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NOTEBOOK NO.: CL-1154

ISSUED TO: E. J. Witkowski

ISSUED BY: Jane Schellentrager

DATE: 1-21-46

[redacted]

RUN 9; SEE PAGES 114 – 145 (also includes "HP run")

p115 iodine collector

[redacted]

Box T-279

CL-1154

R.B.

Classification Cancelled

~~Or Changed To~~

By Authority Of

By NTS Date SEP 22 1971

CLASSIFICATION CANCELLED

Ted Davis 7-8-96

ADD signature Date

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

David R Hamrin 7/8/96

Technical Information Officer Date

ORNL Site

Work For 4-12 and 12-8 Shifts

1/21/46

OK 1. Jet solution from B10 to B3 and sample (label cell #4 rinse). Dispose of solution to W11 via B10 and A5.

OK Rinse B3, B10 and A5 thoroughly with 5% HNO_3.

OK Be careful not to overexpose man in cell A entrance while getting through A5.

2. Start decontamination of A16 off-gas line with steam, using the following procedure:—

OK

B19 & A8 OFF GAS VENTS LEFT OPEN. ALL OTHERS CLOSED

✓ a) Shut off small fan.

✓ b) Open drain to W11 at NE corner of building.

✓ c) Close off-gas header at E side of cells.

✓ d) close A16 drain.

✓ e) attach steam hose to rotameter line at PB-2. Turn on steam.

✓ f) Continue steaming until 8 A.M. Open valve at cyclone separator every hour to drain it and then close valve each time.

3. Check A4-205 off gas line to determine whether or not it is being flooded by A4 scrubber by the following procedure:

✓ a) Check that water is off to A4

✓ b) Drain system completely. Obtain about 10" vacuum. (over)

gets only 5"

Did not remain constant,

c) Keep vacuum on system for at least 4 hours with scrubber water off, note whether vacuum falls off or remains steady.

d) If and when vacuum is proven to remain steady, turn on water to A4 for at least 4 hours, note if vacuum falls off.

Circulating in B3 + B6

4. As soon as B3, B6 and B1 are MTed start circulating 10% nitric through each of the samplers in preparation for blister decontamination. NOT DONE

OK

Started about 7:00 PM

5. Start decontamination of small fan by running water through jack leg and fan housing.

OK

6. Continue hosing down cell A, use iron hose stand as much as possible and concentrate on concrete base under A5 and A6 (this is very hot).

NOT DONE

Started circulating on 12-

7. Try to decontaminate A1 sampler and surrounding area so that maintenance men can do some work on it tomorrow.

1/21/46 4-12 SHIFT.

1. Had B10-B3 jet repaired.
2. Did not MT B1. Tried (B1-B10), (B1-B3), & (B1-B6) jets without success.
3. Continued hosing floor behind A5 & A6 throughout shift. The "one-lunger" has been giving trouble — uses too much gas & performs very irratically. Maybe dut to improper mixture. We installed a new spark plug which didn't help much.
   HP Lauritsen readings at start of shift were:
   Cell A a. At edge of step — 220 mr/hr
   b. 2 ft back of step 110
   At end of shift:
   Same a. 270 ! } May be due to floor being dry
   b. 125 ! }
4. HP found some floor contamination. Scrubbed entire 1st floor area south of cell A. See HP for further "info".
5. Drained A4-205 system at 5:30 PM. Vacuum rose from 4 to 5 in. in A1. Did not remain constant. Drained again at 11:20 PM. Got 3 pots H_2O from up hill line & nearly 1 pot from D bldg. side. Max. vac. now almost 7 in. Scrubber off at all times.

(over)

4 Continued

6. The wire pulley on B3 sampler probe slips. Fixed it temporarily but suggest that it be checked.
7. Note comments in margins of pp 1&2.
8. Informed at 11^{20} by HP that area south of cell A is contaminated again or yet.
9. DAY SHIFT – Better check the gas engine. It uses better than 1 tank of gas / hr. & doesn't pump worth a _____.
10. Cell # 4 Rinse Sample.
Whole rinse (before jetting part of it from B1.0 to B3 for sampling) was 51.8 liters. Of the 14.4 liters in B3, 1.3 liter was condensate from jetting.

1/22/46 12-8

A-1 sampler started circulating with 10% HNO_3 at start of shift. 1/22/ 8

B-1 jet finally broken loose toward end of shift – soln moved to B6. B-1 sampler started circulating with 10% HNO_3

B-6 blister needs a long pipe & funnel arrangement so that one can get near enough to it to pour decontam. solutions inside blister to clean it out.

Hot spots on floor (1st) at south end of cells cleaned up with soap + water.

Hot spot (~2R) found in decontam room and cleaned up.

Fuel mixture adjusted on gas pump & cell A closed down and pumped out to decontam room.

Readings at 7⁰⁰ Am:
250 mr at edge of step
125 mr 2ft back of step

Area around A-1 blister smears at 950 c/m. Blister itself reads about 300 mr.

1/22/46 8-4 A water line to flush line M1-M9 has been installed.

Work for tonight

① Continue work on A1 sampler decontamination

② Have HP man check floor contamination 1st floor near cell entrance — It is no doubt warm. Hose it down and lay paper over the entire area where men change rubbers as they go in and out of cell.

③ Have H.P. man take smears of entire area west of cubicles when

it dries up, then cover large area west of cubicles with several layers of paper.

④ Continue blowing down of cell A. Concentrate on concrete base under A5 and A6 and on sump. The floor on N end has been scrubbed with acid so you should have enough time to set up the shoot rack inside the cell in any desired position.

⑤ Run another test on A4-205 off gas line by following procedure:—

a. Drain system completely.

b. Obtain and note maximum vacuum reading in A1.

c. Close valve, in A4-205 line, located pit under H.P. office window.

d. Keep valve closed for at least 5 hours.

e. Open valve in pit and note any loss in vacuum compared to original reading.

⑥ Try running a fire hose to third floor and plotting the tops of all stacks through floor sleeves.

lead removed from under A1 sampler + area scrubbed down to something tolerable, floor still contaminated.
Slave labor expended on 25R spots on the cell floor, now about 400mr.
Spent 1½ hr obtaining ~~[illegible]~~ air flow through cell A 'cause dust had been allowed to fill up with water over night.

4-12 A-1 Sampler washed in with acid and brush. (15 mr.)
We washed and put down a Ammonium citrate near cell H. It is still on floor as we thought best to leave it long enough to do some good.
The fire hose was drained through a plug over A5 - from 3rd deck.
The first batch of water pumped out ran 75R. The pump is 72R now at water chamber. The hose had all 70 South end of cell R so there was very little scrubbing done on floor.
P.E.P — L.F. — Roy M —

1/23/46 12-8 Turned on AD-AS jet for all night to keep air moving thru cell A.

Put 2 additional hoses thru cell A roof to help decontaminate. Hose in SW corner

1/23/

had to be discontinued because of leakage around plugs.

Squirted acid in A1 blister and noticed acid leading down along cell wall underneath blister which would indicate the leak to be in the blister drain pan.

Ran test as requested on A4-205 off gas line as instructed on page 6. After 5 hrs - no vacuum - but supposedly a gurgling sound was heard.

H P survey
cell A:

Door step	390 mr
2' from door	190
pump	1 R

Cleaned floor south of cell A and laid down fresh paper around cell A doorway.

1/23/46 Do not get any material from cell B vessels or sump to cell A. unless for some reason it becomes absolutely necessary, also — do not add water to cell B sump since there is a possibility that it runs down to cell A sump.

See typed housekeeping inspection report, check and initial items as they are completed. Please put special effort in cleaning up Room #9 so that maintenance can install decontamination tanks tomorrow.

Decontamination for tonight:

1. Discontinue steaming off-gas line, disconnect hose.
2. Start spraying 1% HF + 10% HNO_3 over cell A: floor and concrete under A5 and A6. Use small pump at cell entrance for this purpose. Be extremely careful in pouring H.F. Hose down after each treatment and neutralize with soda ash. Try not to overflow sump when hosing down to prevent contamination from spreading back on clean spots.
3. Start decontamination of B3 and B6 samplers. Use the funnel and pipe outfit provided for this purpose. Use very little effective time on this job — save time for cell A.

Cell A Hosed all slight from various pts. + angles. Fire hose used at part power so as not to get ahead of pump + jets.

Area around cell ~~III~~ Worked over — fluorsilicate paste now down.

OFS gas system test run on Christmas tree to 205 line — no apparent leaks.

1-23-46 4-12 SJR

North end of cell A sump is eaten out. Water in sump is apparently leaking into the dirt through north end of cell A sump. If any acid is sprayed into the cell or poured on the floor, soda ash will have to be put into the sump to prevent lead from getting worse and forcing all Cell A vacuum.

We put wire around intake line from small portable pump, and are using this pump to get water out of Cell A since AS-A5, and AS-A6 jets do not work.

We decontaminated lead sections of Cell A floor by pouring acid on lead and washing off with fire hose after two or three minutes. Do not overflow sump, since it is reading about 7R. We got a long narrow shovel from Maintenance to get sludge out of Cell A sump, but ran out of manpower. Save the shovel!

Reading at Cell A doorway is 185 mr. Two feet back it is 110 mr. Most of the radiation seems to be coming from the sump.

Third floor was cleaned up.

Floor around Cell A entrance and in Cell A entrance is hot. Wear rubbers.

1/24/46
12-8 Decontamination room put into shape for maintenance to work. Readings ranging from 100 to 1000 mr were found in various spots in room, general background was 100-200 mr. Working time used up in getting this place down so working time in there is now approx 2 hrs at floor level. Hot corner moved outside to provide greater working time in room. Can be moved back in after maintenance work is finished.

Area south and west of the cell A was mopped down to clean up high smears found by H.P. O.K at last check this AM

Housekeeping done according to typewritten sheet.

cell A doorway 270 mr

3' from doorway 160 mr

1/24/46
8-4 Cell IV area scrubbed again - still warm.

Cell A floor + sump hosed with HF + dilute Nitric. Water chased + W-Ned. at present using Hydrostatic head for pressure since pump is Kaput. Nozzle now on step. Supply of HNO_3 - HF on 3rd floor. - Hottest

area measurable is ~ 2R, - which is about background.

(interesting side light: at 6142 are men willing to repair equipment + bury "bodies" at any hour of the day or night)

Decontamination For Tonight

1. Cell A vessels are still hot, start running cycles through them again! Start off the cycles with 2 runs of 5% fluo + 10% HNO_3 and heating and agitating at 65°C for 1/2 hour. Follow these two cycles with a 60% HNO_3 cycle.

850# soln.

2. There are two bags of rock salt in make-up room. Wet down the cell completely with water and throw the rock salt over everything you can reach from the cell floor and through 3rd floor sleeves. Allow it to work for a half hour and then hose it down thoroughly.

3. Spray tops of vessels with 10% HNO_3 by dropping tygon through 3rd floor sleeves, make sure all salt is out of cell when doing this.

Save the 1/2 bag of table salt in make up room. This salt

1-2
4
5

will be used in sand blaster tomorrow.

4. B3 and B6 blisters still need work on them start on these only if exposure time is left after doing necessary work in cell A.

1-24-46

4-12 Maintenance took small agitator SOR from 3rd floor to repair it.

Salt thrown all over Cell A and washed down Cell A with firehose.

Cycles started through Cell A tanks again. Tanks are still hot. Run a 900 lb 60% HNO_3, a 10% HNO_3 5% flux and two carbonates treatments in order after the next carbonate.

Status:

A6 - flux cooling
A11 - flux cooling
A9 - 60% HNO_3 boiling
A1 - 25% Na_2CO_3 boiling.

Add another 25% carbonate (1200#) to A1, and then start a 60% HNO_3, a flux and two more carbonates in order. Sample 60% HNO_3 in A8 and label 11N. Get 11NC sample too, if you can. Continue sampling which will tell us how hot the tanks are yet.

1-25-46.
12-8

7:00 AM. Probe Readings - Cell A.

A6	Base	~ 400 mr
	Mid	"
	Top	< 400 mr.
Scrubber	Base	~ 400 mr.
	Mid.	"
Scrup	N.	1.R.
	Mid	1.5 R.
	S.	~ 400 mr.
A5	Base	~ 400 mr
	Mid	"
	Top	"
A9	Base	6.25 R.
	Mid.	10 R.
A8	Base	1. R.
	Mid.	1. R.
A1	Base	~ 400 mr.
	Mid	"
Louvre - N.		~ 200 mr

Cyclone Sep. - no deflection.

EJ.

Scrubber given 4 carboys acid, MT'ed, steam on.

3 Carboys acid diluted to 10% + equiv. base to neut. added to cell thru 3 plug holes on 3rd floor.

Cycles continued inside tanks. Need some Fluo + Na_2CO_3.

Leak in A9 jacket throws a stream like a full grown ass.

EJW → Bad leak in stem of off-gas valve controlling cell A+B gas inlet to scrubber.

A5 1st Batch Na_2CO_3
A6 2 Batches Fluo.
A8 2nd Batch Na_2CO_3 --- end of cycle 11.
A9 } M.T. no fluo.
A1 }

1/25/46 Decontamination Program

① Continue spraying 1% HF + 10% HNO_3 all over tops of vessels and floor. Allow it to "dissolve the cell" for several minutes then hose down thoroughly. Use the small pump and spray from inside the cell while manpower holds out, then continue through 3rd floor plugs.

② When cell is free of HNO_3, spray the 1/2 bag of salt over all vessels and floor, then hose it down after 1/2 hour. When fine salt runs out, try using up the rock salt. The sandblaster is hooked up on W side of cell, run hose through plug in cell wall.

③ There are many hot rubbers in building, please check all of them.

④ A-1 vacuum to 205 stack with A-2 coils, jacket, A-4 scrubber off. at 3:00 PM with 7" H_2O in A-1 the vacuum on A-1 was 9". Check at 8:00 PM, the vacuum in A-1 by opening the valve at the H. P. Office.

(5) Before starting any work in cell, sweep out cell completely, survey all old gaskets rope etc just to see if we're doing any good by removing gaskets from flanges.

1-25-46 After opening valve in pit, we
4-12 got 10" vacuum on A1
SJR

H.P. checked hot rubber.

Tank Status in Cell A:

A1 – 10% HNO_3 5% flux cooling
A9 – 10% HNO_3 5% flux cooling
A8 – 60% HNO_3 boiling.
A11 – 100° 60% HNO_3.

We sprayed acid on Cell A tanks from the doorway and then a spray over A8 that Maintenance made for us. Three hundred pounds of Na_2CO_3 were put in Cell A sump to neutralize acid. Cell was thoroughly hosed down after each acid spray. Reading at the doorway is now 90 mr with most of the radiation coming from Cell A Sump. Sump is the hottest, being >2R at a distance of one foot along its entire length and reading about 500 mr at one yard. Bottom of A8 was the next hottest point that we could find. It read 1.0 R. So, we left 60% HNO_3 boiling in A8 over shift change.

Follow the acid washes in Cell A tanks with two regular 25% Na_2CO_3 treatments. Sample flux solutions, in A9 and A1 now, in A8, and call them 13 N and 14 N respectively. We want to find out how 60% HNO_3 compares with flux as a decontaminant.

Continue running solutions through

the tanks since lab analysis show about 1×10^6 c/m/ml of beta which is enough to raise the background in the Cell. Longer boiling acid treatments (straight HNO_3 only!) in the tanks may give better results.

1/26/46 Top of A2 leaks like a fountain - several nice little leaks spouting water into the air.

Cell A Salt blasted to extent of manpower + hosed out, both fine + rock salt used. Some undissolved salt still in sump. Blaster is loaded + ready to go. Fluo + Na_2CO_3 cycle run.

7 AM Survey

at step 3' up	250 mr
N end of S sump 1' up	1750
Cite " " " "	2500
S end " " " "	1600
A1 base	850
A5 base	750
A6 base	600
A9 base	1250

All vessels empty at shift change.

Program for Week End

(1) Each shift please expend manpower at 50 mm / man spraying inside of cell with acid, salt, or water. Always save one man to hose the cell with water last so as not to leave the vessels covered with acid too long. Do this early on the shift.

(2) Try not to leave the tanks sitting MT as this accomplishes no decontamination. After using manpower start up cycles again.

(3) Give cell A one or two steaming treatments. Do this by covering up louvers in cell A and leaving large fan on. Probably will have to break some steam lines in cell A to get enough steam in. Do this over the lunch hours. Evacuate building during steaming and air it out before starting work again.

20 (4) alternate cycle treatment with steaming inside the tanks. Do this by turning on all the steam sparges.

W. A. Rodger

1-26-46

4-12

Inside of cell A sprayed with solution of NH_4Ac, HNO_3 36% salt, 26% NaOH and hosed down with H_2O between each solution.

H.P. check shows activity on ceiling above A-11

Tanks sparged with steam during time no one in cell.

Started 68% HNO_3 into A-1 for a 68% HNO_3 cycle as has been suggested. Check A-16 N_2O gas system before getting into A-9.

1-24-46 Threw two bags Na_2CO_3 all over
4-12 Cell A. To get proper steaming in Cell A you
SSR have to close Cell A door and cover up louvre
to Cell A on east side of bldg as well as covering
up louvres inside the Cell. Start steaming with all
jets and spargers on. Then after Cell gets warmed
up, cut off about half the steam jets and spargers.
We steamed Cell A for three hours and got pretty
good action inside the Cell. The carbonate was
present everywhere as a rather viscous solution. We
hosed the Cell down well. With the louvres all
covered up you get pretty good vacuum in the Cell,
and there is not too much danger of contaminating
the bldg by steaming. Would suggest that steam
treatment be carried out near the end of the shift
and continued thru shift change. You do not have
to have all the tanks in the Cell empty to carry
out the steaming treatment.

Cycle Status:

A1 – 10% HNO_3 5% flow at 60°C

A9 – 60% HNO_3 boiling.

Follow with two Na_2CO_3 solutions of 1200# specific. Sample HNO_3 and flow in A8, and call 15W and 16W.

1/27/46 22

12-8 Cell A blasted - using citric acid in
M.J. the sand blaster. Then steamed, without washing off the citric, all sparger, jackets, and jets (except to cell B) plus a hose through the roof plug used at full blast for 3 Hrs.

Cell then hosed down using Hot 25% Na_2CO_3 + finally with the fire Hose.

Status of cycle

A1 - 25% Na_2CO_3 boiling
A9 - Fluo + HNO_3
A11 - 60% HNO_3 boiling

7# survey

Doorway at waist height	70 mr.
Half way from door to sump	175 mr
Center of Cell background	195 mr
A9 at 1'	220 mr
A6 at base	160 mr

1/27

1/27/46 Decontamination Program For Tonight

1. Continue soda ash-steam treatment until 7 PM. The louvre to cell A and the cell door are closed and air may get contaminated, keep out of operating area.
2. When steaming is complete, hose down the cell and give it couple of HNO_3 sprays, hose down well after each acid spray.
3. Repeat blasting cell with citric acid or soda ash and steam cell for couple of hours each time. Alternate steam treatments with acid sprays. Use all sprays and jets except ones leading out of cell.
4. If cycles are started again, please make sure vessels are free of flux

1-27-46
8-4

Completed cycles in H-tank

Blasted citric acid in cell A and steamed 3 hours.

Blasted solid Na_2CO_3 into cell. Steam on.

1-27-46 Cell A is steaming with
4-12 carbonate on the walls.
SSR There is 30% HNO_3 boiling in
A1, A4, A8 and A11. Twenty-five percent
Na_2CO_3 is in M1 to neutralize 30% HNO_3 in
M1 tanks. The carbonate has been steaming
six hours and the HNO_3 boiling for four hours.
Ready for a change.

1/28/46
12-8 Hosed cell A after 4-12's steaming.
M.L. Blasted with citric acid + started steaming again
alternately sprayed the tank tops with 25% Na_2CO_3
via wooden plugs while steaming.
Then emptied tanks + flushed cell.
A9 jacket leak is not a leak, jacket discharge
line is broken completely off!! all water put into
jacket ends up in the sump.

7A/ survey
Taken with an electroscope so it's the
McCoy.

Doorway	73 mr
Base A16	160
Base A6	95
Top A6	110
Top A5	110
Base A5	115
Base A9	180
Top A9 (SE corner)	280

(Cont)

Top of steel ladder in cell 90 mr.

tanks left empty as it appears all is about ready for maintenance men.

1-28-46

Maintenance and riggers dropped A-9 tanks. Basket hot.

The pump in make up room now reading 400 mr/hr. Solution in M-1 has some count in it.

H. P. check.

Entrance cell 3'		60 Mr/hr
N Sump 6"		2300 Mr/hr
M. " 6"		800 "
S. " "		1000 "
Base	A-1 E. side 4"	250 "
"	" W " 4"	230 "
Base A-5	W 4"	200 "
" A-6	W side 4"	180 "
Bkgd N. part cell 5' above floor		160 "
" 5' above floor center cell		175 "
Top A-9	E. Side	500 "
" "	Middle	400 "
Flange S. Top A-9		700
North top A-9		200
W. top A-9		400
A-9 off gas line 3' above A-9		200

(over)

Background 3' south A-9 2' above	140	1/2
top A-2	70	
top A-4	60	
A-11 off gas valve 6' above A-11	250	
Hottest flange A-11 E side	500	
Center top of A-8 (hottest)	200	
W. side top A 8	400	
S side A-8	400	
N side A-8	200	
E side A-8	175	
Middle E. side A-8	125	
N. side Middle A-8	190	
N.W. at bottom A-8	600	
Bottom A-9	210	
Bottom N.W. side A-11	210	
Middle A-9 N. W. side	260	
Middle top A-6	125	
Hottest on top A-6 N.E. side	140	
S. End Sump	500	
Working time top A-9		
South top A-9	4.5 min.	1-2
E. top A-9	6.0 min	"
W. N & Middle A-9	7.5 min.	S
Work Sump 6' above		
N. End sump	1.33 min	
Middle "	3.75 min	
S. End "	3.0 Min	

1/28/45 Program for tonight

① Use up manpower trying to remove hot gasket from top of A9 and any other hot gasket you may find in A9 noggles. Do not drop gasket material into tank if you can possibly avoid it.

② Spray top of A9 lid and under A9 lid with acid. Hose down well.

③ When manpower runs out, continue steaming as usual.

④ Before 8 A.M. make sure A9 is M.T (jet out whatever you can and if there is too much water left in it, siphon it out). If water in A9 gets hot, rinse out well with acid

⑤ Take complete survey of cell by 8 A.M, concentrate on good readings on A9.

1-28-45
4-12 Large hot gasket and three small ones
STR from flanges removed from A9. Can holding hot gasket material reads 6.5 R.

Cell A steamed until 11⁴⁰ P.M when all steam was cut off.

1/29/46 Expended manpower on A9 floor via acid
12-8 and brush. Then did a little steaming.
M. L. [Side note: A9 now sitting on floor of cell, Suggest that whoever is responsible for leaving A9 hanging by one piece of rope be told about safety precautions — it's no fault of theirs that it fell 3 minutes after I left the cell instead of while someone was under it]
[A9 not full of water when it fell]

7/A survey 1/2

N sump	700
Center of S sump	560
S. sump	230
Center A1	140
base A1	200
Base A5	180
Base A6	180
N cell B.G.	180
Top of A9 tank	120
Top A6	100
A9 cover	
E.	50
N.	180
S.	200
Center	200
W	200
splash plate	200

A8

N top 400
E top 200
E base 300
N base 500

pump in make up room needs two studs in pump Housing Na_2CO_3 Had solidified in pump + in dismantling to clean out, they twisted off.

1/29/46 Decontamination Program For Tonight

① Decontaminate A9 tops, agitator shafts, and all related part completely by 8 AM. All in decontamination room. This job has AAA priority.

② Survey cell completely and attempt to clean off hot spots on all tanks and sump, we intend to start installing new jet lines and steam pots tomorrow.

③ Continue boxing, steaming etc of cell A when manpower rounds out.

④ Remove hot gasket from A9 (on 3rd floor)

⑤ Try to clean up the survey building, esp around cell A entrance. Check fall gloves and rubbers.

⑥ Get complete survey of cell A by 8 AM. Concentrate on tops of tanks where most work will be done.

1-29-46
4-12
SJR

~~Hot~~ gasket removed from A9 tank and from A9 top.

Cell A entrance and Cell A cleaned and straightened up.

Two bags Na_2CO_3 put into sump prior to steaming Cell A for decontamination purposes and to neutralize any acid that may make leak in the sump larger.

A9 top decontaminated with several treatments of HCl, HNO_3 and Na_2CO_3 each in succession. When Na_2CO_3 was put on, the tank top was steamed to make solution visible. A9 top is pretty clean now with one of the jet lines, however, giving the highest reading to be found on the tank top of 50 mr. Four jets were removed, and are soaking in a bucket of HNO_3. Background in decontamination room is 20 mr.

Cell steamed four hours. We shut off at 11:00 P.M.

1/30/46
J.E.C.

(1) Concentrated on A-9 Sap, per request, alternating acid and carbonate solution. Highest reading now ~ 40 mr. on some of the decant lines. Agitator shaft & blades very well decontaminated with leather blade giving highest reading (~ 25 mr.).

(c) Dreamed Cell A entire shift — prior to taking survey attempted MT'ing Sump & floor via sump jets. AS-A-5 doesn't appear to be working "atoll" and last minute plug renders AS-A6 unusable. Why wasn't gasoline pump repaired on 8-2 yesterday? Still attempting to MT Sump at Shift Change.

A-Sump L.L. Manometer plugged lighter than a Monkey's a—.

P.S. Why is a Grave-yard necessary at this stage of the game?

→ 7:00 Sump jets MT'd Cell — & L.L. Man. works okeh — "Ookey Dookey". Ready for Survey at 8:00 A.M.

Programs for Tomorrow

① A4-205 line — the valve in pit under HP office window has been removed and the water continues to run back to cell A sump. Keep checking during next two shifts also check if water drains into pit from Christmas tree. Keep pit M.T., pump out water if necessary. 623

② Continue decontaminating Cell A. Concentrate on sump. Get sump M.T. and clean of as much dirt as possible by 8 A.M. So far it has been so dirty that lead burners were unable to get required measurements for new lining. Survey before 8 AM. (whole cell) 1/30 4-1

③ Start decontamination of large fan, try using steam hose through inspection plate. Do not steam cell A while large fan is off.

(625) 1. The first floor can stand some housekeeping.
2. Whenever a print is taken out of the file please deposit it in the orange box on top of the steel filing cabinet and Jackie will file them and keep it in order.
3. When cleaning the Cell A sump don't use much chemicals, use a lot of water and flush out all the gunk you can.

W.P.B.

1/30/46
4-12 Steaming of large fan thru inspection plate on east side of fan housing begun at 11⁰⁰ AM. Fan in use prior to this time to keep cell A air fresh while personnel were in cell A to hose down sump.

All manpower expended in hosing down cell A sump in an attempt to loosen up slime & chemicals etc etc deposited therein and water pumped out continuously. Level of water was never allowed to overflow sump onto floor but hose was played in sump proper and actually a slurry was being pumped. North end of sump came down from 1800 to 1600 mr/hr. Rest of sump

radiation level was lowered from 100 - 150 mr. (Reading now about 800 mr)

Changed piece of equipment in decontam tank in decontam room end for end once during shift.

Took smear counts on flat disc under stairway to low storage area. Highest found was 120 c/m.

Ran test on A4-205 off gas line; jet on, christmas drain and valve to 205 closed, bucket hung over end of line (in pit near HP window where valve had been removed in daytime). Six hours later no water in bucket, no water in christmas tree. Conclusion: line from pit to 205 does not leak.

Some housekeeping done on 1st floor in removed hot equipment, paper, tools etc from main passageways.

12/
1/31
J

12/8
1/31/86
JEG

(1) Steamed cell fan housing for 2 hrs. prior to entering cell. Reading through inspection plate ~ 400 mr/h.

(2) Cleaned Cell A sump via hands and hose. Net result — 1 bucket of bolts, concrete, crud, etc.

(3) Rest of shift steamed cell —.

(4) Results of Test to Determine Leak in A-4 — 205 Line —:
H_2O in Pot at 4 mos. free at end of 5 hrs.
No H_2O .. Bucket in Pot.

(5) Cell Survey: Following hosing down, following steaming.
(1) [illegible] —
(2) [illegible] —
(3) [illegible] —
(4) [illegible] A1 —
(5) [illegible] A1 —
(6) [illegible] A5 —
(7) [illegible] A6 —
(8) [illegible] cell —

See next Page

(1) Entrance at 3' — 50 mr.
(2) Bkg N End of Cell — 140 mr.
(3) 1900
(4) 1450
(5) 1000
(6) 2100 ?
(7) 600
(8) 600

$\boxed{8\ 7\ 6\ 5\ 4\ 3}$
Sump

(9) Bkg. S Cell 3' from A-1 — 175
(10) Bkg. N Cell 3' from A-5 — 240
(11) " " " 3' " A-6 — 220
(12) Top of A-6 (N) — 70
(13) " " " (E) — 125
(14) " " " (S) — 100
(15) " " " (W) — 100
(16) Top of A5 (N) — 75
(17) " " " (E) — 160
(18) " " " (S) — 90
(19) " " " (W) — 125
(20) Top of A1 (N) — 190
(21) " " " (E) — 400
(22) " " " (W) — 190
(23) " " " (S) — 400
(24) Top of A-8 (NE) — 240

1/3
8
DN 4
sta 4
no M
Pow
1/3
4.

1/31/46 [illegible] Tonight

Done 4-12 1. If A9 is moved to decontamination room by 4 P.M., clean it up.

started 4-12 2. Start decontamination of B6 and B3 blisters, use special funnel to cut down exposure.

3. Try further decontamination of hot spots on tops of A1, A8 and A11, there is still too little working time on top of these tanks. There are a few pieces of lead around the building that can probably be used to shield out some of the hot spots that are bringing up the background.

no Men-Power * Remove all unnecessary junk from cell.

The foot-counter is in 717-B for repair will be back Fri. 2/1/46. WPB.

1/31/46
4-12

B6 blister was worked on apparently for the first time since reading at start was 86R. After treatment using funnel with long pipe attached reading came down to 3R. All exposure time used up by this time but squirting with a wash bottle from up close & wet swabs could

undoubtedly bring this down even further

The MF Butchers (see Slattery for definition) who moved A-9 from the 3rd floor really crapped things up. Small bits of gasket were strewn around on the third floor where A-9 had been. These particles of gasket were reading as high as 300-500 mr. This was also cleaned up & a high spot survey was made by H.P. of other suspected parts of the building.

2/1/46 12-8 JEC. (1) Manpower expended as follows:

(A) Decontaminated B-6 Blister.
Initial reading 3R
Final Reading 1250 mr./hr.

The above reading was taken inside sampler blister proper. Reading at 4'-8" ~ 200 mr.

(B) Stacked lead sheeting atop A-1 & A-8 in an attempt to increase working time in this area.

(C) Decontaminated cell fan via steam hose in inspection plate.

Steam is steel on at shift change.

2/1/46 Ball joint clamp from B21 removed, (72R) now in drum in Decon. room, cooking.

2/1/46 Program for the Weekend

Done 4-12 2/1/46

1. Get the off-gas drain over sump plugged so that no water will drain through it. The line will be blanked in outside pit so no water will back up there.

2. The working time on A8 and A11 is still too short. In order to increase it, it may be necessary to pull out gaskets from the tops of the tanks. Try to get radiation on these tanks down as much as possible by 8 AM Monday. Call emergency maintenance anytime they can help you but try to schedule them near end of shift.

maintenance took bolts off all flanges 4-12, 2/1/46 but nothing done to remove hot gaskets or hot spots between flanges due to lack of working time

3. All broken blister doors are in decontamination room, please have these cleaned up for millwrights to fix Monday

Cleaned 4-12, 2/1/46

4. Cell A sump excavation is scheduled for Monday morning, please have sump dry and air surveyed before 8 AM. ///

5. There are some lead skids outside fan house, please pile these around big fan housing to give more working time around bearings.

12-8 2-2-46

Done Do not shut off large fan

Done 2-2-8 12-8

6. Move bunks of hastelloy from east platform to low storage.

Notice

There is to be a supervisors meeting at 2 45 P. Mon. Feb. 4. The following are expected to attend A.C.V., L.R.M., E.J.W., R.S.P., M.L., W.S., A.M.R., S.J.R., + W.P.B. All operators are welcome as W.A.R will discuss his trip.

Cleaned up 4-12-1 2/1/46

The bldg. looks well except the west side of Cell A. Please dispose of what you can.

A simplified procedure for permits to the burial ground which outside the plant area is being worked on so that the guards will not hold up any trunk.

The janitors complain about men rifling thru the stock in both room #6 + #7. Let's watch it.

W.P.B. 2/1/46

Note B 26, Manometer has been cut off on 3rd floor & at entrance to cell.

2/1/46
4-12

Cleaned up as indicated on pages 39 & 40 to limit of working time. Also poured acid on cell A floor, neutralized it in cell A sump and pumped it out. More water later added to cut down radiation.

E.J.W. Please note: A9 reactor, Exit flange on A9 jacket pretty badly banged up. Probably needs to be worked on before installing A9 in cell

Suspect B-3 blister is still pretty hot

Leadishuts on dolly cleaned - ready for use

2-2-46
12:8

A-11 has no gaskets on the flanges. Scrubbed top of A-11 with HNO_3 and hosed from top floor. Hottest point on A-11 now 250 mr/hr.

A-8 flanges worked on to the extent of man power of maintenance.
Hottest points N side - 820 mr/hr
S side 560 "

Lead placed around by fan housing to increase working time.

2-2-46
8:4
STR

We removed gaskets from A8. However, north and west side of A8 read 1300 and 1100. So it would be worthwhile scraping flanges on this side of tank and also using some acid on flanges and on top of A8 (with Na_2CO_3 in sump).

We removed lead pieces from flanges, decontaminated them, and stored them east side of Cell B. We picked up bottles and trash in Cell A, and straightened out Cell somewhat.

We steamed Cell three hours with carbonate. Then treated the floor with acid and hosed down Cell thoroughly three or four times.

2/2/4

H.P. got a hot sleeve knocking against top of A-8 tank. So there may be contamination on the outside of the top of A8.

Cell A readings:

A11 -	W - 230 mr	A8	N - 1100
	E - 120		E - 165
	S - 120		S - 280
	W - 200		W - 1300
	C - 160		C - 180

Sump
N - 1900
C - 300
S - 120

Doorway Entrance - 45 mr.

2/2/46
4-12

Water and acid sprayed on top of A-8 + 11. Highest reading found was then 450 mr on some gaskets on N + W sides. These gaskets were then scraped off and more water & acid was sprayed on top of A8. Reading at end of shift:

280 - Flange N by NW on A8 (highest reading)

There are some pieces of hot gasket on the floor of the cell which probably ought to be picked up. Manpower - this shift all gone.

44

2-3-46

12-8

Scrubbed A-8 with HNO_3 and hosed down.

Bits of gasket and bolts from A-8 flanges picked out of sump.

2-3-46 Most of our manpower was
4-12 expended scrubbing gaskets off flanges on A-8.
SOR Almost everyone who touched A8 got contaminated. So we poured HNO_3 on A1, H11 and H8, concentrating on A8 in particular. We had Na_2CO_3 in the Sump, and hosed the HNO_3 off the tanks PDQ. A8 is reading about as well as A11 now.

Cell Readings

Doorway - 35 mr.

A11 -	N - 150 mr	A8 -	N - 265 mr
	S - 50 mr		E - 85 mr.
	E - 50 mr.		S - 165 mr
	W - 100 mr		W - 165 mr
	C - 90 mr		C - 85 mr.

Sump at 1 foot:

N - 1600 mr.
C - 240 mr
S - 110 mr.

By giving floor an and wash and hosing Cell with plenty of water, you can get rid of Na_2CO_3 in the Sump.

2/4

Some pertinent facts about product carriers:

1. These should not be returned to 706D abnormally hot and crapped up. Higher supervision has failed to require the customers adherance to this rule to the extent that 706D man power has to be sedated to do others' duty work.

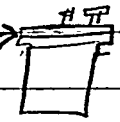
2. After these carriers are returned, hot, they should not be put on absorbent paper prior to decontamination in room 9. The paper sticks to bottom of carrier and has to be scraped off, bit by bit.

3. After carrier is clean, some more easily removable coating than acid proof paint should be applied.

4. The wooden scows have been contaminated from the beginning. Stainless scows, which can be decontaminated, were requested Dec 17. To date no action has been taken.

LRM.

2/3/46 Took some smears in cell A at random
4-12 on the piping over the tops of A8-A11, the

tops themselves, and cell A floor, ladder etc. None of the smear samples were very bad but HP got a spot on his coveralls which jammed the counter. Acid (2 carboys) sprayed around piping and tops of these 2 tanks followed by a water wash. Smeared after this treatment: all OK except flange around A-8 cover → 
gasket here reads 500 mr
Same flange on A-11 OK.

A product carrier was decontaminated and placed in the storage area over the hot labs. The decontamination to be done on the one now in the decontam. room has been started.

There is a hot scow >7R to be buried on the 12-8 shift. Maintenance men had another hot job in the 115 bldg and so had used their working time up.

2-4-46
12-8

Sump and duct emptied.

Maintenance used up their man power working on the big fan. They will leave a note for the 8-4 shift to bump the hot skow.

Decontaminated B-3 sample blister from 4 R to 750 mr/hr.

Decontaminating product carrier with HNO_3 & hot H_2O. Another carrier placed in decontaminating room on a scow which is relatively clean. It is the last one and has been used to carry acid etc to the third floor.

2/4/46 Program For Tonight

1. Large fan oil leak has been repaired, please clean up the whole fan house. Move lead sheets into building so they can be used to cover hot spots in the cell.

Didn't touch on 4-12 see below.

2. The sump concrete has been chipped and radiation levels increased, concentrate on further decontamination of sump, try more soda ash, steam and plenty of water.

3. Decontaminate product carriers and cones now in decontamination room. Store carriers on top of hot lab when job completed.

2/4/46
4-12 Special job done:

Prepared approx 100 cc (supposedly 100 millicuries) of stuff for C building. Solution sitting in cell in special glass cone, plug in carrier.

N.B.

B 8 rinsed out well as per instructions then an attempt was made to see how much of 100 cc of H_2O poured into B 8 rest well + transferred over to B 1, with B 8, actuating wound up in B 1. No increase in probe reading observed. This was attempted several times — no positive

results (i.e, no increase in B1 probe reading showed at any time)

Next 100 cc of water were added to B8 rest well & transferred to B17 and probed. Calibration chart showed approximately 95 cc. This was transferred to B6 which had previously been evaporated to dryness - allowed to remain in B6 about 5 minutes.

From B6 the soln was drawn into B11. At this point B11 worked very slowly which led to speculation as to how many liters were in B11. Solution was watched closely thru scope in N wall while transferring to B23 with the intent of stopping the transfer when about 100 cc (pure guesswork) had passed thru. 100 cc thru and B11 showing up empty occured simultaneously leading to conclusion arrived at in beginning of paragraph.

Cone was dropped and liquid level in glass cone approximately 1 1/2 inches from top of special glass insert.

Appearance of liquid going to B23 — viscous, amber colored with a greenish tinge.
Product carrier dropped into cell

was painted with a coat of Tygan paint. Left in cell as per verbal instructions from WPB given at approx. 7:30 pm

Can of hot concrete chippings in cell A removed from cell with intent to bury (verbal instn from day shift) However after it was removed from the cell it didn't read over 100 mr at 1 foot so it was put on the trash station for the daily 1 PM pick up.

Sump filled with a layer of conc Na_2CO_3 & NaOH.

2-5-46
12-8

Sump hosed for two hours after NaOH & Na_2CO_3. Tri sodium phosphate & steamed 2 hrs. Hosed & emptied sump. Pump didn't work well toward end of shift.

Fan house scrubbed with T.S.P. and hosed down. Lead sheets taken from the fan house & on west side of cell A.

Carrier given HCl scrubbing 3x and rinsed with hot H_2O Also allowed water to run over

the carrier for several hours.

2-5-44 Decontamination room was cleaned
8-4 up except for jets to A9 tank, two carriers, two cones
SJR and an air hammer. The air hammer is soaking in
HJS soda ash. Neither of the carriers is contaminated much but you cannot do any work on them until you cut down radiation background due to hot cone in south decontamination tank. We just got this hot cone back from 706-C and stuck it in the decontamination tank. Hottest reading thru the tank is 15R. General background in the center of the room is 300-400 mr. We are sparging the cones in warm 60% HNO_3 through shift change. Suggest that you drain off this highly contaminated acid solution, rinse thoroughly and add peak acid. Then you can go to work on the carriers, as the background will probably be down low enough.

Allow the air hammer to soak in the carbonate soln. until 8-4 shift tomorrow.

Hot area around cubicle has scrubbed with TSP + Lanoklean, hosed down, & squeegeeed. H.P. has survey of area prior to this last decontamination attempt. Would the on coming shift survey this area to determine any decrease in radiation after washing?!

52 Program for Tonight

2/5/45 ① Keep water out of cell A sump. There is fresh concrete there.

② Decontaminate lines to W9 or W11 or both. These are contributing to high activity around sump. Cover pipe with lead if necessary, no lead over sump

Some lines tagged on 4-12 ③ If time is available, trace all A9 lines from PB-2 to cell, tag each one inside of cell wall.

See note on page 51 ④ Try to complete decontamination of air hammer by 8 A.M. Use no acids other than citric.

Pressley There is a memo for you to read on WAR's desk, please sign if you feel so inclined.

All manpower expended as follows:

2/5/46 4-12 Hot stuff in decontam tanks (15R) was brought down to next to nothing in radiation, smeared low + so was stored.

Hot carrier in [illegible] also cleaned up, [illegible], moved to storage.

⑧ tags hung inside cell A to identify some of the A9 [illegible] lines [illegible] in the cell for any further work of this nature (Special note left for WPB)

HP surveyed area around lead cubicle - still hot as hell - passage commonly used alongside roped off area gives you a full tolerance dose (12½ mr/hr).

Several of H-12 personnel got hot shoes this shift (190-200 mr). Suspect a pair of rubbers left around hot as hell. We tossed all rubbers and gloves laying around the first floor into the contam cans since the laundry had sent back a fresh supply today.

2-6-46
12-8

Placed lead on hot lines to W9 + W11. Back ground down by a factor of 4.

Decontaminated carrier and placed in storage.

Tagged remaining lines on A-9, inside of cell wall.

HP has complete survey of cell A.

2/6/46 Program for Tomorrow

1. Keep water out of cell A sump, fresh concrete.
2. Clean up all junk out of cell, put all pipes on E. platform, do not throw any away. Pick up all nuts and bolts and put into bucket provided (it is now in A1)
3. Clean up building in general.

2/6/46
4-12 Most of the loose material removed from cell A, except ladder and lead. Now on last platform — hope it doesn't rain before morning.
M.L.

False flooring above cell B scrubbed, found it roped off.

2-7-46
12-8

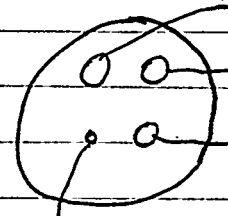
General housekeeping.

2-7-46
8-4 L.L. Fairchild and D.C. King:
SJR Medical called and said that you were overdue on your blood count check-up. You had better drop by Medical and get this straightened out ASAP.

2/7/46 Program for Tonight.

1. Get every bit of junk out of sump, new lead goes in tomorrow.
2. Start calibration of all A9 lines. Pick out a total draw-off line, get the heel left by it and calibrate all other lines.
3. Clean up wet floor areas
4. Do not throw away any papers.

2/7/46 A9 calibration (preliminary)
4-12
m.L. Nozzle J. –



180cc heel (A9-B31)
200cc heel (A9-B26)
100cc heel (used as standard) (A9-B12)
A9-B1D
715cc Heel

A9-A8DA - 7670. cc heel
A9-B1D 1330. cc heel
A9-A8C 80. cc heel
A9-A8DB 140. cc heel

Nozz. B

short
log 650cc heel
Med 4800 cc heel
log 560 cc heel

suggest that when maintenance men are done with A9 that it be torn down + cleaned — ~~so~~ stuff sucked out was green, had a ppt + sand + was generally crappy.

2-8-46
12-8

Cleaned out sump.

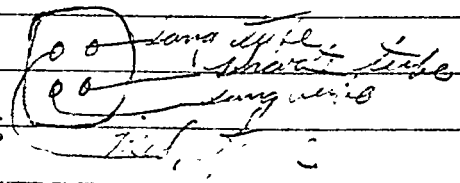
House keeping.

2-8-46
8-4. Rechecked A9-A8DB heel, assuming A9-A8C heel to be 80cc.:

heel:	1200cc	1230cc	1195.
	1250	1140	
	1250	1195	

Since tank is not level, results are slightly off.

No 2. B.



see tags on tank for re calibrations.

2/8/45 Program For Weekend.

Done ① Haul all loose concrete and dirt swept out of sump.

Running H_2O thru W-11 line 8-4, 2/10/46 ② Try flushing out W11 and W9 lines to bring down radiation levels around N end of sump.

Done/ ③ Build lead sheet shield around N end of large fan housing so that leaking oil can again be fixed Monday.

Done ④ Relocate trash stations on E platform. Hot trash on NE corner of new platform. Cold trash and trash box on SE corner of new platform. Empty barrels where trash stations are now located

Done ⑤ Clean up whole building. Throw out material that is obviously junk, save all pipes on east platform, these will be assorted next Monday

Phy AW-B9 checked 8-4 2/10/46 ⑥ Check all A9 lines and tag inside cell; some are now tagged wrong (rumor) check all from PB in. (own)

done (7) Check all periscopes, tag if ok or in need of repairs. 2-12 N.

2/8/46 Put up lead to shield bearings at big fan.

4-12 M. L. Dismantled platform used for A9 assembly, lumber out on E. platform. 8- LR

Removed reactor from cell I, and then broke it while trying to decontaminate it. Now reposing in coffin near cell I so "wheels" can see it if they want to (on Monday) — reading of 35 mr at coffin so figured it was not a booby trap. E

"Infernal Confusion" motor on the emergency generating unit all fouled up, sometime in the past it froze up, soft plugs were pushed, and coolant drained out. Tonight the power failed + unit started up. We heard a slight noise, like an empty ball mill in a boiler factory — the motor pounding itself apart, it was so hot it kept running even with the ignition off, finally shut off by stopping up air intake. 4-1 m

Reported to Maintainence, they said they couldn't fix it but they reported it to Transportation, who fix motors, should be a mechanic out tomorrow to fix. Aren't these units supposed to be inspected regularly?

2-9-46
12-8
N.S.

Sump cleaned out. N end still reading 110 mr/hr. (about 2" from floor).
Followed through on program for week end.

8-4
LRM

Scopes checked, cleaned. Small scopes hard to get at hot spot around mirror. Put back in use. The large scope in hole at N. end of cell A was cleaned & new window put on;
EJW → the revolving mirror does not work well.

" → Steam leak on drit water ap.
Leak in HNO_3 valve to T9. Need lead
" → work under this valve to prevent drips on 3rd floor.
" → Leak in T-7 line.
" → Leak in NaOH line M3 → T6 at 3rd level.

500# HNO_3 put thru W9 line.

4-12
M.L.

Started to remove cond filter from cell IV — contamination on outside door of 20-R. Postponed until lead floor is in place as cleaning is probably going to crap the area — most of the contamination being on the bottom of the door.

8-4
2/10/46 Replaced concrete plugs in cell walls where possible, cleaned up contamination + rust spots around plugs.

Changed tags on plug AW-39 piping inside cell A. so that now tags read same as sheet record sheets.

Took smears all over building - O.K. (about 70)

Did general housecleaning.

4-12
2/10/46 Changed tags on AW-B9 back to correct status — this is second time we've done it in the last couple of days, sheet record is not up to date with present maintenance job.
M.L.

New Off gas line trench pumped out so as to make it accessable to maintenance in A.A. — seepage slowly filling it however so it will probably need pumping again before morning

Motor on Emergency generating unit has had soft plug replaced + now full of anti freeze (it says) [done sometime in last 2 days]

Monitron at glass P.B. not working — again.

2/11/46

8-4 Pumped out cell A sump with vacuum pump to allow more time to work on it.

There is a row of slightly hot stuff & of material of awkward shape on the east platform which probably should be buried on one of the off shifts.

Started to clean up area behind PB-1 when it was noticed that a union in line M1-A5 (plug A10) looked as if it were leaking. Honorable Sahibs asked to have it tested but not while maintenance men were in cell A which was all day. Should be tested on one of off shifts.

8-4 Program for Tonight

1. Scrub, scrape or sand down all corrosion from cell A conduits in preparation for painting.

2. Bring in pipe from E platform to building, store in some convenient spot and rope it off. These pipes are warm and spread contamination during rain. OK

3. Check sump before 8 A.M., if there is any water there, remove it by using vacuum and large bottle.

4. Clean up building, east platform. Check east platform for contaminated material and put in in but barrels or send to burial ground if necessary. 2-1 12- WJ SJ

EJW

Avoid, if feasible, using the two skids with the new wood until the stainless tops + skirts arrive. They've been ordered.

2/11/46 4-12 M.L. We wouldn't mind burying the stuff you left — except — day shift is the only time it's possible to get to the new burial ground. It requires Capt. Grafton's signature or equivalent and such wheels are not around on the "off shifts".

Leak in M1 - A5 line is reality — was reported in fact on 12/16/45 (see item 40 in report book). 2/

Pipes moved from E platform to behind Cell B.

Platform checked, no appreciable contamination H.P. says.

Wire brushed and then painted with glyptal to extent of manpower, mainly junction boxes on tank tops. A5 agitator motor worked on some.

General Housecleaning

2-12-46
12-8
WJS
SJR

Conduits scrubbed in Cell A; respirators were worn. Suggest cell be hosed down as soon as possible to prevent these scraped paint particles from contaminating personnel, of course after lead sump has been installed

As long as can does not read 100mr/hr at one foot, it need not be disposed of by Operations. Regular Maintenance pick-up service will take care of it. We could not find material of "awkward shapes to bury. Patrol said that they would let us through the gate to the new burying grounds if we had anything to bury. A procedure ought to be worked out with Patrol department to bury hot stuff, if burying is required on the night shifts.

2/2/46 ① Please continue making 4-12 check of all safes, the guards found the safe open last week.

pad ② Paint all valve wheels in building. Paint and brushes are ready over hot lab.

③ To remove hot material to burial ground it will be necessary to fill out a package pass only (latest set-up)

④ Work has been started to reduce radiation levels in sump, please continue add more lead shielding. Try to

shield the hot betwee cells and any other place H.P. man finds hot. It is ok to lay lead brick in sump as long as the seams are not covered where lead burners must do their work.

(5) Continue painting rusty conduits in cell A if manpower is available

(6) Please!!!! — Clean up the building, it looks not too bad but has been better just a short time ago.

Red (7) — Please try to get rid of hot box and stuff — see if the new system works.

(8) Cover up roof opening to Cell A

(9) Check A5 agitator and small spare blower (Run A5 agitator until 8 A.M. and blower for several hours)

2/12/46 Put in a little time placing lead for sump shielding.
4-12

M.L. Painted valves on PB's and elsewhere.

Per item 7 above, ~~[illegible]~~ removed hot box and one truck to burial ground - if interested in reclaiming truck send safe to do so, also might be a good idea to buy the box, we didn't do it as there is at present no hole or trench at the burial ground - good thing we

took along K rations to keep us going on the walk back.

Bob is now sitting on scrap lumber just north east of concrete mixer.

replaced cell A roof plugs.

Small auxiliary fan only runs for about 3 min before kicking out. Tried to start it 3 times without success, sounds like a small thrashing machine when running.

I-13-46

12-8

SJR &

WJS

More lead was laid in the sump.

Contaminated lead removed from cell, decontaminated and stored. Then cell was swept thoroughly. West side of A1 is reading 1.7 mr. Cell is clean now. All unnecessary lead should be removed from cell from time to time, decontaminated and stored, after it has served its purpose.

One sheet of lead in the decontamination room should be treated further with acid to cut down activity and then stored.

Suggest concrete pad be placed in Cell-H.

Program For Tonight

1. Please read UAR's memo on trash disposal. One reason for our getting poor service on removal of trash is the fact that we do not follow this procedure. All cans must be covered. Do not throw hot material into trash box and do not throw bottles and all other small junk into box.

2. Start testing cell A pipes for leaks, Leave a good record of all leaks located and tag each. Look for any other irregularities in cell equipment and record same.

P.S. — A9 jacket services and jet A9-A8 DA are not yet connected.

P.P.S Blow down headers for 15 min. before using jets.

4-12 shift 3. Please remove rat's nest around water still.

OK

4-12 4. Nail up restricted area signs.

OK. 5- Continue work done in decontamination

4-12 room on last 12-8 shift.

H-12 2/13/[illegible]

A [illegible] leak test.
A1 Sparger OK.
A1 – W9 OK
A1 Jacket OK
ok A1 – A9A leaks at elbow behind PB1 & N side of steam pot
ok A1 – A11 leaks at weld on top of pot S. side
ok A1 – A6 leaks at steam entrance to pot
A1 – A9B OK.
A5 Jacket OK.
A5 Steam sparger OK.
ok A8 – A5DA Cap on pot plugged.
A8 – A5DB OK.
A5 – W11 OK.
A5 – A5B OK.
ok A5 – A6 leaks at weld on top of pot E. side.
A5 – A5A OK.
A6 – A5 OK.
A6 – A6 OK.
A6 Jacket OK.
OK A6 – W11 leaks at bottom of pot S. & E. sides
A6 Steam sparger OK.
A9 – A11 OK.
A11 – A5DB OK.
A11 – A1 OK.
A11 – A8 OK.
A8 Jacket OK.
ok A8 – A9 leaks on pot N & E side (Valve open 65 #/psi)
A8 Sparger OK.
A8 – A8 OK.

68 A5 - A8 OK
A11 - A9 OK.
A11 - A5A OK.
A11 - A6D leaks at all fittings at Pb #2
A11 jacket belts out of outlet flanges
A11 sparger leaks at Pb #2 at elbow.
A9 - sparger - OK.
ok inside cell. A9 - A8DB leaks at all fittings at Pb #2
This cap on steam pot should have larger hole, pressure drops off too slow.
A9 - A8C leaks at valve Pb #2
pot cap ok only. A9 - B26 leaks at pot top side at weld [illegible]
A9 - B1A OK.
A9 - B12 leaks on top of pot S.E.W side
pressure goes up slowly
A9 - B1DD pressure goes up very slow
A9 - B1DC " " " " "

2/14/46 Program for Tonight

1. Cover 2nd seam (from S end) of
done new sump with lead brick. This is one
of the hottest spots.

2. Check transfer rates of new jets
A9-A8DA and A11-A6D. Report results

H-12 OK 3. Complete checking all cell A pipes
for leaks (include scrubbers
and condensers (A is now all [illegible])

4. Check operation of auxiliary blower
in fan house for several hours. Report
results of check.

5. Leave A9, A8 and A11 absolutely dry by
8 A.M. (Heat with jacket steam for several
hours). This is for checking instrument lines.

Done 6. Clean up all junk, pipes etc in cell A.

H-12 OK 7. Check all tags on lines to E+W wall cell
A by tracing lines from PB-2. Make
all necessary changes and tag new
lines.

Please — try not to
rest too heavily on cell A pipes
thus causing new leaks.

70 H-12 2/14/64

Recheck on repaired jet lines.

OK A1 - A11
OK A1 - A6
OK A8 - A5
OK A5 - A6
OK A6 - W11
OK A8 - A9
OK A9 - A8DB
A9 - B26 steel leaker at weld 2" from entrance to steam pot also on Discharge end of jet where union is connected.
OK A9 - A8DA
OK A9 Gasket
A1, 2 & 4 coils & A2 Gasket should be connected before testing.

Note

A9 liquid level manometers not working ∴ A9 - A8DA transfer rate could not be checked.

Auxiliary blower OK at 8:00 PM. It is still running.

A-11 - A6D checked for transfer rate 2X - 9 gal / minute.

2-15-46 Auxiliary blower was found not
12-8 running. The switch was off. Somebody on the last
SJR4 shift probably shut it off near the end of the shift.
WJS We started the fan, but shut it down due to unsatisfactory operation. Fan seems to be scraping somewhat, and shaft also may be binding somewhere, giving the screeching sound that we hear.

2/15/46 Program For Tonight

1. a) Check calibration of tanks A8, A9 and A11. Check several points to determine whether or not new calibration charts are in order. Check records for heels left by total draw-off jets and use as reference jets. Report results.

2 b) Check specific gravity factors on tanks A9 and and A11 by using HNO_3 of known gravity and calculating it. Both are under 4.0 so that water cannot be used.

2. Flush all tanks thoroughly with HNO_3 and jet through all lines, check for leaks.

3. Check transfer rates of jets A9-A8DA and A11-A6D. Report results.

4. Start from scratch on getting all tank nozzle records Saturday, Levenson will start the job, 4-12 shift please carry on where he leaves off.

→ 5. Please make sure that sump is

P.S. — Shut off headers to keep water from leaking into sump.

dry by 8 AM Saturday and Sunday. The bad burners will be in on both days to work on sump.

6. The auxiliary blower is now running. Let it run until 6 PM tonight then check its operation and shut it off.

Notice:

Beginning Feb 21st and every second Thursday at 3 PM thereafter a meeting of all 706D supervisors will be held. All supervisors and all 8-4 and 4-12 shift operators who can make arrangements to come to these meetings are urged to attend. The 4-12 shift operators who do come early to the meetings will receive overtime pay.

No meetings will be held during a run but will be resumed the first Thursday following its completion.

4 - 12
2 - 15 - 46

Checking calibrations

A-9 A9A8C Total draw off. Chart

H_2O added #	Manometer Reading	Pounds H_2O
30	9"	31
50	13.5"	50
500	49.5"	500
650	56.0"	650

A9-A8DA jet rate 450# in 7.5 minutes = 7.2 gal/minute.

A-8 calibration check

100 #	2"	100
300	10.5"	310

total draw off A8-A5-B

A-11 calibration check

100	4"	100
300	12"	300

A11-A6D jet rate
200 # in 2.5 minutes
= 9.6 gal/minute.
A11-A8 total draw off.
We called 105 instrument to come down and zero the manometers as they were off.

Checking sp. G. manometer
on A9 and A-11
Sp. G. acid used 1.383
A-9 Sp. G. reading 5.380
Factor 3.9

A-11 S. G. reading 5.080
A-11 Factor 3.67

Auxiliary fan was hot
and noisy. Called maintenance
and they are going to overhaul
fan on day shift.

Checking equipment with 60%
HNO_3
A-11 - A5 B OK
A11 - A1 OK
A11 - A8 OK
A11 - A9 Leaks on inlet &
outlet of steam pot on welds.
also on suction flange Leaks
on flange on steam line.

A-11 - A5 A OK
A11 - A6 B OK

Tanks A-9 - A8 and A11 contain
60% HNO_3 for testing.
A-6 has small amount of 60% HNO_3

2/16/46

12-8 Following jets on A1, A8, A9. Tested for leaks.

A9-A8DA OK
" " DB OK
" " C "
A8-A9 "
A8-A11 OK
A8-A8 "
A1-W11 "
A1-A9A - Leaks at N side of pot at inlet
A1-A6 OK
A1-A9B "
A1-A11 "

All vessel jackets & A2 jacket tested under water pressure - no l.l. increase observed - apparently no leaks.

Acid is now all in A11 (60% HNO_3) except for 15 in 60% HNO_3 in A6.

Sump in cell A pumped dry with vacuum pump.

Cleaned up used rubbers & gloves around cell A entrance & did housekeeping.

I note a conflict with classes for the 3 00 PM meetings on Thursday. Is there any objection to Wed at 3 00 PM?

No/Sec WAR.

O.K. AWR
O.K. M.L.

2/16/46
8-4 Flanges traced out, list on separate sheets now on E J W's
M.L. desk.

Hot pipes etc. left in Decon room by previous shift, cleaned and disposed of.

All tools removed from cell, now in M1 being decontaminated — we hope.

4-12
House keeping - polished the chairs

2/17/46
12-8 Cell A sump is dry as of 6 30 AM

Checked rubbers — several contaminated pairs found — removed to contaminated clothing can in room 8.

Checked tools in cabinet in shift office with H.P. representative. Several warm ones found - added to those reading in M1. Also spot in cabinet (in shift office) was found reading +0 mr. cleaned with acetone - OK. now.

2/17/46
8-4 Started bringing records up to date. Starting from
M. L. scratch. Now working on sleeve record, on clipboard on
desk in SS office. Pipes numbered left to right in each play

1 2 3 4

2/17/46
11-12 Finished sleeve record of BW-BN
& BE up to date. Except behind
Cubical.

2/18/46
12-8 Cleaned up debris from cell A sump &
straightened up cell A in general

Had maintenance change a 25# pop valve
on low press (25#) line in S.E corner third
floor. Condensate was blowing out vent pipe thru
roof and leaking back in causing a mess. (Late
flash! — the pop valve leaking again at 7 15 - called maint).
Pumped off gas trench dry for any maintenance
work today.

To All

Operating Manual
outline is on Bulletin Board for your suggestions and study. Please supply YOUR part legibly written for typing (no abbreviations, etc.) in well organized and sub-divided paper

LRM.

2/18/46 Program For Tonight.

Done 1. Clean up fan house floor. Check bearings periodically for oil leak.

Done 2. Build lead shield around new off-gas line exit from cell wall, one brick thickness should be sufficient.

Done 3. Check that all bolts on transfer line flanges and nozzles are tight.

4. Clean up the joint.

Note:
Meeting will be held every other Wednesday at 3PM meeting of Thursday. Everybody happy?
Yes! AmR.

2-18-45
4-12

See Program.

80

2/19/46
12-8

The manual prop pump (forced oil lub for all four bearings) on the cell fan developed a bad motor late on the 4-12 shift yesterday. Maintenance changed the motor. Cell fan running again & being checked periodically for oil leakage.

Cleaned up all A sump somewhat.

2/19/46 Program For Tonight

1. Remove bricks from N sump also remove lead bricks and sheet lead covering waste lines over N end of sump only (for installation of sump jets). Restock hot barrel, junk and scrap piping from cell, check tank tops.

Done

2. Start final testing of all lines. Use and fill out forms attached to clipboard.

started

3. Have pit outside H.P. office M.T. by 8 A.M.

done 4-12

4. Keep in mind — 1st supervisor meeting tomorrow afternoon at 3 P.M.

2-19-46
4-12

Moved bricks away from N. end of sump. Not sheets covering waste lines.

Maintenance installed line to sump or set discharge from duct to sump.

Pumped out pit outside of H. P. office. Better check as it is seeping into pit.

Started final checking of all lines.

2/20/46
12-8 Removed bricks & sheet lead covering waste lines in N end of sump. Cleared up debris from sump leaving lines which may be ~~needed~~ for installation. Lead removed from sump was decontaminated and removed to storage.

(2) Pumped out trench for new off gas line just before shift change.

(3) Tested A-10 & A16 - see data sheet on clipboard for remarks.

2/20/46 Program for Tonight

1. Check transfer rates of all cell A jets, record on sheet provided on clipboard. — Done 4-12

2. Remove all lead pipes and crap from cell floor and sump. — Done 4-12

3. Check operation of all samplers, unplug if necessary. — Done 4-12 A-6 bad shape

4. Clean out spare make-up tank and head tank. These tanks will be used for H_2SO_4 in the future. — S/: 12

5. Clean out H_2SO_4 make-up tank and head tank. These will be used as spares in the future.

6. Put new vacuum line in operation and check vacuum for next 16 hours. — ✓

7. See enclosed housekeeping inspection sheet, take care of as many items as possible. — ✓

2-20-46 4-12 SJR [illegible]

Removed Pb sheets from cell A. It seems every time the same thing we take them out some else puts them in.

I hope that preliminary operation of the new vacuum line is not indicative of future behavior. When we opened the vacuum valve at the Xmas tree, we could hear condensate pouring back into the condensate pot. We drew

some of the condensate out into the small glass ... noticed that it was very muddy in appearance. Highest vacuum on A1 was 6 inches. It fell to 2 inches and came up to only four inches where it stayed constant. We jetted new condensate pot empty to bring vacuum up to four inches.

Transfer rates on all Cell A jets except those going from A9 to Cell B were obtained and recorded.

5/21/46

12-8 Spent greater part of nite cleaning up H_2SO_4 tanks. Head tanks T_3 & T_4 clean, M6 also clean. M8 had to be emptied with a vacuum pump, H_2SO_4 in it was a bright green color. Never did get the water coming out of M8 really clean after the valves in the pit were broken loose. Might be a good idea to boil water in M8 to clean it. Also why was the acid a bright green color, Steamed M-9 & it broke loose.

Steamed M7 but couldn't break it loose. M6 cleaned.

The jet from the pot by the H.P. window to W11 may have something to do with poor vacuum in A-1. Might have to put a valve in the discharge side of the jet line. If that doesn't do it then probably a leak somewhere in the new line.

The steam lines in the S.E corner, 2nd floor were leaking water all over the place again.

Shut off the 2.5# line and apparently stopped any more water from getting on the floor. The 1/4" basin line inside the roof work may have something to do with this.

Did housekeeping on third floor.

2/21/46 Program for tonight

1. Check new off-gas line again. This time try it with water in A1 and enough water in sump to cover A1 overflow line. Add water to sump with chore and not the line ordinarily used for water addition (now covered with fresh concrete).

Done 4-12

2. Clean M8 by steaming until water comes out clean.

Done 4-12

3. M7 was reported plugged. Try to unplug it, call maintenance if necessary.

Done 4-12

4. If instrument lines are fixed by 4 P.M. calibrate cell A sump and post results. Check sump gets.

Done 4-12

5. T6 (NaOH storage) is undoubtedly again full of crud. Clean it by steaming until water is again clean.

done 12-8

6. Paint new valve wheels in decontamination room.

done 4-12

7. ~~Move tank 9~~ and scale away from hole in lead floor. Lead floor will

be repaired tomorrow.

Partially done 1-8 [illegible]

8. Top of B6 probe is reported to be 2.5R. Please check and see if anything can be done to correct this condition.

Done 4-12

9. Throw all pipes on E side of cell A to corral (call maintenance to move them). Also throw old pipe on E platform in same place. Salvage all bolts and steam pots.

Done 4-12

10. Check discharge lines for leaks, they have not been completed, see clipboard.

2-21-46 4-12 SJR+ WJS

M7 was unplugged by steaming a short while. M8 was cleaned out.

Flange on top of T-6 was broken + tank steamed until condensate came out clear.

Junk from E end of cell A was removed to corral. Some of the flanges were warm.

The T-9 + scale was removed away from hole in the lead floor. The wooden platform was broken up + discarded. Since the weight of the T-9 + scale was removed from the lead floor liquids have a tendency of seeping under the lead with subsequent leaking onto the second floor. Watch this until floor is repaired.

Discharge lines were tested for leaks.

With sump full of water vacuum in A1 was 8". With tank holding 22 inches water, vacuum in A1 went up to 13 inches. On the west

side of A1 one of bolts in the top of A1 tank needs tightening. Few can hear a hissing sound close to the bolt on west side of A1.

Drain or vent at S.E. corner of the building was cut in two places and flown out with air to unplug the line. The drain line was plugged somewhere between first and second floor. A new union was installed. Drain should be working satisfactorily now. 2/

2/22/46
12-8

All manpower used up in working on B6 probe. Nitric acid was poured on hot spot halfway (4-5 feet) up probe + allowed to drain down being caught in a special can apparently made for that purpose. Due to uncertainties as to what would happen to bucket probe tips under the action of HNO_3 = the probe was given a water wash + this was also collected. Hot material <2R was disposed of in decontam room.

Survey of probe now shows: still hot as hell.

Painted valves in decontam room but this job will probably have to be redone since valves were needed before paint was dry. 4

Found water dripping all over S.E. corner of 3rd floor again. Found 25# ~~gage reading~~ on scale (over 30#) Should have ~~pressure regulating~~ valve repaired on the 25# line. Believe this is the

Checked A4-205 off gas system. Drained Christmas tree & noticed that water coming out of it was muddy. Could also hear a gurgling sound coming from new catch pot located by H.P. Office.

5" water in A-1 gave 7" of vacuum

13" water in A-1 gave 12.4" of vacuum

2/22/46 Program for the week-end.

1. All leaks inside of cell are now supposedly repaired. Run a check on all leaks recorded on clipboard which have been fixed today.

2-23 2. Calibrate sump instrument levels.

3. There are 6 S.S. gaskets which are to be installed into cell A flanges for testing purposes. Pick out 6 flanges that may get the most contamination and have shift men install these. The A9-A10 flange would probably be one good one. The gaskets are in desk at cell entrance. Leave record of the flanges used.

4. The new B19 heater is ready for testing. Run 2 evaporations using heater #1 (old heater) and 2 evaporations using heater #2. Keep data on sheets attached to clipboard. Start the heater #1 runs first and when you're ready for the other heater get maintenance men to shift the blank in flanges on heater. If there is any question about operation

4-12 started

Done

88 of these heaters, give me a call. Use 1% $BaCl_2$ soln. 200 cc

Done 4-12 5. Remove all vent plugs on PB1 and PB-2 and install valves on jets A11-A6D and A9-A8DA.

started 4-12 Done 6. Drain out and clean with steam M10 and M11. Check that all lines are clear and ready for operation.

See next page 7. If platform for T9 is completed by 4 P.M. move T9 back where it belongs.

Attempted 4-12 8. Maintenance work is now practically complete, clean up building, store all equipment in its proper place. This

9. includes east platform and ledge on east side cell A.

Done 8-4 9. Police area outside of building store ~~gas pump on east platform etc.~~

10. Check operation of all cell B jets. Do not use more than one vessel full of water to run all tests. Do not jet anything to cell A.

11. Check stationary and movable pipette operation. Please be careful

Red 12. Give with your energy on getting glass equipment in shape for next run.

Done 8-4 13. Check all cell B samplers.

Done 4-12 14. Get maintenance to repair steam leak in 125# header S.E. corner 3rd floor and replace ~~valve between T3 and T9.~~

Once transfers in cell B are started, do not enter cell A without checking background. Place a stool somewhere in cell to use as reference point during and after cell B transfers. (use no more than one jet at any time.

Please add file cabinet in Kaskie's office to 4-12 Shift Check [illegible]

WAR

4-12
2-22-46
SJR
WJS

Replaced 2 S.S. unions; A5-A8 on discharge side + A11-A8 on inlet side. All are leaks required in Cell A. ??

Vent plugs removed on PB-1 + PB-2 + vent valves installed A11-A6D + A9-A8DA.

Steam leak at valve of the 125# header has to be repacked. Could not get to it on this shift.

Maintenance brought in a platform for T9 but it was one inch too high, requiring an adjustment of forty pounds on the zero point. The platform was three inches high instead of two inches. McManus, maintenance foreman, will try to have the carpenters make up another one on day shift tomorrow.

M10 and M11 were drained all 2/2
shift to pit in make-up room. The tanks are 12
empty now, and require steaming and flushing with m.
water.

First evaporation was started at 8:00 P.M. using
Heater #1. One liter of 17% Br_2 was made up in
the lab. and is now on the third floor on lead tray
where graduates are kept. This should be enough for
four runs. The first evaporation is now cooling
down, and is ready for inspection. Flood lights in Cell
B are burned out, but you can still operate.

Water was found going into mist
eliminator (cyclone) and thence draining out through the
small s.s. fan. When water is turned into this
cyclone to decontaminate the small fan, each shift
should turn it off prior to shift change and let
the next shift start it up. One of these days somebody
will turn up a motor or twist a fan all to hell. The
stand-by fan may also have water in it now,
causing erratic operation.

All reported Cell A leaks have
been tested and fixed. There are supposedly no
leaks in Cell A now.

Just turned off — switch at P.B. J. (3rd fl.) — Kept off
when not in use to prevent the curious from leaving
them on at switch at stage.

2/23/46
12-8 steamed out M10 + M11 4 Hrs a piece
M.L.

Dropped cone left cooling at shift change — all solution still in it. Raised it and reheated — used 0.25 — 0.30 inches of gas flow as no standard was specified in instructions left. After 3 Hrs it was dry. at present is in carrier at foot of chimney — started to bring it out for run 2 — 250 mr at 6 ft — no manpower available see next item — so lowered back down again.

Opened cell IV, removed and buried crud filter — reading 1400 Mr at 6 ft from the coffin. Seal bots clamps, tongs etc all in decontamination room — We haven't no more exposure coming Nohow !!

Help in cleaning up cell IV prior to new installation is Hereby solicited. There is one warm spot on the bottom of the lead door — about center — it can be located with the 100R probe — and then the cell gages. Recommend using paper spread on the lead — it would be a shame to have to replace the lead so soon.

2-23-46
8-4 Sump A operating level 6"
Overflow sump 7"
Complete flow coverage 10"

Water to cell A sump
See Note 1 on P. 84. AE-C5 does not put water in cell A sump. No further check.

2nd evaporation on heater #2 in progress. 2/2 12 m

S.S gaskets will be installed on day shift tomorrow.

M10 & M11 steamed and sparged with about 10 inches of water in them. Solution coming out still black probably needs another treatment. E

Electrician fixed lights in cell.

2-23-46 4-12 SJR and WJS

A hole was blown out of the S.E. corner of Heater #2, causing a loss in air pressure across the heater which kept kicking out when it overheated. We shut down the evaporation, and pulled the carrier out of the Cell and put it in the decontamination room. The cone and adapter are soaking in 60% HNO_3. The carrier has two hot spots on it which will require Tygon thinner to remove. 2- 4 5 1

Decontamination room was straightened out.

Steam leak at S.E. corner of bldg, 3rd floor, was repaired.

M10 and M11 were steamed some more. Tanks are about clean now.

Maintenance did not show up with new T-9 platform.

2/24-46
12-8 Tested B7, B8, B11 - all working at the moment.
M.L.

Decontaminated tongs, clips, seal box etc. left over from filter removal job of last night

8-4

Checked samplers.

B-9 OKay

Worked on cell 4 door and ledge.

No gaskets put in by maintenance.

House keeping on outside of building.

2-24-46
4-12
SJR &
WJS.

First floor tidied up.

Cell IV was opened up, but no cleaning was attempted since it did not look as though we could do much good. Reading at a foot is about 7 R. At five feet it is 500 mr.

[illegible] handle [illegible]

[illegible] has [illegible] Gasket [illegible] [illegible] that [illegible] gasket [illegible] work [illegible] flat flange. Ring gasket

are supposed to be installed in grooved flanges. ??

2/25/46 Expended full manpower on cubicles. Cleaned
12-8 ball joint in cell I — removed old springs etc.
M.T. Spent rest of manpower on Cell III — cleaned door from 4R at 6" to ~700 mr at 6"

Coil in Bldg Heater sprung a leak again — Instrument shop and room 8 sort of moist. Steam shut off at present.

Shift pipfitter fixed a couple of the steam leaks in Decon. Room.

The six S.S. gaskets installed as follows:
1. On A9, line A1-A9A
2. ~~On A9, line A11-A9~~ On A11, A11-A16 line
3. On A9, flange A9-A10
4. On A9, overflow
5. In line A4-205, on N. side of valve
6. In line A5-A3, on N. side of valve

Hope this is satisfactory

2/25/48 Program for Tonight

started 4/12 1. Start dummy run. Run books for batches A and B are ready. Use the slugs on 3rd floor, 212 slug equivalent.

done 4-12 2. Get maintenance to unplug the following jets at P.B. B1-B26, B1-B12A, B3-B10B, B3-B1.

4/12 done OK 3. Check operation of A9 contact microphone

being done 4-12 4. Check lines for leaks while making dummy run transfer.

4-12 done 5. Check NH_3 tank, probably MT.

6. Please spend as much effective time as possible in decontaminating cell IV (cond filter cell). Red suggests using swabbing method rather than spraying. It is less likely to spread contamination outside cell.

7. Following housekeeping items

a) Clean off E platform, get rid of all junk.

done 4/12 b) Clean out cell A of all junk except lead on tops of tanks, sweep up floor and sump.

c) Clean up fan house.

d) Clean out everything around cell A entrance.

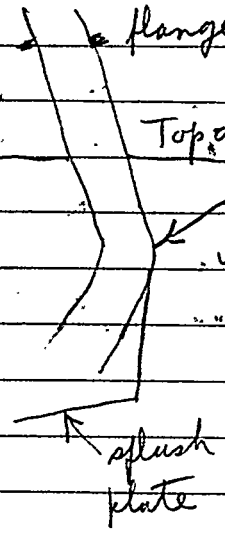
8. Continue decontamination of material in decontamination tank.

9-25-46 Replaced MT NH_3 tank.

4-12 Maintenance had to repack spare pump

SJR & because sulfur was leaking thru the packing.

WJS. We ran into considerable trouble when we started to drop the oversize slugs into A-1. The slugs hung up in the line twice. We expended most of our manpower and Maintenance manpower in unplugging the line.



The first time we broke the line at the flange and lifted out slugs out with tongs. Then we worked a hooked aluminum rod down past the two remaining jammed slugs and yanked up hard. The second time the slugs hung up around the flange (as well as at bend indicated) and it was an easy job to unplug the line once the flange was broken. The last 36 oversize slugs we dropped by hand through the broken flange and had no trouble. A man was stationed in the Cell each time the line plugged. It seemed that the slug was coming so fast that it could not get around the bend without jamming. Incidentally the bend seems much sharper than what the print calls for. Advice: Oversized slugs will hang up very easily. Avoid use of some in A1. Slugs should be dropped slowly. Sometimes one will get to spinning at a bend and if another is dropped right behind it, you will have a plugged line. We noticed this right away when we started to drop the slugs, and we dropped our slowly. It is lucky that the slugs were cold.

2-12

2/

Feb 25-2

On the second plug-up one of the slugs stuck crosswise at the flange as well as at the bend.

Jet lines unplugged at PB's B1-B26, B1-B12A, B3-B10B, + B3-B1. All lines contained a black hard scale that had to be knocked out.

Al coating removed + metal dissolving started at 10^{30} PM.

2-26-46 Dummy run in progress

12-8 Vacuum off on dissolver, A16 fan belt [illegible] pullley squeaky, T8 scale tank doesn't work. Poor vacuum on A9, started with 4" ended with ½". Small fan motor squeaky in housing. Expended our time on Cell IV door, time extended (some but not much)

2/26/46 N.B.

① In order to get more than 3" or 4" of [illegible] in A9 the bottom of A1, A8 and A11 must be covered. The loss of vacuum was due to [illegible] leaks through large [illegible] A8, A11 and A1 [illegible] the [illegible] [illegible]

② [illegible] A4 and [illegible]

③ [illegible] every

Program for Tonight

done 4/12 1. Check A16 off-gas system. Drain entire system completely, turn on vacuum. Do not turn on water to A16 until you are satisfied that vacuum is sufficient (25") and steady. Then turn on water starting at 50 on rotameter and slowly run it up to 130, if flooding starts, check point at which it does.

done 4/12 2. Continue dumping run but do not decant A9 to A8 until A16 scrubber is in operating condition

done 4/12 3. Run B19 heater #2 for about 3 or 4 hours without actual evaporation. Check to see that temperature can be controlled just as during actual evaporation

done 4/12 4. Empty Iodine pot under A4 scrubber (probably full of caustic). Use carboy and vacuum bottle.

done 4/12 5. Check all transfer inside cell for leaks in lines, use up balance of approx time on cleaning cubicle #4 and removing lead from sump and sink in cell and cell entrance. Lead on tops of tanks and waste lines stay put.

done 4/12 6. Clean up fan house.

7. Get maintenance to repair leak in new still and if possible leak in

oil pump in fan house.

2-26-46
4-12
SJR
WJS

Scrubber installed + put into operation. At present with H_2O thru rotameter at 120#, vacuum at manometers 37" + 30" respectively + vacuum at A-9 about 6", can't get it any higher.

B-19 heater checked + operated for a couple of hours, OK. Kicks off at about 145°C.

Iodine got emptied by breaking vacuum in cell, contents drained into sump.

Lead from sump + junk from cell + cell entrance removed.

Fan house cleaned.

Remarks:

D8A settling in A11 until 1 25 AM

D8B dissolving A1 sp. gravity 1.68

Lead brick in decontaminating room, exposure time used up in cleaning cell, did not have any left to decontaminate bricks.

Don't forget shift inventories. They are important.

The caustic in M-11 is to be used only if you do not have time to get it from the drums.

2-27-46 D8-B settling in A9 till 12:17 PM
12-8 D8-C
Heel of D8-A was was Comonbined with
D8-B in A-9
Waste from Run D8-A in A6.
Batch of Carbonate in A-5

IMA - 51 slugs
IMB - 54.9
IMC 54.0

We have about 3400 # 20% NaOH in M-11, which is enough for several dissolvings of Al. Coats.

M-10 can be filled by jetting from the drums even though they are frozen.

(1) Jet the unfrozen caustic from the drum

(2) add hot water to drum from hose from decontamination room (allow to run until water is as hot as it will get)

(3) Roll the drum back & forth until NaOH dissolves.

2/27/46 Program For Tonight

1. Continue dummy run. Don't forget to check lines for leaks also don't forget to sample in A6. Estimate volume in A6 if A6 Ring balance is not fixed by 4PM. Keep contact mike on A9 on while agitator is running.
2. Spend 50 min. exposure time on decontamination of cell IV.
3. See enclosed list of housekeeping items please take care of these and initial as they are completed.

(over)

General Information and Remarks.

1. Circular charts at PB1 and PB2 should be changed at beginning of each 12-8 shift
2. Use only 60 lb. steam pressure on jets A11-A6D and A9-A8DA.
3. Please re-read U.A.R.'s memo on disposal of trash. Please remember not to overload trash cans, unless absolutely necessary. In this case dispose of material on an ERO.
4. See U.A.R.'s memo on handling caustic drums — see mail box.

8DB - A-11 settling
8DC - Extraction settling
8DA - A6 ready to send to A-5.

5. In order to evenly distribute the dumping of solutions in M.V. room we have inaugurated a system of keeping a minimum level in all storage tanks. Each shift is responsible to see that the minimum is left for the following shift or explain why. The minimum levels are posted on tank calibration charts. More suggestions are welcome
6. Leave keys in A1.

2/27/46 Run status
4-12 Samples to be taken:
A8 - 8WMC
A6 - 6WMB

Manpower expended on cell IV - Used a wash bottle & squirted in acetone as per recommendation from E.J.W. Didn't do much good - inside of cell approx. 70R. Swabbed door ledges & lead bricks with cheesecloth - got off quite a bit.
Did housekeeping as per attached list.
Dumped reagents
~~Made up solutions~~ in make up room and T area.

Had a power failure at 2:30. Kohler unit in brick you-know-what just north of building kicked in. A16 fan & vacuum pumps kept going - presume that is what this auxiliary unit is supposed to do but any further light shed on the subject would be appreciated.

Also would like to see a manufacturers drawing or literature on the Barnstead Stills we're operating in the crow's nest on the 3rd floor.

Some of the monetrons etc seemed to be acting rather screwy this shift - can't offer any explanation

2-28-46 Run status - A9 settling until 8:07 - D8C
12-8 A8 - Cake Wash Decant from A9
A11 - Waste Decant from D8C - Waiting for A6 to be empty.
not plugged, Ring Balance off } Line A5 - A6 plugged while transferring neutralized waste from A5 to A6.
Decontamination room was cleaned up, Adaptor & gasket in tank are still reading high.

2/28/46 Program for Tonight
1. Continue dummy run, hold up 2nd (last) metathesis cake wash decantation until 8 A.M.
2. Start dissolving A1 heels, use about 350 lb of acid in the first dissolving. You may find that the gravity will go up high enough so that dilution with water will be necessary before neutralization to prevent freezing in A1 on cooling. Neutralize metal waste and jet to W11.
Started 350# acid used - 5 hrs 45 min to come to 1.77 probably should add another slug of acid
3. Dispose of hot acid in bucket hanging on lead cubicle. Remove flask containing acid on 3rd floor at end of PB-4A.
acids removed by set up left
4. Empty B1, B3, B6, B10 and B12 through B10 to A5 and then to W11. Rinse A5 thoroughly and immediately and check
Emptied but not tested

Cell A background. Then test all cell B jets. Get maintenance to supply necessary lines. Report results of tests. Also test B2

General Information

1. Big still is shut off and storage tank is M.T. Keep off until tomorrow at which time leak in still and storage tank will be repaired.
2. We've been having more than our share of manometer fluid blow out. Replacing fluids takes lot of work and fluid corrodes the lines.

SDC in A-6 ready to go to A-5

Run SD in A-9 ~~First~~ second Metallic decant at 5:33 PM

A-8 - First metallic decantation

2/28/46
4-12

Noted vacuum gauge on A-5 didn't work well, in fact it showed a positive pressure. Checked vacuum by means of A5 overflow line, was assured that A5 does have a vacuum when so desired. In process of checking discovered cell A sump empty of water, 7" water put into sump by means of A-1 blister. Incidentally what is the recommended way of adding water to this sump now. Comments in the log concerning this over the past week not very clear.

Emptied cell B as per item 4, page 104. Had trouble emptying B1 again. Didn't do any work on jet testing but did notice

that jet B1-B10 wouldn't work.

Run status:

8WC + 2 water washes in A8.
Last metathesis cake ~~was~~ decantation held up until 8AM as requested.

A5 }
A6 } MT

A-1 probably metal heels.

Take a survey in cell A before entering. Jetted that matl over to A8 from cell B!

12-8 Checked Steam Jets as per attached
3-1-46 list.

Added 200# HNO_3 to A1 and cooked for about 3 hours but was unable to obtain any rise in sp. gr. so we cooled her down and neutralized it in A5, via A6, with 1/2 batch Carbonate and sent it to W11.

3-1-46 Some general house Cleaning -

8-4 Note new figures for making
SJR + up Na_2CO_3 - Na_3PO_4 solution for neutralization of metal
WJS. waste. Only 65 slugs will be dissolved per batch instead of 85 slugs. A batch of Na_2CO_3 - Na_3PO_4 solution now calls for 1760# water, 2.5 bags Na_3PO_4 and 60 bags Na_2CO_3.

A1 has 200# 60% boiling HNO_3 to dissolve out heels in A1. Let it boil until 8:00 A.M.

A Cell around A5 was checked for activity. It is O.K. now, but from now on you had better check each time that you go in Cell.

In order to keep equipment list on blueprints straight it is desired to keep the old labels on T3 and T4 tanks. It is O.K to switch around the designations of "H_2SO_4" and "spare" on these tanks, but the tank numbers will have to remain the same. They are now marked correctly in red crayon.

New sign posted outside gate at Fan House "Hot Area Do Not Loiter".

Jets B1-B10, B1-B12A OK.
Probes checked, the only one not functioning correctly was the B6 probe; it seems the electrodes hit the side of the tank at about 8-8.6" consequently does not check manometer reading.
B2 pipette checked, O.K.
Electrolysis finished at 8 40 PM.

Program for the Week-end-

1. Calibrate A9 for small volumes. Dry A9 with jacket steam for several hours. When you are satisfied that A9 is dry, add up to 2 liters of water in 50 and 100 ml portions and check manometer calibration chart, make necessary changes to bring chart up-to-date. Done

2. Continue heel dissolving in A1 until late on today's 4-12 shift, then neutralize and dispose to W11. ✓

3. Check all items in corral, separate all S.S. pipes etc. that can conceivably be used in the future from the junk that should be buried. The junk will be buried next week and the good material kept for future maintenance work. Done 4-12

Note floor + sump to be cleaned

Done 4-12 12-8

4. Remove all lead from cell A, sweep tops of tanks, floor, and sump.

Finished 12-8

Continue 5-16 dummy run in B12.

DONE 6. Check strength of 20% $Pb(NO_3)_2$ in storage tank.

DONE 4-12 7. Check if light bulb replacements are needed in cell A, and replace old bulbs if necessary before Sunday night.

✓ 8. See operating bulletin in mail box

9. Flash — We are to be honored by the presence of a distinguished visitor tomorrow. Please give housekeeping your attention, building is expected to be in A-1 shape by 8 A.M.

3/1/46

4-12 Cleaned east platform of debris: 2 pieces of pipe laying on piece of blotting paper on wooden platform removed and put in NE corner of lime yard in case any one is interested. Paper put into hot can

A1
A5 } Empty
A6

Dummy Run in B6

Lead removal — last shot of acid ready to come out of B12 — Sample B3. See Run Sheet

3-2-46

12-8

Steam on A-9 if further calibration of tank is necessary

Waste from electrolysis in B-3 and sampled.

A-cell floor and sump hosed down. Only a ladder left in A-cell.

Run #1 [illegible]

[illegible]

t [illegible]

[illegible] off

The [illegible]

time [illegible] waste [illegible]

so [illegible] that [illegible]

[illegible] due to

[illegible]

[illegible] of this run are:

1) 2000-2500 [illegible]
2) all tolerances met
3) no building contamination
4) NO OVEREXPOSURE

On the last run slopp[y] operation got cell A [illegible] and the [illegible] system quite badly [illegible] [illegible] us [illegible] [illegible] [illegible]

[illegible]

[illegible]

OK

[illegible]

Program

3/2/46 The following items must be completed before the run starts.

OK 1. Unplug steam pot cap on A9-B26 jet.

Done 2. Remove all paper tags in cell A, on top of A9, on ledge etc.

4-12 3. Remove bolts from top of A5 and sweep all dirt from tops of tanks.

4-12 4. Paint rusty conduit boxes and pipes on A5. Paint new conduit box covers on A9

4-12 5. Sweep out sump completely

Started 8-4 6. Get ERO to fix oil pump to large fan bearing. Get reserve oil supply on hand.

E.R.O. to maint 4-12 7. Get safety bars for tops of slug carriers, if you cannot find them get same made up by maintenance

Done 8-4 8. Check that sampling equipment is complete.

9. Have cell A ready for slug loading by end of 4-12 shift Sunday night, sump level ok acid and caustic ready etc.

2 bars 1/2" D-24L-1" thread on each end - of mild steel. Received

3-2-46 There are plenty of sample tubes both
8-4 large and small in cabinet on second floor at south
SJR & end of Cell block.
WJS. Three clips and one pair of tongs are soaking in 60% HNO_3 in decontamination room. There are also two sample carriers in decontamination room.

Tongs and some black iron are soaking in a phospho-citrate solution in decontamination room.

Oil pump on large fan ~~removed~~ being repaired in Fan House ~~to shop for repair~~. Should be in on the 4-12 shift. Watch activity from Cell B. Have H.P. check working time on your shift.

3/2/46
4-12 Maintenance finished fan job this shift. Oil returning to manzel forced feed lubricator very slowly if at all. Keep your eye on this job in case further work needs to be done. Small elec motor on oil pump acted up a bit when fan was started up.

3/3/46
12-8 Found several other steam pots plugged & cleaned them too.
Large fan lubricator worked OK during shift but drip appeared to be somewhat slow. Better keep checking.

3/3/46
8-4
SJR
WJS

Repaired two leaks in cell A on discharge line A9—A8. Had to have maintenance call in welder from Oak Ridge. We put 800# water in A-1 and jetted thru all the tanks, checking various 1" process line and instrument liquid levels. We could find no other leaks other than those mentioned above. Cell A floor was closed.
(D. C. King has the flu & will not be in for 2 or 3 days.)

3/3/46
4-12

Checked A6-A5 jet-worked very erratically so had maintenance remove it and inspected it. Looked O.K. — Blew down the steam line while jet was out and put a water hose onto the suction line of the jet which extends into A6 and flushed it out thoroughly. Tested jet — 4 times — 3 times with H_2O, 1 time with H_2O_2 — worked well each time — Amen.

Walt called up to reiterate several things on his memo on method of slug procurement. Note red pencil.

Slugs are pushed, truck is here. Cell door locked.

Had maintenance make up 2 5/8" safety rods for the slug carriers in case the 3/4" ones now in place don't work

too well. On table in shift office. Let's hang on to both sizes however. Had some ½" ones made up yesterday but they disappeared during the day.

Minimax #16 (PB1) pen not working

Ed: What's the score on turning off cell lights when not needed.

Coating removal soln in A-1.

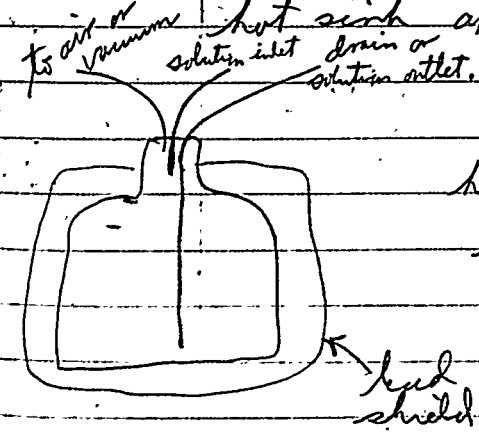
3-4-46

[12-8] Loaded slugs

1st wash after coating removal in A-1

3-4-46
8-4
SJR

Walt wants to know the total possible output of the iodine collector. Hence, we are using 706-C carriers (two of them), 706-C trash and disposing of the hot waste that we collect in 706-C hot sink after taking a sample for iodine analysis.



Between the bottle and vacuum outlet you need a regular suction flask half-filled with soda-lime to neutralize hot gases and keep vacuum system from getting hot. Before starting a dissolving it is best to have two empty carriers on hand.

the first carrier will fill up pretty quick. You get about two carriers (36 liters) per dissolving. Fill the carrier up close to the neck so as to get a rough idea as to the volume of solution drawn out of the iodine collector. Use a flashlight to check the level in the bottle while drawing off the solution. To fill the carrier apply suction through the soda-lime trap to the carrier, open valve to iodine collector and suck solution through the solution inlet line into the carrier. To stop flow of solution cut off valve between collector and carrier on the solution inlet line, cut off vacuum and disconnect vacuum line at vacuum outlet. It also be necessary to vent solution outlet line, if solution is sucked up this line.
To empty the carrier take it to the hot sink in the N.W. corner of 706-C. Put an extension on the solution outlet line and let it hang down into the sink so as to get a syphoning action. Apply slight air pressure thru air line. Disconnect the air and let the bottle syphon. At this point you have to be careful that you do not build up too much air pressure in the bottle, and blow the stopper out and spread activity all over the place. The bottle will syphon so slowly that it will be desirable to apply a little air pressure from time to time to hasten emptying the bottle. We just hold the Tygon line against the air line without actually connecting it to the line, and when solution starts to discharge, we break the connection entirely. A hot sink must be used to get rid of the waste to W-11 because if you send it down the drain, you get

too much activity in the settling basin. We sampled two carboys full already and called them I_2, NO I and I_2, NO 2 respectively. The lab will take care of the samples. Sample the waste while you are getting rid of it to a hot sink. Use regular sampling equipment. We have one carrier full at shift end that is ready to be sampled and discarded to a hot sink. The other carrier is partially full and connected up ready for operation. Label the sample that you get on the full carrier, I_2, No. 3.

We straightened out platform according to new arrangement of sections for various chemicals.

Run Status:

A9 - 9A settling hot until 4:25 P.M. then cold until 9:25 P.M.

A1 - 9B - diluted and sampled.

Program for Tonight

The following items are in the order of their importance.

1. Continue run.
2. Continue taking out off-gas iodine and sampling according to procedure set up by S.J.R, page 115.
3. Run another PbO_2 removal in B12 HNO_3 and H_2O_2, then follow with HNO_3 rinse. In other words, repeat steps 49-55 in run 5-16. Resample in B3 and label 3W Pb-2, Run 5-16.

Done H-IV

3/4/46

4-12 Took sample I_2 no 3 and disposed of full carboy down hot sink in 706C

Hot flash from EJW. 7 30 PM
Do not neutralize waste from Batch 9-A but run to A6 and hold there. Day shift will dispose of it.

Run status - see inventory sheet

Sampled and dumped I_2-3 and I_2 4, I_2-5 collecting at shift change.

30,000 + counts/min on third level using A9-A8A jet. Followed procedure outlined for jetting vigorously.

3/5/46

12 - 8

Did not decant A-11 as air count too high. We have been turning off steam headers to try to stop steam leak.

A-1 sampled 5cc in big tubs for Baldwin.

Sampled I_2 - 5 and I_2 - 6

3-5-46
8-4
SJR &
WJS

9B was settled hot. This held us up. We had to cool and settle 1 1/2 hours extra.

Air count is coming down.

We started dropping slugs at 11⁰⁰ A.M. Caustic and nitric to make a neutral solution were dropped to A-1. Rest of caustic for coating removal is in T-8 (419# 20% WaOH)

Carbo phosphate solution made up in M-1, to be used to neutralize waste in A8 (9B). Since 9B has only 11 curies it is advisable to jet directly to A5 for neutralization & then to A6 - W9.

Run Status:

A9 - 9A settling A11 5" heel 29 curies

A8 - 9B (8 WMB) only 11 curies ready for disposal to waste.

A1 307 slugs 263# caustic + 136# HNO_3

(over) 419# caustic in T-8 for coating removal

Finished loading slugs at 3^30 PM. Total of 307 slugs. Did not have time to remove slug carriers to storage nor track to maintenance.

T-8 has 419^A canister to be added to A1 for coating removal

3/5/46 Program for Tonight

Besides carrying on with the run, please take care of the following items.

Done 1. Please clean up decontamination room, also remove tygon and saran connections at entrance to decontamination room

2. Get hot can on E platform removed to burial ground.

no steam coming out 3. Try to locate source of steam backing up through drain under S.E corner stairway. It is probably due to bad traps on one or several of the radiators on S. side of building.

Operating Bulletin

1. Use 90#1 pressure to jets A9-A8DA and A11-A6D instead of 60-75 lb. as originally set up

2. Do not blow down jet vent prior to jetting, instead, blow down PB header →

3. Use the same CO_3 PO_4 figures that were used before the last change was made.

until [illegible] lab checks are run. Watch for large volume in A5 so that it does not overflow

3/5/46
4-12

Run A16 scrubber at 140.

Sorry couldn't take care of any of the maintenance items. Operational difficulties.

Ed says to leave the jet vents closed for 1 full minute after pressure goes to zero, then vent.

Air counts hi all night. No wind coming out of the stack.

E dissolving

D settling in A9 until 225

C - A11

→ When jetting is in plate, vent 1 minute after pressure gauge reads zero, vent under water

3-6-46
12-8

A-5 sp G. and Lab. instrument not working night.

C- A-6 neutralized, ready to go to W-9.

E- dissolved waiting on A-9

D-

No samples taken from tank farm on this shift H.P. informed us to stay away (Morgan).

Cleaned up decon room

Slid not taken but can to burial grounds.

WED

R. S. Pressley why has log not been kept up for the past two nights for tank farm?

ACJ

3-6-46
8-4
SJR

Medical called about blood count and urinanalysis. They want the fellows to come in when they come on days for a blood count. In other words if you are on shift work, wait until you rotate on to day work before you get your blood count. The hospital will take you for a blood count from 8:00 A.M until 11:30 A.M, and then from 12:00 noon until 2:00 P.M in the afternoon. Do not miss going down for a blood count when you come on days.

They located the source of trouble on the tank farm. The automatic jet on W-11 would not shut off. W-11 was being sucked dry and then steam was blown to W-5 since the jet would not shut off.

Run Status:

A1 - 9F - diluted and sampled

A9 - 9E - Settling until 5:45 P.M.

E.J.W. requests that hot can containing tygon, also filters from far now on east platform, be removed to burying ground. Filters not so hot but need burying.

3/6/46 Operating Bulletin

OK (1) Please read program and bulletin on page 20. Some of the items have been overlooked during last night's operation.

OK (2) A high waste level in A8 has been officially set at 35 c's. If waste is over 35 c's, it must be decanted to A6 and recycled there. The heel in A11 must then be jetted to sept extraction in A9 and A11 rinsed with metal solution.

OK (3) Please check that the sample carriers are fitted with the proper covers when delivering sample to lab. A sample had been dropped in the lab when a sample temporarily stuck in carrier lid when chemist was removing sample from carrier.

See entry p. 126 (4) Please check floor behind PB-1 for radiation; reported warm. If so take necessary measures to correct same.

OK (5) Remove all hot trash on ERO.

3/6/46 Buried air filters.
4-12

M.I. Started checking glasswool, D25 rate is 400 cc/min.
D20 rate is 500 cc/min

H_2SO_4 in scale tank was a nice shade of green — apparently coming from carboys as screen to M8 had a nice crust of green crystals —

A8 sampler plugged — spent 4 Hrs before unplugging — sampler blower-back made by maintance - now in barrel in Decon. room.

Run status
9E — settling in A11 - awaiting analysis 15.2 CD
9F — settling in A9 till 4 10/A
9G — in A1 - Diluted + Sampled

Jet from pot in HP office jet to W11 line doesn't work — steam line plugged somewhere between header and jet — not worked on as line is so assembled that breaking line opens off gas line to Bldg — union is between valve and jet, not between valve and header. — Vacuum holding up O.K.

Still plugged

3/7/46 GRAVEYARD -

9E (A11) 152 C's.

Maintenance tightened belt on steam engine to 205 stack.

Slurp not pushed at 105 until around 5 PM 3-6-46 so we started another dissolving.

A11-A9 Jet leaks at PB.

Action of #12 Micromax (PB1) is erratic. Suggest it be checked.

Radiation behind PB1 found to be due to A5 Sparger line (plug F9) being extremely hot — > 4R/hr dent plug. Activity decreases toward PB. Danger sign placed in area on 1st floor.

Run Status

9E - IN A6 - Ready to jet out.
9F - IN A11 Settling
9G - IN A9 Settling until 9 36
9H - IN A1 Diluted

3/7/46 Continued
12-8

A5 LL & Sp Gr Ring Balance
Not Working.

JRJ

3-7-46
8-4
SJR &
WJS.

We had trouble getting the pump to take water out of pit under H.P. office window. If you prime the inlet to the pump as well as the pump itself, you can get it to pump some water. We had to bail most of the water out with pails. The jet was removed, cleaned of silt which was plugging the jet, and then replaced. The steam nozzle is so small that only a small amount of scale will plug up the jet. Because about 50 feet of pipe carrying steam to this jet is unlagged, quite a bit of steam condenses in the line and loosens up enough scale in the line to plug up the jet. Hence, before operating this jet the line ought to be blown down thoroughly. They are working in the problem of putting an extension handle on the blow-down which is located in the pit. In the meanwhile you ought to blow down the line regularly, preferably just before a dissolving.

Run Status:

A-1 9I 136# HNO_3 added
263# of caustic in scale tank ready to add to A-1

A9 9H $Pb(NO_3)_2$ added H_2SO_4 being added at shift change.
A11 9G settling
A6 6WMF not neutralized
M1 Carb phosphate for neutralizing of A6

3/7/46 1. When removing slug coats, avoid using steam to bring up temperature to 110 deg since the reaction was proven to be extremely violent under these conditions during the last coating removal and 250 lb of coating removal solution was lost to W11 when a pressure of over 10" was developed in A1.
2. Please note that fan house monitor records on PB-7 micromax. Let it now set on 2R scale but may be changed to 1R or 5R scale if need arises, by using selector switch located in fan house.
3. The new carbophosphate figures posted in tube on chart in make up room.

4. Note minimum level to be left in M11
5. Although it will involve some extra work and some expensive flame blow down strainer to jet in condensate pot in A4-205 off-gas line. Always open strainer valve first before turning on steam. See S J R's note on page 127.
6. M.T. mail box, please.
7. Start checking reagents before dumping again. Use the chromate paper test.
8. See housekeeping inspection report enclosed in log book.

3/7/46
4-12.
M.L.

At the instant that coating removal started — A1 developed 12" pressure, water (in jacket) for about 2 min brought it under control — from the way the instruments reacted I don't think it's due to a too violent reaction — I think there's just too much stuff in A1, the use of 20% caustic gives a terrific volume and a small amount of foaming is enough to seal off the flange to A2. 'Cause the vacuum on A2, A4, and A5 plummeted (neg pressure) as though the connection to A1 was sealed — a large gas evolution wouldn't cause this and the water from A2 coils was very cold, a violent reaction would be producing heat — that should show up there. — suggest we go back to stronger caustic — now that warm weather is approaching

Finished testing the glassware — at the moment

everything is O.K. - ~~[illegible]~~ (no bets accepted on it's staying however) Pressure needed to push B20T → B17 is slightly greater than usual.

Run Status

9G - in A6 - ready for W9ing
9H - in A9 - settling until 12 40/A
9I - in A1 - diluted + sampled.

3/8/46 12-8

9J - A1 diluted sampled

9H - A-11 decant at 8:00 AM

9-I - A-9 settling till 11:30 AM

House keeping items

3/8/46 8-4

Run Status:
9J - settling hot in A9 until 4 38 PM
9I - in A11 until 7 30 - No analysis yet
9K - in A-1 - sampled.
A5 - empty
A6 - neutralized metal waste - for W9

Manpower expended decontaminating product carrier in decontam room from 1500 to 300 mr. miscellaneous pieces in st. tanks in decontam room cleaned out - moved

to low storage where smears OK. Piece used for handling glassware in M1 since smears were a little high.

Air exit held down to 338 c/min on A9 decant.

3/8/45 ① Please have maintenance fix two sample carriers (on table in lab office) so that they can be used for bucket type sample or large 1M samples. Drill the larger hole 1½" deeper. We'll need these over week-end. The ② sample carriers are clean, we think.

② One reason for our high metal waste losses is that the charges are not sufficiently cooled during settling. Please cool charges down to 25° on all future extraction settlings. Previous batches have been cooled to as high as 52°C and the jet does not work well at this temperature. Use full pressure steam.

③ Start dissolving batch "L" as soon as batch "K" is in A9. Hold it in dissolver until the rest of run is in cell B

④ The fan house monitron is set on 1R scale at PB-7. Please do not change scale unless you are forced to do so by abnormal fan house radiation.

(over)

(5) Yesterday's housekeeping report has been filled in very well but the items didn't appear to be completed as well as pencil pushing indicates, please complete all items missed.

3/8/46 4-12 M.L.

I give up — where were the gaskets to cell ~~I-A~~ cell ~~III~~ doors hidden this time?

Run status

9I - in A6 - ready for W9'ing
9J - in A11 - settling until 3.45/A
9K - in A9 - settling hot till 2.57/A, cold till 7.57/A
9L - in process of being dissolved.

~~[illegible]~~ Why was the vacuum, pressure line from PB5 to B24 disconnected?

Shift millwright drilled out two carriers to hold bucket samplers

3-9-46 12-8 SJR & WJS

New steam strainer was installed on steam line going to jet in the pit under H.P. office. The blow-down on this steam strainer discharges into the pit. The valve on the blow-down and the valve controlling steam to the jet are now located right next to each other so that it is no trouble at all now to blow down the line before

operating the jet.
9K decant at 8 00 AM A9 to A8
9L solution diluted + sampled
Hold 9L in A1 until set of
run is in Cell B.

3/9/46
8-4 Metathesis in progress - 8 WW taken at 3 30 PM.
water addition going on

Hold batch L in A-1 until further notice

Paint 7 on Micromax #12 looks unusual.

Expended all manpower on cleaning up
carrier with hot spot of approx 300 mr
near base of carrier. Still pretty warm at
this spot.

3/9/46
4-12 Status
M.L. Run 9 second metathesis settling until 12 30 A
1st metathesis waste in A8.
9L - in A1 diluted + sampled

Installed seal boxes + sealed cells I + IV.

B12, B7 B8, B6, + B3 + B10 rinsed with
dilute HNO_3 + water (couple of each)

New light shield installed in cell IV

3-10-46
STR
WJS
[12-9]

Replaced nipple on steam jet A11 - A9 at PB to repair leak.

Steam leak at S.E corner of bldg fixed.

In transferring the Run from Cell A to Cell B jets A9-B26 and A9-B1 did not work. So Run and tank rinses of A9 were jetted from A9 to B12 with A9-B12 jet which happened to be operating. The Run was then picked up from B12 with B7 pipette and discharged to B26 via golden horseshoe. Then regular iron filtration was run, and the stuff was blown from B27 to B12 after B12 was rinsed out as well as possible. Most of the run is in B12. The rinses are being filtered. Run will be ready for electrolysis soon.

Cell A Status

A8 - SWCW - sampled - (SWC run 80 C's).

A9 - MT - The Run was just transferred to Cell B and A9 has been rinsed out.

A1 - 9L - ready to be processed in A9 after SWCW analysis. Combine stuff in A8 with 9L if analysis is high.

3/10/46 All of A1 metathesis washes & waste added to batch L.
8-4 AMR 55# A_2SO_4 added to A9. 87", 97 gal in A9
A8 rinsed out and added to heel in A11.

B12 electrolyzing until 5:45 PM

Batch 9L settling in A9 until 7 PM
" 9M in A-1 sampled

3/10/45 Run Status at 12M
4-12 ① Batches 9A thru 9K in B6 ready for
EJW transfer to B21.
② 9M in A9 settling hot until
1:20 AM, cold until 6:20 AM.
③ Heels are dissolving in A1, you may get complete batch out of it so watch the Sp. Gr.
④ 8WML settling in A11 - 120 cc

All metathesis waste + rinses of A8 and A11 + batch K heel have been reworked in batches 9L and 9M.

If A1 heels turn out to be a whole batch, it will be processed as batch 9N. and extraction washes will be made on this batch.

B17 was rinsed and sparged with 1 liter H_2O. Transfer lines from upper discharge

funnel to B17 were check with 2 - 1 liter portions of water, all funnels and lines appear to be ok.

3-11-46
12-8
SJR &
WJS.

The Run -

The Run and two B6 tank rinses were successively pulled up into B11, and dropped to B21P, B11 being put under slight air pressure each time. Two fuming Nitrics were run and combined in B3 and sampled. The fuming Nitrics were blown to B3 from B21T, because line from B20T to B3 was plugged or kinked somewhere. Two HCl-ether Treatments were also made on the run. The two HCl-ether wastes and washes were put in B20T, but could not be sampled. While rinsing out various transfer lines from B21T, some water was blown up onto the product cake due to excess air pressure in B21T and consequent large volume of air swept thru the cake which, it is believed, carried some water up onto the cake. We went ahead with the solution of the product cake anyhow, and sampled the product solution in B17. Sample is in lab being analyzed.

B6 tank rinse was only 25.1 C's.

Fuming Nitric run only 10 C's. Hold everything until product analysis of B17 P is complete.

9W came up to Sp. Gr. pretty fast. We started another dissolving (90) in A1. Jaw will need run sheets for 90 if it comes up to Sp. Gr.

Run Status in Cell A.

A1 - Dissolving 9Ø - 390# 60% HNO_3 added at 7:00 AM

A9 - 9W - digesting until 8:40 A.M

A11 - 9M - Settling in A11 until 12:30 P.M approx.

A6 - 9L - Neutralized and ready for disposal to W9.

3/11/46
8-4 Product being evaporated in B19.

Batch O in A-1
" M in A-11
" N in A-9

3/11/46 ① Status of Product
4-12
E.J.W. The product is dry in cone. The cone plug has been only partially inserted into the cone — do not drop it in all the way. At 6:00 AM the second part of the "Sky Shine" readings are to be taken. Get H.P. to place necessary meters over cell B chimney after you completely pull out the plug from the cone and move the product under chimney. Let the product stay under chimney until 8:00 AM.

② Run Status in cell A.

A1 - dissolving heels (definitely).

(over)

A11 — Batch 9N settling, ready to be decanted to A6. Decant to A6 and sample there. Hold the heel in A11 until further notice. — 124 c's

A9 — Batch 9-O settling until 4:50 AM. Start extraction washes after this batch. After sampling 8WMO jet waste on top of heel in A11 and let settle until further notice.

3-12-46
12-8.
SJR +.
WJS

Skyshine tests started promptly at 6:00 A.M. Product is still under the chimney. Reading 7.14 R at top of chimney thru steel plate.

Run Status:

A1 - 60% HNO_3 - still dissolving heels

A9 - First water wash of cake prior to metathesis is settling until 8:00 A.M.

A11 - 8WMO settling until 10:55 A.M.

3/12/46
8-4

A-1 MT

A-5 metal heels neutralized

A-6 MT

A-9 First [illegible] settling till 4:40

A8 rinsed ready to add HNO_3 for metathesis waste

A-11 Decant from Batch O

B3 Run 9 lead waste waiting for B12 HNO_3 rinse before sampling.

B12 HNO_3 rinse after PbO_2 removal, ready to transfer to B3 for sampling.

Program For Tonight

1. Carry run in Cell A to settling of second (last) metathesis wash. Let the second wash settle until 8:00AM
2. Check the number of slugs dissolved in A1 heel dissolving. If the number is low, jet the material in A5 to W11, if it is high, jet it to W9.
3. Complete PbO_2 removal from B12 and sample
Red → 4. Get HCl - ether waste sampled as soon as possible so that the Chemist who is working over can go home early.

CAN'T READ

?

3/12/46 Lead oxide removal completed, sampled, and dumped.
4-12 seemed to be hot — monitor in cell B dropped
M.L. quite a bit when it was jetted to A5.

The HCl-ether waste put in B17 and sampled - a little warm - around 50R/drop. Carrier, bucket sampler, paper, and hot can buried "natch"
The material looked very odd - a sea green color, and full of bubbles like champagne not viscous like last time but a little thicker than normal HCl-ether.

B17 probe tip now >100R

Run status
First Metathesis Wash settling started 12[15]/
(see note 1 on page 139)

3-13-46 Just wash of metathesized cake
12-8 is settling in A9. See Note 1 on page 139.
SJR & WJS

3/13/46
8-- Farmers: all mine Silverman between 4 and 4 30 pm today. AWR

3/13/46 Program For Tonight

1. The 2nd part of the run is electrolyzing in B12. After completing electrolysis, move product from B12 to B1 and evaporate to dryness; then add 2 liters H_2O and evaporate down to 200 c.c. Pipette with B2 to B19 and evaporate to dryness. Rinse B1 with 200 c.c. and repeat transfer to B19 (B19 must be cool) and evaporate to dryness again. Use cone and plug and black carrier assembled on 3rd floor.
2. Save HCl-ether that is now in B17, it has been sold to 700-c.

3-13-46
4-12

H. P run evaporating to dryness in B-1 for first time. Cone, heater placed and plug in cell ready for evaporation in B-19.

First shot of 25% HNO_3 and HiO_2 in B-12 ready to come

out as soon as evaporations are completed in B-1

Hot ether waste in B-17 to be saved.

Variacs repaired; ready for the evaporation in B-19.

3-14-46
12-8
SJR &
WJS

Line from B1 to B2 plugged when we tried to such H.P run out of B1 into B2. We tried unplugging the line a couple times by putting pressure on B2 with B1 cold and then with B1 hot. Finally, we added two more liters of water to B1 and put pressure on B2. B1 is evaporating down at shift change. Two liters of water were added at 6^{30} A.M.

3/14/46
8-4

H.P. product evaporation going on in B19.

Cleaned up some smears around the bldg. The B-2 vacuum line filter is hot as a pistol (W wall cell B).

3WPB couldn't be taken [illegible] pipette B2 [illegible] for H.P. product and B1 still needs a shot [illegible] before a representative sample can be taken.

3/14/48 Program

(1) Take sample 3W Pb after completing removal of PbO_2 from B12. B12 now has first $H_2O_2 + HNO_3$ shot

(2) Complete evaporation for H.P. run. A portion of the run has been evaporated to dryness in B19. Evaporate the material in B1 to 200cc, cool and transfer to B19 with B2 via movable funnel and evaporate to dryness in B19. Rinse B1 with 200cc more H_2O and transfer to B19 and evaporate. Insert plug, remove from cell and put lid on carrier.

(3) When H.P. run is completed, start 706-C run using HCl-ether prepare in B17. See enclosed instructions in log book. Use cone and carrier which are now on 3rd floor.

(4) Decontaminate B1 blister as soon as possible and B2 pipette strainer as soon as H.P. run is out of B1. The strainer can probably be best decontaminated by running steam thru it from PB-4B

3-14-46

Last portion (rinse) in B-19 evaporating down.

B-2 strainer cleaned and it is now reading below 200 mr/hr at 4"

B-12 cleaned out in B-3 not sampled. Sample circulating

Witkowski says to not evaporate the HCl ether waste as the HCl might wreck the B-19 welds. Get ready for the evaporation - cone carrier etc and wait for further discussion.

B-1 filled with ~~water~~ weak HNO_3 and sampler started circulating.

3-15-46
12-8
SJR & WJS.

B19 evaporation finished. Inspection showed a red crudy ppt apparently with a lot of iron. We had a lot of trouble getting the plug in the cone. The plug hangs on the south end of the cone and leans towards the north end. By twisting the handle of the plug handle we finally shook the plug into the carrier. We took the carrier out of the cell, and had H.P. survey it. The carrier surveyed O.K except for

a 714R beam coming out from between the plug and the cone. We put the carrier down into the chimney for storage.

3/15/46 Performed "skyshine" on H.P. preparation. and
8-4 delivered it to H.P. dept.
M.L.

Did a little work on B1 blister. Now 60Mr at 1'

Started the Sr. prep. evaporating - 1st shot now cooking in B19

3/15/46 Program for The Weekend.
GJW 1. Continue the evaporation of run for 706-C by transferring ½ inch portions from B17 to B19 via B7, upper discharge funnel, and movable funnel. Since B17 probe does not work with this solution the following method of measuring must be used.
a) Drop B7 to bottom of B17

(over)

b) Lift B7 2.7 inches from bottom and apply vacuum. This will remove 1/2" from B17 since there is now approximately 3.2 inches in B17.

c) Complete transfer to B19 and evaporate to dryness.

d) On the following transfers repeat the same procedure but lift B7 only 2.2 inches and on each successive transfer 1/2" less until B17 is MT.

e) When evaporation of run is complete, drop cone into carrier and move under plug but do not insert plug into cone. Red wants to run a "Sky Shine" on product tomorrow.

f) Rinse B7 with caustic then rest well after

2. Empty H_2SO_4 head tank and make up tank and boil out both with steam and water until no crud remains.

3. Start cleaning B20 and B21 as soon as 706-C run is completed use only dilute HNO_3 and K_2CO_3.

4. Take care of housekeeping report enclosed in log book.

3-15-46

4-12

Steamed A5 sparger. Did little good

Steamed T-3 & M-8.

Added second portion to B-19 at 7:30 PM. 2.2 inches is level B-7 raised to. Rinsed B-7 with NaOH to B-3

Made ½ batch of carbonate (no phosphate added) to neutralize H_2SO_4 from T-3 & M-8.

House keeping items.

each transfer

Added 3rd portion of run for 706-c at 10:45 PM Pipette set at 1.7 inches. Rinsed B-7 with NaOH solution.

3/16/46 12-8 Added .5" (4th portion) from B17 (1.7" to 1.2" on B7 funnel) to B19 at 1:30 AM. At 4:30 AM (time for another addition on the basis of 1 every 3 hrs as had been done on previous shifts) we decided to lower the cone and look at it. The liquid level was about 1" from the top of the cone. Water (or liquid of some sort) was also observed down in the bottom of the product carrier. No more new solution was added but

the cone was raised back into place & the evaporation continued. Going on over shift change.

3/16/46
8-4
M.L.

Sort of reorganized the junk in the low storage area. Threw out some.

Had maintenance replace section of condensate line behind cell B (one under the T-7 leak) with stainless

Hel-ether -Sr prep finished - now in process of "skyshining".

4-12
3/16/46

Washed contaminated handle & area on first floor.

Washed B-7 and funnels to B-19, with caustic.

Three washes with weak HNO_3 thru B-21 & B-20 to B-3.

Handle — 664 c/m
Guard Rail — 280
Floor near Pb 135
Floor 2' from Pb 60

4-12 continued

3/16/46 Contacted Maintenance on repair of leaky valve on T-6 pipe. Postponed because there was no welder on shift. Will tell Monday.

3/17/46
12-8 Moved product carrier away from chimney & shut off sky shine instruments approx 12 30 AM

Finished off item on housekeeping list

Worked on glass equipment decontamination. Disposed of HNO_3 in glassware at shift change added 1 liter new 20% HNO_3 to B20 + B21 left sit several hours and removed. New batches of 1 l 20% HNO_3 added, in B-20 & B21 at shift change 8 AM.

3/17/46
8-4 F loaded off gas line (A16 system) to wash out any HCl condensate that might have collected - Lots of leaks at the various valves.

Continued glassware cleanup of B20, B21 and B25. B21 is the one to concentrate on (B20R has never been used)

Also started decontaminating inside of cells - "tool" is now inserted in cell II scope hole - do not use in cell II until black iron handles to the valves have been removed.

150 3-17-46

4-12

Washed cell 4 walls with 20% HNO_3.

Washed B-21 glassware with HNO_3

3/18/46
12-8

Approx 50 liters of HNO_3 (20%) used to wash down cell 4 walls. We got a little of this and dripping out the crack in the door when the liquid stream sprayed against the door. Reading was about 60 mr. Contemplated using Na_2CO_3 citrin, fluosilicate, NaCl etc, etc solutions but held back not knowing what the effect would be on tygon or other materials in cell 4 if any.

Put 3 HNO_3 (1L) batches into B21 - 3rd HNO_3 now in the glassworks.

3/18/46
B-4

put plug in Carrier and started cleaning it enough to give it to 706 C. about 30R at start. Now in decon. room - do not run solution into the core!

Continued ~~[illegible]~~ rinsing the cubicles. Cell II leaks out the door so held off on it. I + III have parts in the roof for putting in the nozzle. Liners of cells I + III are emptied by jets C20-B22, C21-B22 Valves on PB4A. B22 should be emptied often -

cell IV drain goes to B22 also.
Flash - B22 - B10 jet plugged (B22 overflows to sump)

3/18/46 Program For Tonight

4-12 1. Decontaminate the product carrier, containing 706-C run, in decontamination room and remove core adapter. Do not permit any liquid to seep into core around the plug.

NOTE →

4-12 2. Continue to flush out cubicles I, III and IV with weak nitric and carbonate. Follow each nitric rinse with sufficient carbonate to neutralize it since B22-B10 is plugged and the material overflows into sump and duct. Add only 2 liter portions to Cell IV to prevent running over.

4-12 3. Empty cell B sump and cell A duct completely before pouring any more solutions into it. It probably now contains acid and is ruining the sump.

4. A Cl #1 jet has been installed into A4-205 condensate pot. Please test its operation and report. It will probably be necessary to add water to the pot through one of the blank pipes on top of pot.

4-12 Also check At vacuum when pot is emptied to see if the new jet causes much vacuum loss

Notice:-

The system of assigning specific housekeeping areas to each shift will be discontinued effective today. The reasons are obvious.

From now on, each shift is responsible for the appearance of the entire building and it will be their duty to do at least their share of the work.

Please put in more than normal effort in keeping the place neat for the next several days since we have many visitors from Chicago on the area at present and we expect a visit from the Central Safety Committee in the near future.

3/18/46
4-12

1. PRODUCT CARRIER

Each man spent full time on carrier, spraying acid with wash bottle, rinsing, scrubbing with rags, etc. The >20 R/hr spot on "ear" in SW corner was reduced to ~1500 mr/hr. Corresponding reductions were obtained everywhere else.

Smears taken at end of job still rang frisker, indicating need for further cleaning. During this work the floor area surrounding the carrier was "cropped up". This area was flushed with H_2O for ~2 hrs. Hot rags are in red can in SE corner.

BEWARE DO NOT ALLOW ANY LIQUID TO ENTER CONE.

2. A4-205 COND. POT JET

A1 gained about 1 inch of vacuum when jet was turned on. Test was repeated with same result. No water was added to pot.

3. CELLS I, III, & IV

Continues acid & carbonate treatments. Cans on 3rd floor contain 20% HNO_3 & ~30% carbo-phosphate soln from M-1.

JPL

3/19/46
12-8

All manpower was expended in decontaminating product carrier with inferior equipment and materials being the only ones at hand as usual. However we did get the ear (lug for sphe) down to 450 mr and base now reads about 400 mr. Smears as follows: (looking at the carrier as it now sits in decontam room):

top 3588 c/m
front 313
back 2940
Ear (right side, 450 mr) 26,465 c/m

Poured 20% HNO_3, water carbonate from M1 alternately thru cell I, jetted out with C20-B22 jet. Post hole reads 120 mr or did.

Tested jet from pot near H.P. office. Found vacuum at PB1 increased from ½ - 1" same as 4-12 shift found. B-22 B-10 Jet IS WORKING NOW.

Did Housekeeping

3/19/46
8-4 Opened Cell IV, removed and buried B25.
M.L. Opened cells I + II - still damn Hot!! We will dispose of seal boxes + gaskets tomorrow.
Inspection plate removed from off gas duct, steam hose now steaming it..

Now in process of decontaminating tygon + valves - procedure as follows:

1 add 500 cc dilute HNO_3 to B21R
2. Filter it.
3. add 500 cc dilute HNO_3 to B24 (Fund of 3rd fl)
4. push B24 to B20T
5. suck solution from B20T to B21T
6. push to B21 reactor via recycle line 500 cc
7. suck to B24 via drawoff line 15 min
8. Push from B24 to B17
9. suck back to B21T
10. Push to B3 (push a little of it out B19 line, but only a little, remember the sump)

at present 1½ liters are in B24 + B17

3/19/45 Program For Tonight.
1. Continue decontaminating cubicles as outlined above by M. Levenson.
2. Continue decontamination of duct. Concentrate on south end where it is hottest. Use the long piece of pipe and flush down with water back to to cell, jet water from duct to W11 via cell A sump. We are trying to increase

working time at duct so that maintenance can install permanent decontamination equipment inside duct.

3. Check all ladders, valves, pipe, rods etc on E platform for contamination. Store hot ladders on N side of building where rack will be built for them. Pile the rest of the ladders and other maintenance material that is not hot somewhere off the platform where maintenance can haul away their junk. Other hot material either throw out or put in corral.

Pers 4-12

4. Clean up junk around pit under H.P. office — check it for contamination.

4-12

Washing duct all shift.

Washing glass equipment as per Levenson.

Opening to duct read 1800 mr/hr. Reduced during shift to 400 mr/hr. Water is still on.

1 liter in B-24 and 1 liter in B-21-T

3/20/46
12-

First 6 hours of shift were spent trying to carry thru soln's in glass ware by 4-12 shift - finally disposed of properly - we hope. Then we started over at the beginning of the cycle. When soln was pushed from B21R to B21T (step 6) 500 cc's were observed, indicating perhaps that the 500 cc's added to B24 hung up there. At present 350 cc's in B21R, 750 cc's maybe in B24 (some possibly in B20R). Would appreciate any further information on the glassware available (i.e. if anyone finds out what happened to the 500 cc's, pass it on) (Suspect B24-B20R line plugged. Also have suspicions about B20R-B21R.)
B17 probe not working properly did not help matters any either. B17 probe still reading well up in R's incidentally

Hosed air duct on 706 D stack fan all nite, water not running at shift change, however.

Have shift checks and inventories been discontinued?!?

3/20/46
8-4 Solution to problem of missing solution: line B24-B17 has slight hole in it ~~[illegible]~~ before line gets to valve — result — every time B24 is put under pressure the solution runs out the hole. Cavity in line just at point that line enters cell II.

Also — line B21 → B3 has a hole — had a hole —
3 hole removed to ~~[illegible]~~ bucket in room 9.
Reactor + transfer vessel removed to box near cell B door — we will bury later.

Decision was made since two lines leaked to replace all tygon.

Big drive at the moment beside cell B, is cell I. Offgas hood seems to be main source; spray with acid (HNO_3), caustic, citric acid, etc — also use steam — hose now in via scope hole. Keep check ~~[illegible]~~ get to B22 (valve on PB4A)

Solution may be run from B23 to B21 but not to B20 this means the handle to B23 should be clear in (B19) or clear out (B21) but not the intermediate position

3/20/46 Program for Tonight

1. Give top priority to cell B and cubicle decontamination. Use the following general procedure until more specific instructions are issued

B1, B3, B6, B10.

Boil for approximately 1 hour 40 liters of 60% HNO_3 in each B1, B3 B6, and B10. Make sure that all off gas vents are open and NH_3 and water to A16 are on. Neutralize in A5 after rinsing all transfer lines

A9 - Cell B jets.

Add HNO_3 to A9 and jet some solution through each of the jet lines from A9 to cell B.

B7, B8, B12, B17

a) Add 1 liter 60% HNO_3 to B7 rest well. Sparge in rest well for 10 minutes and transfer to B17.

b) Repeat step "a"

c) Transfer the two liters from B17 to B12 after sparging in B17

d) add 1 liter 60% HNO_3 to B8 rest well sparge for 10 minutes and transfer to B17

e) repeat step "d"

f) transfer to B12 via B8 after sparging in B17.

g) boil 4 liters of acid in B12 for ½ hour and transfer to A5 via B3 and B10

B9, B11 and B2

Rinse each pipette with acid through solution addition funnel while keeping foot valve closed and opened alternately. Check that movable funnels are in position for B19 while doing this.

Note: Keep watering cell B floor constantly to keep acid off the floor, keep sump MT to W11 so that water does not seep into cell duct.

Use one batch of 60% HNO_3 to each one batch of 5% fluo + 10% HNO_3.

Use same procedure for fluo as for HNO_3 but do not heat.

See Red's instructions for cleaning cubicles.

3-20-46 4-12
WJS

A decision to decontaminate Cell B was reached on the 8-4 shift and since we only have about two weeks to do it in (expect next run to start then) speed is essential.

A preliminary decontamination program was set up for the 4-12 & 12-8 shifts pending a formal decontamination procedure.

A nozzle with extended handle

AA

was rigged up for cubicle decontamination.
Three shots of 30% HNO_3 and two shots of 20% NaOH with intermittent steaming was sprayed into cubicle. The reading at cubicle door is now 700 MR. All waste from cubicle floor was jetted with C21 jet to B22 – B10 to A5.

Two cycles were run thru B1, B3, B6, B10 after jetting 60% HNO_3 from A9 to respective tanks in C24B

One cycle run thru test well B7 and B8 and thru tank B12

Cycle status:

1. 60% HNO_3 cooling in B1, B3, B6, B10 ready to jet to A5.

2. A5 jetting to W11

3. Steaming cubicle

4. 1 lb. 60% HNO_3 B7 test well ready to sponge (2nd shot)

3/21/46
12-8 2 cycles HNO_3 + 2 cycles fluo run thru B1, B3 B6, B10

At shift change
[illegible]

A9 has 30" HNO_3
T9 - contains flow soln

B1, B3, B6 are cooling

B10 - ready for A8
R-Wells - MIT
2½ cycles thru B7, B8 → B17, → B12 - B3

Cell sump sump flushed out - can't hold 17" operating level; drops down to 12". Suspect it drains from sump into duct.

Changed NH_3 cylinder

Steaming hose in cell I reads several R at the end going into cubicle.

Ran HNO_3 + citric into cell I + steamed all nite - down to about 400 mr at cell I doorway.

Ran water into off gas duct and jetted from duct to cell A sump to W11.

3/21/46
8-4 Cell B + cubicle decontamination carried on.
Cell I line has a hole - south east corner - about 1 inch from the bottom - keep l.l. below this point.

② B sump → W11 Jet connected, keep sump empty as sump now overflows to duct.

B3

3! ③ Neutralized waste in A5 to be W-11'd.
④ All vessels in Cell B contain 10% Hr. - 5% Fluo. CAUTION! DO NOT HEAT!
See Decontamination flow sheet. - A-9 has one batch Fluo (Less 3 batches)
⑤ Following jets in "Fritz". A9-B1A completely plugged. B10-A5 partially plugged!
(NEAR WASH BASIN) ⑥ On 3rd level have assembled S.S. beaker in adaptor to be placed under B-19 Head Heater. Scotch tape beaker on carrier while assembling to prevent slipping.

3/21/45 Program for Tonight

1. Continue decontamination of Cell B according to latest outline. Start the first cycle using fluo. Omit running solutions to B20 (Cell III), B26 and B27, run to B12 directly for time being until B26 and B27 are hooked up.
The tygon tube from movable funnel to B21 has been cut inside!

cell so that water will run directly from funnel to cell floor.
Do not run material through movable funnel to B20, run to B19 instead.
Please be sure to take the following precautions:
a) keep washing cell floor with water and keep jet to W11 on so as to keep sump almost M.T at all times.
b) Do not heat fluo
c) Be sure that no fluo is jetted to tank containing boiling nitric.
2. After completing one 900 lb. fluo cycle through B1, B6, B3 and B10 and as many of fluo cycles as you possibly can through the other vessels during the same period of time, empty and rinse all cell B vessels.
Steam cell with all jets and sparger on for a total of 5 hours, 2 hours with all vents open and 3 hours with vents closed. Keep inlet louvre to cell B tightly covered during steaming period and keep large fan on. Monitor air in building and evacuate building during steaming period if necessary.

3. Continue flushing and steaming lead cell I only.

3-21-46
WJS

Steaming cell B with vents closed, time end, 2 30 AM.

Guide holes drilled in new carrier to fit cone adapter, o.K.

Had no trouble with beaker adapter assembly; B19 heads heater fits snugly in beaker.

7R inside first l of cell B

800 Mr doorway of cubicle after 3-30% HNO_3 washes.

Typewritten copy of decontamination procedure on desk.

Neutralized waste in A5

3-22-46
12-8

T-9 contains sufficient amt of Fluo + HNO_3 to make up to 900# (5% Fluo + 10% HNO_3).

A-9 has 30" of HNO_3; A-5 - neutralized acid to be held for remainder of cycle; B-1, 3, 6 + 10 contains HNO_3.

Material in B-26 is unknown in regard to its kind.

B-12 has 4 liters of HNO_3 to discharged to B-19.

B-8 is in B-12 sparging.

3-22-46
12-8 (cont) Nothing was done on the cubicles.

JCK

8-4 8:00 AM
3R at step 5R inside cell up.
10R inside cell B toward floor.
~~[illegible]~~ 1100 mr is rending at Cell B doorstep.
Cell B jets are on (B5-W11 & B5-A6) since Cell B floor is covered with water.

3/22/46 Program For Tonight:

I. Cell B decontamination:

1. Each shift give one ~~soda ash steam~~ or one citric acid steam treatment for 4 hours. Cover everything in cell with soda ash or citric acid by using sand blaster provided then turn on all steam jets and spargers to cell B vessels, this should also include jets from A9. Keep louvre to cell B (and not cell A) tightly closed to prevent air flow through cell. Keep vessel vents closed.

2. After steam treatment has been completed, hose down cell thoroughly for one hour by attaching fire hose to iron stand. Change position of nozzle periodically to wash all parts of cell. Be careful not to flood duct, keep jet AD-A5 on during hosing. Jet B5-W11 operates best at 60# pressure.

for 4th 3. Do not use A9 for fluo any more; rinse out well with water and if necessary use for nitric only.

4. When steaming of cell has been completed Run fluo cycle #2 which includes rest wells, B17, B26, B27, B12. It is ok to use B26 and B27. The cond disc have been replaced with straight glass tube.

→ Be sure that B26 manometer is equalized when steaming with jet A9-B26 also that

valve B26 – B27 is open.

II Lead Cubicle Decontamination.

Cubicle I — use steam and solutions alternately but use no strong acids such as HNO_3.

Cubicle II — use steam and solutions alternately HNO_3 can be used.

III See latest housekeeping inspection report.

3-22-46
4-12
MJS

Burying boxes stored in low storage area.

A9 and A11 solutions jetted out + tanks rinsed with H_2O.

Cleaned up first floor + replaced leaky valve at door of 706 C.

Sprayed cell with two tank fulls of citric acid, steamed cell for 4 hrs. + hosed cell at long intervals because sump discharge jets are too slow for continuous hosing.

Noticed seepage + trickling at plugs at west + north side of cell B during steaming + hosing. Stuff is quite hot; change absorbent paper on floor when it needs it.

1st shot of flow in B tanks

B1, B3, B6, B10, B27, B[illegible], B[illegible]
B9, B[illegible]

A5 contains carbonate for acid in B tanks.

8-4
3/23/96
SEC

① Completed flue cycle started on "swing".

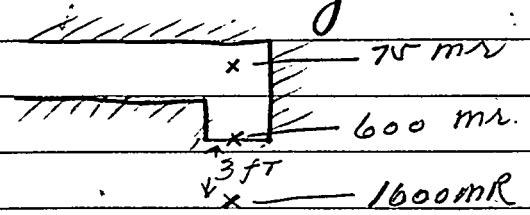
② "Sand" blasted cell with carbonate and citric acid mixture.

③ Steamed cell for four hours — including cubicles.

④ Completed D Bldg (operations) housekeeping with exception of maint. jobs. (8-4 SEE to maint.)

⑤ Hosed cell for 1 hr. (intermittently due to sump overflow).

⑥ Cell B readings: Cutie Pie



3-23
8-4 We steamed the off-gas system in Cell B by following procedure: We shut down the small s.s. fan, closed the intake valve to this fan, closed the off-gas valves on A6, A11, A8 and A9, and opened off-gas valves to all Cell B vessels except those in the cubicles. Water was cut off A-16 and then A16 was drained. Steam hose was connected to A16 at north end of Pb-2. The steam was turned on. The off-gas system is still being

170 steamed at shift change.

We sprayed Cell B with carbonate, steamed two hours and then hosed the cell down.

North end of Sump and B19 Area are the hottest spots that we could find in the cell. The tanks and golden horseshoe gave readings of about 3R that seemed to be background from B19 Area radiation. Suggest that both night shifts give B19 Area & north end of Sumps concentrated hosings with fire hose and stand.

Valves, racks etc. removed from cell II to room 9. cells I & II - given [redacted] shots of Carbonate + [redacted] shots of basic citric acid solution (citric + NaOH or Na_2CO_3) cells steamed between wash cycles.

this treatment appears very effective + should be continued (5 gal/shot from third floor bottle) Sprinkling Citric Acid around B19 Area should help it also.

3-23-46
4-12
WJS

Hosed down cell, sprayed 2 tanks full of citric acid followed by 1 tank full of Carbonate then steamed cell. Cell still under the influence of steam.

Emptied all B tanks then filled B1 B2 B8 B6 B10 B12 B11 B9 B26 B27 test wells B17 + B19 with water; heating + steam sparging at present

Sprayed cell I + II with 2 shots of citric acid soln. followed by 2 shots

of NaOH soln. Cell I is still steaming. Cell III did not get the steam treatment.
Disconnected steam line to off gas system, set valves, adding water to A16, started fan.
Suggest cell be sprayed again + another cycle of H_2O run thru B tanks. Also follow through on cubicle.

12-8 JEC 3/29/75 ① Completed H_2O (?) cycle in Cell B —.

② Blasted cell with Na_2CO_3 + Citric acid followed by "turkish bath". Concentrated on B-19 area. Rigged up steam line with pipe extension and placed directly in B-19 area.

③ Steamed Cubicles I & II alternately whole shift.

④ What is the solution in A-9 ?
Last two shifts ripards ? on inventories. Could it possibly be from A-11 where ~ Curies have been residing ? L.L. in A-11 has dropped considerably during last two shifts, maybe it is in A-9. When we came on all A-9 — Cell B jets were on jetting the ? over. Let's hope we are not proceeding backwards in our decontamination.

(5) At shift change cell is being steamed to be followed by having an accurate survey. Cell would be very helpful in getting concentrated effort on certain spots.

(6) Is it customary for large fan to be left on during steaming of cell? If this is true we haven't played the game according to Hoyle — much better results can be expected if fan is off during steaming

3-24-45 Cell B Decontamination

8-4

Large fan was left on because of seepage of activity through leaking plugs at north end of Cell block on first floor, and because of possible leak of activity from Cell A. However, results after steaming with fan off (12-8 shift) were pretty good. Reading at entrance to Cell B was about 250 mr when we checked it after boiling down this morning. So, it is suggested that steaming with fan off be continued, being careful not to steam too long and watching for air activity on third floor from Cell A and for seepage activity at north end of Cell block.

The heel in A9 was probably condensate from B10 - A9 jet. We jetted this heel to A8 for storage. A9 now contains 10% HNO_3 solution for decontamination of Cell B tanks.

3-4

Cell B readings:

B19 Area > 20 R
W. Sump > 20 R
B12 - 2R
B6 - 2R
B17 - 4R
S. Sump - 2R
B2 - 2R

Electroscope reading at doorway - 190 mr.

We treated B19 Area with saturated citric Acid solution which probably did some good because Area as a whole does not now read > 20 R. Only parts of it are now > 20 R. Suggest that this treatment be repeated after Cell is hosed down, after present steaming of Cell B is completed. Do not use strong acids since Cell is still in good condition.

Since B12 (2R) and B17 (4R) are reading above Cell background, more solutions should be cycled through the tanks. Concentrate on Cycles II and III, and use the 10% HNO_3 in A9 (by jetting to B26 + B27 → B12 etc or jetting directly to B12).

At shift change we have 10% HNO_3 in B1, B6, B3 and B10 with steam to jackets and spargers on these tanks. Also off-gas system in Cell B is being steamed according to procedure on p. 169. Large Fan is off.

3-24-46
4-12
[illegible]

Hosed down cell + since sand blaster was plugged, shoveled citric acid + carbonate into the floor + as much as it could be thrown. Steaming cell

Cell I washed with citric & soda ash solution. Steamed for about 2 hours and hot water and steam alternately rest of shift.

Cell I Top 500 mr/hr
Cell I Bottom 2R/hr.

Hot water and steam did not have much effect after about readings.

Cell II was steamed with hose most of the shift. Perhaps the nozzle with holes in bottom & top which we used on cell I is more effective than steam hose.

Steam going in cell II thru hose at shift change. Jet C26-B-22 on.

3-24-46
4-12
WJ

Hosed down cell with H_2O + since sand blaster was plugged shoveled citric acid + carbonate onto cell floor + as high as could be thrown. Steaming at present.

Filled B tanks with 10% HNO_3 turned steam on jackets + sparges. Still cooking at shift change.

Sprayed cells I + II with 10% HNO_3. Steamed + used hot H_2O at frequent intervals. Steaming at shift change.

Maintenance unplugged sand blaster, empty + O.K. to use.

During our steaming cycle the large fan was shut down. Since steam was noticed coming out of a couple of periscope holes H.P. took a precipitron test at the opening + at third level of building. Results at the holes + third level were 15,000 cpm + 273 cpm respectively. Fan was turned on. Suggest that all fans keep running during the steaming cycle.

3/25/46 176
12-8
J.C.C.

① [redacted]

② Critic-ized, nitric-ized, "Turkish Bath-ed", and Paved Cell B & Cubicles.

③ Reading in Cell B doorway beginning of shift — 210 mr/hr.

④ How in the hell do you remove liquid from B26? With disc removed why isn't it possible to vac. solution to B27 (yes, valves at Cell IV were opened)?

⑤ Sorry that 1st level doesn't have a more attractive appearance. To clean up area at this stage of game would only necessitate re-cluttering up of area until decontamination is achieved.

3

⑥ Reading in doorway at completion of shift — 125 mr as compared with 210 mr at beginning of shift. Cutie Pie reading 3' into cell — 240 mr./hr. Suggest hosing by hand rather than mechanical means — much more effective.

⑦ Cell B vessels (exception of B26) are empty of chemicals although water from hosing is probably in some.

⑧ All A Vessels are same as previous shifts.

A-6 - Water from B Sump
A-9 - 10% Nitric
A-5 - MT (~~Micromer~~ Ring Balance reads 10" when MT)

3-25-46
8-4 Some Readings in Cell A:

B-19 Floor - >20R	B2 - 700 mr
N. Sump - >20R	B12 - 2200 mr
B1 - 400 mr	B17 - 3300 mr
B3 - 250 mr	B19 - 5000 mr
B6 - 2000 mr	B26 - 250 mr.
B10 - 250 mr	

Cell B doorway - 120 mr

Pump was set up to get rid of water in Cell B. Cell was hosed down all day. B19 floor was treated with saturated citric acid.

Removed "stuff" from cell III + hosed + steamed cells

3/25/46 Program for tonight:

1. Cubicles — Continue rinsing cells I, II and III with citric acid and carbonate and steam, concentrate on cell I. 5

2. Decontamination Room — at beginning of 4-12 shift, drain decontamination tanks and refill with dilute nitric. At beginning of 12-8 shift drain out nitric and refill with soda ash and citric acid solution. Do not remove or add any equipment to the tanks. 3-

Try to decontaminate and remove all material (carriers, sampler doors etc) on floor and store in proper place. 4-

Decontaminate 3 sample carriers in preparation for maintenance work and have in S.S. office. The blister doors will have hinges installed. 7

3. Cell B:

At the beginning of each shift steam down the cell for 4 hours after wetting down the cell and

blasting citric acid, concentrate around N.W. corner of cell where radiation is highest. Make sure the vessel vents are closed and louvre and door to cell are closed.

4. Hose down cell thoroughly after steaming until end of shift. Use the hose & rack and pump out the water while all jets are on.

5. Run alternate fluo and carbonate cycles through Best well, B17, B12, upper discharge funnel, B19. Before the next steaming is started make sure that all fluo is out of cell. Run the cycle after steaming has been completed.

3-25-46
4-12
H.J.S.

Sprayed cells I, II, + III with citric acid solution followed by carbonate soln.; steamed until end of shift.

Decontaminated Carrier 4 stored above Int lab. Decontaminated lead doors + sample carriers, highest smear test showed 148 cpm, stored S.W. corner cell A.

Hosed down cell B + layed a forage of citric acid + carbonate on cell floor + tanks. Steaming cell at present. 10% HNO_3 in B tanks under heat.

Noticed positive pressure in cell A by rattling of cell A door + verified by cell A gauge

shortly after 7-4 shift change, evacuated building until precipitator tests were seen. 300 cpm third level + 40 cpm 1st level. It seems the duct was full of H_2O; after duct was cleared of H_2O vacuum in the cells resumed.

Obtained barrel of citric acid from warehouse.

In reply to note (4) page 176:
Suggest that B27 be emptied first to B12 via two lines: B27 — B12A + B12B, valves located above cell II after closing valves above cell IV.
After cleaning B27 shut off the B12 valves + open all 3 valves above cell IV and apply vacuum to B27.

12-8
3/26/46
J.E.C.

(1) Pushed, sucked, and jetted 10% H_2O_2 through B needle.
(2) Refilled decontamination tanks with barrel citric acid.
(3) Gave cell I treatment with citric + NaOH followed by steaming.
(4) Please refrain from using sand blaster hose for priming pump. We found, as a result, and much to mutual disappointment that it was plugged tighter than hell.

File 8 30 Apr.

(5) At shift change cell is undergoing a steam bath with large fan off.
All Cell B vessels MT.
Cell A vessels are the same as the inventory we didn't get with exception of A-5 (Neutralized Waste).

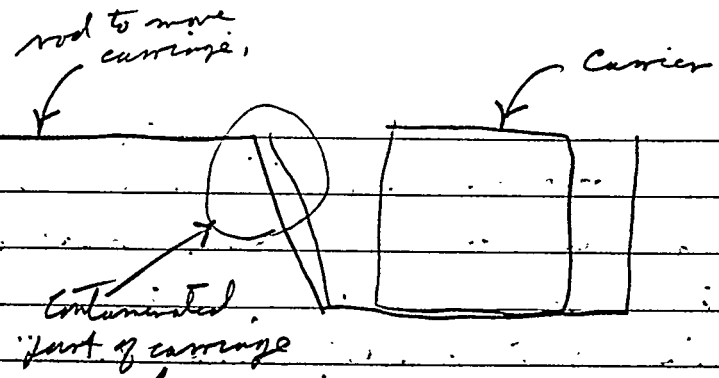
(6) Please keep absorbent paper in cubicle area. Water leakage from cell is terrific and hot too. Just remember the days of Cell IV overflow!

3-26-46 Some Readings in Cell A at 11⁰⁰ A.M.:

8-4

B1 - W - 1050 mr
S - 700 mr
E - 700 mr
W - 700 mr
B2 - W - 700 mr
S - 320 mr
E - 320 mr
W - 700 mr
B12 - W - 1200 mr.
Golden Horseshoe - 1550 mr
B7 - 700 to 1350 mr (W)
B8 - 1050 mr
B17 - W - 2700 mr
S - 3000 mr
E - > 3000 mr.

B6 - W - 1050 mr
B9 - 900 mr
B11 - 700 mr
N. Sump - 10.0 R° at 6"
B19 Head Heater - 3.5 R° at 4" (E)
4.5 R° at 4" (W)
B19 Floor - 720 R
B8 - upper discharge U.D. Funnel - 1050 mr (E)
B7 upper discharge funnel - 1550 mr (W)
Carriage - 720 R at 2" on W. side near top.
720 R at 1" on E. side near top.
720 R at 1" at top.



The carriage is now sitting under the chimney. Acetone on the contaminated part of carriage may help.

Continue chemical treatments around B19 Area. The readings are definitely coming down.

We started to cut out Tygon tubing on Cell B. All the Tygon will be removed except for two flash Tygon off gas lines, and one Tygon line from the movable funnel to B28.

Concentrate on Cycle II, running B17 over a few times.

3/26/46 Program For Tonight

1. Since B17, movable funnels, and upper discharge funnels are still very hot and some of these have been adequately steamed, please try steaming each directly by inserting a steam pipe at the end of a hose, into them, try using the pipe made up for duct decontamination and have maintenance men modify this pipe extension if necessary. Survey each piece periodically to determine effectiveness of the steam.

2. We have to get more drastic with B19 area. If you can get maintenance dept. to hook up small acid spraying pump, use it for spraying B19 area with HNO_3. Concentrate on floor and B19 head heater which appear to be hottest. Have soda ash in sump when doing it and hose well thoroughly after allowing acid to react for 5 minute periods.

Do not spray acid over beams and etc. We anticipate no beam replacements when decontamination is complete.

3. The housekeeping is getting stinkier by the day. All efforts turned in this direction will be appreciated.

4. Please continue equipment checking of all equipment in use, fill out

equipment check sheet accordingly.

N.B. No safety meeting tomorrow

5. Continue steaming and spraying cells I, II and III. Use no HNO_3 and HCl in any of them.

6. Steam the cell with soda ash the last 3 hours of 12-8 shift and let steam through 8 AM.

3-26-46
4-12
HJB

31

1. Rigged up pipe to steam movable funnels, B17 + U.D. funnels.

2. Hooked up gravity feed acid spray system using the set up we had for spray cubicles. Used carboy of HNO_3 placed on third level + ran the tygon line in B cell chimney, started syphon with hand pump.

3. Spread carbonate over cell floor + sprayed B19 area with 60% HNO_3, hosed down with H_2O after 5 minute acid reaction time. Repeated same procedure 2 times. Covered all floor with carbonate before steaming.

4. Inserted steam line into B8 upper discharge funnel, steamed ½ hr then inserted steam line into B7 upper discharge funnel. Reading at B7 U.D. funnel 600 mr.

5. Since man power was used up slated cell B + are steaming cell + tanks at shift change.

6. Tidied 1st floor
7. Before sealing chimney with concrete plug, looped the tygon spray line around the carrier guide rods in chimney. When next shift is ready for spraying remove concrete plug & remove acid line with hook!
8. B tanks contain H_2O.

3/27/86 ① DECONTAMINATION PROCEDURE FOLLOWED
12-8 AS OUTLINED WITH EMPHASIS ON
SEC B-19 AREA WITH 60% HNO_3.

② CECC STEAMING AT SHIFT CHANGE.

* 15 Minutes BEFORE SHIFT CHANGE
B-12 CABLE GOES BESERK — PCs. Fix.!

③ TYGON TUBING FOR HNO_3 SPRAYING
HANGING ON GUIDE RODS IN CHIMNEY.

④ CECC B VESSELS EXCEPT for
CONDENSATE.

3-27-48 Readings in Cell:

8-4	N. Sump - 3000 mr	B6 - 600 mr (top)
55R	B19 Head Heater - 2100 mr.	400 mr (W)
	Carriage - 7.5R (at top)	3000 mr (W)
	Golden Horseshoe - 750 mr (W)	B12 - 750 mr (E)
	600 mr (W)	Mallinckrodt Funnels - 600 mr.
	600 mr (S)	B24 - 450 mr (top)
	1650 mr (E)	600 mr (S)
	B9 & B11 - 600 mr (top)	750 mr (W)
	B7 U. Discharge - 600 mr	900 mr (E)
	B8 U. Discharge - 450 mr	B8 - 450 mr (top)
	B17 - 1800 mr (top)	750 mr (W)
	1400 mr (W)	B19 Floor - >20R (W. W. corner)
	1050 mr (W)	Doorway - 110 mr.

3/27/48 Program for Tomorrow.

1. Concentrate on decontamination of B19 head heater, B17, Upper discharge funnels, and movable funnels. Try steaming B17 and all the funnels for an hour at a time by inserting steam pipe into them. Spray HNO_3 onto head heater and hose down.
2. Continue hosing down of B19 head heater with hose attached to iron stand
3. Devote last three hours of shift to soda-ash steam of citric steam treatment and to cleaning up the

4 building.

4. Try to decontaminate cove and carrier in decontamination room if possible without taking much exposure. I would suggest that at least an automatic hosing and steaming treatment be tried.

5. 12-8 shift please have cell boxed down and surveyed by 8 AM. Get fairly accurate survey of B19 and surrounding area, B17, B3, B24, upper discharge funnels, and movable funnels.

6. 4-12 wet down cell II & spread with dry soda ash - cover the bottom & what ever else you can - then steam it all shift - hose out & empty cell III at shift end (cell II drains to cell III)

Done

7. 12-8 do above except use dry citric acid instead of soda ash.

8. Tanks in decontamination room ~~the~~ are steam sparging with water - keep as is - if they overflow drain out some - leave enough to cover the stuff in them

3/27/46
4-12

The mercoid switch on cell B door operating the red flasher lights burned out. Must taped up the bare ends of wire remaining.

All manpower was expended working on the Decontamination of Cell B and cell II.

HNO_3 was sprayed on the B19 head heater then the fire hose was directed at it.

B17 was steamed as were also the movable funnels. The upper discharge funnels were not steamed.

The soda ash, citric acid - steam treatment was given cell B.

Soda ash & steam treatment was given cell II.

Did housekeeping items which were obvious.

Pptn reading on 3rd level approx 400 c/m.

Had smear taken outside cell A door. All very good.

Ref point this shift was center of cell about 3' south of B17, 5' off floor

2.70 mr at start of shift
2.40 mr at end of shift

No Heat sent on product carrier

Couldn't tell much on B19 + B17 since we don't know where readings on day shift were taken. B19 cone heater seems hot as a pistol however.

3/28/46
12-8
J.E.C.

① Steamed product carrier via mechanical means whole shift. Does cone still contain product or has Parker obtained it? Why shouldn't 706-C try their hand at decontamination?

② Covered Cell II with citric acid and steamed entire shift.

③ Sprayed 60% HNO_3 on Cell B vitals. Acid spray beserk!

④ Steamed upper discharge funnels with individual steam line.

⑤ Carbonated Cell & steamed.

⑥ "House-kept" around Cell B.

⑦ Hosed down Cell following steaming and survived.

(over)

No heat spot on product carrier before steaming 250 mr/hr. Now down to 85 mr. More steaming in order.

190 Readings in Cell B—

① B-19 Head Heater – 1700 (Top) 2700 (Bottom)
" Core Heater – 3000 mr. (6" from top)

② B-17 – 1200 mr.

③ ~~Upper Dis. Tunnel~~ –

④ B-12 – 800 mr.

⑤ B-3 – 280 mr. (North side)

⑥ ~~B12A~~ –

⑦ Sump:
N – > 3000 mr
M – 2500 "
S – – 1650 "

⑧ B1 – 300 mr. (N. side)

⑨ Carrier – > 3000 mr.

⑩ Horseshoe – 1000 mr.

Readings listed are highest on each vessel at distance ~ 6".

JEK.

3-
(4-

8-4
3-28

o (Bottom)
n Top)

The discharge lines to the movable funnels were welded in place.

The two upper discharge funnels were removed.

The fixed funnel rack was installed — S.W. corner not welded.

Tygon removed from B-19

Product carrier etc in Decontamination room is one returned from Y - not 706C stuff - cover, poly etc to be removed + cleaned — it is probably fairly warm inside so handle with care
Decontamination of cell B to be continued as has been a B19 areas + B17 areas are areas of work and should be concentrated on. B17 cover moving mechanism seems to be hot - try steam + citric acid solution.

3-28-46
(4-12) The carrier and its accessories have been decontaminated. All smears were less than 50 except one taken from the top which counted 135. Who! Who?! X placed the piece of tygon reading 8r in an innocent

looking can in the decontamination room? JOH

[illegible] on B17 & B19 [illegible] cell and in cleaning up the product carrier in the [illegible] R lot of shift spent steaming B17 and [illegible] down B19 head and cone heaters.

Are the upper discharge funnels going to be used anymore. Are observed lying just off the step inside cell B. Also there seems to be a lot of hot odds & ends around the building which should be disposed rather than allowed to add to the general building background

Oil in crankcase of portable mud pump was drained after being observed and mostly water. New oil from cans in fan house was added.

Survey 11:35 PM

B17 - 6[illegible] mr at the [illegible]
B19 cone heater - 2 R at 15"
B19 head heater - 1700 mr at 6"

General cell background, center of cell, 200 mr

3/29/46 Nitric-ized, steamed & hosed cell
12-8 with thorough ~~AND~~, treatment of B-19
SEC- & B-17 areas.

Cell STEAMING AT Shift CHANGE.

8-4
3-24-46 Removed some hot material to
SJS+ burial ground
W.S. Cleaned first floor.
Helped maintenance.

3/29/46 Program For Tonight -
1. Clean up all hot material in decontamination room and store in proper place.
2. Move the furniture into the new office, also the table in the hall outside Jackie's office. Store in low storage area, the

rubber racks and other equipment which we have no use for at present time.

Did try no success 3. Try to remove, with no overexposure, the sheet lead around the bottom of the large duct.

4. There will be no more decontamination of cell B. Please spend some time in cleaning building more building and working on operating manual.

3/29/46
4-12

All manpower expended in trying to remove lead sheet from around base of duct. Didn't have much success - suggest that it be cut off and left where it is. Same thing holds for forms used to set up the concrete shielding

Moved furniture etc to new office

3-30-46
12-8

Item 1 and housekeeping

3-30-46
[illegible]
WJ

Followed housekeeping list.
Manpower used up helping Red string tygon tubing from cubicle to cell B.

3/30/46 Program Until Monday

OK 1. Take care of all housekeeping items listed on new housekeeping Inspection report.

2. Test new set-up for movable funnels. Rinse funnels and lines well with HNO_3 but do not allow HNO_3 to run on floor, catch it in bucket. Pour HNO_3 to funnels through solution addition on 3rd floor (B23)

3-30-46 (4-12)

There are some carriers, etc., soaking in the decontamination room - The 12-8 shift please rinse & have material surveyed. OK

Cell B has some cake in one corner. The area in the corner is approximately 3'. Please scoop material either with rubber gloves or short handle shovel & dump it into the waste can. All items on house keeping list have been taken care of except "1st Floor, items 1, 3 (in decont. room soaking) & 4. OK

3/31/46 (12-8)

Removed material from sump (as mentioned above) & washed sump with H_2O. Cleaned cell B entrance & adjacent area. Pump & hose cleaned & set on E. platform. Survey of floor outside cell entrance: All smears less than 100 cpm except for 1200 cpm beneath K-2 plug. Canvas H_2O hose returned to storage area after being checked. All items being decontaminated in "decon"

room were rinsed & set on floor. Each item was checked with "Cutie-Pie". None showed activity except cone plug (~35 mr/hr) & cone & collar (~12 mr/hr). Upon drying they can be put in their places. Further survey with "W-T" left to discretion of next shift. 4/ 12

Red waste can & 1 S.S. bucket left in Cell B. Readings in N.W. corner & sump still as before.

3/31/46
8-4

Equipment in decontam room checked for smears - that which was OK was stored, the rest put back for further treatment either in SS drums in decontam room or in M1 [illegible] 4/

Tools, brushes etc which came out of cell B checked, some cleaned & stored, the rest put into SS drums in decontam room or in M1

Cleaned up hot [illegible] concrete floor & also cleaned lead floor [illegible] with [illegible] and water and [illegible]

Worked on decontam [illegible] product corner east & west [illegible] (put [illegible] Cubicles).

4/1/46
12-8 Same as 4-12.

4/1/46 Program For Tonight.

1. Test B7 and B8 upper discharge funnels. Have man in cell when first swinging each pipette, check clearance between pipette arm and U.D. funnel when pipette is in lower swing position and also clearance when pipette is in upper swing position. You will probably find that the funnels need moving up or down so be careful not to bend pipette. If funnels needs moving get shift maintenance to fix them.

12-8 Run water from rest wells to B7 and B8, to U.D. funnels, to movable funnels, to B19 to see if all lines are clear. 4/12

2. Start testing all jet lines in cell B for leaks. Leave record of all leaks that you locate.

OK 12-8 3. Test B19 head heater for leaks. Just turn on steam and inspect.

4. 4-12 string up Tygon to B17 as per M.L.'s directions

Notice

① A meeting will be held at 3 PM Wednesday April 3rd for all supervisors only. Topics to be discussed —
"New Cost Accounting system"

② 706-C is now [illegible] 205 off-[illegible] system, [illegible] our valves closed

4-1-46
(4-12) Strung Tygon. Checked B-7 & B-8 For the swing of B-8 to upper discharge the clearance is small. Disregard the holes for top position + line up the bottom sides of the top bracket + the movable net for the swing of B-8. B-7 is okay Jeff

4/2/46
12-8 1. Ran H_2O from test wells → B7 → UD FUNNEL
→ B8 → UD FUNNEL
B19 ←

B-7 — OK

B-8 — Verified findings of 4-12 shift. ~~Suggest that holes be reset or funnel be moved.~~

Called Emergency Maintenance. In showing Foreman what was wanted it was discovered that lowering funnel would foul up lower swing position since clearance was very small. To clear top of funnel it was necessary to raise pipette as high as possible. Even if the holes were moved the setup appears to be too risky so it was decided to pass on this info and postpone any action until the "powers that be" take a look.

2. B19 Heat Heater
Turned on steam, lowered elevator, and found no leaks.

3. JET TESTING

PB 4A

B1-B26 OK
B1-B6 Leaks at union inlet to jet (steam line)

200 Continued (12-8)

C20-B22 OK
B1-B3 Cap on pot plugged. Leaks at flange entrance to B3
C21-B22 Leaks at A2 plug at weld in steam line.
B1-B10 Steam pot plugged at hole.
B22-B10 OK
B6-B1 OK
B6-B3A Jet leaks (hole)
B6-B3DB OK but gauge is slow.

PB 5

B10-A5 Top of steam pot exit line leaks.

All but one or two leaks were tagged.

Each man received full approval so work was stopped.