OK

③ Set new NH_3 manometer at 5-8" water for tonight. Test air flowing from system (use drain valve on cyclone) to be sure it is alkaline - use litmus paper. Call me if if is not alkaline.

OK

④ Check new blower occasionally to see that it is operating properly.

OK

McLennett. 8:30 pm.
6-4-45.

② Status of hot run #2

78 slugs loaded and a full carrier is now in 105 bldg. canal ready to be brought down. Transfer sheets and HP permits are on NAR's desk. Tube run sheets may be made up but we did not locate them. Enclosed in log book please find the sheets 2 and 3 which we have started run with.

③ Status of run S-13. — ready for evaporation again, we had to cut it off very shortly after we started it because of maintenance work on fume line.

WPB
pcf

④ The concrete above cell B chimney was decontaminated from 50MR to 9MR with some soap powder paste and a good stiff brush and elbow grease.

(5) What is the procedure on throwing hot stuff into the decontamination room? ——— no information left. We found a pail and the capillary pan reading over 1 R. It was brought down to 140 MR. It is now hanging in M1 for more decontamination, this appeared a very effective.

6-5-45
12-8
ACY

RUN STATUS:

RUN 2 IN A-1 - STARTING METAL SOLUTION STEP 10 & 11.

S-13 IN B-6 READY FOR STEP 30 TURN OFF SPARGER & TRANSFER TO B-11

WE HAD TROUBLE GETTING MORE THAN 2½" VACUUM IN A-1. DUE TO LEAKAGE ON CHUTE COVER AND PROBABLY LARGE PRESSURE DROP ACROSS A-4. JET AT 205 IN ON AND THEY HAVE A GOOD VACUUM. WE SEEM TO LOSE IT ALL THROUGH A-4. SUPPOSE IT IS PLUGGED UP A LITTLE.

HAD TO HOLD UP EVAPORATION OF S-13

UNTIL LEAK IN NH_3 LINE COULD BE FOUND. THE CYLINDER VALVE LEAK SO MAINTENANCE HOOK-UP ANOTHER ONE. HOWEVER THERE STILL SEEMS TO BE A LEAK. YOU CAN'T SMELL IT NEAR CYLINDER. BUT YOU SURELY CAN ON SECOND FLOOR.

PROBE ON S-17 IS NOT RECORDING PROPERLY. SINCE POLARISCOPE WAS USE THE OTHER DAY, PROBE WILL HAVE TO BE RE-ZEROED AGAIN. BELIEVE THAT 1.6 IS THE NEW ZERO.

PER MCL'S INSTRUCTIONS WE DRAINED CYCLONE SEPARATOR THREE TIMES DURING SHIFT. SOLUTION WAS ALKALINE, AND CONTAINED NO DETECTABLE AMOUNT OF ACTIVITY. TOTAL VOLUME DRAINED DURING 6 HOURS RUNNING TIME WAS ONE QUART.

ACM

MPB

6-5-48
8-4 B17 probe handle was scoped at ~ 230 mr/hr. The probe was removed to 706C graveyard, plenty hot. Probe sleeve swabbed out with cheesecloth on a rammed. Hot area around B17 probe cleaned. Pls. continue if necessary. Sleeve given vaseline coating. When sampling, the man handling the capillary must not touch the upper part of the probe, nor the probe handle. Tis microbes we are handling.

A body frisker is needed for 3rd floor.

A9 has first batch. Waiting on anal. of 65 % H_2SO_4 and make-up of new 6 % $Pb(NO_3)_2$. To be sampled at 4^00. Circulation started 3^50.

S-13 ready for step 31, page 32.

Program

(1) We lose 0.25% per hour. Consequently it is a primary job of the shift supervisor to schedule operations that as little time as possible is lost.

(2) MT B17 with B8. Zero in the new B17 probe. Work out B17 to B3 with 3 portions (1000 cc) water use B8.

AW
Done
EJW

(3) Clean out B7 and B8 and their rest wells. MT to B3. Fill rest wells with 0.5N HNO_3. Put 6 l in each B7, B8. Rinse B3 and discharge B7 and B8 in turn to B3 & Rinse in between. Sample in B3 and continue washing until Pb reaches a low constant level. Have Fe analyses also.

(3) When B17 is clean go on with S-13. Take 2 L samples for spectrographic analyses.

(4) Start S-14 asap.

(5) Make up measured quantities of f. HNO_3 and water in new clean bottles. Submit samples to lab for analyses. Paste on bottle when available. Make up QS for S-14, S-15, and H2.

(6) Drain cyclone separator and the jack leg on new fan each shift. Until further notice leave all off-gas valves to vessels open so that vac on A16 does not go over 25".

(7) Each shift is responsible for leaving a clean building. Add Rms 8 and 9 to shift inventory

Above — awaiting analysis

Label
Date
Quantity
Identity
Fe and Pb and SSS

DO NOT OPEN B19

JMB

and enter whether clean or dirty.

Done for fuming HNO_3, H_2O and $Pb(NO_3)_2$ (8) Get appropriate sized graduates and label one for each reagent. Do not use for anything else.

Posted at mano (9) Note new instructions on PB2 for changing from Hg to oil manometer. TK A9

W. A. Rodger

DO NOT WAIT FOR LAB ANALYSIS ON WASTES BEFORE STARTING NEXT EXTRACTION —— WAR

6/5/45 EJW

4-12 (1) We may as well resign ourselves to the fact that we'll not have enough distilled water in top storage tank for the rest of this run. Somebody left the valve open to lower storage tank and that's where she is now. Any suggestions for an easy way to make up 65% H_2SO_4? The method we used this time takes too much work.

(2) Mc Clellan will not be in on 12-8.

(3) We got far behind on run S13. B9 and manometer was out of wack completely with no mercury, and B11 manometer also did not want to move with vacuum on. It took us from

5:00 PM to 9:00 PM to get an instrument man here after getting hold of Hartner. When the instrument men took apart these manometers the manometers and lines leading to them were found plugged with black foundry material which was high in mercury, had Pb of 2.5 mg/g and Fe of .36 mg/g. Off BS line had some of this and it were blown

④ Start-up solution for run S14 is on make-up bench. The run sheets are attached to clipboard but they are not filled out completely. Please fill these out, they should be identical to run S13.

③ (Cont'd) down to B6, it could since explain a lot of things.

⑤ $Pb(NO_3)$ is 5% Pb according to analysis. Please measure volume and butt it up to 6%.

⑥ A lot of hot spots were located around sampler probes so please warn the boys before it's tracked around. It is likely they came from the white crap somebody used for cleaning probes. Cleaning up the white spots off concrete was too late, paper on floor would have helped before it splattered.

WBB

(7) Run status:

2A-A settling & filtration until 1:35 A.

2A-B dissolution complete, diluted and sampled.

S13 - Trying to transfer 2nd portion of water solution from B6 to B17 when stationary pipette, manometer are fixed.

6-6-45

12-8

Ney

S-13 SPENT HALF THE NIGHT TRYING TO FIND WHERE 100 cc OF SOLN FROM B-6 DISAPPEARED TO IN TRANSFER TO B-17. PROBE ON B-17 SHOWED ONLY 80 cc AFTER FINAL TRANSFER. IT WAS IMPOSSIBLE TO GET A 1/2 cc SAMPLE AS EJW SAID INSTEAD OF λ SAMPLES. SUPPOSING B-17 PROBE WAS CORRECT, WE PUT 100 cc WATER IN B-6 AND TRANSFERRED TO B-17 BY WAY OF B-11 (B-11 MANOMETER WORKS ALRIGHT) THEN ATTEMPTED TO TAKE 2 - λ SAMPLES FROM B-17.

λ CAPILLARIES WERE DAMP INSIDE. SENT THEM BACK TO THE LAB TO CLEAN & DRY.

DRAINED CYCLONE SEPARATOR AND DRAIN LINE INSIDE FAN HOUSE LIQUID (500 ml.)

6-6-9

W.A.R. WE ARE GETTING HIGH HAND COUNTS
COULD WE HAVE SMEAR TESTS MADE
ON VALVE HANDLES?

RUN STATUS:

A-1 2A-C THRU METAL SOLN
DISSOLVING STEP 11.

A-9 - 2A-B COOLING DOWN PRIOR
TO 5 HR. COLD SETTLING
STEP 15.

A-8 8WMA - SAMPLED.

B-17 S-13 - 150 cc TO
HAVE A SAMPLE TAKEN.

AOY

6-6-45 The beginnings of an H.P. shift
8-4 Sensitivity record have been roughed out & given to W.P.B. Everyone is invited to add suggestions & additions before tomorrow A.M. so that forms can be made. Purpose of the sheet is to provide a regular check of the whole bldg. to prevent a shift from walking blind into a hot spot, as happened to us on B17 yesterday.

WPB

WRR
WPB

How about posting a complete list of volumes required for each hot sample??

B17 probe was re-checked at 0, 200, 500, and 1000 cc & O.K.'ed by WRR.

S-13 completed, sampled, dumped.

B-19 Status:
Old Plug on hook. Cone suspended.
In process of removing carrier. Method:
1. Put old plug in carrier, remove thru chimney.
2. Remove plug, insert special plug.
3. Put carrier back in cell, hang plug on hook.
4. Put cone in carrier, put in plug.
5. Remove to decontam. room.

26 slugs added to A[redacted] - total 78.

S-14 steps 4+5 3rd wash in B6.

H-2, in A9, step 11 C, digestion to 3:56 P.M.

Cell B was partly entered. Very Hot.

6/6/45 EJW

6.77 4-12 Run Status:—

2A-D — Dissolving

200,

2A-C — settling extraction, ready to decant to A8 anytime you're ready now.

S-14 — Settling 1st running nitric — until 12:45 AM.

On decantations A9 — A8DB hold the steam pressure on low side of 75#.

Analyses of 65% H_2SO_4 may be by means of hydrometer breaking. SS sign for fact that some HNO_3 was added.

W.A. Rodgers

MAB

6-7-45
12-8
Acy

RUN STATUS:

A-1 — 23-A STEP 11
METAL SOLUTION DISSOLVING.

A-9 — 2A-D STEP 14
SETTLING HOT UNTIL 10:45 AM.

A-8 — 8WMC SAMPLED.
AWAITING ANALYSIS

B-6 — 5-14 STEP 27
EVAPORATING TO DRYNESS
OVER AT 8:05 AM.

WAR. → In removing the sample carrier from cell B we encountered several difficulties.

Most trouble was due to the hoist hook slipping out of the eye of the grappling hook. The cable would twist around and the hook would also turn, making it hard to hook on the carrier. When one is extremely careful the grappling hook will hang on one side and slip off from the hoist. It slipped off on us twice and we spent about ½ hour grappling for it.

Suggest that, whenever we lower carrier into the cell, we wire on the hook so that the grappling hook will not slip off.

HP reading at top of carrier is 1 r.

Another difficulty was that the hook on the sample plug had to be exactly centered and on opening at right angles to the lift hook, or else it would be hard to lift out.

Made up run sheet (STEP 11) for 2B-A dissolving. Could not find printed sheet.

Drained cyclone separator and line inside fan house. About 1/2 gallon came out of cyclone. Reading 300 mr. Very little drained inside fan house.

ACY

MPB

6-7-45 M-10 needs 2 drums N_2OH addition.
8-4 Sufficient water has been added.

H-2 (2A-D) being decanted (3 45).

S-15. Steps 2+3, one wash completed.

The T-Tank calibrations are N.G. as far as overflow pt. is concerned. They were calibrated with water. Heavier liquid will not overflow at same wt. measurement as H_2O.

6/7/45 EJW
4-2 ① In taking λ samples, WAR requests that we plug the probe holes with cheese-cloth — to eliminate any possibility in dropping sample tube into vessel.
② Both personelle and equipment decontamination rooms cleaned up. B6 blister cleaned down to 350 MR inside and 40 MR with door closed. B1 blister cleaned down to 450 MR inside and 40 MR with door closed.
header off + bypass open ③ Status of Run S15 — Evaporating until 2:40 AM — Step F(a) 6
Status of Run 2A — Settling last extraction H_2O wash until 12:08 AM.
(125# steam header off + bypass open)

6-8-46
12-8
ACM

RUN STATUS:

A-1 2B-A → STEP 20 READY TO TRANSFER TO A-9 WHEN A-9 IS MT.

A-9 2A → STEP 31 SETTLING UNTIL 8:50 AM.

B-6 5-15 → STEP 17 SETTLING UNTIL 8:25 AM.

W.A.R. → Analysis of IWCA sample from B-1 was 11.0 e @ analysis time.

ALL POWER FAILED AT 6:40 AM.

W.A.R. → ALL EMERGENCY POWER FAILED EXCEPT LIGHTS IN HOT LAB & ANALYTICAL LAB. SWITCHES WERE ALL ON AT THE EMERGENCY PANEL BOARD.

W.A.R. → CELL FAN IS NOT SELF STARTING. WHEN POWER CUT BACK ON IT DID NOT START. ALSO DID NOT RUN ON EMERGENCY POWER.

ACM

B-1 THERMOCOUPLE NOT WORKING. TROUBLE IS INSIDE THE CELL.

WPB

IWCAA ANALYSIS IS ½ DONE.

6-8
8-4 Small fan in fanhouse dismantled & line plugged.

5-15 evaporation held up due to prep for H-2 (cleanout of B-12, transfer WCA & WCB back to A9). B-6 needs to be heated about 3 hrs. additional to effect dryness. 6/2

First metathesis waste (80 c) & 2nd (9 c) brought back to A9 for re-extraction.

Lack of sufficient info on conc. of $Pb(NO_3)_2$ is holding up addition of H_2SO_4 to A9. This $Pb(NO_3)_2$ was made up on 8-4 yett., sampled, result (about 4 PM) – 10%. Lab has another later sample at 3.5%. The 2.5% variation from 6% hasn't worried anyone since 3rd re-analysis shows 3.5% correct.

A-9 H_2SO_4 addition. Step C-9.
A-1 HT ready for next dissolving.

H-2A 12P in B-12; Step 15E complete. Check lab to see if normality is O.K.

B-7 containing waste (PbO_2 cleanout of B12) to be dumped. B7 and B7 rettwell are to be given acid treatment & washed out. B-8 has had treatment.

Finish S-15 as vacuum allows. Then rinse out B6, B8, B7, B9, B11, B17.
Start electrolysis when S-15 is finished.
Carry on Run 2B as rapidly as possible.

6/5/45 ① Run 2A, in B12, adjusted to 3N acidity
4-12 ② B7 and B7 restwell cleanout completed.
③ Equipment which was in process of decontamination in M1 was all taken out and checked. Some of it was ok'ed and taken out. Two cone plugs and one cone were still hot and were thrown back in for further cleaning.

The cone carrier was found to read >1R on side. It was decontaminated down to 68 MR and left in decontamination room.

Decontamination of large heavy equipment (like blowers) in M1 was found very impractical. While taking out this equipment the liquid crops up the top of tanks and floors. We had to scrub out the whole make-up room floor and area surrounding the make-up room and decontamination room. Small piece decontamination in M1 is still very much ok.

④ Run Status
2B-B — Dissolving complete, diluted, sampled, in A1

WBB

2B-A — Extraction settling until 1:14 AM. This will give it 8 hours settling. This may be wrong however, since we did not 7½ settling on previous batches and would suggest checking on this to make sure there is no error in the instructions.

2A — In B12, ready for electrolysis. Holding on this for further instructions.

S15 — Evaporating to dryness, according to LRM's log, it should be dry at 2 AM.

Both cell A and cell B vessel vacuum is gotten from 205 stack because blower has been dismantled. Before proceeding with next dissolving you may find it necessary to stop B6 evaporation, cut off cell B vacuum in order to get enough for A1 dissolving.

A1 vacuum very jumpy. It would probably be easily corrected now by cutting off all vessel vacuum and draining off gas line to cell A sump.

6-9-45 W.A.R. Can't understand why
12-8 we can't change shifts Monday June 11.
ACY The swing shift feels the same way about this as we do.

RUN STATUS:

A-1 2B-C STEP 11 METAL SOLUTION DISSOLVING. NEXT READING @ 8:15 AM

A-9 2B-B STEP 15 COLD SETTLING UNTIL 12:15 PM.

B-12 2A - READY FOR ELECTROLYSIS.

Finished S-15 and rinsed B-3, B-6, B-7, B-9, B-11, B-17.
B-8 & B-8 rest well have not been rinsed yet.

ACY

WAB

Rm 1
706 D
5/9/45

All personnel
706 D

Gentlemen?

Re: Shift Scheduling

There will be no shift change this week end.

I note signs of slight disagreement with this decision. Therefore I should like to clarify my position. When we reversed our shift rotation to the present order it was with the expectation of little more Sunday work. It now appears that most runs will take over one week. As you may remember I have said all along we would freeze on shifts for the duration of any run. If we were to change tomorrow the following shifts would get the end of the stick.

8-4 → 12-8 Short change
4-12 → 8-4 Short change
12-8 → 4-12 Lose long weekend.

This will undoubtedly happen again and over several months it will probably come out just about even. oh yeah!!

W. A. Rodger

8-4 A-1 to received 4 more batches of 26 slugs. One batch just added

H2 A electrolyzing. Sample 5 40

A9 extraction starting.

A5 needs 500# more CO_3 for next M.W.

M-10 contains H_2O. M-2 has 1 drum NaOH.

Program

① Load 208 more slugs, remove coats, dissolve 2B-D, and start extraction of 2B-D.

② After Batch D there will be another wash, metathesis, and cake solution. Then transfer to all B (B12) electrolysis and combination in B6.

③ We hope the 208 now going in will be all.

④ The metathesis wastes will be acidified and tossed back in to A9 as on last batch.

⑤ After removing Batch 2A to B6 tag out all lines to and from B6 and cut off the 125# steam header to PB 4A.

⑥ Rinse B12 with 1000 cc H_2O. Transfer to B1 and toss back

into A9 with the 2BD extraction. Sample thy in B1 and call it 12P heel. Then clean out B12 as per run sheets and be sure to use B7 -- not B8.

(7) Some weeks ago I asked all shift supervisors to read the weekly reports. None have done so. Suggest all personnel read them if interested. Also I have not seen many SS weekly reports recently.

VRJ

4-12 May I make a suggestion? — Why don't we hire women with dainty hands to do all our sampling? Thirteen pair of gloves are available in the cabinet (S Lab) and all are the same size 9. There may be one possibly two men working in 706-D who could wear this size, but what about the rest of us? In removing these tight gloves one cannot possibly refrain from sliding one hand with the other. When one is removed that hand is bare and in helping the other — well result He H.C.

G. Hawks.

Maybe I'm not acrobatic enough to wiggle my hands out.

6/9/45 EJW
4-12 Run Status

2A — In B6, electrolysis completed. Hold
2B-C — In A9, extraction settling. Ready for decantation at your convenience.
2B-D — Dissolving. When completed and out of A1, proceed with 2C-A discolority, all slugs in.

Suggestion — Immediately after sampling take scope reading of sampler with doors open. If reading is over 500 M.R., have same shift clean it until it gets below said reading. Have health man report activity of sampler after every sample taken.

Enclosed in log book find new chart for 65% H_2SO_4 take-up. Please post if you find time.

All shift supervisors et al pls read memo posted on operation office Black Board.

WR.

per
WPB

6/10/45

1.) 12-P Lee (1L.) sampled in B-1 by 4-12 and A-5-ized after receiving lab. analysis of ~3C.

12-8.

JEC + M.L.

Note N.E. Corner of Second floor above tolerance - monitor on 125 scale to keep bell from ringing - appears to be coming from A16 off gas line which gives about 30 Mr at the windows.

Run Status

A-1

Dissolving 2C-A.

A-8

2B-C - ready to be neutralized

A-9

2B-D settling hot until 9 15/A; then cool + settle till 2 15/P

B-12

PbO_2 plate ready for removal

B-6

2-A - just sitting.

Just for general information - it's possible to start a dissolving with 1" vacuum on A-1 + drive it wide open without losing the vacuum - aren't recommending it - just saying it's possible.

One of the funnels in the bank between T 8 + T-9 (appears to be the N. one to A 9) leaks, pipes behind PB1 slowly being dissolved.

6-10-45
8-4

See WPB's typed sheet for odd jobs.

Cell B MT except for 6P in BG. Hold.
A9 H_2SO_4 wash. Step 14-2 page C.d.
decant at 4 23 to A8.

A8 Being decanted to A-5.

A1 contains 2C-A, dilutte, sampled.

EJW. Have HP check hot waste can in Rm #8. — WPB.

6/10/45 4-12 EJW

① Suggestion — Fence off the area between room #9 entrance and the poles just outside of the room. A person working in room #9 must change rubbers somewhere and the best place is just outside of the room. In doing this he contaminates the floor there and it is eventually tracked around the building — Scrubbing the floor in that vicinity proved the point a couple of days ago.

② We need more soda ash and tri-sodium phosphate — very soon — or else

③ According to the new HP man which came on tonight with our shift, he has reported the drain pans under PB-4A, PB-2, PB-1, PB3 being hot several

WPB

days ago, they are still hot. We took off some vent pipes on PB-1 and PB-2 and found them to be hot also. The solution addition funnels to Cell A are also hot.

I have reason to suspect that at least some contamination has come from sparging tanks and getting into tanks when the vent header from said tanks are closed and I would suggest checking all operators on this overnight.

(4) Tried decontaminating samplers again with little success but we managed to use up all man power because of high radiation. A lot of work is still need on these, esp. B6 samplers.

(5) Run Status:

2B — 1st metathesis settling until 2:25 AM in A9. 8WW in A8 waiting for analysis before getting into A5 on top of 8WMD neutralized waste 1 hr 5 min ahead of schedule.

2A — In B6, hold until further notice.

2C-A — In A1 sampled diluted.

6/11/45
12-8
JEC + M.L.

1.) Product Carrier in Decontamination Rm. given a Caustic bath followed by a nitric bath. H.P. surveyed and found hottest spot to be —:

~ 42/hr @ 1 ft.
~ 72 against —

Assuming decontamination was sufficient no more work expended.

2.) Hotter than Hades !!

Yes, you guessed it — B-6 Sampler >1 R/hr inside BC ~ 350 mr/hr through door. Intense HNO_3 scrubbing did no apparent good. During process of cleaning the floor glowed radiantly, but was scrubbed down and appears to be okeh now.

3) The beetle won — see desk top of Panel Board 2. —

4.) Run Status:

A.) 2A - Being held in B-6

B) 2C-A - In A-1. Sampled & diluted

C). 1WCA - in B-3, ready to go back to A9 after metathesis

D) 2B - in B12 ready for make up + electrolysis, yet to be sampled
↖ 2 Hrs 15 min before par.

e) 1WCB - in B1 - ready to go back to A9 after metathesis

Hope lead burners don't fasten floor down as is - hard enough tearing it up now to use valves (B12 + B1 especially) without they fasten it down.

8-4 Troughs on PB 4A, 1, 2 were given citric acid bath according to HP., 1+2 are O.K. and 4A needs more decontamination. Would suggest plugging drain and filling with NaOH. See sheet for additional hot spots.

3hrs ahead of schedule A9 - 2C-A settling til 6^{35} P.
A1 - 2C-B diluted, cooling.
B12 - 25 amps til 8^{15} PM.
B6 - 2A.

E.J.W. 1. - What happened to the list 6/10/45 of odd jobs passed on by L.R.M. - please complete and return. —— Lists made last night we came in at 4:00 PM today
2 - Extract from the Run sheets, all dissolving that took Place on the 3rd thru the 9th of June.

All → Date the bottom of all run sheets, also some are slipping as for noting AM or PM.

Please note that just about everybody is to report for a blood count. This is one missed early in the week. This notice was given to shift supervisors last Friday. Someone filed the notice in a desk drawer and forgot about it. Please see that such notices get circulated as required. The shift supervisors failed here and the bulletin board are clearly "mute".

WAR.

6/11/45 ① NPB. — Watt and I couldn't decide what you wanted when you asked for extraction of Run Sheets of dissolvings 6/3 thru 6/9.
4-12
EJW
Ergo — job undone.

② Chemists request that a larger sample of metal waste be taken than we have in past. They want 1 cc, they are getting ½ cc, check sampler stopper.

③ Run Status —

2C-C Dissolving

2C-B Settling hot until 12:20 AM. then cold until 5:20 AM (4 hrs. 10 min ahead)

2C-A Neutralized metal waste in A5 agitating before getting to A6.

2A+2B Run B6 ready to be evaporated to 4 liters starting at 12:00 M. Blower should be working at beginning of your shift. (Continued on next page)

Painting in progress on glove cabinet. ES W's shift has his locked off. — Take what's left boys.

Run Status (Cont'd)

2B - 1st PbO_2 solution in B3, 2nd PbO_2 solution in B12 ready to move to B3.

6-12-45
12-8
ACY

Blower in operation and B-6 evaporating @ 1:15 AM. 3 hours motor is rather warm.

H.P. took survey around Panelboard No. 1 and were unable to find any trace of β or γ. They also took a gas sample which will be analyzed on day shift.

Run Status:

A-1 2C-C STEP 11 DISSOLVING SP. GR. rising slowly.

A-9 2C-B STEP 18 PAGE 14 READY DECANT TO A-8 SINCE 5:20 AM. NO HURRY SINCE 2C-C NOT READY YET.

B-6 .- 2A & 2B STEP 10 PAGE 26
Ten hour settling until 2:20 PM

B-3 - B-12 CLEANOUT - STEP 22 PAGE 27
Waiting lab. analysis before transfer to A-5

W.A.R. It would help a great deal if extensions were put on the valve handles on top cell B. They are very hard to operate now.

According to 4-12 Time schedule we are now only one hour & twenty minutes ahead of schedule.

AOY

8-4 3 WPb from B3 (27 Cs) dumped.

2C-C in A9 Settling till 4:10 P.M. Hot. Cold settling till 9:10 P.M. This extraction is on schedule.

3WC in B3 sampled. Very Hot.
2B+2A in B6.
2C-D dissolving.

6/12/45 4-12 ① Please note UAR's housekeeping items attached to clipboard. Some left undone.

② Run Status

2C-D in A1 dissolving complete. Hold this batch in A1 until further notice. It is not to be run through with rest of run.

2C in A9 extraction cake washing in progress; 1st water wash settling until 12:40 AM. (Steam header closed and bypassed)

2A+2B Back in B6, evaporated down to ~~about~~ 3,000 liters. Add enough H_2O to make it 4 liters and proceed with volume reduction but do not decant until UAR is present. because B6 L.L. bubbler line is plugged and the decantation must be done with use of probe.

UAR says — do not hold up run in A9 while waiting for analysis of washes in A8, if analyses come in late, get to A5 and have A8 ready for metathesis waste.

AM

6-13-45 RUN STATUS

12-8

Ay A-1 Dissolving of heels. Steam off. Waiting for further instructions.

A-9 2C - First metathesis settling until 10:10 AM. Step 5 - page 17.

B-6 2A, 2B Cold settling until W.A.R. gives word to decant to B-3. B-6 manometer still plugged.

Run is now approximately 13 hours AOM ahead of W.A.R. schedule

8WW sample of combined washes from 2C is 2½ curies as of 8:00 AM.

6-13-45 Tank Farm requests us to minimize
8-4 volumes sent to W-11 as much as possible.
Settling pond is now a lake.

Jet B6 - B3 OA was unplugged. 2-3L. H_2O washes in B3 were returned to B6 B3 sampler unplugged. B6 manometer lines unplugged. A third 3L. H_2O wash in B3 was sampled to see if B3 was free of C's. This was transferred to B-1 and resampled (WW-B3). Check lab for result and if low enuf dump B-1 to make way for 3C from A9. When B6 is decanted, have inst. man check B6 Gr and L.h. manometer.

B9 & B11 blown into B6, as per WAR.

Status

B6 Settling til. 4:50 P.
A9 Metathesis C. Cooling. Step 17.
A8 First two metath. wastes, awaiting C.
B1 3rd H_2O wash of B3. See lab anal.

6/13/45 Suggestion — 3rd floor sink faucets
4-12 were found hot. This is probably
where some of us get our high
hand count, how about getting
foot pedals installed. Cleaned out
but please check again

Run Status —

B6 — Run 2A+2B — volume reduction
cake — hold.

B1 — Run 2A+2B — vol. red. waste,
instructions in run book last page.
Heating until 12:10 AM, then
cool and settle for rest of your shift

B12 — Run 2C will be ready for
electrolysis when normality of B12
solution is adjusted. Waiting for instructions
from NAR because lab analysis of
12P differed a great deal from what
he expected

Run Status

6-14-45
12-8
ACM

2A + 2B

B-1 Volume reduction waste settling until 8:00 AM. See W.A.R.

B-6 2A + 2B Volume reduction cake. Hold for 2C.

B-12 2C - Electrolysis in progress @ 25 AMP. OVER @ 10:50 AM.

The first capillary sample we took on B-12 was for off analysis of previous shift. The second sample was 5.3 N. Since this agreed with the 4-12 shift analysis, we added 400 cc dist. water to A-9 and gitted to B-12.

Cleaned up building.

ACM

W.A.R. Lead tray for acids on third floor needs a drain.

MCL
MOP
WAR
6-14-45
8-4

Suggestions and requests:

1. That each previous day's pocket meter readings be made available on 2nd floor bulletin board. This will involve some extra co-operation from H-P office. The total mr. to date should be listed each day from the beginning of each run.

2. That 2" additional lead be installed immediately around all blisters. Swinging lead doors to be installed over present sliding doors.

3. That every operator & supv. be provided with one special dose meter which at beginning of each shift will be set at zero mr and will provide an instantaneous check at any time as to the amt. of mr. that man has taken so far on the shift.

4. That a list of persons from somewhere (from lower R. levels) be provided to take a considerable No. of samples. There are enough hot spots in the bldg. to provide the regular shift personel their share of mr(s) just by being present for operational duties other than sampling.

5. That higher supervision do something NOW to reduce radiation hazard (and equalize same) other than suggest "better operating technique."

LR Michener

Closing most of the off-gas valves as per step 2b F(a) page 25a overloads small fan, causing it to stop.

Status:

B-1 — Vol. Red Waste A+B left settling as per McL.

B-19. Started to put cone + plug in place. Held up until we find out whether we have to use special plug to give the stuff to 706 C.

B12 Step 15 F page 26 complete.

B-6 Evaporation Started 2^{15}. Cooling Started 3^{45} to probe vol.

B3 — First PbO_2 cleanout.

6/14/45 (4-12) EJW

Run Status

B1 — Vol reduction waste from Runs 2A+2B

B12 — 1st fuming nitric waste 3WFNA

hold

B6 — Run #2 all combined, 3rd fuming nitric wash agitating until 12:10 AM. then start settling.

B3 — 2nd fuming nitric waste ~~cooling~~ agitating with air sparger, ready to take 3WFNB ~~[illegible]~~ sampler (lucky boys)

6-15-45 Run Status:
12-8
Ney

B-6 Run evaporating to dryness
Step 25. 5 hours over @ 8:15 AM
Ready to move to B-17.
5 # pressure on both B-9, B-11

B-12 First fuming nitric waste
3WfNA.

B-3 Third fuming nitric waste
3WfNC - 27 curies

A-5 Second fuming nitric waste
3WfNB - 55 curies

Swept out fan house & took survey

Ney

6/15/45 The following operating conditions should be
B-4 met when A16 is used with the positive displacement
J. T. Wells blower:

(1) Pressure differential A16 at top to Cell should not exceed 20" water.
(2) The other A16 to Cell manometer reading should not differ from the A16 at top to Cell reading by more than 2 to 3" water.
(3) The reading on the A16 Rotameter should not exceed 50.

8-4 B8 left over B19 funnel to let any drips go to B19.

The hot baby is in B19 as of 3:20. 180 cc H_2O added to B6, sampled in B6 7 times, trans. to B17, pipetted to B19. B6 is to receive 150 cc additional water now and is to be carried over to B19 after the first shot has been evaporated in B19 for several hours.

B17 cleanout consisted of swabbing the sleeve 4 times (full length), 1-10% HNO_3 wash, 1-40%, 2-30%, 2-20%, 1-10% and 1-H_2O. Pb anal. on last wash — nil.

The 3rd WFNC left us in B3 was dumped. All other wastes remain.

LOAD CARRIER ON TRUCK. HP SURVEY

12-8 Pls do following

① add 1 l H2O to B6 agitate 1/2 hour [illegible] Label B6-W Run for Ba.

② MT B1 and B3 to A5. Rinse Both tanks with several (3) 4l water washes. Jet these to B5 [illegible]

③ Transfer. Solve in B12 to B3 using B7 Jet to A5. Rinse B12 with 3 5l water washes and follow same route to A5.

④ Jet B6 to B3. Then to A5 Rinse B6 with 3 5l portions water following same route to A5

⑤ Rinse B17 with 3 1l portions water. Use B8 and run separately to B3. Then to A5. AT THIS POINT MT A5 to A6 and A6 to W9 Check tank [illegible]

⑥ Check all handles of all sort valves, with taps, door handles for [illegible] and cleaning

[illegible]

neutral [illegible] all washes

WPB

(8) File [illegible] 36 [illegible]
[illegible] 60% HNO [illegible]
[illegible] each [illegible] sample
[illegible]
A5 [illegible] neutral [illegible]

(9) Repeat (8) as many as three times or until [illegible] sample blister comes down to tolerance. Confirm the above treatment with a thorough cleansing of the inside of each blister.

W. A. Rodger

6/15/45 4-12 EJW

(1) There may be some error in inventory since it was taken in hurry. Have your boys check each item on your inventory in morning.

(2) Cyclone separator not drained on our shift.

12-8
6/16/45
JEC.

1). Balls of fire — "gremlets" everywhere. Very little accomplished as far as cleanups are concerned. But every man received > a dose. Was progressing very well when our solemn serenity was interrupted by what sounded as a 1-alarm fire. All friskers in Bldg. were set off. Immediately H.P. was on the job — Results:

1.) Front Panel Board 3 — > 2R
2.) B-1 Sampler (Door Closed) — > 1R
3.) 3rd Floor Operating area — 35 m
4.) Etc --- See HP log book.

All operations ceased as Simons took air samples & Precipitron readings in preparation for evacuation. Precipitron results indicated ~ 600 C/m. Not extremely high but by no means low.

Everyone, including WAR (by phone) was baffled by PB-3 Reading. Thinking that it possibly could be coming from sumps or rest-wells in B —

Sumps were emptied to A-5 and survey then indicated

something > 1 R. Evidently rest-wells were Oked as funnels & line appeared normal although nearby sampler B-1 was "buzzing" with activity. All fans and vents to cells were open!

Note: Monitron in Wash room shut off —:

Cleanup Status —

1). 1 L. H_2O in B-6 - to be agitated and sampled per WAR instructions #1.-

2.) B-3 & B-1 each contain 2nd 3L. H_2O wash ready for A-V after agitation.

3). Rest of cell B cleanup to proceed per item 2. —

"Your Baby" was loaded in truck ready for trek at 6:00 A.M. Praise Allah! But gee, what repercussions.

6-16
8-

Clearing building @ 5 30/11. —

At time of evacuation sumps were in process of being fused — discontinued for another shift.

6-16-45.
8-4

P.B. 3 lines back into B sump (which were 4-5 R) are being washed back with water preparatory to removal of lines.

Sampled B6 prod soln. wash.
Sampled B3 collection of B7, B8 restwells.
P.B. troughs are hot and roped off.

B-1 has had 2 water washes, 1-2 hr 60% HNO_3 boil and a second acid boil is in progress. Circulating thru sampler. Blister was very hot this A.M.

B7, B8 restwells are MT after 10% HNO_3 wash.

Transferred A5 → A6 late in shift.

A4 scrubber on slowly, as per WAR.

12-8
93 6-18

Cell fans not working. No H.P. man to take survey in fan house

1. Emptied B-3 to A-5
2. Filled B-1, B-3, B-6 2/3 full 60% HNO3.
3. agitated and circulated thru samples for 2 hours.
4. Neutralized with NaOH in A-5.
5. Repeated steps 2-4.

6/18/45 8-4 ① WaR's decontamination program completed.

E.J.W. ② All MR absorbing manpower of 706D and semi-trucks used up to clean B6 blister. Last reading was 170 MR with door closed and 800 MR with blister door open. It would probably not be worth wasting more manpower on cleaning it. More acid was put in B6 and sample being circulated in hope that this would cut down some of the radiation.

6-18-
4-1
W.A

6-18-45 Decontamination procedure for fan
4-12 house, cell A, cell B is partially
Key set-up. See clip-board.

Before anything can be jetted from cell B to A 5, the line to Panelboard # 3 will have to be capped off.

Cell A decontamination ready to start.
Cell B decontamination ready to start jetting between B-1, B-6, B-3.
Fan house decontamination ready to repeat.

W.AR. → H.P. checked jet lines on P.B. 5 only but one is B-3 to B-6.

Key

WAB

6-19-45
8-4
NJC

60% acid washes for As-1, 8 & 9 are complete. Solution is in A-5. Send to A-6 and cycle as per instructions.

20% frost wash is in A-1 and A-9 till 6:30 P.M.

Cell B cleanout & decontamination completed as per ACV's outlined sheet. B1-B3-B6 washed with 4L-H_2O after circulating acid through them 3 times.

A-6 has material from 4-12 yesterday that was inadvertently left there so please have it sent to tank farm from A-6 before sending acid over on top it.

Work on fan house delayed by maintenance on 8-4 and request for 4-12 to decontaminate as completely as possible so labor crew can have full 8 hours there tomorrow.

NCR requested that we check all optical [illegible] in presence of HP man. If dirty, [illegible] up. The one next to decontamination room is clean. Please bring up to 2nd floor.

6-19-45
4-12

Survey of "Hot" Blisters

Acy

B-1	door closed	250 mr
	door open	> 1000 mr
B-3	door closed	120 mr
	door open	770 mr
B-6	door closed	145 mr
	door open	640 mr

Fan house decontamination continued again until manpower used up.

Another series of acid washes started in cell B. See procedure sheets.

Acy

WPB

6-20-45
8-4
NJC

Fan House decontaminated to the satisfaction of higher supervision with the exception of the floor in spots. Floor to be cleaned up by 4-12 shift.

Cell A free of acids used in decontamination.

Periscopes have been cleaned and are ready for instrument department to work on.

Maintenance on plugged steam lines to A-5 & 6 job has been completed.

No work was done on Cell B as no vacuum was available due to the removal of the 8" line to the fan house on 8-4 shift.

Checking into the cells it appears that A's-5-16 & 9 are the hot spots with A-16 a minor offender. In Cell B it appears that B-1 is a minor offender with the rest of them raising hell. Hell alone 1R immediately after making the turn in the cell passageways.

NJC

6-20-46
4-12
Acy

W.A.R. Report on fan house decontamination is on your desk. By using several reagents, the general activity of the fan house was reduced 50%.

The plywood was removed and the floor scrubbed after the oil film was removed.

Maintenance took off three inspection plates on the big duct. Hoses were inserted into the duct to reduce activity. These plates were left off for further work.

All nitric acid was used accordingly to cell A & B tanks.

WPB

Acy

6-21-45
8-4
HJC

25% caustic washings are the order of the day. Bs-1-6-3 have theirs for the first time. Fill up the entire system and get around cell B with the second wash to go in about 4:00 PM.

All A to get caustic treatment 25% Sluff. None in as yet but plenty NaOH being held up in the scale & head tanks.

Most all hot spots have been eliminated till the place is not almost as safe as "C" Building

6-21-45
4-12
Ney

See instruction sheet for 25% NaOH treatment. Emptied B-1, B-3, B-5 to A-5 and put fresh 25% NaOH in.
Put 25% NaOH in A-1 & A-9.
Fit from A-9 to A-8.
Instead of adding extra caustic to neutralize 60% HNO_3 in tanks (All HNO_3 now in A-6), we are using 25% NaOH from decontamination treatment. Then when all acid from A-6 is neutralized we can put 2000 # 25% NaOH into A-6, according to procedure sheet.

Ready to add 2000 # 25% NaOH to A-6.
Ready to neutralize 40% HNO_3 in A-5.

ACM

6-22-45
8-4
NJC

Cell B has 25% NaOH in B-1-3-6-17 and 60% HNO_3 in B-12. All vessels are circulating thru the sample blisters.

Cell A has 25% NaOH in A-1-8-9 and circulating thru the blisters

All of the tanks containing caustic have been filled to overflowing to wash off the tops where a high count may be found. Please do all of your washing likewise.

Cells A & B are to be washed down with a hose. This means specifically, the floors. Cells are hot but doorways are fairly safe. Before hosing flood with caustic of 25% until the floor is completely covered.

NJC

6-22-45 See instruction sheet on clip board for
4-12 HNO_3 treatment of tanks in cell A & B.
ACY

A-6 is to be filled to overflow with 25% NaOH. Then this contents can be used to neutralize HNO_3 in 4000 # batches.

A-9 to be filled to overflow with 60% HNO_3.

Acid fumes appear to be coming out of A-8 funnel on third floor. We put some water into A-8 to cut down fumes. AP. took a test.

Cell B

Opened up chimney. Floor was covered with dark brown stuff. Washed it down to sump & pitted the A-5. Then filled sump up again & covered floor with water. Put back bottom concrete lid. No activity coming up chimney.

ACY

ACU -- Last thing tonight take everything off floors in Rooms 4, 5, 6, 7 & 8, and locker room. Put benches etc in shower room. Allow no water on unpainted floors on your shift.

WAR

8-4
6-23-45
GW

Finish filling A8 with 60% HNO_3

Clean B5 by filling with 60% HNO_3 + jet between B4 & B6, & B5. Leave all B tanks full of acid over week end, sparges off.

Recycle caustic in A6 & leave set over week end.

6-23-45 **Cell B:**
4-12
ACY

1- Filled off gas line full of 60% HNO_3.

2- Took survey in cell. See report.

3- Put fresh 60% HNO_3 in all vessels.

Cell A:

1- Finished filling A-8 with 60% HNO_3.

2- 1/2 hr. working time at entrance to cell proper. i.e. lead flow. G + inside doorway.

3- Emptied cell A sump & all took turns at washing down walls & tanks from doorway.

W.P.B. Took 2 carboys of 60% HNO_3 from outside platform.

ACY

6/25/45 Continue to apply $(Na_4)_2 Si_6$
8-4 Washes to Tks. B-1 - B-3 — B-6 - B12
AOY + B-17, B7, B8, B9, B11

3. 2 g/l of ammonium Fluosilicate.
in 20% HNO_3
Fill tanks to overflow,
Agitate 1 hour and jet out.
Do Not Heat over 55°C.
Take samples from B1 - B-3 - B6
after each treatment to determine
when these washes ceases to
do good. Be sure all tanks
are empty at 12 midnite in
Cell B. (Corrosive stuff)
(Operation in progress), B-19 is
in process of being placed prior
to overflowing with 60° HNO_3
please continue with this.
Continue to wash down Cell
B. Time limit, 15 min. per man.

AOY

30000
2200

Citric acid washes of all vessels
as per above are to be
as follows:
50 g/l citric acid
in 3% NaOH

WPB

Make up 3% NaOH by adding

water to tank then adding 0.135 # 50% NaOH / liter to the tank and follow in with the 50g/l Citric acid in enough water to dissolve it. Agitate and fill to over flowing.

Example: B1, B3, B6: capacity 44 l

Add 30 l water to B1
Then add 44 × .135 = 6 # NaOH (50%)
Then add 44 × 50 = 2200 grams Citric acid

Agitate and make up to overflow with water. Sparge one hour at 50-60°C. Jet to A5 and dump directly. no neutralization necessary.

Circulate thru samples while sparging and take samples from B1, B3, B6 on each treatment. Label and store in South Canal lab.

On Tuesday put thru as many Citric treatments as possible and continue the wash of B19.

W. A. Rodger

6-25-45 during circulation of 3rd fluosilicate wash.
4-12

B1 Blister door open ~1200 mr. Sample 80 mr
closed ~ 250 mr.
B3 " " open ~ 90 mr.
closed ~ 20 "
B6 open ~ 300. ~~Sample 8 mr.~~
closed ~ 40

(50%) after 4th wash (fluosilicate).

B1 Sample (2cc). 16. mr.
B3 " (1cc) 80. "
B4 " (½cc) 7. "

B-19: ——

Carrier was left up misplaced on truck. In lifting, the truck was raised also — a few inches, — one S.S. guide on carrier was torn loose. New one made & installed. B19 was assembled and 1000cc 60% HNO_3 added thru B19 funnel. This will overflow cone. Let sit til Wed. A.M.

B-1 sampler jet leaks.

per
WPB

6-26-45 1st Citric acid wash - Completed.

B1 - Sample — 1/3 cc - 10 Mr. — Bad Samples.
B.3 - Sample — 2/3 cc - 37 Mr.
B-6 - Sample — 1½ cc - 5.5 Mr.

2nd Citric acid wash.

B1 - Leaking sampler. Could not get sample
B.3 - Sample. 56 mr.
B-6 - Sample - 1½ cc - 8 mr.
Reading 2 ft inside cell - 360 mr.

3rd Citric acid wash.

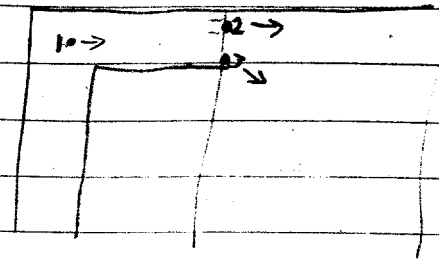
B1 - No Sample
B.3 - Sample — 2 cc - 16 Mr.
B 6 - Sample — 4 cc — 9 mr.

4th Citric acid wash.

B1 —
B.3 —
B 6 —
Reading 2 ft. inside cell - 340 Mr

The 440 current was cut off at 2:30 P.m. to do some work, B1 - Sampler still leaking so we could not get it to suck up sample. B19 is still like we found it as Larry said to hold as was. (See log.) B.17 & B12 full. Caustic, NaOH washes.

6/26/45
4-12 8:30 survey
M.J.



pt 1 32 mr/Hr.
pt 2 300 mr/Hr
pt 3 315 mr/Hr.

5th, 6th, 7th citric acid - NaOH washes finished
8th one now in B cell vessels
B3 + B6 samples in South lab, B1 sampler not working.

A-8 still making with the fumes.

6-27-45 Cell B:
8-4 1- Took survey of all tanks
Ady 2- Started ammonium fluorilicate treatment again.
3- Working time in doorway is twenty minutes.
4- Washed down inside cell again.
5- Started scrubbing hot spots with brush on three foot pole. Scrubbed floor, B-12, B-19 + head heater. Time is about three minutes. Actually 5 min., but there is safe.

WPB

6- Procedure for cell B decontamination is on clip-board. Take out fluorolinate at about 4:30 PM. and continue treatments

7- After each scrubbing inside cell, hose down with water.

Main hot spots are B-12, B-19 and head heater of B-19.

ACY

6-27-45 4 PM survey cell B

			11 PM
Step	200 Mr/hr.		400 mr.
B1	1100 "		600 mr.
B3	900		600 "
B6	1100	top	2600.
		bottom	1500.
B12	>5000		4000.
		~~1 foot~~	~~>5000~~
B19 heater	1900		
B19	>5000	1 foot	>5000
		18"	3000
Cone	2000		low.
B9	3300	sump	1500 mr.

Cell A tanks A1, A8, A9, given acid boils. A9 + A1 remained to be dumped + neutralized.

The New fan for A-16 off-gas required 2 grease fittings before we could use it. OK. now. Left off at 12 00 P.

Black iron screw on head plate B-19 will no doubt need replacing after its recent acid treatment.

All man power dosed on scrubbing B-19.

6-28-45
8-4
Acy

Maintenance worked some in cell B.

Washed out inside of cell A.

Time limit is 5 minutes per man on pencil line. Semi-works, chemists, etc. helped out. Fire hose now installed.

Fluorsilicate soln. in A-1 at 60°c digestion one hour until 4:35 PM.

Acy

6-28-45
4-12

Cell B is empty. Cell A has been hosed down till we ran out of man power. About 1R at 1 ft into the doorway. A-8 has NaOH-citric acid bath in it. A-1 has straight 60% HNO_3.

The suction fan for cell equipment has been turned off by us at 12M

On with the decontamination. Hours about a more general idea into which direction we are going in this decontamination.

[illegible]

WPB

6-29-45 Maintenance work in cell B all day.
8-4
Acy

Cell A fluosilicate treatment started again.

Cell B decontamination is coming along well. At entrance 100 mr/hr or one hour working time.
Maintenance worked in there as long as 15 minutes today.
There are still some hot spots.
In particular B-7, B-8, B-9, B-11 and rest wells. B-12, B-17, B-19 also.
Line from B-17 to B-19 is pretty hot & will be taken out by maintenance.
We will have to cool it down a little.

About cell A decontamination progress there is little known, since a thorough survey is not feasible as yet. Boorway is going down a little.

NH_4 fluosilicate soln in A-1 & A-8 should go to A-5 & digest hot for one hour (60°C)
Then go to A-6 & digest for one hour.
When A-1 & A-8 are MT
Put another shot in.

Acy

6-29-45 All tanks empty in both cells
4-12 Hosing has been successful as the
[illegible] enclosed surveys show.
No nitric in stock so please have some brought in.
Suction fan on equipment turned off

[illegible]

6-30-45 We added 30% K_2CO_3 into A-9. Since
8-4 small fan was off & line full of
Key HNO_3, we could not heat to 80°-90°C.

Off gas line is being drained of 60% HNO_3 & small fan is still off.

As shown by your cell A survey Hot spots are Top of A-8, Bottom of A-9 and A-6 of top of A-5. W.A.R. wants us to concentrate on A-8 & A-9.
Give A-8 fluosilicate treatment.
See clip-board for working time at entrance to cell A. Apparently boring down does some good.

Key

6-30-45 Cells A & B [illegible]. All decontamination
4-12 carried out as instructed by 8-4 shift.
NJC Hot spots [illegible] tops in Cell B
and B-17 B-19 feed lines on the offending
hot spots that probably a bit of lead sheeting
wrapped around would remedy. A shield has
been built but it doesn't stop the hot spot. 7
Check off gas lines for complete clean
out removal as some may still be in the lines.

NJC

7/1/45 ① Cell A fume line full of weak nitric,
8-4 please drain to W11 before you try to
EJW use it.
② There is practically no vacuum in Cell "A".
and it appears to be caused by water
in the duct. When Cell B door is closed,
some vacuum may be gotten in cell A.
We tried to jet the water from the
duct to sump with no results.
③ Cell B vessels tops were all hosed down
again in hope of increasing working time
for maintenance men. No H.P. survey taken.
④ Small fan again found full of liquid
and had to be drained out the hard way.
It should be ok now.

⑤ We are to continue decontamination of

Cell A vessels by repeating yesterdays procedure — Carbonate in A9, fluosilicate in A8. See latest cell A survey in H.P. survey book

(6) Nothing added to cell B or cell A vessels.

7-1-45

1 Cell B hosed down 3 minutes and 100# Na_2CO_3 thrown over vessels wall etc.

2. A-8 filled with 20% HNO_3 2g/l fluosilicate solution digest 2 hrs 70°c. to A-5

3. A-9 filled to overflowing with 30% Na_2CO_3 solution, heated to 80-90°c and jetted to A-5.

4. Off gas lines in cell A emptied to w-11 and NaOH sent to w-11 to neutralize acid. Line not rinsed and fan not used.

5. B-1, B-3, B-6 left as they were at 4:00PM. They probably contain H_2O.

6. Line to 205 stack open to give suction on equipment

R.S.P.

7-2-45 Cell B maintenance work all day.
B-4 Semi-Works took out B-17.
Acy

Inventory is same as at 8:00 AM

Washed Na_2CO_3 off tanks & walls in cell B. Then it would not jet out. Finally syphoned it out.

Moved NH_3 cylinders inside & rearranged Acid.

Cell A is hot (air has 35,000 β & γ counts) min. first count.

Acy

7-2-45 Maint. work in cell B slowed
4-12 cleanout. One lead sheath put over one B19 delivery line. Three more sheaths are under table at cell B, to be put on B19 delivery lines. See J.T.W.

AD → AS jet removed, cleaned, replaced. apparently the suction line behind the jet is plugged, as the jet failed to work after cleaning.

The louver to AD was removed in cell A. Inspection of the duct showed presence of plenty of water. The gas motor water pump was hooked up & run a considerable length of time. The suction hose (2" reinforced) collapses, preventing pumping. The pump is left in place. New hose should do the job.

Some of the rubbers & debris' in cell A sump - removed.

Tried to decontaminate B11 with citric acid-NaOH but B6-B11 seems to be plugged. Also the vacuum pumps, mercoid switches, and resets need an overhauling.

7-3-45
8-4
Acy

See note from W.A.R. on job for today. All remains is item 6.

Making up of solution for dummy run in cell A.

300 slugs in A-1.

We put pump down inside cell A & pumped out duct. Three times we filled the cell flow to overflowing back into the duct.

Believe that one more time

will get it all out, as vacuum is beginning to show in cell.

Better shore suction line down a little further inside duct.

Got 15 # K_2CO_3 [illegible]

7/3/45 6:00 P.M. J. Wills

The blower parts which are east of the fan house have been marked by maintenance in order that they may be assembled correctly again. In order not to loose identification of a part maintenance will clean parts at the time of reassembly. No restrictions (other than by H.P.) apply to cleaning the shell of the blower.

7-3-45 4-12

'Hot' fan & motor removed to bone-yard.

Gas water pump removed from cell A. The hoses showed about 3 mr. pumped Na_2CO_3 thru them.

Dummy Run in A1. First shot of NaOH added. Cooling water on. Better develope some tank vacuum before proceeding.

Independence

4th of July 8-4 NJC

Cell B has had maintenance men working in it all day. Time limits vary from 1/2 min. to 10 min. so best have H.P. man check the place if you must work in it.

Difficulty experienced in getting a vacuum on As 1-2-3 & 4. Great amounts of water were found in the fume system that had to be removed. Not till late in the shift was the situation corrected. Slugs in A-1 exactly as last night's 4-12 left them.

NJC

7-4-45 4-12 7-5-45 12-8 NJ

Progress of I-6 in cell A

1- Coats removed from slugs.

2- Line to small fan for vacuum in cell 3 & A-8, A-9 & A-6 has been blanked off. Valves to 205 stack are now on as an auxiliary line, so we could start the extraction of I-6.

3- A1 to W-11 jet would not work. Discovered line from main steam line to panel-board steam valve was plugged. Appeared to have some sort of fused material like pipe compound.

WPB

4- A-1 sampler was plugged. We tried steam, air and acid to unplug it. But no results. Finally took sample from A-9. A-9 sampler was also plugged, but an air line unplugged it.

Instrument work →

5- PB2-7 micromax was not recording as pen was plugged. Changed pens with PB2-17.

6- Extraction in progress in A-9. Hot settling until 8:30 AM.

Cell B entrance & floor cleaned ACV/up

8-4 — ?

7/5/45 TC's on A1 are going pfft. —
4-12 Disagree by 4° and seem
BAW. to be diverging steadily. Instr.
man checked micromax's & they are
OK. Says he — TC's are going the
way of all flesh ——— S-o-o-o —
Maybe while its still cool there'd onto they
could be replaced — ???

Db — B dissolving complete & in
A9 ready for extraction.

Db — C ready to start.

T 8 needs 6 l. H_2SO_4 of the carboy
acid to bring it up to snuff (65%).

7-6-45 Thermocouples on A-1 are OK now.
12-8
ACY LRM — How about getting instruments
to cut off chart on PB-2-7 micromax.

We intended to make up some
65% H_2SO_4, but didn't have any distilled
W.A.R. water. Still tank is MT and still
→ is off. Shouldn't it be on?

D-6C in A-1 Metal solution in progress. Ready for dilution

D-6B in A-9 Extraction step. Cold settling until 10:40 AM.

Took 9MB sample out of A-9, since A-1 sampler is still plugged.

AOM

7-6-45 Decontaminated fan housing (A16) for maint. work.

Unplugged - T6 manometer lines.

For the second time — the leak in A9 manometers caused 24" man. to blow during switch from Hg. man. to oil man. These manometers have now been repaired and the tank is settling til 4 PM for completion of decantation.

Batch C, diluted and neutralized.

Ball removal in progress - cell B.

7/6/45 ① Program for Tonight According to NAR
4-12 Continue to clean up building where
EJW we left off.

ⓐ Cell B sump water jetted out and all of crap taken out of sump. The sump still needs flush out with water.

ⓑ Cell walls esp. west side are to be surveyed for contamination around plugs where water seeped through during hosing down. These hot spots are to be cleaned.

ⓒ Continue with general junk clean-out of building.

② Please note new $CO_3 - PO_4$ figures in make-up room for 60 slug batches. I'm afraid we've been short changing the neutralization of metal waste.

③ Continue with dissolving of slugs in A1, neutralize the metal solutions and get rid of them to W9.

Run Status:

D6-D dissolving

D6-C neutralized metal waste in A6 ready to go to W9.

7/7/45
12-8
m.J.

Cell B sump filled with water — not emptied as J.T.W. has jets tagged out.

D6D dissolved, neutralized and now in A-6, ready to go to W9.
D6E - ready to start dissolving, acid in scale tank.

7/7/45 To relieve the distilled water situation the following steps are to be taken

1) Use tap water for diluting A1.

2) Use tap water for making up 65% H_2SO_4. The dist. water line line to the makeup tank has been taken out and replaced with a tap water line.

There is a great deal to be done before the next run starts. The work includes:

a) Cell A maintenance complete
b) Cell B maintenance complete
c) During runs in new glass equipment.
d) Complete check of cell equipment
e) Bldg cleanup.

WPB is following (a). On (b)

we are at the mercy of others, (c) will be started Sun, ~~this morning~~ if at all possible. (d) and (e) may be started at once. a check list for ~~these~~ Cell A is provided.

A-1 left as at 8 AM due to maint. men in cell.

7/7/45
4-12 ① Conduit lines on wall over final evaporator viewing set up are full of lime & scaling rust. The lower sections were painted & when jarred the least bit rust particles showered down. Our time expended so — a major project faces some other boys. Lights were removed to paint inside of sockets. Suggest replacement with new ones.
② Last dissolving of run D6E in progress, to be neutralized and sent to W11 when completed.
③ WPQ. list of housekeeping items completed - there is still room for improvements.
④ - J. S. Wells requested that we check cell B carefully to find and unnecessary junk on top of wheels etc. Remove these

(5) See WPB check list of cell A equipment enclosed. You may not be able to do much of it until all the stuff is out of A1.

7/8/45
12-8
M.L.

DGE in process of dissolving.

Check of cell A equipment, as per sheet left, done as much as possible, for remaining items, see sheet.

8-4 Revised schedule for Mon.

RSP - off.
LLF - 8-4
LRM - 8-4
HJC - 8-4

12-8 starts Tues 12^01 A.M.

See yellow & white sheets for jobs on 4-12. B-12 black iron magnet, rusted conduits in cell B to be scraped free of crud & painted with glyptal paint.

4-12

1. Checked Jets in B1, B3, B6 & A-1
2. Painted in cell B.
3. Filled T tanks

7/9/45 ① The following jets were tested and found
8-4 plugged at panel board. These should again
Ej-w be re-tested.

OK A9 - B1A	A8 - A9 (ok, to be retested)
ok A9 - B1B	B1 - B6D (ok, to be retested
ok A9 - B1DC	B1 - A9 ok
ok A9 - B1DD	A9 - A8DA ok
ok A9 - A8C	

B1 - B12A was disconnected of PB OK
B3 - B1 completely out. (to be put in)
Repair orders for the above work have been issued.

② Blisters B3, B6 and B1 are to be cleaned out thoroughly to permit maintenance men to work inside of them for 1 hour. At 4:00 PM blister radiation is as follows:

B6 — 750 MR/hr
B3 —
B1 — too hot to get reading, must be hosed down first.

③ We were lined up with several jobs which need further work:

a) Move HNO_3 cans from platform to 3rd floor.
b) Check and decontaminate all dirty tools or equipment left in Room #9
c) Continue cleaning Cell A entrance and labyrinth.

7-9-45 Followed W.A.R. special instructions as
4-12 per clip-board.
Ready for step 10 and 12 & 13.

B-7 was not plugged. Spare line at top was not capped off properly and hence caused a leakage in system. OK now.

Attached tuggen lines to both B-9 & B-11 discharge. Pretty hot to work around them.

Moved six cases of acid up to third floor storage.

B-8, B-9, B-11 also work properly.

Ney

7-10-45
12-8. W.A.R. → Please state the policy regarding H.P. responsibility. Each HP man at some time or the other has stated that the H.P. supervision does not expect H.P. men to do "menial" H.P. work for 706D operations — such as, checking the progress of decontaminating. They claim we should work the decontamination with one hand, so to speak, and keep the other hand free for an H.P. instrument. I do not know whether the H.P. supervision desires to "ease" us into doing our own H.P. work or whether you have made such agreement with them. I would appreciate a more clear cut indication — line organization way — in this matter.

B9 & B11 have been played with most of the nite. B6 was given an acid treatment to remove any possible carbonate. B9 & B11 seemed to be plugged, or partially so, several times. It is difficult to get a full 3800cc in these pots.

B4 manometer should be checked for amt. of fluid. We could not get it below 1.2" by jetting or by B9, or B11.

Sample blisters A9, B1, B3, B6 were dismantled from top. B1 jet removed (110 mt.) and treated separately. Hot spot in most cases seems to be s.s. pan at bottom. The B cell pans were given 2mm. citrate treatment with scrubbing.

7/10/45 8-4 Eg W

① The last jet in cell A that needs to be tested is A8-A9.

② A8, B1 and B3 blisters were okked for maintenance work, no more cleaning necessary.

B6 blister is still over 1R and needs more cleaning.

③ The second floor was found badly tracked up with contamination this morning from blister clean-up work. All of it, with exception of the roped off area around B3 and B6 blisters has been cleaned up. When B6 blister is cleaned up, this floors will also have to be cleaned up. In the meantime please wear rubbers in this area and take them off before leaving it. Scrubbing floors and shoes is hard work but a lot of paper on floor can eliminate it

7/10/45 B6 Blister given the acid
4-12 treatment. Activity was
Weil all from 1/8" sampler tubing flange.
It now reads less than 100 mr γ &
600 Q. 1/8" of bakelite cuts out all Q so
covering flange should suffice when
working on equipment.
No more manpower to write.
All fixed up!

7-11-45 Hot area around B6-B3 blisters cleaned
12-8 up. Smears before cleaning 11,000 c.p.m. —
After — 128 cpm (highest).
Last nite B6 Blister was 240 mr. on
several readings by H.P. It was cleaned after
the last reading. The IR reading seems to
be open to question.
The recent increase in activity in cell B was
a secret as far as 12-8 is concerned. No one
said 'Boo' and the incident was like-wise
not recorded in H.P. shift book. Since
the authorities have abolished the 12-8 shift
(H.P.) check — we don't know nuttin.

7-11-46 Dismantled lead shield around B-19.
4-12 Put shielding platform outside on
Acy top of hot cans.
Hot lead bricks are just east of cell B doorway. Didn't know where to dispose of them.
Checked all rubbers and fans.
Hot ones are in wooden barrel & cold ones in metal can. down outside cell B.
J.T. Wells turned on small fan & wants it to run all night. Water on A-16 should be 15 or 1½ gallons/minute. Pressure drop across A-16 is 1". Vacuum at bottom being 20 & vacuum at top being 21. If these conditions vary let J.T. know at 8:00 AM.

Acy

7-12-45 A-16 ran along according to specifications all
12-8 night with no difficulty
HJC General clean up and washing down of
building carried out
HJC

7/12/45 ① Michener and Pressley are to stop in
8-4 at Riordan's office 1st thing in the morning
EJW to sign up for Monsanto.
② Run Status — Slugs are now being
loaded, 8 batches in.
③ Direct from U.A.R. to 4-12 shift, —
clean off ledges in cell over B19. Hotter
than a little red wagon around there. A
hand brush, attached to a long handle
is provided at cell entrance.

4-12 - Please do the following:
1. - Move the 2 cabinets (new) near M-10
to the 2nd floor.
2. Paint with glyptol the seams on the inside of PB1
drip pan.
3. Replace the pieces of pipe beneath PB1.
4. "Do not use Cell B Sump or BS jets to AB."
7/12/45 N.P. Bigler.

over

Run 3 is now in progress. Tonite take off coats -- nurse it over the reaction point with steam off. Run dissolving for hotel A and start A extraction. also start B dissolving.

On this run we will skip wearing rubbers. This is an experiment to see if we can keep floors clean. Have HP keep close check on floors and each man check shoes twice per shift.

Be extra careful on taking samples. Try to avoid hand counts, floor contamination and land overexposure.

UR.

7-12-4 Completed following odd jobs.
4-12
ACM

1- Cleaned off ledge over B-19
2- Moved two new calinda from outside platform to second floor storage.
3- Painted seams on inside of PB-1 drip pan. Inside pan was rust
4- Removed piece of pipe beneath PB-1

Run 3 in cell A.

Metal solution in A-1. STEP 8.

H_2SO_4 in T-8 for 3A extraction is 1.48 sp. gr. appears low. Better check.

Butted down 7.9 % $Pb(NO_3)_2$ in T-2. Now it is 5.9 %.

ACM

7-13-45 A-9 cooling first batch till 1PM. At 8AM
12-8 turn on cooling water
A-1 dissolving second batch.
(Leak at junction NH_3 feed line and off gas line) Strong smell of NH_3 on first floor. Shouldn't ammonia fittings have been used on this line?
Both the top & bottom manometers on A-16 vacuum system went haywire shortly after 3AM. A-9 vacuum manometer indicated over 20" pressure when the vessel was to be used for first extraction. Instrument man has apparently connected A-9 gage but after inspection has left A-16 gages for day shift.

7-13-45
4-12
MJ

Run status:

3A-B in A-9 ready to decant to A-8. All steps checked prior to filtering. Ready for step 18.

3A-C in A-1 ready for step 19. To go to A-9.

65% H_2SO_4 was made up & put into T-8 for next extraction.
Sp. gr. = 1.56

MJ

7-14-45
12-8

A9 → 3A-C cold settling til 10^50 A.M.

A1 → 3A-D Dissolving nearly complete.

Small fan housing was drained but NO drop in amt. of radiation could be detected after drainage.

Made adjustments to horn warning signal for failure of small fans.

We are short on Na_2CO_3.

Losses to date:

3A-A	~ 7 C	ship. time. → 4 C
3A-B	~ 11 C.	" " → 7 C

7/14/45 ① Run Status :—
8-4 3BA — Adding slugs to A1.
EJW 3AD — Settling extraction cake, proceed with cake washing and metathesis on this batch.
② Status of special project by UAR :—
Sample probes to be fixed and product handling equipment to be checked to complete work.

7-14-45 RUN STATUS:
4-12
AOY

3A-D IN A-9. CAKE WASH IN PROGRESS. Page 11a step 4. settling until 12:55 AM

3B-A in A-1. Ready to start metal soln. as soon as M-3 pump is replaced. Page 5 step 3

BWMC in A-6 neutralized ready to jet to W-9.

BWMD in A-5 neutralized & ready to jet to A-6 → W-9

While making M-10 up to the overflow mark, it overflowed & filled sump just over top of pumps. Maintenance checked wires & found them wet. They will replace pumps M-3, M-5, M-7 in this order. 12-8 shift maintenance will continue work.

W.A.R. wants each man to spend 15 minutes dismantling motor in decontamination room.

No connection to make-up room motors. [illegible]

7-15-45 Losses

12-8 Batch C → 87 C ship time → 58.3 C

" D → 20.4 C " " → 13.9 C

M-3 pump motor replaced and pump re-packed. All other make up room motors are being removed, heated one hour and reinstalled.

Apparently probe work was done - the Instrument man understood some work remained. No info available.

Loss on cake wash - 8WW-A — 2.9 C.

A1 - 3B-A Dissolving nearly complete.

A9 - 1st Metath. Settling till 9:30 A.M.

7/15/45 Run Status: —
8-4 ① 3BA — metal solution, diluted
Eg W in A1.
3A — second metathesis settling until after 4PM — see WAR about this. 1st metathesis waste is in A8 (in acid solution)
② Cell a floor and duct found full of liquid which looked like yellow water. It is now being pitted into A6 and A5 and an attempt is being made to sample it in A6. — A6 sampler appears to be plugged and blowing air into it with hose appears to do it no good.
③ The air hose from 3rd floor is around A6 blower, flows during it back up for use on 3rd floor.
④ Cell B preliminary tests are not yet started — you'll need these finished before putting that stuff to B12.
⑤ Capillary probe sampling tube should be put on and tested to see if they

have been properly fixed by instrument dept. — Levinson knows what there is to do on this (continued) Take a sample out of A5 — NARis instructions.

7-15-46 Tested final product removal equipment.
4-12 Product carriers need holes in top
AOY to support final cone assembly.

Run Status:

3A in B-12 Electrolysis in progress. Run @ 15 Amps. until 1:05 AM. Step 17 Page 19. Then step up to 25 amp.

3B-A in A-9 Extraction. Page 9 Step 10 Digestion over @ 12:06 AM. Start settling.

3B-B in A-1. Metal solution dissolving. Step 8 page C Next reading 12:10 AM.

AOY

Electrolysis in B12. Run until Monday AM. Please hold for me.

Take readings on cell A sump every two hours. Try to find out where water in cell A sump is coming from.

Make shift check even though sheets are missing. Will get more tomorrow.

FILL THESE RUN SHEETS OUT COMPLETELY !!!!

W.A.R.

7-16-45
12-8 H.P. reports need for a bigger roped area around fan house.

A sump gained only a negligible amt. on this shift. We tried jetting AD → AS with only slight increase in lt. Could the cracked valve from off gas line be the source?? Not if the vol. 500+ gal. is correct. Anal. of special sample taken yesterday, shows presence of 19C.

B1 + B6 manometer oil levels need checking.

3B-B in A-1 diluted, sampled.

3B-A in A9 settling til 8:06 AM.

3A in B-12 at 25 amps.

7/16/45 8-4 EJW

① Cyclone separator needs draining, no chance to drain on our shift because of constant need of vacuum.

Done still N.G. at 4:00PM

② A4-205 probably needs draining and can be done as soon as A1 vacuum is not needed. The vacuum in A1 is very poor and there is no apparent reason for this except that the A4-205 line in cell A may be full of liquid.

③ Ring Balance for A1 vacuum does not seem to work right. It does not check vacuum on manometer to A2.

④ Run Status

~~A1~~ 3BC — Diluted, cooling, sample circulating

3BA — Neutralized in A6, ready to jet to W9.

3BB — Settling extraction to 7:30 PM.

3A — See WAR

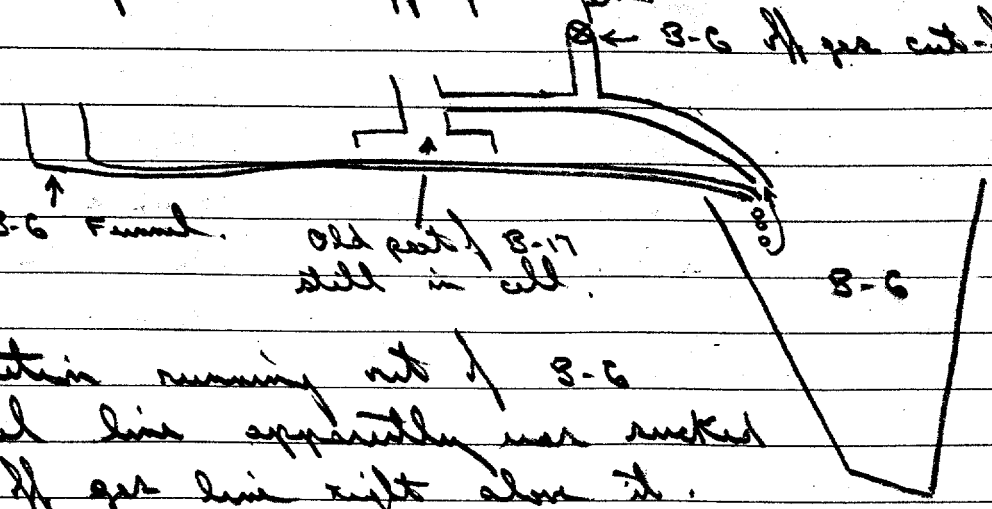
(5) B3 and B6 sample blisters are OK. Check if B3 blister is all assembled at 4:00 AM. Stoppers set at required level — please do not change.

7-16-45 4-12 Acy

Drained 205 gas line from 4:00 PM until 9:00 PM. Vacuum on A-1 is OK now.

Run Status:

Latest whereabouts of 3A (1000 C's) is in fan house. HP readings 30 r. Keep away from small fan. Apparently solution went from B-8 to B-6 funnel alright, but never got into B-6, because of high vacuum of small off gas fan.



Solution running out of B-6 funnel line apparently was sucked up off gas line right above it.

3 B-D in A-1 metal solution dissolving Step 8 page 6. Next reading @ 12:10 AM.

3B-C in A-9 Extraction in progress. Step 12 Page 9. Hot settling until 1:35 AM.

8WMB in A-8 Sampled & ready to be neutralized. 30% CO_3 & PO_4 is in M-1.

done

3WPD in B-3 Ready to be sampled, but in view of what happened to the product of 3A it is doubtful whether necessary to sample. See W.A.R.

Lead plate removal from B-12

ACJ

W.A.R. suggests each shift take care of one floor for housekeeping. Clean it up & then keep it clean. 8-4 - first floor
4-12 - second floor
12-8 - third floor.

Larry

Much trouble -- product 3A souped up vac. line to B17. Now in W11. Off gas small fan very hot. We are running water in at top of separator in fan house. Out at four drains in bottom of fan and also down drain line to W11. Run until reasonable values are obtained -- ~200 mi or until you need fan badly.

Carry on run in cell A. We will load 234 more slugs in morning. Metallurgy 3B, A, B, C, D. together.

Cell A sump has water in it again. Jet out as soon as possible. See if you can figure out where it is coming from.

See ACU note on housekeeping 3rd floor is yours.

VR

7-17-45
12-8

Hold yor hats, boys, 706D is starting to glow!

over funnels 3rd floor	> 1R.
Big duct - East side	225 mr
PB-1 trough (middle)	50 mr.
2nd floor east side	25 mr.
3rd " " "	15 mr.
Board Walk " "	15-30 mr.

Fan House.

Altho the Zeus placed at outside fan on 4-12 read gradualy lower (7.5 div) during the 12-8 shift (supposedly due to washing of fan housing to W-11) it is the opinion of H.P. that there has been no reduction of activity. The zero pt. on Zeus was found to have drifted sufficiently to cause the difference in reading. 6 A.M. correct reading 10 div. or about 750 mr. In other words, the little fan is just about as {warm / cold} as it has been for several days. Likewise the fan house itself is about the same. If a big part of 3A came thru the fan & went to W-11, an unbelievable decontamination by water has been done. Probably little or no part of 3A got to the fan. Water will be ~~left off~~ off fan housing at 8 00 A.M.

Cell A Sump: gained only about .4" in 6 hours. Manometer 15.2" when we came on. I can see no alarm in this. There was no water on cell A floor. AD → AS should be fitted once a shift, as it always seems to yield a bit.

M-3 Pump needs checking by maint. for vibration.

3 W Pb in B-3 left as we found it as no instruction was left. Prob. can be dumped.

Blame all bottles at 12-8 shift for prolonged man-power shortage.

Short on Na_2CO_3 again.

Will some one on 8-4 please put another firecracker under Rip Van Winkle at the instrument Dept. and expedite the return of a few of the missing telephones. They have now been at instrument Dept. longer than they have been in 706D.

7/17/45 ① LRM: According to the instrument dept. we have all our telephones. Please note that many of them are in new location — esp. around glass side.

② New figures for Na_2CO_3 + Na_3PO_4, 40% NaOH, and 4% NaOH are posted in make-up room. We will not use 50% caustic any more, we will make up 40% caustic ourselves.

③ Run Status

3BD — Settling extraction until 5:13 PM

3BC — Extraction waste in A8 ready to neutralize. Could not be done on 8-4 shift because no steam to M1 jet.

3C — Slugs are all in, ready to dissolve coats — seal top of slug chute with putty first

All Shifts (until finished)

1. The stand-by blower is in the Decon. Room, all apart. Clean all parts + housing so that shops can work on it. Have it ok'd by H.P.
2. The errors in ~~[illegible]~~ dittoing the "Shift check" are shown on the bulletin board please correct copies as they are filled out.
3. When M-11 is completed calibrate + test.

7-17-45
4-12
ACV

Room Status.

3C-A in A-1 Metal solution dissolving. next reading @ 12:25 AM
Step 8 Page 6

3B-9 in A-9 Cake washing in progress.
Step 4 Page 11-C Decant to A-8 @ 12:50 AM.

BWMD extraction waste from 3B-9 is neutralized and in A-5 waiting for metathesis waste before going to A-6.

Decontamination of stand-by flows in Decontamination Room is progressing along. Reading to 12 M.D.

Impellers	200 mr. each
Housing	100 mr.
Right & left end plates	35 mr. each
Gear Cage	10 mr.

We used both citric acid & dutch cleaner treatments with resulting.

M-11 is being fixed up.

ACV

7-18-45
12-8 Several parts of No. 2 fan given Na_2CO_3 - treatment prior to final cleaning. (with acid) No H.P. man on this shift to O.K. them. The Zeus seemed to give considerably higher readings than Lauritson.

Made up a batch of CO_3-PO_4, moved to A5 for next M.W. so the way is now clear to use M-1 for 40% NaOH make-up.

A9 - 3B 2nd Metath. settling till 9:49 A.
A1 - 3C-A - sampled.

7/18/45 ① Please note new chart for make-up
8-4 room valve arrangement on make-up
EJW room north wall. Also note new numbers on all valves to correspond to this chart.

② M1 contains 40+ % caustic which is to be pumped to M11 as soon as A1 dissolving is completed and water in M11 can be drained out. This cannot be done with M3 pump running.

③ Run Status
3B — electrolyzing in B12 until 8:05 PM
3C-A — extraction settling chart until 4:15 PM
3C-B — dissolving

④ Enclosed is list of tools which we are permitted to keep in our building, if anybody is so inclined, we would

appreciate your help in making out a list of all tools we now have, and all tools we want to get. We'll try to get them on the 8-4 shift.

7-18-45
4-12
Acy

E.J.W. - Maintenance item. Pb door on B-6 sample blister is broken.

Instrument - Micromax 15 on PB-1 needs new roll.

LRM Better wear rubbers. Floor is hot somewhere. After taking GP sample the floor of south lab. got hot. Activity could have come from there.
We washed lab. floor and part of 1st floor.

Run status:

3 B - GP in B-6 awaiting further instruction.

3WPb in B-3 to be sampled.
Step 3G Page 21

3C-B in A-9 extraction. Hour hot digestion in progress until 12:10 AM. Step 9 Page 9.

8WMA in A-8 when OK to be neutralized jet to A-5. PO_4 + CO_3 already in there

3C-C in A-1 Metal solution in progress. Page 6 Step 8. Next reading @ 12:00 M.P.

We tried out product cancer set-up. Equipment worked well. The lower concrete plug is hot.

AOY

7-19-45
12-8

Hot Spots

around main entrance, 706 C rubber rack and in monitor room — about 2000 c.P.M. — were cleaned with hot water, soap, amm. citrate. There are two isolated spots left, circled in crayon, which show up on W.T. Smears on these spots were O.K. H.P. suggests further clean-up at leisure. Also foot counter needs cleaning due to hot checks made on 4-12. B.G. -4. All spots around B6 O.K. Hot lab. requires use of rubbers.

153 The floor of pers. decontam. room needs cleaning.

Soln's. made up, floors cleaned, housekeeping items taken care of only insofar as a 2-man crew can leave the more essential work at hand. Shift check omitted.

B-3 Sampler would not take tube, 3WPb was moved to B1 for sampling. (26 C in sample).

A heel of ~6" 40% NaOH remains in M-1 after pumping to M-11.

7/19/45 8-4 EJW

① Please have HP man check personnel decontamination room again. It was scrubbed down 3 times.

② LRM's housekeeping list completed.

③ Who's leaving sample carriers around blisters? If you [illegible] clean them just anywhere, please do not leave them on 1st floor → this is our cleanup territory. Also — please refrain from using decontamination room as garbage dump, there are a lot of hot cans around this building. Thank you for your wholeheartedly cooperation.

④ Run Status

3C-D — dissolving, this batch is not to be used with the rest of this run but is to be held up diluted in A1 for a special run for local consumption.

3C-C — settling until 7:10 PM. To be followed by extraction washes and bromothesis.

3B — in B6, not to be evaporated until 3C gets into B12.

3C-B — In A6, ready to go to W9

⑤ B3 blister sample same as left at 8:00 AM

4-12

1. Put B3 Blister in operation
   See LRM note p 153
2. Do not evaporate B6 yet,
3. Lewenson will not be in — ill.

12-8.

1. Newton will be back Mon.
2. Do not evap. B6 soln yet.

7-19-45
4-12 LRM - We unplugged B-3 blister and
Acy put a new rubber stopper on it. However
the old one will have to be cut off so
the new one will slide up further.

Run Status:

3B in B-6 sampled and waiting
until further instructions.

3C-C in A-9 cake washing in progress
Third wash settling until 12:10 AM.
Page 11B Step m.

3C-9 in A-1 metal solution
diluted and ready to be
sampled. Hold in A-1 as it
will not be used for this
preparation. (Only 25 slugs)

8WMC in A-5 neutralized and
waiting for 8WW waste, before
jetting to A-6 and W-9.

8WMB in A-6 To be jetted to W-9
We tried several times & thought soln. was
too hot. Acy

8WRC analysis was 2.1 c to shipping time.

7-20-45
12-8.

B-3 Blister Sampler

Contains two stoppers - the old one is pushed up far enough to not interfere and it would be a manif. job to remove it. The new stopper is now set to circulate at ~ 1/2 cc. However, the return line may still be partially plugged, as it does not always remove sol'n as fast as it comes in. By testing we found 1/2 cc sample could be obtained by removing tube while air pressure = 30. If air pressure is cut off before removing tube, dribble will increase sample size to ~ 1 1/2 cc.

3C-D	A-1	Diluted, Sampled.
8WC	A-8	1st Metathesis Waste.
3C	A-9	2nd Metathesis - H_2O addition in progress.
6P	B4	3B - untouched this shift.

7-20-45
8-4

Please read notice regarding tools on bulletin board. gd.

All paint now stored in Semi-Works Paint Storage

7/20/45 Run Status

8-4 3B — Evaporated to 430 ml in B6, waiting for 3C (B18 - A16 vent is closed now)

3C — Electrolyzing until 9:38 P.M.

3C-D — In A1 to be kept in A1 until Monday.

→ Metathesis waste from run 3C is in A8. It should be kept in A8 until next week when it will be recovered with batch 3C-D.

It took about 2 hours to evaporate 3B in B6 so you can figure the shift evaporation to take about the same length of time.

N.B. Difficult to come in on the regular 12 M shift bus. If you want me in earlier give me a call.

7-20-45 Run Status:
4-12
ACM

3B & C in B-6 evaporating down to 350 cc bal. Step 4 / Page 22

Pb plate removal in progress in B-12. First slot is in in B-3. Second slot in B-12. To be removed with B-7 @ 12:05 AM.

Hold 8WC in A-8 & 3C-9 in A-1

While taking GP sample from B-6, the sample tube broke off. No solution in in broken tube which is in sample carrier. HP helium flow around B-6 shutter is contaminated.

ACM

7/21/45
J.J.Wills

Ammonia flow manometer now has Oil Sp.Gr. = 1.0. Set NH_3 flow to read 7 to 8 inches and air flow to read 3 to 4 psi. New tank of NH_3 was connected 12:00 noon of 7/20/45

7-23-45
12-8

Waiting on anal of (6) 21P samples taken ~ 6 3rd A.M. Very Hot. B19 contains evaporated prod. some red crap, prob. Fe has dripped on lip of cone in considerable amt. It is thought to be from HCl action on S.S. of off-gas (B-19) line, refluxing. Cone is in carrier; is NOT in position for soln addition.

7-23-45
-8-4
Acy

Run 3 shipped @ 3:15 PM.

HP + 2 went into cell 3 to start decontamination according to W.A.R. instruction. A reading could not be taken at the x spt. 50r meter went way off scale. Moved stool to rear x and got a reading of 40r. Since they don't have a >50r meter, we can have readings taken at the rear x.

The collar adapter for the final vessel was hot. >4r. Washed it in decontamination room and put it into a S.S. bucket full of 60% HNO_3 to cool.

Concrete cover put back into chimney.

B-1 to A-9 jets doesn't work

ACM

7/23/45
4-IV
Jey

Plugged jets B1-A9
B1-B3
Both are free as far as the sleeve.

B1-A9 jet steam line — 25R at PB4A.
obviously solution backed up some how.

Boy is this joint sizzling. 2nd floor around glass equipment control panel has a B6 of about 800 mr. PB4A — >1R. Generally the east side of the building is too damn hot.

Status: —— B6 was rinsed & sampled & discarded via B6-B3-A9. A9 jet backs up to B1 so cycle was repeated B1-B6-B3 — A9 B1 etc. While this was in progress the above was noted — So — we quit. Solutions are as indicated. Both 5L-2 of HNO_3 washes were put in B8 & B7 respectefully & are still there waiting B6 to be MTied & then sample them.

B8 is over B6 funnel B7 is in B12.

7/23/45 B1 was not rinsed with 10L of water.
4-12
DW. Well it was a nice nite. 2 men cant get much done in >1R back ground.

Cone adapter is in make up room & has HP's OK. Hardly even sets off frisker.

Selah

7-24-45 Jet line B1-A9 (PB-4) cut out
8-4 and buried. Steam line to this jet is capped and discharge line is welded shut at 2nd floor sleeve entrance to cell.

Preliminary "wrinse" of cell B in progress. See sheet. Following this is clean-out of cell A → cell B transfer jet lines. See sheet. Then comes decontam. of cell B tanks, using 3 different soln's as specified on WAR's sheet.

7/24/45 ① Hot material delivered to 706-C
4-12 at 8:00PM. after running into a lot of
Eg W trouble.

The B19 cone elevator is in a sad shape. It takes 2 men and a horse to lift it and it is very much out of line. I doubt that we'll ever be able to put another cone in without having much maintenance work done.

② No Cone has been put under B19 in preparation for decontamination

③ B1, B6 and B12 are full of 60% HNO_3 ready for decontamination as outlined by WAR (see clipboard)

→ Day shift ——— NaOH head tank bubbler line plugged — this is why our inventory has been 0".

done

7-25-45

Unplugged steam line on jet B5-A5B.

Replaced both filters on 2nd floor B9, B11 blow-back lines. B11 filter-37R after moving soln thru to B19.

over

B sump + floor given 10% NaOH treatment + flushed with water thru chimney nearly all day.

We have two 5" pipes with reducers for hosing cell thru sleeves. One is now in B-N. Suggest putting into 2 sleeves on B-W - 2nd floor. This should minimize personnel exposure. However, the hose must not be directed at any glass equipment. Water leakage through sleeves - first floor about 5000 counts. H.P. suggests use of paper on floor if washing is continued.

note →

B1, B3, B6 - first cycle completed
B12 - 2 citric acids done, 2nd HNO_3 in.

Glass equipment has been washed out.

B-19 work untouched as 706 C has carried + South lab

Remaining hottest spots in cell B:
1. off-gas system.
2. Head plate.

7/25/45 4-12 EJW

① B19 Cone has been put in place and does not fit tight under head heater. It was left this way so that cleaning solution that go in will overflow the cone adapter. This will eliminate lifting and lowering cone as written up in WAR's decontamination procedure. (It is next to impossible to lift and lower the cone anyway)

The plug which was taken out of the cone is on cell B floor instead of the provided hook. The reason was that the hook appears to be cracked and it would not hook on to the plug. This hook was probably broken during yesterday's maneuvers in putting in the special plug for 706-D.

2. Cell B off-gas line was filled up as much as possible with 60% HNO_3. It was probably never completely full because B18-A16 valve leaks heavy badly and the acid runs back to B6

3. The carrier which was used to put in B19 cone is still under chimney in cell B. It was flushed down with water but is probably still hot so have survey taken as it is being removed

(4) One decontamination cycle completed.

7-26-45
12-8
ACY

B-8 is spacing HNO_3 in B-12.

B1 & B3 & B-6 full HNO_3 ready to get out.

Pipe in A-2 & BW plug is still hot 2r. Pipe B-1 & A-9 which was cut off the other day.

Walt called said to concentrate on off gas system & B-19

ACY

This Book is hot

7-26-45
8-4 Glass equipment trap (37R) removed after soln back-up.

Parts of cycles 4, 5, 6 completed. See sheet.

An S.S. beaker is mounted in cone adapter, full of fluosilicate, surrounding lead plate — to be continually washed, overflowed. 2 HNO_3, 3 flvo treatments given B19.

Hose spraying of cell continued thru BW-A5, 2nd floor. If & when B19 beaker gets lowered, would suggest pulling plug BA-J8, 1st floor to lose lead plate.

Water run thru off-gas line thru glass equip, out B17, B19 off gas lines to sump. 5-6 tours. Running at 4 PM. sump to A6, A6 to W-11.

No. 1 fan off, tagged, while main off gas valve is off.

5 H.P. instruments vary, disagree about activity in cell. Guesses say 1.5R at Red X; 5R at black X

7/26/45 ① Decontamination of Cell B off-gas line. —
4-12 The off-gas line was kept full of 60% HNO_3
GJW all shift. The vent valve from B1, B3 and B6 leak and it was necessary to keep adding acid about every 15 minutes.

② Going down of cell B through sleeve was continued.

③ B21 pressure-vacuum trap was again found full of liquid which radiated 650 MR/hr. The trap was removed and disposed of, and liquid from B21 transfer vessel blown out to waste. A 2# pressure is now being kept on both B21 and B20 transfer vessels with valves to K11 being open. This should stop liquids from backing up to the traps again. The liquid was probably water from the hose.

WAR ④ We stole 12 carboys of nitric from platform up the hill. How about leaving us some nitric tomorrow?

⑤ B6, B9, and B11 were excluded from decontamination cycle because of HNO_3 leak to B6 from off gas line, this would give unknown volume in B9 and B11.

12-8 ⑥ Vessel off-gas fan is off. According to WAR, you are to continue decontamination of the off-gas line while carrying out vessel decontamination. It is ok to operate jets in cell B with

vacuum cut off. There are 2 partially full carboys of 60% HNO_3 at PB-2 for this purpose.

NAR (7) B1-A5 jet appears to be plugged on suction side.

(8) Cell B HP reading at 12M varied from 1.2R inside cell to 6.5R at the same point due to instrument trouble. "Certi pie" is definitely unreliable in its present condition. The stool where readings were taken has been moved too just inside the cell. At 12M the readings are as follows (using 12R probe instr. # HP242):—

at former position of stool (black x) — 3.5R/hr
at new position inside cell — 6.5R/hr

I would like to suggest using the same instrument in taking further readings. Taking readings over the stool inside the cell should also give us a better idea of our progress in decontamination.

7-27-45
12-8
AGY

Decontamination of off gas line was continued from 4-12 shift, but we were unable to add HNO_3 fast enough to keep up with the leaks.

Valve at bottom of A-16 was closed and all off gas lines to all cell B were including A-8 & A-9 were closed. I went inside the cell and saw the sump full of acid and also B-20 & B-21 had something in it. Could be acid. The metal funnel underneath both transfer units was full of acid.

USED INSTRUMENT #452

The readings NP took in cell after completion of 6th cycle were ½ r at red X point (18" from east corner, and 6.2 r maximum about two feet over top of stack in its new location inside cell.

In the seventh cycle, B-1, B-3, B-6 have the sodium citrate shots in. It has been heated & jetted around according to procedure & is ready to MT to A-5.

B-12 has the 8th HNO_3 shot in & is being sparged by B-8.

B-1 to A-5 appears OK.

AGY

To record [illegible] posterity [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Item #1

Shift will be forth change each week Sunday night at midnight. We will change every [illegible] [illegible] [illegible] in progress. When necessary to [illegible] Sunday two shifts will [illegible] to [illegible] short [illegible]

If at any time it appears [illegible] to cut back to two shifts the [illegible] am 12-8 may work either 8-4 or 4-12 but are liable for return to 12-8 any time during the week if [illegible] [illegible] [illegible]

Item #2 It will be necessary to work this Sunday DAM IT

Item #3

Shift Schedule next week:

LRM –	4-12
[illegible] –	12-8
ACV	8-4

W.A.R.

7-27
8-4

No. 1 fan housing being warded to hot drain. Water on [illegible] hot.

Off-gas line, glass equipment B19 sol'n lines worked at. Thru 68 1st floor comes a big beam when plug [illegible]. On 8-4 tomorrow maint. will try to cut off, load heater with torch. Working time thru this hole is little. Cl. try to increase it.

B 20, [illegible] have 2nd oxalic acid washes. More [illegible] in [illegible].

(~ 40 [illegible] made up, sampled. T-1.

7/27/45 ① Our efforts during this shift were,
4-12 of necessity, concentrated on personelle
EJW and building decontamination (outside of cells).
The whole crew got hot faute, hot
hands etc. after working on moving
carrier to B19. The carrier pushing
rod and the "iron horse" covering it
were very hot and were the source of
contamination of most of the area.

The whole wooden platform was
hot and was taken out of building and
scrubbed back to tolerance. The eye-
pieces on all specific viewers were hot
and were cleaned up. Floors around areas
where sleeves were pulled out were hot,
these were also cleaned up although
there is still some contamination left
under paper around carrier pusher
(area marked off).

The "iron horse" was taken out of building
and scrubbed several times. It still has
around 600 counts on top pipe. It is
located outside south of shake-up room.
and not re-installed since it would
only be in the way of maintenance
men tomorrow.

All the old paper on floor around all
B was thrown out, new paper laid
and sleeves put back in. The sleeves

should not be left lying around since they are a good source of contamination

② Decontamination of all vessels:—

B21 — 2 cycles with oxalic acid run through

B20 — only one cycle run through, the transfer vessel is still about 2/3 full and it is next to impossible to get this out.

B1, B3, B19 also worked on.

HP reading at 12M — 5.4R ← 12R probe over stool

③ Small fan housing decontamination:—

Flushed with water all shift.

HP reading at 12M — 850MR/hr (Cutie pie)

→ Water is still running into fan housing at shift changes, please check this on your shift

7-28-45 Water was left on at fan housing
12-8 all shift. Turned off @ 8:00 AM.
AOY

60% HNO_3 was put into off gas line all shift. Drained occasionally through B-19. Off gas line will be full at shift change.

We concentrated on off gas line, B-19 and B-12. All solutions put into B-6 were heated & vacuumed into B-11 and run to B-19.

Several minutes were spent inside cell to hose down equipment with emphasis on B-19.

At shift change B-1 & B-3 & B-6 & B-12 are full of 60% HNO_3

B-20 & B-21 were not touched.

HP readings @ 8:00 AM.

12r #242	6" from east wall	-	800 mr
	36" " " "	-	1100 mr.
	ABOVE stool	-	5200 mr.
Electroscope #208	36" from east wall	-	900 mr.

AOY

7-28-45
8-4

Head plate and ~15" of pipes, burned off & removed. Sleeve still very hot. Removal of upper lines and large plate delayed by welding difficulties, loss of ground in cell, inadequate welding machines.

Have raised temp. specifications on FLUO treatments to 60°.

Off-Gas line drains very slowly even with several valves open ???

H.P.M. Carrier + 7" ht. garbage can bottom in place under B-19 to catch hot plate, if and when welders get it loose.

B1, B3, B6 have FLUO treatment.

7/28/45
4-12
EJW

① B19 plate disposed of to bone yard. While doing this we had contaminated some ground north of building and northeast of building. Some of the ground was scooped up into 2 wheelbarrels and 3 hot cans, this should be picked up by red truck on day shift (maintenance men on 4-12 could not locate keys to the truck. There was still a considerable amount of contamination

left on the ground and this area has been roped off. If the rain does not clean it up overnight, maybe a steam shovel should.

② A clamp was put on glass joint between B21 R and B21T. We can now put pressure and vacuum on B21 vessel. Valve B21T – W11 is also broke (in closed position). We're not guilty, it was broke when we first tried to use it.

③ B21 was given 3 treatments with oxalic acid.
B12 was given 3 treatments with HNO_3 — 2 treatments with acetate.
B1, B3, B6 given one fluosilicate treatment.
At end of shift all B radiation over stool was R.

④ Small fan running water all shift, water still on at 12 mid.

ACT ⑤ Suggestion for your shift, if you think it's OK.
Try decontaminating glass equipment by doing the following: –
1. Close all vent valves from cell B vessels and A8 and A9. Also close bottom valve to A16 scrubber.
2. Open up B20 and B21 vent valves
3. Maintain about 3 lb pressure on both glass vessels (it will be on at 12 M.)

Done before 12M
See next page.

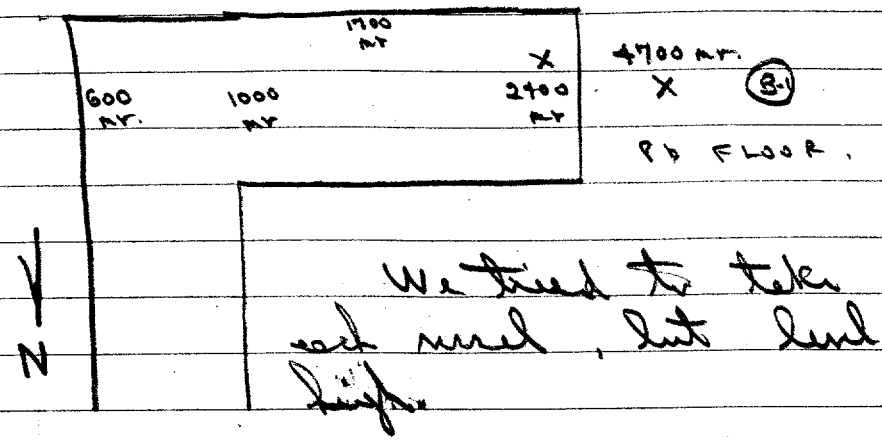
This pressure should keep liquid from backing up to the glass traps.
4. Run hose water to off gas funnel all shift. This should come out of glass reactors and give the whole area a wash down.

P.S. The above instructions were completed before shift change, keep an eye on it please. The water cannot run thru both vessels at one time without much adjustments of valves so it's going thru B20 only. Keep a watch on cell B sump

7-29-45
12-8
Key

Attempted to hose down inside cell. In order to increase working time in the doorway, we decontaminated Pb floor in front of doorway and the sump. Poured a carboy of acid on it. According to HP we knocked level down somewhat but not appreciably. Each of us hosed down B-12 & tops of vessels and sump & floor for a little over three minutes. Just went a little over tolerance although we stood between 800 & 1200 mr range.

HP readings are as follows.



We tried to take readings of each vessel, but level is still pretty high.

Gave B-1 B-3, B-6 60% HNO_3 treatment and fluorosilicate treatment. B-12 HNO_3 treatment.

Continued decontamination of B-20 by running water into off-gas funnel & leaving it run over the sides with B-20 to A-16 line open.

Left water running through small fan, all night.

[illegible]

7-29-45 Made complete survey of cell B - 10^{30} A.M.

8-4

B1 —	~ 7 R.
B12	~ 25 R.
B3	~ 2R.
B6	~ 2 R.
Main Off Gas Line	~ 2 R.
B19 heater	~ 9R.
B19 Carrier area	~ 6R.
B20T (with sol'n)	~ 40R.
B20R.	~ 28R.
B21T.	~ 10R.
B21R	~ 18R.
B11	~ 17R
B7	~ 7R
B15 area	~ 2R
B19 off gas lead-in line to main off-gas line	~ 40R.

Clamp installed on B20, old one taken off.

Valve, inside cell, B21-B20, opened.

Buried hot pipes No. 2, after resurrection from bone yard. Would suggest that 8-4 tomorrow have H.P. determine whether slit trench in buried grounds is hot enough to warrant use of bull dozer to do more covering up.

A.M.

The area behind bldg. was surveyed this A.M. Rain had spread activity considerably, the one spot near red cans was 2 R. As per usual, 8-4 Monday is to re-check & decide about getting a labor crew to dig up & remove hot dirt.

Survey of P.B-troughs.

No. 1	—	11 mr.
2	—	5
3	—	5
4A	—	22
5	—	<1

B-12 was given 1 — FLUO treatment at 50°.

Both B 20, 21 given several HNO_3 & H_2O washes, each left with oxalic acid in Trans. vessel.

Welders are to cut off the lead in off-gas pipe from B19 thru T-7 and adjacent sleeves, tomorrow 8-4 order not in.

181 ① Who the strong-arm man who broke another valve – B21 – W11?
7/30/45 This valve, however, appears to be
12-8 open, at last we now know how to break them
EJW

② Treatments of oxalic acid and hot nitric acid were given B20 and B21 continuously for last two shifts. The drop in radiation by 12 mid was amazing (too good to be true, instruments must be wrong.) Please check activity at beginning of 8-4 shift, our health man is burned out.

③ B12 was given another fluo treatment plus continuous HNO_3 and acetate treatment for two shifts. Results at 12 mid were also very good. Please check radiation at beginning of 8-4 shift.

④ Cell hard down as long as possible.
At 12 mid readings were as follows:

B20 (at filter disc) – 4.5 R
B21 (at filter disc) – 9.0 R
B12 – 10.0 R

④ Water still running through small fan, when should it be turned off?

7-30-45 B-19 off-gas line was cut off
8-4 through BW-G-8 & BW-J-7
Acy sleeves. Moved under chimney and raised up out of cell & lowered into coffin. Coffin was officially buried @ 3 PM.

B-20 & B-21 were given a 5% HCl wash all shift. At 4 PM flotation washing is in progress. Water is constantly flowing in and overflowing.

Cell was given water wash until manpower was used up. Cell floor was washed off with 60% HNO_3 also sump. Scrubbed P3 floor with brown & HNO_3.

Cut off remaining piece of 1/8" S.S. line to B-19 & tygon lines attached to it. Removed same from cell to ~~[illegible]~~ Hot can at East platform.

Level in cell is really dropping.

Acy

7-30-45 Picked up 53 mr & 58 mr on shoes while working in front of glass equipment. Upon further investigation a hot spot was found on floor 6" south of B 20 apparatus - over 1½ R. General floor area given hot soap, oxalic, nitric treatment. Hottest spot left - 850 mr. Smear - 6500 counts. THE PAYOFF - while checking area, the strainer in line going to A-3 plug, 2nd floor, was found to have dripped sufficient perfume to cause >55 R (on B1 blister.) (why wasn't this found earlier?)

B 12 given 6 HNO_3 hot treatments, 3 removed thru B 7, 3 - B 8.

Oxalic wash agitating in B 21 R
H_2O " " in B 20 T.

No. 1 fan untouched this shift.

WAR. Please order Pb covering for sewer drain line (vertical) at NW corner cell block. It remains hot.

7/31/45 ① B1 blister was given some nitric
12-8 wash but it still reads 40-45 R.
EJW on top, ran out of manpower.

② The second floor around west side of cells was found very badly tracked up with contamination. The area around blister and glass P.B. was not cleaned up but roped off and paper covered but the rest of the floor was scrubbed with soap and water. Please caution people entering the roped off area to wear rubbers and to leave them there when leaving.

③ Hosing down of cell continued until everybody received full dose.

④ The building was cleaned up to some extent, old papers on floors discarded, new ones laid down. More work along this line still needed.

⑤ Decontamination of B20 and B21 with HNO_3 and oxalic acid continued.

7/31/45
8-4
M.L.

① Concrete barricade erected in cell B., lead shielding in process of being installed.

② Funnel for viewing product was removed + is now in ~~con~~ on top of carrier - to be removed and buried (assuming it is as hot as survey indicates.

③ Status of cell after bricks were in (before lead)

center of bricks	55 Mr/hr
B.G. in enclosed area	195 " "
at Red X. brick	12.5 " "
at N end of wall	950 " "

④ auxiliary lead was removed from top of B-1 sampler and is now in Decontamination room. Sampler still Hot as blazes - no more slave labor available this shift. Floor still hot within roped off area but rest of second floor is O.K.

⑤ No vessel decontamination carried on as men were in the cell all day.

7-31-45
4-12

Cleaned up exterior cell B area, layed new paper, etc.

Decontaminated prod. carrier push rod ~~rather completely~~? One spot on wall was over 1R. Also cleaned drainage stains from wall under big scope. Scope is removed, should have viewer cleaned by instrument men. Some small amt. of activity will prob. remain

7-31-45 on floor at these two spots.

First floor BN sleeves K2, J2, G2, K-1 hot, about 70 mr.

Removed and buried garbage can bottom containing pipe pieces. Low range, but over 55R.

The prod. carrier (No. 2) is in decontam. room. Top is over 55R. Low range.

Final Survey 10 P.M. Cell B hot spots. :—

		12 P	3:04
North wall, east louver, upper left corner	—	>55R	.45R
North west corner cell floor	—	>55R	.45R
Middle louver	—	20R.	9R
Between middle east louvers	—	27R.	
Pipes on floor under chimney	—	45R.	—
Under chimney	—	2R	
B21 bottom	—	4.5R	3.5R
B21 Top	—	11.5R	8R
North side Pb shield around air heater	—	9R.	
Small Scope area	—	6-4.5R.	
Hook	—	8R.	3.5R
Dolly wheels N.E.	—	20.5R.	9R
N.W.	—	34R	22.5R
S.E.	—	7R	3.5R
S.W.	—	7R	3.5R

affected by hot area at N.W. floor

B20 Top		1R	
B20 Bottom		1R	

B12 given 3 HNO_3 heat treatments, No. 4 left in B12.

8/1/45 12-8 EJW

① North wall of cell B and all hot items found in that vicinity hosed down all night. Particular attention was paid to the corners which were the hottest spots in the cell according to 4-12 shift survey.

② B20 and B21 were both given hot HNO_3 treatment. So far this appears to be the most effective method.

③ B7 and B8 rest wells, which I don't remember being worked on, were given 3 HNO_3 treatments and flushed out with water.

④ Pipes and carrier plug which were supposedly hot, were taken out of cell and placed in decontamination room.

⑤ A survey of cell B taken at 6 30/AM. The results were inserted into 4-12 shift log for comparison. This survey was taken with 50R probe and may not be too accurate.

PLEASE WEAR RUBBERS AGAIN UNTIL THIS EPIDEMIC OF HOT FEET IS OVER

W. A. Rodger

Continue decontamination until 8⁰⁰ AM. Concentrate on B12, B3, and floor around B19 area. Get drastic in that area. Spend as much time as possible on floors of the building and the equipment in Rm 9. Special attention should be given to B1 blister area.

UR

8/1/45
8-4
M.L.

Product carrier returned - survey shows one hot spot on top of carrier under hatched region. No decontamination as everyones time had been expended - it's your baby -.

① Lead shielding installed in B19 area and one piece to help shield the B10 working area. - B10 supports and tank installed.
② B1 blister acid washed + offending strainer removed - finishing up over man power - still Hot as blazes in that area, strainer, hot paper etc in Red Can near by.
③ Floor between nails in Cell B given 1 acid wash.

8-1-45 Used up manpower trying to decontam.
4-12 B-1 blister. After extensive efforts with HNO_3 oxalic, HCl, Na_2CO_3, two hot spots remain —
(1) about 500 mr. on one spot, top.
(2). about 1 R. at intersection of right side and concrete. Soaked in concrete. Acid proof paint would have prevented this.

Cell B - B19 & chimney area given two HNO_3 baths, also dolly wheels.

8-4 Please have Al gravity & liq. level checked on PB-1. Seems to be off — or tank has been filled.

WAR I believe it will be a regrettable mistake not to coat B10 with 2" Pb - before it gets crapped up. This tank will make the cell B doorway a glowing red. (Will refer to this note in about 3½ weeks.)

B12 MTid, given 2 HNO_3 treatments, third HNO_3 in B12 ready to be dumped.

B3 has HNO_3, cooling after steam spraying.

8/2/45 12-8 EJW

① Floor in NW corner of cell B was scrubbed down with acid to a point where more scrubbing does little good. The whole area is still hot and it's difficult to pick out the hottest point to work on. After everybody's time was used up, we went back to hosing down that area.

② Decontamination room was cleaned up and the carriers were scrubbed several times with nitric.

③ B12 was given 4 HNO_3 treatments. B3 was given 3 HNO_3 and 3 fluo treatments.

8/2/45 8-4 M.L.

A-1 Ring balance O.K. – lines into cell were found plugged; blown back + now O.K.

Program for B20 + B21 (per WPB)

→ in progress 1. Complete wash with 5% Sodium or Ammonia citrate
2. " " " " Sodium or Pot. Bicarbonate
3. " " " " " " " Carbonate
→ 33. H_2O was 4. Check level ~~+ contact WPB~~.

All necessary chemicals on desk near glass panel board, specific viewer in room 9 cleaned up + installed.

Floor of second level O.K. now except directly under the blister (area covered by paper)

Carrier Soap + Water washed + nitric washed — doesn't appear to be coming down at all — almost all B according to "Cutie pie".

B20 + 21 have the [illegible]

8-2-45
4-12

B-10 head plate removed, tank cleaned of dirt, dust, wood, overflowed with water, given HNO_3 wash, followed by two more water washes. Tank MTied, cleaned of small particles, dried, and lid put back in exactly same position as we found it. Working time in area - 12 min.

B20, 21 filtering washes all shift.

B20 finishing citrate wash near midnite. Has been very slow. Bicarbonate soln for 2nd wash is made up - in graduate on floor near glass equipmt.

B21 finishing filtration of bicarbonate near midnite. K_2CO_3 soln for 3rd wash is made up - in bottle - near glass equipment.

12-8
8-3-45 According to [illegible] the dose
[illegible] in the NW corner of cell B under B19 is over 20 R.
& that caused erroneous readings on floor
etc. in that area. Hose was set &
played on the drain & corner all nite. - Please check. -
Hot spots on floor around B1 blister
cleaned up. Spots about 300 mr
brought down. Seems as if only activity
at that point is under iron angle on
floor. ~ 300 mr.

B20 2nd wash in - filtering
B21 3rd " " " "

These 2 sure are slow filtering.

AS OF NOW NO ONE IS TO
TAKE A CALCULATED DOSE
[illegible] THAN 70 MR. A
NOTE IS BEING CIRCULATED
TO EACH OF YOU ON THIS
POINT SUGGEST ADDING
[illegible]
MAN [illegible]

8/3/45 Standpipe in B19 area shielded with lead.
8-4 One small piece put on north side of B12 - to
M.L. help B19 area Background. More pieces of this 3/16 lead
is lying in & near the cell - any placing of this
around B12 will not be frowned upon - unless
it is dropped on the glassware.

If H.P. is succesful in picking up any more hot spots in B19 area — use large pieces of lead on the floor behind the Brick wall to cover same. —

B20 Treatment (per schedule) done + given a 5% NaOH wash in addition (Now in progress - power + therefore vacuum failed at 2 20/P)

To Be Done (per WAR.)

1. empty B20 + Wash with nitric acid enough so as to be sure no caustic remains. (recycle some)
2. Rinse B21 with nitric acid.
3. Expend manpower on B19 area - either shielding or/and washing so as to increase working time for maintenance work.
4. Clean up of stairs - H.P. afternoon survey says they are warm.
5. If B20 still contains "crap" after acid wash, give it a "flotation" water wash

Liquid line from B20R to B20T (from Disc down) is lying in the bottom of B20T so keep an eye on the traps at the panelboard — one is now about 300 Mr/Hr — but is only background a ft away so replacement was postponed until B20 is replaced.

8-3-45 B-19 area worked on to lower readings.
4-12 First H.P. make a survey to determine
Acy approximate position of hot sources. The general background appeared high. Manpower was expended with alternate HNO_3 & water washings of hot sources. gas masks were used. The three lines still remaining from B-19 apparatus are the hottest source in that area, 33 γ. With a little brush on the end of a two foot pole we scrubbed this source with 60% HNO_3 & washed it off again.

H.P. finds that stairs are relatively warm. With smear checks he found a few mr readings. With Walkie-Talkie there appears to be quite a bit of β. The north flight of stairs (being the hottest) were scrubbed down with soap and dried quickly to prevent soaking into the wood. After both flights of stairs were cleaned H.P. checked them. With the Walkie-Talkie there was no difference. However, the soap solution & rags used to dry the steps showed signs of having some activity. Smear however didn't show an appreciable difference. H.P. believes that covering them with linoleum would be satisfactory.

Acy

8/4/45 "If thine eye offend thee – pluck it out".
Jaw So be it – The 3 hot "residual" pipes
12-8 from B19 (one of which was ~ 33 r) were removed from cell B and are in hot can on platform. Man power expended. – Greatest reading in that area now is ~ 2R. Could this be still from drain? Reflection etc??? Further lead work may solve the problem –

B20 + 21 MT ed. but nothing added to either tank this shift. Guess its ready for acid.

8/4/45 B20 + B21 both acid washed + water rinsed.
8-4 M10 + all head tanks on the 3rd floor filled.
M.L. Now in process of making up caustic in M1 – to fill M11 (all the cans of caustic in the make up room are to be added, water is all in.)

Decontamination room was cleaned up.
Over all viewer on the first floor cleaned, lenses cleaned, and a new window installed.

8-4-45
4-12
ACM

Finished making up 40% NaOH in M-1 & pumped to M-11.

Filled up M-4 with 60% HNO_3

Made up 20 L. of 6% $Pb(NO_3)_2$ in T-2. This has not been sampled yet.

Instrument Dept. was notified to check all instruments on PB-1 & PB-2. Because they were showed up.

ACM

8/6/45
12-8
M.L.

Jets A9→A8, A8→A9, A8→A5, A5→A6 checked.

A1, A8, A9 samples checked and set for ~1cc

Solution from A8 added to A9 — and guess what? it filled up A9. Therefore — A1 solution is still in A1. A9 solution sampled — sample in S lab upper fourcade. — decision as to which is to be filtrated will have to wait for A9 analysis — I guess.

The last 100 [illegible] NaOH cannot be transferred from M1 to M11 due to piping set up — [illegible]

about an extension on the pump suction line to put it closer to the bottom of M11?

WPB → We need some identification for the Valves in the makeup room for the M11-M10-M11 water-air-steam set up - prefer painted dogtags to the illegible aluminum tags.

Where are the spare locker keys kept these days?

8-6-45
8-4

Loading of slugs to A-1 in progress, 3C-D in A-1 not with standing. Cooling water on jacket. 3 loads in A-1

P-1 extraction in A9, settling til 5^{25} P. Use 92% H_2SO_4 on P2. Part of H_2SO_4 carboy remains near scales.

A-9 Vac man. being worked on by instruments. (Has been registering 4-5" with fan off.)

Labor crew removed part of bricks from cell B.

No. 1 fan off, but should be available soon. Off-gas system for A-1, A-5 seems to be pulling Vac., but may need checking & draining, etc before start-up.

8/6/45 ① Small fan started up at 11:00 PM,
4-12 please check its operation, vacuum very unsteady
although lines have been thoroughly drained.
EJW ② Run Status:
4P-2 — extraction settling until
4:20 AM
4A-A — metal dissolving
WPB ③ Red — in your spare time please
issue RO for cleaning out T6
bubbler tubes and lines from
T6 to T8 and T9 (almost completely
plugged)
④ Some water was jetted out of
cell A duct but there still appears
to be a lot left, who's supposed
to take care of this, day shift?

8/7/45
12-8 The new sampling set up "stinks"!!! The
M.L. tube can't be removed with the jet on as suction
holds it in place, if the jet is shut off, several
cc of solution run back into the tube! — this
beside the dose received in the several minutes
required to hook the tongs into the clamp
especially on graveyard.

4A-A — settling hot until 9 52/A then cool
+ settle cold
4A-B — dissolving. — sp Gr. on way up.
4P-2 — in A6 ready for W9

The new sampling system works very well according to all who have been exposed to adequate instruction.

The clamps fit on in a matter of seconds. To remove bottle while suction is on it is necessary to open clamp by compressing the tongs and then use the upper (shorter) part of the clamp to pry the tube loose. It comes very easily drops a fraction of an inch onto the lower prong of the clamp. Then release pressure on tongs and the tube is gripped tightly by the clamps again.

4-12 PLEASE SEE that this is demonstrated to 12-8 at midnight.

Starting at once Safety and Housekeeping responsibility shall be as follows:

8-4 3rd Floor
12-8 Entire first floor including

cells when possible (cell B is possible now!)

4-12 2nd floor, east platform, Room 12 and Fan House

W.A.R.

8-7-45 8-4 Drain valve thru South concrete wall around No. 1 fan left open, as it merely drains pan.

4A-B - going into A9 for extraction.

4A-A - 8MWA in A8. To be sampled. A5 has CO_3-PO_4

$^{60}HNO_3$, $^{65}H_2SO_4$, 4% NaOH ready for next use.

Warm spot around A8 sampler cleaned with oxalic, please check.

B 20 removed & put in graveyard.

Spare sample tubes, new type, are in wooden cabinet at cell B entrance.