U-005-404.1

269

TECHNICAL INFORMATION FOR ASI, INC. FOR "PREPARATION OF OU-3 FEASABILITY STUDIES"

05-09-90

WMCO:R:90-366
WMCO/DOE-FMPC
200
DATA

[redacted]

269

Westinghouse
Materials Company
of Ohio

PO Box 398704
Cincinnati, Ohio 45239-8704

(513) 738 6200

WMCO:R:90-366
May 9, 1990

Mr. Gerald W. Westerbeck
Site Manager
U. S. Department of Energy
P. O. Box 398705
Cincinnati, Ohio 45239-8705

TECHNICAL INFORMATION FOR ASI, INC. FOR "PREPARATION OF OU-3 FEASIBILITY STUDIES,"

Reference: Verbal Request, S. H. Wolinsky to F. T. Jebens, same subject, dated March 22, 1990

Dear Mr. Westerbeck:

Attached, please find the technical information requested by ASI, Inc. for preparation of the Feasibility Study for ERA Operable Unit 3. The following information is attached to support ASI in the preparation of their Task reports.

1. Scrap Metal inventory and plan for metal decontamination.

2. Listing of unused, hazardous, or abandoned facilities.

3. Preliminary Level cost estimate for Operable Unit 3 which is based on previously transmitted assumptions.

4. Information on Refinery sumps from 1971 to 1988.

The technical information is a supplement to other information previously collected and/or transmitted. Please contact F. T. Jebens, ext. 6456, for additional information.

Very truly yours,

J P Hopper for

W. A. Weinreich, Vice President
FMPC Restoration

FTJ:dal

Attachment

FMPC RESTORATION
QUALITY
SAFETY
1
COMPLIANCE
WE RE MAKING SURE

cc w/attachment:

G. J. Brown
F. T. Jebens
S. H. Wolinsky, ASI
J. D. Wood, ASI
ERA Project Files
Central Files

cc w/o attachment:

A. P. Avel, DOE/FMPC
K. T. Brakken, DOE/FMPC
D. J. Carr
B. J. Davis, DOE/FMPC
J. P. Hopper
E. M. Howard, DOE/FMPC
S. M. Peterman
R. S. Shirley

ATTACHMENT 1

SCRAP METAL INVENTORY
April 1990

CATEGORY	QUANTITY, tons
DOE Metal Management Program*	
Ferrous Metals	5000
Copper Pile, Plant 1 Pad	1375
Scrap	
Refuse, low level contamination	2800
Metal for FMPC Decontamination	2200
Total	11,375

* The DOE Metals Management Program is a centralized processing and reclamation of steel and semi-precious metals at ORO. The materials slated for this program at the FMPC have not been funded or scheduled as of yet.

PLAN FOR METAL DECONTAMINATION

Fiscal Year	Quantity, DE's**
1990	4200
1991	7500
1992	7600
1993	3500
1994	3500
1995	7500
Total	33,800

** DE (Drum Equivalent) is equal to 241 pounds

ATTACHMENT 2

UNUSED, HAZARDOUS, OR ABANDONED FACILITIES*
April 1990

DESCRIPTION	STATUS
Chemical Area	
Plant 1	
~~Metal Oxide Silos~~	~~1~~
Plant 2/3	
Ozone Building	3
Hot Raffinate Building	3
Refrigeration Building	3
Incinerator Building 39	3
Plant 4	
Reactor Banks (9)	3
Old Tank Farm	3
Plant 7	
Entire Building	1
Pilot Plant	
Dust Collectors (3)	2,3
Wet side Equipment	2,3
Exterior Tanks/Pads	2,3
Metals Area	
Plant 6	
Rolling Mill	1
Plant 9	
Dust Collector	3
Storage Areas	
Thorium Warehouse 64	2
Thorium Warehouse 67	2
Thorium Warehouse 68	2
Thorium Equipment Warehouse Q-3	2

* Includes facilities which are not in use or contain materials which may be hazardous and are currently not funded for maintenance or disposal.

Notes

1) Facilities which are abandoned and on the "orphaned list" (Facilities are not funded for removal or maintenance)
2) Facilities which are Thorium related
3) Facilities which are not in use but require near-term action

ATTACHMENT 3

Preconceptual Estimate
for
Operable Unit 3

Lockwood Greene Engineers, Inc.
#3 Main Street
P. O. Box 3561
Oak Ridge, TN 37831-3561

COST ESTIMATE

LGE Job Number:
50206.01

ERA SUPPORT - OPERABLE UNIT #3
FMPC - FERNALD, OHIO

PRELIMINARY LEVEL ESTIMATE

FINAL DRAFT ISSUE

Approved By:

Project Estimator	4-27-90 Date
Estimating Group Leader	4-27-90 Date
R.W. Andenschat, P.E. Project Manager	4/30/90 Date

LOCKWOOD GREENE ENGRS. 04/25/90

Prepared by:
LOCKWOOD GREENE ENGINEERS, INC.
OAK RIDGE, TENN

ESTIMATE SUMMARY
FMPC
FERNALD, OHIO

L.G.Project Number: 50206.01
Level of Estimate: PRELIMINARY
File No.-
Client & Dept- WMCO
PROJECT TITLE -ERA - OPERABLE UNIT 3

Sheet- 2
Date- 4-25-90
Estd. by- DKA/JLS
Chkd. by- RSF

Location- OU3

CODE	ITEM DESCRIPTION		MAT'L $	LABOR $	SUBCONTR	TOTAL $
2000	SITEWORK		180,098	15,940		196,038
6000	SPECIAL FACILITIES & PROCESSES		79,823	59,149		138,972
7000	UTILITIES		183	119		302
9000	CONSTRUCTION COSTS		11,277	6,464		17,741
	SUBTOTAL		271,381	81,672	0	353,053
	JOB CONDITION FACTORS	18%		14,701		14,701
	INDIRECTS	31%		25,318		25,318
	SUBTOTAL		271,381	121,691	0	393,072
	HEALTH PHYSICS	20%		24,338		24,338
	SALES TAX	5.5%	14,926			14,926
	SUBTOTAL		286,307	146,029	0	432,336
	BOND	1.0%	2,863	1,460		4,323
	SUB OH&P	25%	71,577	36,507		108,084
	SUBTOTAL		357,884	182,536	0	544,743
	RUST CM FEE	20%				108,949
	SUBTOTAL					653,692
	PROJ. MGMT.-WMCO	6%				32,685
	ENGINEERING	15%	Title I&II- 3	Title III- 12		81,711
	SUBTOTAL					768,088
	DECONTAM & DISPOSAL					0
	SUBTOTAL					768,088
	ESCALATION	35.9%				275,743
	SUBTOTAL					1,043,831
						0
	CONTINGENCY	40%				417,541
	TOTAL ESTIMATED COST	DOLLARS X 1000				$ 1,461,000

7

ESTIMATE SUBTOTAL SUMMARY

LOCKWOOD GREENE ENGR, INC.
OAK RIDGE, TN. 37831

JOB NAME: ERA SUPPORT
FMPC - FERNALD, OHIO
DATE: APRIL 25, 1990
ESTIMATE: OPERABLE UNIT 3
L.G. NO: 50206.01

DESCRIPTION		PG.NO.	MATERIAL TOTALS	LABOR TOTALS	TOTALS
CONSTRUCTION COST CODES		(DOLLARS X 1000)			
2000-A	SOILS - NON-PROCESS	14	$2,052	$826	$2,878
2000-B	WASTE SORTING, CRUSHING, ETC	16	$149,492	$9,000	$158,492
2000-C	STORAGE AREAS - SOILS/GRAVEL	18	$3,346	$1,775	$5,121
2000-D	SUPPORT AREAS - W.W. OUTFALL	19	$294	$64	$358
2000-E	SITE PREP - PROD. AREA	21	$24,914	$4,275	$29,189
SUBTOTAL 2000			$180,098	$15,940	$196,038
6000-A	ENGINEERED DISPOSAL FACILITY	22	$24,465	$11,410	$35,875
6000-B	OU3 OPERATIONS	23	$1,910	$13,819	$15,729
6000-C	EDF CAP	24	$6,889	$1,674	$8,563
6000-D	STAGING AND PROCESS AREA	25	$9,907	$4,735	$14,642
6000-E	STORAGE AREAS - DEMOLITION	26	$1,054	$2,958	$4,012
6000-F	OPERATING PLANTS - DEMO.	27	$519	$1,089	$1,608
6000-G	STORAGE AREAS - CONTAIN, ETC	28	$15,396	$12,082	$27,478
6000-H	STORAGE AREAS - SUMPS	32	$2,858	$4,081	$6,939
6000-I	OPER. PLANTS - CONTAIN, ETC.	35	$5,996	$4,694	$10,690
6000-J	STORAGE AREAS - DECON.	38	$10,547	$2,481	$13,028
6000-K	OPERATING PLANTS - DECON.	40	$270	$126	$396
6000-P	SUPPORT AREAS - PCB TRANS.	41	$12	$0	$12
SUBTOTAL 6000			$79,823	$59,149	$138,972
7000-A	UTILITIES	13	$183	$119	$302
SUBTOTAL 7000			$183	$119	$302
9000-A	GENERAL SITE CONDITIONS	10	$9,427	$4,927	$14,354
9000-B	TRAINING,TESTING,MEDICALS	12	$1,850	$1,537	$3,387
SUBTOTAL 9000			$11,277	$6,464	$17,741

PROJECT TITLE: ERA SUPPORT SHEET 1 OF 1

PROJECT NO.: _____ PROJECT ENGINEER: _____ DATE: 4-25-90

FILE NO.: _____ LOCATION: OPERABLE UNIT 3 EST'R: DKA/JLS

BASIS OF ESTIMATE

CWID.....[ ]	PRELIM DWGS...[X]	VENDOR QUOTES..[X]	PREVIOUS ESTS.....[X]
SITE VISIT.[X]	VERBAL SCOPE..[X]	SPECS.....[ ]	KEY DISCIPLINE SCOPE.[ ]
SKETCH.....[X]	WRITTEN SCOPE..[X]	CFC DWGS.....[ ]	GENERAL INFO.....[ ]
NO DWGS....[ ]	GREEN SHEET...[ ]	EQUIPMENT LIST.[ ]	OTHER.....[ ]

SCOPE: SEE PAGE NUMBER 5

ASSUMPTIONS/NOTES:

1. CONTINGENCY: 40% DUE TO THE GREAT NUMBER OF UNKNOWN ITEMS AND MANY ASSUMPTIONS THAT HAD TO BE MADE TO PRODUCE THIS ESTIMATE.

2. DECONTAMINATION & DISPOSAL: TO BE STORED ON SITE.

3. ENGINEERING: TITLE I, II & III TO BE DONE BY A/E. PROJECT MANAGEMENT BY WMCO.

4. GENERAL: SEE "BASIS OF ESTIMATE" PAGE NUMBER 6.

JOB CONDITION FACTORS (%) OR ($)		INDIRECT COSTS (%) OR ($)	
HEIGHT/BELOW GRADE		SMALL TOOLS	
WEATHER	6%	SCAFFOLDING	
HAZARDOUS FUMES/DUSTS	2%	CLEAN-UP	2%
JOB CONGESTION		TEMPORARY FACILITIES/SERVICE	
CRAMPED WORKING AREA		MAINTAINING PRODUCTION	
CRAFT INTERFERENCE		CHG. ORDERS ALLOWANCE	5%
ABNORMAL CLEAN-UP		WELDER QUALIFICATIONS	
STRINGENT TESTING & INSPECTION	5%	FIELD SUPERVISION	
TIGHT SCHEDULE		PREMIUM TIME & SHIFT DIFF.	21%
NON-PROD. TIME	5%	SURVEYS, TESTS, GEOLOG. STUDY	3%
TOTAL	13%	TOTAL	31%

ERA SUPPORT
PRELIMINARY ESTIMATE
OPERABLE UNIT 3 - FMPC

SCOPE: THIS ESTIMATE WAS PRODUCED IN ORDER TO ESTABLISH A PRELIMINARY PROJECT COST FOR THE REMEDIATION OF THE OPERABLE UNIT 3, AT FMPC, FERNALD, OHIO. OPERABLE UNIT 3 CONSISTS OF THE FOLLOWING:

A. NON-PROCESS AREAS
   1. SOIL SPILLS AMD SCRAP DUMPS
   2. NON-PROCESS FACILITY DEMOLITION

B. STORAGE AREAS
   1. WAREHOUSES
   2. PADS
   3. OPEN FIELD

C. OPERATING PLANTS
   1. PROCESS SPILLS AND DEMOLITION
   2. SUMPS
   3. ABANDONED FACILITIES

D. SUPPORT AREAS
   1. MAIN WASTE WATER EFFLUENT OUTFALL LINE FROM SEWAGE TREATMENT PLANT TO GREAT MIAMI RIVER
   2. WASTE WATER RIGHT OF WAYS
   3. RCRA AREAS - PCB POWER CENTERS

FACILITIES AND SUSPECT AREAS ARE TO BE REMEDIATED AS DEFINED DURING THE RI/FS PROCESS. CONTAMINATED SOIL TO BE REMOVED TO 1' DEEP, BOXED, AND TAKEN TO PRE-PREPARED STORAGE SITE; BACKFILL, REGRADING, & RESEEDING WILL BE REQUIRED. NON-PROCESS FACILITIES WILL REQUIRE DEMOLITION, SIZE REDUCTION, AND BOXING OF RUBBLE; BACKFILL, REGRADING AND RESEEDING REQUIRED.

STORAGE AREAS WILL REQUIRE REMOVAL OF LOOSE CONTAMINATION, ISOLATION OF SOURCES OF CONTAMINATION, AND NEW AIR AND WATER MONITORING DEVICES. DETERIORATED SECTIONS TO BE REMOVED AND UPGRADED TO CURRENT STANDARDS. CONTAMINATED GRAVEL AND SOIL THROUGHOUT THE PRODUCTION AREA TO BE REMOVED TO 1' DEEP AND BOXED; BACKFILL, REGRADING, AND RESEEDING TO BE REQUIRED.

OPERATING PLANTS WILL REQUIRE ISOLATION, REMOVAL OF CONTAMINATION AND UPGRADING OF BUILDINGS WITH MAJOR TREATMENT AREAS TO HANDLE ADDITIONAL GROUNDWATER DUMPING VOLUMES. MONITORING TO BE REQUIRED.

SUPPORT AREAS TO REQUIRE REMOVAL OF CONTAMINATED SOIL, REMOVAL OF DETERIORATED SECTIONS, AND UPGRADE TO CURRENT STANDARDS. POWER CENTERS CONTAINING PCBS TO BE IN STORAGE AND REMOVED FROM THE FMPC SITE AND TAKEN TO AN OFFSITE INCINERATOR. AIR AND WATER MONITORING TO BE REQUIRED THROUGHOUT CONSTRUCTION.

BASIS OF ESTIMATE

NOTE: THE FOLLOWING ASSUMPTIONS WERE MADE IN ORDER TO PRODUCE A PRELIMINARY ESTIMATE FOR THE OPERABLE UNIT 3 AT FMPC - FERNALD, OHIO.

1. REFER TO THE KICKOFF MEETING MINUTES OF 2-15-90 AT FMPC.

2. REFER TO THE MEETING MINUTES OF 3-09-90 AT LOCKWOOD GREENE.

3. ESTIMATE IS BASED ON THE FOLLOWING CONSTRUCTION SCHEDULE:

START OF CONSTRUCTION	- FY 1993, QTR. 4
END OF CONSTRUCTION	- FY 1999, QTR. 4
MIDPOINT OF CONSTRUCTION	- FY 1996, QTR. 2
ESCALATION	- 35.9 %

4. ALL CONSTRUCTION PERSONNEL WILL NEED TO BE OSHA HAZARDOUS WASTE SAFETY TRAINED AND HAVE FULL MEDICAL EXAMS.

5. ASSUMED TOTAL NUMBER OF CONSTRUCTION PERSONNEL THAT WILL NEED TRAINING AND MEDICAL EXAMS IS 500.

6. ASSUMED AVERAGE NUMBER OF CONSTRUCTION PERSONNEL THROUGHOUT CONSTRUCTION TO BE 70.

7. PERSONNEL DECON TRAILERS AND STORAGE TANKS WILL NEED TO BE PURCHASED.

8. CONTINGENCY OF 40% USED DUE TO UNKNOWN LEVEL OF CONTAMINATION, VARIED LOCATIONS OF CONTAMINATION, PER DIRECTION OF WMCO.

9. ASSUMED USE OF PERSONNEL PROTECTIVE EQUIPMENT DUE TO UNKNOWN LEVEL OF CONTAMINATION.

10. ASSUME 2000 LF OF HAUL ROAD.

11. ASSUMED NO PROPERTY COSTS, LEASE PAYMENTS OR ANY TYPE OF ACCESS FEES INCLUDED IN THIS ESTIMATE.

12. ASSUMED WORKING 5-10 HOUR DAYS PER WEEK W/3 SHIFTS, THIS RESULTS IN AN ADDER FOR OVERTIME PREMIUM PAY AND SHIFT DIFFERENTIAL OF 21%

13. ASSUMED PURCHASING BORROW SOIL FROM WITHIN 10 MILE RADIUS OF SITE.

14. ASSUMED ALL CONSTRUCTION EQUIPMENT WILL BE DECONTAMINATED.

15. ASSUMED ALL WASTE WILL BE PACKAGED IN 4′ x 4′ x 6′ CONCRETE STORAGE BOXES AND STORED IN AN ENGINEERED DISPOSAL FACILITY ON THE FMPC SITE.

16. ASSUMED TEMPORARY SITE UTILITIES WILL BE REQUIRED DURING CONSTRUCTION SINCE EXISTING SITE UTILITIES MAY REQUIRE RELOCATION AND/OR COMPLETE DEMOLITION AS PART OF THE REMEDIATION PROCESS.

ASSUMED ALL PACKAGING WILL BE DONE AT A CENTRAL LOCATION ON THE FMPC SITE. THE PACKAGING SITE WILL NEED A CONCRETE SLAB TO ALLOW WASTE PACKAGING AND SIZE REDUCTION.

TOTAL BOXES TO BE STORED WILL BE 118,656.

TOTAL EDF SPACE NEEDED IS 637,200 SF.

ENGINEERED DISPOSAL FACILITY PRICES ARE BASED ON COSTS USED IN ESTIMATES FOR INTERIM WASTE MANAGEMENT FAC. @ OAK RIDGE, TN. COSTS IN THIS ESTIMATE ARE FOR OU3 DISPOSAL AREA ONLY. THIS IS NOT THE TOTAL COSTS FOR THE EDF, ONLY A PROPORTIONAL COST FOR THIS UNIT

ASSUMED USING A 3 PART RCRA CAP CONSISTING OF A 2' IMPERMEABLE SOIL LAYER, FLEXIBLE MEMBRANE LINER W/ DRAINAGE NET & GEOTEXTILE FABRIC, 1'6" VEGETATIVE LAYER FOR COVERING THE STORAGE AREA BELOW CAP FILL. BASED ON 637,200 SF OF SPACE NEEDED, THE CAP WILL BE 130,300 SY.

A TEMPORARY POLYETHELENE COVER WILL BE USED UNTIL THE RCRA CAP IS INSTALLED.

ASSUMED HEADER SIZE FOR DEWATERING SYSTEMS TO BE 6" DIAMETER.

ASSUMED DIESEL POWERED PORTABLE LIGHTS WILL BE USED AN AVERAGE OF 12 HOURS PER DAY FOR 2ND &3RD SHIFTS AT THE ESF.

ASSUMED PROVIDING A TESTING LAB TO CLASSIFY BOXES AND RECORD KEEPING. 4 TECHNICIANS WILL BE NEEDED THROUGHOUT CONSTRUCTION.

ASSUMED A SLURRY WALL 50' DEEP x 3' WIDE WILL BE USED IN APPROX. 40 % OF THE PRODUCTION AREA TO ISOLATE & REMOVE EXISTING GROUNDWATER.

ASSUMED A FREEZE WALL WILL BE USED THE REMAINING 60 % OF THE PRODUCTION AREA AROUND DIVISIONS OF CONSTRUCTION - APPROX. 14,600 LF x 50' DEEP.

ASSUMED MONITORING IS CONTINUALLY DONE THROUGHOUT CONSTRUCTION. ALL MONITORS ASSUMED TO BE MANUAL.

ASSUMED "CONTAIN" IS TO REPAIR SO AS NOT TO LEAK; ASSUMED 20% OF TOTAL LENGTH OF EXISTING CURBS/DIKES IS TO BE REPLACED, AND 2 COATS OF EPOXY SEALANT TO BE APPLIED TO ALL CONCRETE.

ASSUMED "UPGRADE" IS TO INSTALL NEW CONTAINMENT STRUCTURES AND APPLY SEALANT TO ALL CONCRETE.

ASSUMED DECONTAMINATION COSTS USING TYVEK SUITS AND RESPIRATORS.

CRITICAL ASSUMPTIONS

NOTE: THESE ARE ASSUMPTIONS MADE IN ORDER TO PRODUCE A PRELIMINARY COST ESTIMATE THAT HAVE A MAJOR IMPACT ON BOTH THE COST AND SCHEDULE OF THIS PROJECT.

---

1. NUMBER OF AREAS AND LOCATIONS OF CONTAMINATED SOIL AND BUILDING MATERIALS.
2. BORROW LOCATION.
3. TOTAL OPERATION TIME OF 6 YEARS.
4. WORK SCHEDULES.
5. LEVEL OF PERSONNEL DRESS-OUT REQUIRED DURING CONSTRUCTION
6. TYPE OF STORAGE CONTAINER USED TO STORE WASTE AND AMOUNT OF BOXES TO BE STORED ON EACH PAD.
7. INSTALLATION OF SLURRY WALLS AND/OR FREEZE WALLS WITHIN THE LIMITS OF THE PRODUCTION AREA.
8. LIMITS OF REMOVAL OF UNDERGROUND UTILITIES.

LOCKWOOD GREENE, INC. 04/25/90

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL COST MATERIAL	LABOR COST UCL	UMH	HOURS	CF RATE	LABOR COST LABOR	09:25 AM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 GENERAL SITE CONDITIONS COST CODE 9000										
1	PERSONNEL DECON TRAILERS W/ STORAGE TANKS FOR WASTE	3	E	20000	$60,000		0	0	0.00	$0	$60,000
2	PUMP STORAGE TANKS (ONCE PER WEEK)	1	LOT	10000	$10,000	25488	1200	1200	TD 21.24	$25,488	$35,488
3	OFFICE TRAILER FOR CONTRACTORS, SECURITY, HP, FIELD ENGINEERING, ETC.	12	E	25000	$300,000	0.0	0.0	0.0	0.00	$0	$300,000
4	PORTA TOILETS ($70/MTH X 6YR.) INCL. SERVICE WEEKLY	10	E	1,680.00	$16,800	0.0	0.0	0.0	0.00	$0	$16,800
5	SITE SUPERVISOR (1 PER SHIFT)	3	LOT	0.00	$0	514800	15600	46800	X3 33.00	$1,544,400	$1,544,400
6	SITE SAFETY ENGINEER, CONTRACTOR (1 PER SHIFT)	3	LOT	0.00	$0	514800	15600	46800	X3 33.00	$1,544,400	$1,544,400
6A	HEALTH PHYSICS TECHNICIAN	3	EA	0.00	$0	135762	4114	12342	X3 33.00	$407,286	$407,286
	PERSONNEL PROTECTION:										
7	TYVEK SUITS (BOX OF 25 , W/ 4 SUIT CHANGES PER DAY)	17,472	BOX	85.00	$1,485,120	0.0	0.0	0.0	0.00	$0	$1,485,120
8	MSA MASKS,(2 PER WORKER)	1,000	E	16.00	$16,000	0.0	0.0	0.0	0.00	$0	$16,000
9	CLEANING OF MASKS BY WMCO	1	LOT	250000	$250,000	0.0	0.0	0.0	0.00	$0	$250,000
10	CARTRIDGES FOR MASK (8 PER DAY PER WORKER)	874	M	3,850.00	$3,364,900	0.0	0.0	0.0	0.00	$0	$3,364,900
11	GLOVES (4 PAIR PER DAY PER WORKER)	437	M	8,000.00	$3,496,000	0.0	0.0	0.0	0.00	$0	$3,496,000
12	RUBBER BOOTS (2 PAIR PER WORKER)	1,000	E	20.00	$20,000	0.0		0.0	0.00	$0	$20,000
	PACKAGE PERSONNEL CLOTHING & EQUIPMENT:										
13	WASTE COMPACTOR FOR 55 GAL. DRUM (3-OP,2HRS./240 DAYS FOR 6 YEARS FOR 3 SHIFTS)	1	E	45000	$45,000	791381	32760	30240	OP 26.17	$791,381	$836,381
14	17C DOT DRUMS FOR WASTE	1,746	E	55.00	$96,030	0.0		0.0	33.00	$0	$96,030

LOCKWOOD GREENE, INC. 04/25/90

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL COST MATERIAL	LABOR COST UCL	UMH	HOURS	CF	RATE	LABOR	09:25 AM TOTAL
15	HAULING DRUMS TO STORAGE ON SITE, ONCE PER WEEK FOR 2 HOURS - 3 SHIFTS	1	LOT	31200	$31,200	39761	1872	1872	TD	21.24	$39,761	$70,961
16	TEMPORARY AIR MONITORS	3	E	10000	$30,000	396.5	16.0	48.0	E	24.78	$1,189	$31,189
17	JOB SHACKS FOR PERSONNEL	6	E	5,000.00	$30,000	224.0	8.0	48.0	X2	28.00	$1,344	$31,344
18	DEMO SHACKS	1	LOT	750.00	$750	336.0	12.0	12.0	X2	28.00	$336	$1,086
19	DIESEL POWERED PORTABLE LIGHT	30	E	3,500.00	$105,000	19052	728	21840	OP	26.17	571553	$676,553
20	PURCHASE TANKER TRUCK	1	E	70000	$70,000		0.0	0.0		0.00	$0	$70,000
	SUBTOTAL				$9,426,800			161202			4927138	$14,353,938

LOCKWOOD GREENE, INC. 04/23/90

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL COST MATERIAL	LABOR COST UCL	UMH	HOURS	CFT	RATE	LABOR	11:50 AM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 TRAINING, TESTING & MEDICAL COST CODE 9000											
1	INTIAL 80 HR. SAFETY TRAINING TO BE GIVEN BY WMCO	500	E	2,000.00	$1,000,000	2240	80.0	40000	X2	28.00	$1,120,000	$2,120,000
2	ANNUAL 8 HR REFRESHER COURSE ($500 EA. X 5 TIMES)	70	E	2,500.00	$175,000	1120	40.0	2800	X2	28.00	$78,400	$253,400
3	BASELINE MEDICAL EXAM ENTRANCE & EXIT	1,000	E	500.00	$500,000	168.0	6.0	6000	X2	28.00	$168,000	$668,000
4	BIOASSAY EVALUATION (4 HRS.)	500	E	0.00	$0	112.0	4.0	2000	X2	28.00	$56,000	$56,000
5	ANNUAL MEDICAL EXAMS	350	E	500.00	$175,000	168.0	6.0	2100	X2	28.00	$58,800	$233,800
6	RESPIRATOR FIT TEST & TRAINING	500	E	0.00	$0	112.0	4.0	2000	X2	28.00	$56,000	$56,000
	SUBTOTAL				$1,850,000			54900			$1,537,200	$3,387,200

LOCKWOOD GREENE, INC. 04/23/90

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CFT	RATE	LABOR	03:37 PM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 SITE UTILITIES COST CODE 7000											
1	SITE COMMUNICATIONS (FROM WMCO ESTIMATE FOR OU1)	1	LOT	8500	$8,500	5947	240	240.0	E	24.78	$5,947	$14,447
2	SITE LIGHTING (FROM WMCO ESTIMATE FOR OU1)	1	LOT	24500	$24,500	19824	800	800	E	24.78	$19,824	$44,324
3	SITE POWER (FROM WMCO ESTIMATE FOR OU1 X 3 DUE TO PROCESS FACILITY)	1	LOT	118000	$118,000	69384	2800	2800	E	24.78	$69,384	$187,384
4	POTABLE WATER	1	LOT	32000	$32,000	23553	900	900	OP	26.17	$23,553	$55,553
	SUBTOTAL				$183,000			4740			$118,708	$301,708

LOCKWOOD GREENE, INC. 04/25/90

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CFT	RATE	LABOR	09:27 AM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 NON - PROCESS AREA COST CODE 2000											
	SOIL REMEDIATION:											
1	TEMPORARY AIR MONITORS	5	E	5,000.00	$25,000	396.5	16.0	80.0	E	24.78	$1,982	$26,982
2	ACCESS ROAD 20'W X 1' DEEP ASSUME 2000'	2,000	LF	11.82	$23,640	81.2	3.1	6208	OP	26.17	$162,463	$186,103
3	SILT FENCE	4,000	LF	2.46	$9,840	0.6	0.0	96.0	OP	26.17	$2,512	$12,352
4	RIP RAP CHECK DAMS TO DIVERT FLOW DURING CONSTRUCTION	1,356	CY	16.13	$21,872	6.8	0.3	349.8	OP	26.17	$9,156	$31,028
5	HAY BALES W/ WOOD STAKES	2,000	E	5.00	$10,000	16.2	0.8	1500	L	21.66	$32,490	$42,490
6	EXCAVATE CONTAMINATED SOIL ADVERSE CONDITIONS & LOAD IN DUMP TRUCKS	70,445	CY	1.86	$131,028	1.4	0.1	3804	OP	26.17	$99,551	$230,579
7	DUMP TRUCK STAND BY TIME 25% OF EXCAVATION TIME	1	LOT	38121	$38,121	16185	762.0	762.0	TD	21.24	$16,185	$54,306
8	HAUL TO PACKAGING AREA 1 MILE HAUL, W/ 25% SWELL	88,056	CY	1.65	$145,292	0.8	0.04	3346	TD	21.24	$71,072	$216,364
9	WASHED NO 57 STONE TO REBUILD EXCAVATED AREAS	149695	TON	10.00	$1,496,950	1.6	0.1	8982	OP	26.17	$235,051	$1,732,001
10	EROSION CONTROL FABRIC	7,007	SY	5.00	$35,035	0.3	0.0	70.1	X2	28.00	$1,962	$36,997
11	REWORK CHECK DAMS	1	LOT	11375	$11,375	4580	175.0	175.0	OP	26.17	$4,580	$15,955
12	REMOVE EROSION CONTROL DEVICES	1	LOT	0.00	$0	1733	80.0	80.0	L	21.66	$1,733	$1,733
13	REMOVE & LOAD ACCESS ROAD	1,481	CY	5.00	$7,405	4.7	0.2	263.6	OP	26.17	$6,899	$14,304
14	HAUL TO FMPC SPOIL AREA W/ 25% SWELL	1,852	CY	1.65	$3,056	0.8	0.04	70.4	TD	21.24	$1,495	$4,551
15	DECON EQUIPMENT	1	LOT	25800	$25,800	8374	320.0	320.0	OP	26.17	$8,374	$34,174
16	SEED, MULCH & FERTILIZE ASSUME 20' ALONG ALL DITCHES	12	ACRE	3,000.00	$36,000	0.0	0.0	0.0		33.00	$0	$36,000

LOCKWOOD GREENE, INC. 04/25/90

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CFT	RATE	LABOR	09:27 AM TOTAL
	DECOMMISSION & REMEDIATION :											
	NORTH & EAST AREA STRUCTURES AND RUBBLE, 70 TONS											
17	DEMO CONCRETE, LOAD, HAUL TO PACKAGING AREA	486	CY	23.32	$11,334	204.4	7.3	3548	X2	28.00	$99,338	$110,672
18	DEMO STEEL, LOAD, HAUL TO PACKAGING AREA	622	CY	10.60	$6,593	36.4	1.3	808.6	X2	28.00	$22,641	$29,234
	PIT AREA CONSTRUCTION DEBRIS & RUBBLE PILE:											
19	LOAD, HAUL RUBBLE TO PACKAGING AREA	5,834	CY	2.27	$13,243	8.4	0.3	1750	X2	28.00	$49,006	$62,249
	SUBTOTAL				$2,051,584			32213			$826,490	$2,878,074

LOCKWOOD GREENE, INC. 04/27/90

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CF	RATE	LABOR	02:36 PM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 WASTE SORTING, SHREDDING, CRUSHING, PACKAGING, LOADING AND HAULING COST CODE 2000											
	SOILS AND GRAVEL :											
1	LOAD SOIL AND GRAVEL INTO CONCRETE 4' X 4' X 6' BOXES INCLUDES 25% SWELL	231161	CY	15.26	$3,527,517	8.0	0.3	70504	OP	26.17	$1,845,092	$5,372,609
2	LABORERS FOR LOADING SOIL	231161	CY	0.00	$0	13.2	0.6	140777	L	21.66	$3,049,231	$3,049,231
3	TRANSPORT BOXES TO LOADING AREA 10 MIN/BOX, $40/HR FORKLIFT	104598	BOX	6.67	$697,669	4.4	0.2	17433	OP	26.17	$456,222	$1,153,890
	CONCRETE :											
4	SORT, CRUSH AND SHRED MATERIAL INCL. 25% SWELL FACTOR	4,861	CY	3.43	$16,673	7.8	0.4	1750	L	21.66	$37,904	$54,577
5	LABORERS FOR LOADING BOXES	4,861	CY	0.00	$0	17.3	0.8	3889	L	21.66	$84,231	$84,231
6	TRANSPORT BOXES TO LOADING AREA 10 MIN/BOX, $40/HR FORKLIFT	2,200	BOX	6.67	$14,674	4.4	0.2	366.7	OP	26.17	$9,596	$24,270
	RUBBLE & CONSTRUCTION DEBRIS :											
7	SORT, CRUSH AND SHRED INCL. 50% SWELL FACTOR	9,584	CY	3.43	$32,873	9.4	0.4	3450	OP	26.17	$90,293	$123,166
8	LABORERS FOR LOADING BOXES	9,584	CY	0.00	$0	17.3	0.8	7667	L	21.66	$166,072	$166,072
9	TRANSPORT BOXES TO LOADING AREA 10 MIN/BOX, $40/HR FORKLIFT	4,337	BOX	6.67	$28,928	4.4	0.2	722.8	OP	26.17	$18,917	$47,844
	STRUCTURAL STEEL :											
10	SIZE REDUCE TO 5' LENGHTS	1,926	CY	191.76	$369,330	343.0	13.3	25674	IW	25.73	$660,581	$1,029,911
11	PACK INTO 4' X 4' X 6' CONCRETE BOXES, INCL. .266 CY/BOX	1,926	CY	0.00	$0	12.7	0.5	870.6	X2	28.00	$24,375	$24,375
12	GROUT BOXES, 1.9 CY/BOX	7,241	BOX	95.00	$687,895	18.7	0.7	5170	OP	26.17	$135,301	$823,196
13	TRANSPORT BOXES TO LOADING AREA 10 MIN/BOX, $40/HR FORKLIFT	7,241	BOX	6.67	$48,297	4.4	0.2	1207	OP	26.17	$31,583	$79,880

LOCKWOOD GREENE, INC. 04/27/90

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CF	RATE	LABOR	02:36 PM TOTAL
	ASBESTOS :											
14	PACK DOUBLE BAGGED ASBESTOS INTO BOXES, 2-L 20 MIN/BOX	280	BOXES	0.00	$0	14.5	0.7	187.6	L	21.66	$4,063	$4,063
	BOXES & HAULING :											
15	CONCRETE BOXES 4' X 4' X 6'	118656	BOX	1,200.00	$142,387,200	13.1	0.5	59328	OP	26.17	$1,552,614	$143,939,814
16	LOAD BOXES ONTO TRUCK 10 MIN./BOX, $40/HR FORKLIFT	118656	BOX	6.67	$791,436	4.4	0.2	19816	OP	26.17	$518,573	$1,310,009
17	HAUL BOXES TO EDF W/ TRACTOR TRAILER, $60/HR TRACTOR, 6 BOXES/LOAD, .75 LOADS/HR	118656	BOX	7.50	$889,920	2.7	0.1	14832	TD	21.24	$315,032	$1,204,952
	SUBTOTAL				$149,492,411			373644			$8,999,679	$158,492,091

LOCKWOOD GREENE, INC. 04/23/90

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CFT	RATE	LABOR	11:38 AM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 STORAGE AREAS SOIL AND GRAVEL REMEDIATION COST CODE 2000											
1	TEMPORARY AIR MONITORS	12	E	5,000.00	$60,000	396.5	16.0	192.0	E	24.78	$4,758	$64,758
2	SILT FENCE 2200' EACH AREA	26,400	LF	2.46	$64,944	0.6	0.0	633.6	OP	26.17	$16,581	$81,525
3	HAY BALES W/ WOOD STAKES	4,000	E	5.00	$20,000	16.2	0.8	3000	L	21.66	$64,980	$84,980
4	EXCAVATE CONTAMINATED SOIL & GRAVEL - ADVERSE CONDITIONS & LOAD IN DUMP TRUCKS	113500	CY	1.86	$211,110	1.4	0.1	6129	OP	26.17	$160,396	$371,506
5	DUMP TRUCK STAND BY TIME 25% OF EXCAVATION TIME	1	LOT	76611	$76,611	32540	1532	1532	TD	21.24	$32,540	$109,151
6	HAUL TO PACKAGING AREA 1 MILE HAUL, W/ 25% SWELL	141875	CY	1.65	$234,094	0.8	0.04	5391	TD	21.24	$114,510	$348,604
10	CRUSHED STONE TO REBUILD STORAGE AREAS	36,562	CY	9.71	$355,020	7.9	0.3	10969	OP	26.17	$287,051	$642,071
11	BACKFILL FROM OFFSITE WITHIN 10 MILE RADIUS OF SITE	36,563	CY	16.06	$587,202	10.4	0.5	16600	X1	23.00	$381,791	$968,993
12	BACKFILL WITH TOPSOIL FROM OFFSITE WITHIN 10 MILE RADIUS	68,750	CY	23.71	$1,630,063	10.2	0.4	30388	X1	23.00	$698,913	$2,328,975
13	REMOVE EROSION CONTROL DEVICES	1	LOT	0.00	$0	4917	227.0	227.0	L	21.66	$4,917	$4,917
14	DECON EQUIPMENT	1	LOT	25800	$25,800	8374	320.0	320.0	OP	26.17	$8,374	$34,174
15	SEED, MULCH & FERTILIZE	27	ACRE	3,000.00	$81,000	0.0	0.0	0.0		33.00	$0	$81,000
	SUBTOTAL				$3,345,843			75381			$1,774,810	$5,120,654

LOCKWOOD GREENE, INC. 04/23/90

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CFT	RATE	LABOR	11:39 AM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 SUPPORT AREAS - WASTE WATER OUTFALL LINE COST CODE 2000			NOTE: COSTS FOR 10 SITE REMEDIATIONS INCLUDED.								
1	TEMPORARY AIR MONITORS	10	E	5,000.00	$50,000	396.5	16.0	160.0	E	24.78	$3,965	$53,965
2	SILT FENCE , 120' EACH SITE	1,200	LF	2.46	$2,952	0.6	0.0	28.8	OP	26.17	$754	$3,706
3	HAY BALES W/ WOOD STAKES	2,000	E	5.00	$10,000	16.2	0.8	1500	L	21.66	$32,490	$42,490
4	EXCAVATE STONE & SOIL AROUND RCP PIPE & LOAD ON TRUCK	890	CY	5.60	$4,984	4.6	0.2	178.0	X1	23.00	$4,094	$9,078
5	DUMP TRUCK STAND BY TIME 25% OF EXCAVATION TIME	1	LOT	2225	$2,225	956	45.0	45.0	TD	21.24	$956	$3,181
6	REMOVE RCP PIPE 60" DIA. 2 - 12' SECTIONS EACH SITE	240	LF	4.04	$970	12.3	0.5	128.2	X1	23.00	$2,948	$3,917
7	SHORING, 480 SF EACH SITE	4,800	SF	0.44	$2,112	0.7	0.0	144.0	C	24.52	$3,531	$5,643
8	CRUSHED STONE BEDDING, 6 CY EACH SITE	60	CY	5.83	$350	0.8	0.0	1.8	OP	26.17	$47	$397
9	60" RCP, 24 LF EACH SITE	240	LF	79.35	$19,044	36.8	1.6	384.0	X1	23.00	$8,832	$27,876
10	BACKFILL W/ CRUSHED STONE 51 CY EACH SITE	510	CY	5.83	$2,973	0.8	0.0	15.3	OP	26.17	$400	$3,374
11	COMPACTION W/ WHACKER 51 CY EACH SITE	510	CY	0.41	$209	1.3	0.1	31.6	L	21.66	$685	$894
12	TOPSOIL, 1' DEEP, 11 CY EACH SITE	110	CY	17.06	$1,877	2.3	0.1	11.0	X1	23.00	$253	$2,130
13	SEED, FERT., MULCH 3500 SF PER SITE	35,000	SF	0.07	$2,450	0.0		0.0		33.00	$0	$2,450
14	SIZE REDUCE RCP W/ HOE RAM	11	CY	14.55	$160	9.5	0.4	4.0	OP	26.17	$105	$265
15	HAUL TO PACKAGING AREA 1 MILE HAUL, W/ 25% SWELL	1,230	CY	1.65	$2,030	0.8	0.04	47	TD	21.24	$993	$3,022
16	REMOVE EROSION CONTROL DEVICES	1	LOT	0.00	$0	1733	80.0	80.0	L	21.66	$1,733	$1,733
17	DECON EQUIPMENT	1	LOT	6450	$6,450	2094	80.0	80.0	OP	26.17	$2,094	$8,544

LOCKWOOD GREENE, INC. 04/23/90

				MATERIAL COST		LABOR COST						11:39 AM
ITEM	DESCRIPTION	QTY	UNIT	UCM	MATERIAL	UCL	UMH	HOURS	CFT	RATE	LABOR	TOTAL
18	MONITORING WELLS	10	EA	18500	$185,000	0	0.0	0.0	OP	26.17	$0	$185,000
	SUBTOTAL				$293,785			2838			$63,878	$357,663

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CFT	RATE	LABOR	03:41 PM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 SITE PREP IN PRODUCTION AREA COST CODE 2000											
	SOIL REMEDIATION:											
1	SILT FENCE	50,000	LF	2.46	$123,000	0.6	0.024	1200	OP	26.17	$31,404	$154,404
2	HAY BALES W/WOOD STAKES	4,000	EA	5.00	$20,000	16.2	0.750	3000	L	21.66	$64,980	$84,980
3	UTILITY RELOCATION ALLOWANCE	1	LOT	1200000	$1,200,000	1256160	88000	48000	OP	26.17	$1,256,160	$2,456,160
4	SLURRY WALL 50' DEEP x 3' WIDE - ASSUMED 10,400 LF LONG	520,000	SF	7.00	$3,640,000						$0	$3,640,000
5	FREEZE WALL ASSUMED 14600 LF BY 50 FEET DEEP AS QUOTED BY GEOFREEZE NORTON VIRGINIA - INCLUDES MAINTENANCE FOR 8 MONTHS AFTER START OF REMEDIATION	1	LOT	11000000	$11,000,000						$0	$11,000,000
6	ADDITIONAL MAINTENANCE & OPERATION FOR THE REMAINDER OF THE REMEDIATION (ASSUME 5 YEARS)	260	WEEKS	25000.00	$6,500,000						$0	$6,500,000
5	DEWATERING 826 WELL POINTS x 50' DEEP W/ 6" HEADER DISCHARGE	1	LOT	2430738	$2,430,738	1774841	77167	77167	X1	23.00	$1,774,841	$4,205,579
8	PUMPING OPERATION - (2) OPERATOR & (1) TRUCK DRIVER	1	LOT	0.00	$0	0.0	31200	31200	OP	26.17	$816,504	$816,504
							15600	15600	TD	21.24	$331,344	$331,344
	SUBTOTAL				$24,913,738			176167			$4,275,233	$29,188,971

LOCKWOOD GREENE, INC. 04/27/90

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CF	RATE	LABOR	02:36 PM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 ENGINEERED DISPOSAL FACILITY COST CODE 6000											
	THESE COSTS ARE BASED ON IWMF COST ESTIMATES @ ORNL OAK RIDGE, TN. ASSUMING STORAGE SPACE NEEDED 637,200 SF.											
	SITEWORK:											
1	SITEWORK	637200	SF	11.84	$7,544,448	4.6	0.2	127440	X1	23.00	$2,931,120	$10,475,568
2	UTILITIES	637200	SF	0.92	$586,224	0.5	0.0	14018	E	24.78	$347,376	$933,600
	TUMULUS PAD:											
3	PAD W/ FOUNDATION SYS.	637200	SF	21.48	$13,687,056	11.5	0.5	318600	X1	23.00	7327800	$21,014,856
4	ELECTRICAL	637200	SF	0.12	$76,464	0.1	0.0	1912	E	24.78	$47,369	$123,833
	INSPECTION GALLERY: BASED ON 59 PADS X 60' WIDE + 200 LF TO MONITORING STATION											
5	PRECAST TUNNEL	3740	LF	287.00	$1,073,380	32.9	1.4	5348	X1	23.00	$123,009	$1,196,389
6	INSULATION & WEATHERPROOFING	3740	LF	30.43	$113,808	19.1	0.8	3104	X1	23.00	$71,397	$185,205
7	ELECTRICAL	3740	LF	26.15	$97,801	17.1	0.7	2581	E	24.78	$63,947	$161,748
8	PIPING	3740	LF	55.93	$209,178	51.9	2.0	7517	PF	25.80	$193,949	$403,127
9	HVAC	3740	LF	48.89	$182,849	27.0	1.2	4301	SM	23.50	$101,074	$283,922
	MONITORING STATION:											
10	STRUCTURAL	1	LOT	306628	$306,628	58911	2561	2561	X1	23.00	$58,911	$365,539
11	ELECTRICAL	1	LOT	74040	$74,040	10308	416	416	E	24.78	$10,308	$84,348
12	INSTRUMENTATION	1	LOT	61484	$61,484	8194	330.7	331	E	24.78	$8,194	$69,678
13	PIPING	1	LOT	155936	$155,936	24046	932	932	PF	25.80	$24,046	$179,982
14	TRUCK TRANSFER AREA	1	LOT	28016	$28,016	10212	444.0	444	X1	23.00	$10,212	$38,228
15	STORAGE TANK AREA	1	LOT	267424	$267,424	91168	3256	3256	X2	28.00	$91,168	$358,592
	SUBTOTAL				24464736			492761			11409879	$35,874,615

26

LOCKWOOD GREENE, INC. 04/27/90

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CF	RATE	LABOR	02:38 PM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 OU3 OPERATIONS COST CODE 6000											
	OPERATIONS:											
1	UNLOAD & STACK BOXES USING GANTRY CRANE (20 MIN/BOX) 118,656 BOXES (2 - OP/ CREW) 2 CREWS PER SHIFT	118656	BOX	0.00	$0	35	1.33	157812	OP	26.17	$4,129,953	$4,129,953
2	LABOR FOR ABOVE (4 - IW/ CREW) 2 CREWS PER SHIFT	118656	BOX	0.00	$0	68	2.66	315625	IW	25.73	8121030	$8,121,030
7	PURCHASE GANTRY CRANE 20 TON CAP. W/ 60' SPAN	3	E	500000	$1,500,000	0		0		0.00	$0	$1,500,000
8	MAINTENANCE (2 OPERATORS)	2	LOT	60000	$120,000	517538	19776	39552	OP	26.17	$1,035,076	$1,155,076
9	CLEANUP (2 LABORS, 2 HRS/SHIFT)	2	LOT	0	$0	214174	9888	19776	L	21.66	$428,348	$428,348
10	HAULING FOR CLEANUP (1 TD, 2 HRS/SHIFT)	1	LOT	40000	$40,000	105011	4944	4944	TD	21.24	$105,011	$145,011
11	20 TON FORKLIFT	2	E	125000	$250,000	0.0		0.0		33.00	$0	$250,000
	SUBTOTAL				1910000			537709			13819417	$15,729,417

LOCKWOOD GREENE, INC. 04/27/90

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CFT	RATE	LABOR	02:38 PM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 ENGINEERED DISPOSAL FACILITY - CAP COST CODE 6000											
	THESE COSTS ARE BASED ON CAPCA COST ESTIMATES @ Y-12 PLANT OAK RIDGE, TN. ASSUMING STORAGE SPACE NEEDED 637,200 SF.											
1	BELOW CAP FILL ASSUME 4' DEEP FROM OFFSITE BORROW, HAULED SPREAD & COMPACT, W/ 2 TO 1 SLOPES 339,300 CY	340	MCY	10100	$3,434,000	3036	116.0	39440	OP	26.17	$1,032,145	$4,466,145
2	3 PART RCRA CAP INCLUDING 2 LAYERS SOIL W/ MEMBRANE LINER & DRAINAGE SYSTEM	130300	SY	23.90	$3,114,170	4.1	0.2	23324	X1	23.00	$536,445	$3,650,615
3	ANCHOR SYSTEM	1	LOT	50000	$50,000	86640	4000	4000	L	21.66	$86,640	$136,640
4	TEMP POLY DRAINAGE CAP	84960	SY	3.42	$290,563	0.2	0.0	850	L	21.66	$18,402	$308,966
	SUBTOTAL				6888733			67613			1673632	$8,562,365

LOCKWOOD GREENE, INC. 04/23

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CFT	RATE	LABOR	11:43 AM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 STAGING AND PROCESS AREA COST CODE 6000											
	CONCRETE SLAB @ STAGING AREA: FOR SIZE REDUCING											
1	8" DEEP CRUSHED STONE	19,360	SY	2.52	$48,787	1.4	0.1	1045	OP	26.17	$27,359	$76,146
2	15" SLAB INCLUDING FORMS, REBAR, CONCRETE & FINISH	19,360	SY	96.66	$1,871,338	60.8	2.2	42011	X2	28.00	$1,176,314	$3,047,651
	DRYING, SIFTING, SORTING & SHREDDING FACILTY:											
3	BUILDING	60,000	SF	69.94	$4,196,400	26.8	1.2	69965	X1	23.00	$1,609,200	$5,805,600
4	METAL SHREDDER PLANT	1	E	500000	$500,000	0.0		0.0			$0	$500,000
5	MOBILIZE METAL SHREDDER	1	LOT	2,000.00	$2,000	6175	240.0	240.0	IW	25.73	$6,175	$8,175
6	CONCRETE CRUSHER PLANT	1	LOT	750000	$750,000	0.0		0.0			$0	$750,000
7	MOBILIZE PLANT	1	LOT	3,000.00	$3,000	6175	240.0	240.0	IW	25.73	$6,175	$9,175
8	CONVEYORS BOX HANDLING	600	LF	500.00	$300,000	76.3	2.9	1740	MW	26.31	$45,779	$345,779
9	FORKLIFTS, 15 TON	6	E	85000	$510,000	0.0		0.0			$0	$510,000
10	CRANE TO MOVE RUBBLE DURING SIZE REDUCTION	2	E	750000	$1,500,000	0.0		0.0			$0	$1,500,000
11	GROUT INJECTION EQUIPMENT	1	LOT	25000	$25,000	0.0	0	0.0			$0	$25,000
12	DECON OF FACILITIES	1	LOT	200000	$200,000	0.0	66577	66577	X2	28.00	$1,864,156	$2,064,156
	SUBTOTAL				$9,906,525			181819			$4,735,159	$14,641,683

LOCKWOOD GREENE, INC. 04/23/90

11:43 AM

FMPC
FERNALD, OHIO
OPERABLE UNIT 3
STORAGE AREAS - DEMOLITION
COST CODE 6000

NOTE: COSTS INCLUDE REMOVAL OF ALL BLDG. MATERIALS, LOADING ON TRUCKS, AND HAULING TO PACKAGING FACILITY.

DETAILS OF THE LINE ITEMS FOR THIS COST ESTIMATE INCLUDED IN GENERAL ASSUMPTIONS

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS CFT	RATE	LABOR	TOTAL
1	PLANT 1 - THORIUM WAREHOUSE	4,000	SF	20.00	$80,000	56.0	2.0	8000 X2	28.00	$224,000	$304,000
2	PLANT 1 - BULK STORAGE WAREHOUSE	6,000	SF	15.00	$90,000	42.0	1.5	9000 X2	28.00	$252,000	$342,000
3	PLANT 2 & 3 - DRUMMED OIL PAD	2,500	SF	7.00	$17,500	28.0	1.0	2500 X2	28.00	$70,000	$87,500
4	PLANT 4 - TANK FARM	14,000	SF	15.00	$210,000	42.0	1.5	21000 X2	28.00	$588,000	$798,000
5	PLANT 4 - PLANT 7	6,500	SF	40.00	$260,000	112.0	4.0	26000 X2	28.00	$728,000	$988,000
6	PILOT PLANT - THORIUM WAREHOUSE	5,000	SF	20.00	$100,000	56.0	2.0	10000 X2	28.00	$280,000	$380,000
7	PILOT PLANT - BULK STORAGE PADS	3,500	SF	15.00	$52,500	42.0	1.5	5250 X2	28.00	$147,000	$199,500
8	EQUIPMENT STORAGE AREAS - QUONSET HUTS 60, 61, 62	9,600	SF	20.00	$192,000	56.0	2.0	19200 X2	28.00	$537,600	$729,600
9	UTILITIES PLANT 10 - OIL BURNER PAD	1,500	SF	7.00	$10,500	28.0	1.0	1500 X2	28.00	$42,000	$52,500
10	UTILITIES PLANT 10 - GRAPHITE BURNER PAD	2,500	SF	7.00	$17,500	28.0	1.0	2500 X2	28.00	$70,000	$87,500
11	BACKFILL W/ CRUSHED STONE	2,485	CY	9.71	$24,129	7.9	0.3	745.5 OP	26.17	$19,510	$43,639
	SUBTOTAL				$1,054,129			105696		$2,958,110	$4,012,239

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL COST MATERIAL	LABOR COST UCL	UMH	HOURS	CFT	RATE	LABOR	11:44 AM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 OPERATING PLANTS - DEMOLITION COST CODE 6000			NOTE: COSTS INCLUDE REMOVAL, LOADING AND HAULING TO PACKAGING FACILITY.								
	- PROCESS SPILLS -											
1	PLANT 1 - BLDG. #66	4,000	SF	20.00	$80,000	56.00	2.0	8000	X2	28.00	$224,000	$304,000
2	PLANT 2 & 3 - AREA 3F	1,500	SF	10.00	$15,000	33.60	1.2	1800	X2	28.00	$50,400	$65,400
3	PLANT 2 & 3 - BLDG. 3G	1,200	SF	20.00	$24,000	56.00	2.0	2400	X2	28.00	$67,200	$91,200
4	PLANT 2 & 3 - BLDG. #39	2,500	SF	20.00	$50,000	56.00	2.0	5000	X2	28.00	$140,000	$190,000
5	BACKFILL W/ CRUSHED STONE ALL	350	CY	9.71	$3,399	7.85	0.3	105	OP	26.17	$2,748	$6,146
6	ABANDONED IN PLACE EQUIPMENT TO BE REMOVED - PLANTS 1, 2 & 3, 4, 5, 6, 8, 9, PILOT PLANT (ALLOWED 12 CF/TON STEEL)	1,200	TONS	80.00	$96,000	448.00	16.0	19200	X2	28.00	$537,600	$633,600
7	RESTORE AREAS WHERE EQUIPMENT HAS BEEN REMOVED	1	LOT	250,000.00	$250,000	67200.00	2,400.0	2400	X2	28.00	$67,200	$317,200
	SUBTOTAL				$518,399			38905			$1,089,148	$1,607,546

31

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CF RATE	LABOR	11:45 AM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 STORAGE AREAS - CONTAIN/UPGRADE/MONITOR COST CODE 6000				NOTE: COSTS TO CONTAIN INCLUDE REPAIRING 20% OF EXISTING CURBS/DIKES AND APPLYING 2 COATS EPOXY SEALER TO ALL CONCRETE COSTS TO UPGRADE INCLUDE NEW CONTAINMENT CURBS/DIKES AND APPLYING 2 COATS EPOXY SEALER TO ALL CONCRETE MANUAL TYPE AIR MONITORS - ASSUMED 1 PER 1000 SF					
	- PLANT 1 -										
1	AIR MONITORS - PLANT 1	550	EA	5,000.00	$2,750,000	396.48	16.000	8800	E 24.78	$218,064	$2,968,064
2	CHEMICAL WAREHOUSE - CONTAIN	26000	SF	10.03	$260,780	11.26	0.402	10452	X2 28.00	$292,656	$553,436
3	IN-PROCESS U WAREHOUSE - CONTAIN	24000	SF	10.03	$240,720	11.26	0.402	9648	X2 28.00	270144	$510,864
4	DRUM STAGING COVERED - CONTAIN & UPGRADE (INCLUDES DRAINAGE AWAY FROM STORAGE AREA)	15000	SF	10.17	$152,550	11.56	0.413	6195	X2 28.00	$173,460	$326,010
5	DRUM STORAGE PAD - CONTAIN & UPGRADE	480000	SF	10.03	$4,814,400	11.26	0.402	192960	X2 28.00	$5,402,880	$10,217,280
6	DRUM SHIPPING -CONTAIN & UPGRADE	300	SF	11.33	$3,399	14.20	0.507	152	X2 28.00	$4,259	$7,658
7	NFS STORAGE TANKS - CONTAIN	4000	SF	10.07	$40,280	11.34	0.405	1620	X2 28.00	$45,360	$85,640
	- PLANT 2/3 -										
8	AIR MONITORS - PLANT 2/3	72	EA	5,000.00	$360,000	396.48	16.000	1152	E 24.78	$28,547	$388,547
9	WEST PAD - CONTAIN & UPGRADE	22000	SF	10.14	$223,080	11.51	0.411	9042	X2 28.00	$253,176	$476,256
10	EAST PAD - CONTAIN & UPGRADE	10000	SF	10.15	$101,500	11.56	0.413	4130	X2 28.00	$115,640	$217,140
11	CHEM RAW MAT TANKS/DIKES - CONTAIN	20000	SF	10.03	$200,600	11.26	0.402	8040	X2 28.00	$225,120	$425,720
12	URANYL NITRATE TANKS/DIKES - CONTAIN	20000	SF	10.03	$200,600	11.26	0.402	8040	X2 28.00	$225,120	$425,720
	- PLANT 4 -										
13	AIR MONITORS - PLANT 4	50	EA	5,000.00	$250,000	396.48	16.000	800	E 24.78	$19,824	$269,824
14	PL. 4 WAREHOUSE - CONTAIN	12000	SF	10.04	$120,480	11.28	0.403	4836	X2 28.00	$135,408	$255,888

LOCKWOOD GREENE, INC.

04/23

11:45 AM

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL COST MATERIAL	LABOR COST UCL	UMH	HOURS	CF	RATE	LABOR	TOTAL
15	PL. 4 MAINTENANCE - CONTAIN	3600	SF	10.07	$36,252	11.37	0.406	1462	X2	28.00	$40,925	$77,177
16	WEST PAD - CONTAIN & UPGRADE	2500	SF	10.40	$26,000	12.10	0.432	1080	X2	28.00	$30,240	$56,240
17	EAST PAD - CONTAIN & UPGRADE	4000	SF	10.33	$41,320	123.93	4.426	17704	X2	28.00	$495,712	$537,032
18	PL. 7 PAD - CONTAIN & UPGRADE	28000	SF	10.40	$291,200	12.07	0.431	12068	X2	28.00	$337,904	$629,104
	- PLANT 5 -											
19	AIR MONITORS - PLANT 5	22	EA	5,000.00	$110,000	396.48	16.000	352	E	24.78	$8,723	$118,723
20	DERBY STORAGE COVERED - CONTAIN & UPGRADE	1500	SF	10.53	$15,795	12.40	0.443	665	X2	28.00	$18,606	$34,401
21	NORTH PAD - CONTAIN & UPGRADE	10000	SF	10.07	$100,700	11.37	0.406	4060	X2	28.00	$113,680	$214,380
22	EAST PAD - CONTAIN & UPGRADE	10000	SF	10.07	$100,700	11.37	0.406	4060	X2	28.00	$113,680	$214,380
	- PLANT 6 -											
23	AIR MONITORS - PLANT 6	41	EA	5,000.00	$205,000	396.48	16.000	656	E	24.78	$16,256	$221,256
24	FLATS WAREHOUSE - CONTAIN	19000	SF	10.03	$190,570	11.26	0.402	7638	X2	28.00	$213,864	$404,434
25	RCRA WAREHOUSE - CONTAIN	18000	SF	10.03	$180,540	11.26	0.402	7236	X2	28.00	$202,608	$383,148
26	COVERED DRUM STORAGE - CONTAIN	3500	SF	10.07	$35,245	11.59	0.414	1449	X2	28.00	$40,572	$75,817
	- PLANT 8 -											
27	AIR MONITORS - PLANT 8	41	EA	5,000.00	$205,000	396.48	16.000	656	E	24.78	$16,256	$221,256
28	PL. 8 WAREHOUSE - CONTAIN	9000	SF	10.04	$90,360	11.28	0.403	3627	X2	28.00	$101,556	$191,916
29	NORTH PAD - CONTAIN & UPGRADE	15000	SF	10.16	$152,400	11.56	0.413	6195	X2	28.00	$173,460	$325,860
30	EAST PAD - CONTAIN & UPGRADE	17000	SF	10.15	$172,550	11.54	0.412	7004	X2	28.00	$196,112	$368,662
	- PLANT 9 -											
31	AIR MONITORS - PLANT 9	40	EA	5,000.00	$200,000	396.48	16.000	640	E	24.78	$15,859	$215,859
32	PL. 9 WAREHOUSE - CONTAIN & UPGRADE	8000	SF	10.23	$81,840	11.70	0.418	3344	X2	28.00	$93,632	$175,472
33	NORTH PAD - CONTAIN & UPGRADE	9000	SF	10.21	$91,890	11.68	0.417	3753	X2	28.00	$105,084	$196,974

LOCKWOOD GREENE, INC. 04/23

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CF	RATE	LABOR	11:45 AM TOTAL
34	EAST PAD - CONTAIN & UPGRADE	5000	SF	10.28	$51,400	11.82	0.422	2110	X2	28.00	$59,080	$110,480
35	SOUTH PAD - CONTAIN & UPGRADE	8000	SF	10.23	$81,840	11.70	0.418	3344	X2	28.00	$93,632	$175,472
36	WEST PAD - CONTAIN & UPGRADE	9500	SF	10.21	$96,995	11.65	0.416	3952	X2	28.00	$110,656	$207,651
	- PILOT PLANT -											
37	AIR MONITORS - PILOT PLANT	43	EA	5,000.00	$215,000	396.48	16.000	688	E	24.78	$17,049	$232,049
38	NORTH PAD - CONTAIN & UPGRADE	6500	SF	10.25	$66,625	11.76	0.420	2730	X2	28.00	$76,440	$143,065
39	EAST PAD - CONTAIN & UPGRADE	3500	SF	10.34	$36,190	11.96	0.427	1495	X2	28.00	$41,846	$78,036
40	SOUTH PAD - CONTAIN & UPGRADE	7200	SF	10.24	$73,728	11.73	0.419	3017	X2	28.00	$84,470	$158,198
41	WEST PAD - CONTAIN & UPGRADE	25000	SF	10.13	$253,250	11.48	0.410	10250	X2	28.00	$287,000	$540,250
	- D & D AREA -											
42	AIR MONITORS - D & D AREA	129	EA	5,000.00	$645,000	396.48	16.000	2064	E	24.78	$51,146	$696,146
43	TH. WAREHOUSE - CONTAIN & UPGRADE	16000	SF	10.16	$162,560	11.56	0.413	6608	X2	28.00	$185,024	$347,584
44	PLANT 5 WAREHOUSE - CONTAIN & UPGRADE	11000	SF	10.18	$111,980	11.62	0.415	4565	X2	28.00	$127,820	$239,800
45	WEST PAD - CONTAIN & UPGRADE	26000	SF	10.12	$263,120	11.48	0.410	10660	X2	28.00	$298,480	$561,600
46	EAST PAD - CONTAIN & UPGRADE	13500	SF	10.17	$137,295	11.59	0.414	5589	X2	28.00	$156,492	$293,787
47	D & D PAD - CONTAIN & UPGRADE	62000	SF	10.08	$624,960	11.40	0.407	25234	X2	28.00	$706,552	$1,331,512
48	MG WAREHOUSE - MONITOR ONLY	5	EA	5000.00	$25,000	396.48	16.000	80	E	24.78	$1,982	$26,982
	- UTILITIES - PLANT 10											
49	BOILER & MAINTENANCE - MONITOR ONLY	3	EA	5000.00	$15,000	396.48	16.000	48	E	24.78	$1,189	$16,189
50	COAL PILE - MONITOR ONLY	75	EA	5000.00	$375,000	396.48	16.000	1200	E	24.78	$29,736	$404,736
	- MAINTENANCE - PLANT 12											
51	NORTH PAD - MONITOR ONLY	15	EA	5000.00	$75,000	396.48	16.000	240	E	24.78	$5,947	$80,947

LOCKWOOD GREENE, INC.

04/23

11:45 AM

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CF	RATE	LABOR	TOTAL
52	COAL PILE - MONITOR ONLY	8	EA	5000.00	$40,000	396.48	16.000	128	E	24.78	$3,172	$43,172
	SUBTOTAL				$15,395,694			433517			$12,082,099	$27,477,793

LOCKWOOD GREENE, INC. 04/25

09:32 AM

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL COST MATERIAL	LABOR COST UCL	UMH	HOURS	CF RATE	LABOR	TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 REMEDIATE STORAGE AREAS - SUMPS COST CODE 6000										
	NOTE: COSTS TO CONTAIN INCLUDE PUMPING SUMPS INTO TANKS, CLEANING THE SUMPS, INSTALLING MONITORING WELLS, AND APPLYING 2 COATS EPOXY SEALER TO ALL CONCRETE										
	- PLANT 1 -										
1	PLANT 1 SUMP	200	SF	12.00	$2,400	36.40	1.300	260 X2	28.00	$7,280	$9,680
	- PLANT 2/3 -										
2	NITRIC ACID DISSOLVER	50	SF	15.00	$750	42.00	1.500	75 X2	28.00	$2,100	$2,850
3	RAFFINATE AREA	50	SF	15.00	$750	42.00	1.500	75 X2	28.00	$2,100	$2,850
4	DENITRATION	50	SF	15.00	$750	42.00	1.500	75 X2	28.00	$2,100	$2,850
5	NAR AREA	50	SF	15.00	$750	42.00	1.500	75 X2	28.00	$2,100	$2,850
6	METAL DISSOLVER	50	SF	15.00	$750	42.00	1.500	75 X2	28.00	$2,100	$2,850
7	INCINERATOR - BLDG. 39	50	SF	15.00	$750	42.00	1.500	75 X2	28.00	$2,100	$2,850
8	DIKED AREA SUMPS - (5)	500	SF	12.00	$6,000	33.60	1.200	600 X2	28.00	$16,800	$22,800
9	REFINERY SUMP - AREA 3H	4000	SF	10.00	$40,000	28.00	1.000	4000 X2	28.00	$112,000	$152,000
	- PLANT 4 -										
10	PLANT 4 SUMP - BLDG. 4	1200	SF	11.00	$13,200	30.80	1.100	1320 X2	28.00	$36,960	$50,160
11	TANK FARM SUMP - AREA 19A	400	SF	12.00	$4,800	33.60	1.200	480 X2	28.00	$13,440	$18,240
	- PLANT 5 -										
12	PLANT 5 SUMP - (4) - BLDG 5	600	SF	7.00	$4,200	33.60	1.200	720 X2	28.00	$20,160	$24,360
	- PLANT 6 -										
13	DEMOLISH EQUIP. IN PLANT 6 TO ACCESS SUMPS	1600	SF	15.00	$24,000	47.60	1.700	2720 X2	28.00	$76,160	$100,160
14	OLD PLANT 6 SUMP - BLDG. 6	1600	SF	11.00	$17,600	30.80	1.100	1760 X2	28.00	$49,280	$66,880

LOCKWOOD GREENE, INC. 04/25

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CF RATE	LABOR	09:32 AM TOTAL
15	NEW PLANT 6 SUMP	4000	SF	10.00	$40,000	28.00	1.000	4000	X2 28.00	$112,000	$152,000
16	PICKLING AREA SUMP	50	SF	15.00	$750	39.20	1.400	70	X2 28.00	$1,960	$2,710
17	ROLLING MILL SUMP	100	SF	14.50	$1,450	37.80	1.350	135	X2 28.00	$3,780	$5,230
18	SOUTHEND SUMP	50	SF	15.00	$750	39.20	1.400	70	X2 28.00	$1,960	$2,710
	- PLANT 8 -										
19	PLANT 8 SUMP - BLDG. 8	12800	SF	8.00	$102,400	19.60	0.700	8960	X2 28.00	$250,880	$353,280
20	DIKED AREA SUMPS (3)	75	SF	15.00	$1,125	39.20	1.400	105	X2 28.00	$2,940	$4,065
21	RAIL CAR WASH SUMP	1000	SF	11.00	$11,000	30.80	1.100	1100	X2 28.00	$30,800	$41,800
22	WEST PAD	50	SF	15.00	$750	39.20	1.400	70	X2 28.00	$1,960	$2,710
	- PLANT 9 -										
23	PLANT 9 SUMP - BLDG. 9	500	SF	12.00	$6,000	33.60	1.200	600	X2 28.00	$16,800	$22,800
	- PILOT PLANT -										
24	PILOT PLANT SUMP - BLDG 13A/13C	1000	SF	11.00	$11,000	30.80	1.100	1100	X2 28.00	$30,800	$41,800
25	SOUTH TANK FARM SUMP - AREA 19B	50	SF	15.00	$750	39.20	1.400	70	X2 28.00	$1,960	$2,710
	- GENERAL SUMP -										
26	SURGE LAGOON - AREA 18A	212000	SF	3.00	$636,000	5.60	0.200	42400	X2 28.00	$1,187,200	$1,823,200
27	GENERAL SUMP AREA - AREA 18B	10000	SF	8.50	$85,000	22.40	0.800	8000	X2 28.00	$224,000	$309,000
28	COAL PILE SUMP - AREA 18C	6000	SF	9.00	$54,000	25.20	0.900	5400	X2 28.00	$151,200	$205,200
29	BIO-D SUMP - AREA 18D	4000	SF	10.00	$40,000	22.40	0.800	3200	X2 28.00	$89,600	$129,600
30	S-W RETENTION BASIN	270000	SF	2.90	$783,000	5.18	0.185	49950	X2 28.00	$1,398,600	$2,181,600
	- D & D SUMP -										
31	D & D SUMP	50	SF	15.00	$750	47.60	1.700	85	X2 28.00	$2,380	$3,130

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CF RATE	LABOR	09:32 AM TOTAL
	- MONITORING WELLS -										
32	CORE DRILL AND INSTALL NEW SAMPLING TEST WELLS AT SITE OF EACH SUMP AND/OR BASIN	50	EA	18,500.00	$925,000	2240	80.000	4000	X2 28.00	$112,000	$1,037,000
33	OBTAIN SAMPLES AT EACH SITE	80	EA	435.00	$34,800	280.00	10.000	800	X2 28.00	$22,400	$57,200
34	MOBILIZE & DEMOBILIZE	1	LOT	2,500.00	$2,500	70000	2500	2500	X2 28.00	$70,000	$72,500
35	REPORTS - SAMPLING	1	LOT	4,500.00	$4,500	23296	832	832	X2 28.00	$23,296	$27,796
	SUBTOTAL				$2,858,225			145757		$4,081,196	$6,939,421

LOCKWOOD GREENE, INC. 04/23

11:47 AM

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CF	RATE	LABOR	TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 OPERATING PLANTS - CONTAIN/UPGRADE/MONITOR COST CODE 6000				NOTE: COSTS TO CONTAIN INCLUDE REPAIRING 20% OF EXISTING CURBS/DIKES AND APPLYING 2 COATS EPOXY SEALER TO ALL CONCRETE COSTS TO UPGRADE INCLUDE NEW CONTAINMENT CURBS/DIKES AND APPLYING 2 COATS EPOXY SEALER TO ALL CONCRETE MANUAL TYPE AIR MONITORS - ASSUMED 1 PER 1000 SF						
	- PLANT 1 -											
1	AIR MONITORS - PLANT 1	14	EA	5,000.00	$70,000	396.48	16.000	224	E	24.78	$5,551	$75,551
2	MAIN BUILDING - CONTAIN	14000	SF	10.07	$140,980	11.31	0.404	5656	X2	28.00	$158,368	$299,348
	- PLANT 2/3 -											
3	AIR MONITORS - PLANT 2/3	41	EA	5,000.00	$205,000	396.48	16.000	656	E	24.78	$16,256	$221,256
4	NITRIC ACID DISSOLVER - CONTAIN	12000	SF	10.08	$120,960	11.34	0.405	4860	X2	28.00	$136,080	$257,040
5	EXTRACTION - CONTAIN	10500	SF	10.10	$106,050	11.37	0.406	4263	X2	28.00	$119,364	$225,414
5	DENITRATION - CONTAIN	10000	SF	10.10	$101,000	11.37	0.406	4060	X2	28.00	$113,680	$214,680
6	METAL DISSOLVER - CONTAIN	1500	SF	10.23	$15,345	11.84	0.423	635	X2	28.00	$17,766	$33,111
7	NAR AREA - CONTAIN & UPGRADE	7000	SF	10.15	$71,050	11.42	0.408	2856	X2	28.00	$79,968	$151,018
8	RAFFINATE AREA - CONTAIN & UPGRADE	8300	SF	10.13	$84,079	11.40	0.407	3378	X2	28.00	$94,587	$178,666
	- PLANT 4 -											
9	AIR MONITORS - PLANT 4	25	EA	5,000.00	$125,000	396.48	16.000	400	E	24.78	$9,912	$134,912
10	H2/N2 AREA - CONTAIN	2000	SF	10.20	$20,400	11.76	0.420	840	X2	28.00	$23,520	$43,920
11	HF AREA - CONTAIN	1200	SF	10.50	$12,600	12.54	0.448	538	X2	28.00	$15,053	$27,653
12	REACTOR AREA - CONTAIN	14400	SF	10.07	$145,008	11.31	0.404	5818	X2	28.00	$162,893	$307,901
13	GREEN SALT PKG. AREA - CONTAIN	6900	SF	10.15	$70,035	11.42	0.408	2815	X2	28.00	$78,826	$148,861
	- PLANT 5 -											

LOCKWOOD GREENE, INC. 04/23

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CF	RATE	LABOR	11:47 AM TOTAL
14	AIR MONITORS - PLANT 5	67	EA	5,000.00	$335,000	396.48	16.000	1072	E	24.78	$26,564	$361,564
15	DERBY PRODUCTION - CONTAIN	32000	SF	10.03	$320,960	11.26	0.402	12864	X2	28.00	$360,192	$681,152
16	REMELT AREA - CONTAIN	22000	SF	10.04	$220,880	11.28	0.403	8866	X2	28.00	$248,248	$469,128
17	INGOT SAWING - CONTAIN	10000	SF	10.10	$101,000	11.37	0.406	4060	X2	28.00	$113,680	$214,680
18	SLAG PLANT - CONTAIN	3000	SF	10.19	$30,570	11.73	0.419	1257	X2	28.00	$35,196	$65,766
	- PLANT 6 -											
19	AIR MONITORS - PLANT 6	160	EA	5,000.00	$800,000	396.48	16.000	2560	E	24.78	$63,437	$863,437
20	ROLLING MILL - CONTAIN	47000	SF	10.03	$471,410	11.26	0.402	18894	X2	28.00	$529,032	$1,000,442
21	CORE MACHINING - CONTAIN	80000	SF	10.02	$801,600	11.26	0.402	32160	X2	28.00	$900,480	$1,702,080
22	CORE HEAT TREAT - CONTAIN	8000	SF	10.13	$81,040	11.40	0.407	3256	X2	28.00	$91,168	$172,208
23	CORE PICKLING - CONTAIN	4000	SF	10.18	$40,720	11.73	0.419	1676	X2	28.00	$46,928	$87,648
24	CORE INSPECT/SHIP - CONTAIN	20000	SF	10.04	$200,800	11.28	0.403	8060	X2	28.00	$225,680	$426,480
25	CHIP PICKLING - CONTAIN	800	SF	10.85	$8,680	13.02	0.465	372	X2	28.00	$10,416	$19,096
	- PLANT 8 -											
26	AIR MONITORS - PLANT 8	27	EA	5,000.00	$135,000	396.48	16.000	432	E	24.78	$10,705	$145,705
27	OXIDATION FURNACE AREA - CONTAIN	16000	SF	10.06	$160,960	11.31	0.404	6464	X2	28.00	$180,992	$341,952
28	NEW KILN AREA - CONTAIN	5000	SF	10.18	$50,900	11.48	0.410	2050	X2	28.00	$57,400	$108,300
29	NEW DRUM RECONDITIONING - CONTAIN	6000	SF	10.17	$61,020	11.45	0.409	2454	X2	28.00	$68,712	$129,732
	- PLANT 9 -											
30	AIR MONITORS - PLANT 8	30	EA	5,000.00	$150,000	396.48	16.000	480	E	24.78	$11,894	$161,894
31	REMELT AREA - CONTAIN	4000	SF	10.18	$40,720	11.73	0.419	1676	X2	28.00	$46,928	$87,648
32	SALT BATH - CONTAIN	3000	SF	10.19	$30,570	11.73	0.419	1257	X2	28.00	$35,196	$65,766
33	ZIRNLO AREA - CONTAIN	3000	SF	10.19	$30,570	11.73	0.419	1257	X2	28.00	$35,196	$65,766
34	MACHINING AREA - CONTAIN	10000	SF	10.10	$101,000	11.37	0.406	4060	X2	28.00	$113,680	$214,680

LOCKWOOD GREENE, INC.

04/23

11:47 AM

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL COST MATERIAL	LABOR COST UCL	UMH	HOURS	CF	RATE	LABOR COST LABOR	TOTAL
35	OLD HEAT TREAT AREA - CONTAIN	10000	SF	10.10	$101,000	11.37	0.406	4060	X2	28.00	$113,680	$214,680
	- PILOT PLANT -											
36	AIR MONITORS - PILOT PLANT	29	EA	5,000.00	$145,000	396.48	16.000	464	E	24.78	$11,498	$156,498
38	WET AREA - CONTAIN	6000	SF	10.17	$61,020	11.45	0.409	2454	X2	28.00	$68,712	$129,732
39	EXTRACTION AREA - CONTAIN	3000	SF	10.19	$30,570	11.73	0.419	1257	X2	28.00	$35,196	$65,766
40	DRY AREA - CONTAIN	7500	SF	10.14	$76,050	11.40	0.407	3053	X2	28.00	$85,470	$161,520
41	6/4 REDUCTION - CONTAIN	12000	SF	10.08	$120,960	11.34	0.405	4860	X2	28.00	$136,080	$257,040
	SUBTOTAL				$5,995,507			168373			$4,694,183	$10,689,690

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CFT	RATE	LABOR	09:36 AM TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 STORAGE AREAS - DECONTAMINATION COST CODE 6000											
				NOTE: COSTS INCLUDE CLEANING FOLLOWING REMOVAL OF LOOSE CONTAMINATION								
				MANUAL TYPE AIR MONITORS - ASSUMED 1 PER 100 SF FOR DECONTAMINATION								
				DETAILS OF THE LINE ITEMS FOR THIS COST ESTIMATE INCLUDED IN GENERAL ASSUMPTIONS								
	- PLANT 2/3 -											
1	AIR MONITORS	30	EA	5,000.00	$150,000	448.0	16.00	480	X2	28.00	$13,440	$163,440
2	MAINTENANCE BUILDING	3,000	SF	40.00	$120,000	16.8	0.60	1800	X2	28.00	$50,400	$170,400
	- PLANT 8 -											
3	AIR MONITORS	60	EA	5,000.00	$300,000	448.0	16.00	960	X2	28.00	$26,880	$326,880
4	MAINTENANCE BUILDING	1,200	SF	40.00	$48,000	16.8	0.60	720	X2	28.00	$20,160	$68,160
	- PILOT PLANT -											
5	AIR MONITORS	53	EA	5,000.00	$265,000	448.0	16.00	848	X2	28.00	$23,744	$288,744
6	MAINTENANCE BUILDING	1,500	SF	40.00	$60,000	16.8	0.60	900	X2	28.00	$25,200	$85,200
7	GREEN SALT WAREHOUSE UPGRADE STRUCTURAL	3,800	SF	50.00	$190,000	25.2	0.90	3420	X2	28.00	$95,760	$285,760
	- EQUIP. STORAGE AREA -											
8	AIR MONITORS	370	EA	5,000.00	$1,850,000	448.0	16.00	5920	X2	28.00	$165,760	$2,015,760
9	CP WAREHOUSE	9,000	SF	40.00	$360,000	16.8	0.60	5400	X2	28.00	$151,200	$511,200
10	KC-2 WAREHOUSE	28,000	SF	40.00	$1,120,000	16.8	0.60	16800	X2	28.00	$470,400	$1,590,400
	- MAINTENANCE - PLANT 12											
11	AIR MONITORS	676	EA	5,000.00	$3,380,000	448.0	16.00	10816	X2	28.00	$302,848	$3,682,848
12	LOCO GARAGE	800	SF	40.00	$32,000	16.8	0.60	480	X2	28.00	$13,440	$45,440
13	VEHIC. MAINT.	8,800	SF	40.00	$352,000	16.8	0.60	5280	X2	28.00	$147,840	$499,840
14	HEAVY EQUIP. GARAGE	11,000	SF	40.00	$440,000	16.8	0.60	6600	X2	28.00	$184,800	$624,800

LOCKWOOD GREENE, INC. 04/25

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL COST MATERIAL	LABOR COST UCL	UMH	HOURS	CFT	RATE	LABOR	09:36 AM TOTAL
15	VEHICLE PARKING PAD	47,000	SF	40.00	$1,880,000	16.8	0.60	28200	X2	28.00	$789,600	$2,669,600
	SUBTOTAL				$10,547,000			88624			$2,481,472	$13,028,472

LOCKWOOD GREENE, INC. 04/25

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL	LABOR COST UCL	UMH	HOURS	CFT	RATE	LABOR	09:37 AM TOTAL

FMPC
FERNALD, OHIO
OPERABLE UNIT 3
OPERATING PLANTS - DECONTAMINATION
COST CODE 6000

NOTE: COSTS INCLUDE CLEANING FOLLOWING REMOVAL OF LOOSE CONTAMINATION

MANUAL TYPE AIR MONITORS - ASSUMED 1 PER 100 SF FOR DECONTAMINATION

DETAILS OF THE LINE ITEMS FOR THIS COST ESTIMATE
INCLUDED IN GENERAL ASSUMPTIONS

- PLANT 2/3 -

ITEM	DESCRIPTION	QTY	UNIT	UCM	MATERIAL	UCL	UMH	HOURS	CFT	RATE	LABOR	TOTAL
1	AIR MONITORS	27	EA	5,000.00	$135,000	448.0	16.00	432	X2	28.00	$12,096	$147,096
2	OZONE BUILDING	1,500	SF	50.00	$75,000	42.0	1.50	2250	X2	28.00	$63,000	$138,000
3	NAR CONTROL	1,200	SF	50.00	$60,000	42.0	1.50	1800	X2	28.00	$50,400	$110,400
	SUBTOTAL				$270,000			4482			$125,496	$395,496

LOCKWOOD GREENE, INC. 04/23

12:28 PM

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL COST UCM	MATERIAL COST MATERIAL	LABOR COST UCL	UMH	HOURS	CF RATE	LABOR COST LABOR	TOTAL
	FMPC FERNALD, OHIO OPERABLE UNIT 3 SUPPORT AREAS - PCB TRANSFORMERS COST CODE 6000				NOTE: COSTS INCLUDE REMOVING THE OIL FROM THE POWER CENTERS AND HAULING OFF SITE, CLEANING THE UNITS AND HAULING THEM OFF SITE AND BURNING THE PCBS AND UNITS IN AN OFFSITE INCINERATOR.					
1	POWER CENTERS 35 UNITS @ 300 LB. EACH (SUB PRICE)	10500	LBS	1.10	$11,550			INCLUDES LABOR		$0	$11,550
	SUBTOTAL				$11,550			0		$0	$11,550

ATTACHMENT 4

Refinery Sump Information
1970-1989

January 28, 1970

REFINERY SUMP PUMPS

W. J. Adams

J. E. Beckelheimer

This is a follow up on the letter dated 8-1-69, same subject.

We have a total of 38 sump pumps in the Refinery, of the thirty eight only eleven work on automatic. 9 of the 27 have no automatic controls, leaving 18 with controls that do not operate.

I discussed this with Mr. J. Farr, maintenance supervisor, and he estimated that it would cost more than $2,000 to put all the sumps on automatic.

A JOR to put all sump pumps on automatic will be attached with a complete list of the sump pumps in the Refinery and the status of each.

J. E. Beckelheimer
General Foreman
Refinery

JEB/dfm

REFINERY SUMP PUMPS

Pump Number	Location	Works On Auto.	Doesn't Work On Auto.	Remarks
F1-36	West Cold Side Digestion		X	Poor cond. - switch in bad shape
F1-37	East Cold Side Digestion		X	Poor condition
F1-38	West Hot Side Digestion		X	Fair condition
F1-35	East Hot Side Digestion		X	Poor cond. - no automatic + no valve on discharge
G2E-50	Metal Dissolver Building		X	No automatic control
No Number	Metal Dissolver Pad	X		Poor condition
20-A-1	5A & 5B Area Pad		X	No automatic control
G2E-16	Slop Tank Area Pad	X		Good condition
G1-2N-850	17A, B & C Area Pad		X	Will not pump - no auto. control
G1-540	512 Area Pad		X	Poor condition - pump no suitable
No Number	West Cold Side Extraction		X	No automatic control
F1-104	East Cold Side Extraction		X	Float sticks - has hole in float
No Number	West Hot Side Extraction		X	Does not work on automatic
F1-102	Center Hot Side Extraction	X		Good condition
F1-614	East Hot Side Extraction		X	Fair condition
F3E- FE3-222	S.E. End Denitration		X	Pump OK - doesn't work on automat
F1-220	S.W. End Denitration		X	
FE3-223	N.E. End Denitration			Out of service for 2.0%
F1-221	N.W. End Denitration	X		
G3E-282	N.E. Pad - Denitration		X	No auto. control - float sticks
	S.E. Pad - Denitration		X	No pump
G3E-244	OK Liquor Pit		X	
G13E-7	1st Fl. Refinery Sump	X		Pump works on auto. - inside
Steam Educt.	W. Pad Refinery Sump		X	
G2E-610	E. Pad Refinery Sump		X	Steam eductor - no auto. control

REFINERY SUMP PUMPS CONTINUED:

Pump Number	Location	Works On Auto.	Doesn't Work On Auto.	Remarks
G3-24	West Pad - N.A.R.	X		
G3-64	East Pad - N.A.R.	X		
F3E-FE3-224	E. Pad Comb. Raff.	X		Float sticks
F3E-FE3-225	W. Pad Comb. Raff.	X		Good cond. - works on automatic
14-4A-P-6	Harshaw Tower Pad		X	
G1-325	Hot Raff. E. Tank Room			No automatic control
	Hot Raff. W. Tank Room			Steam eductor - no auto. control
G1-307	Hot Raff. - Center Room - 1st floor			Pump missing
	Cold Side Ore Pit		X	Steam eductor - no auto. control
	Hot Side Ore Pit		X	Steam eductor - no auto. control
No Number	N.W. Dig. Storage Pad	X		
G2E-140-3	NFS Pump House	X		In good condition
G3E-419	Front - Hot Raff. Bldg.	X		

Digestion

G2E-50 Metal Dissolver Building

Brick lined sump; fair to good condition
Perimeter cement walls need repairs
Sump pump needs automatic control, has manual only
Cleaned and inspected

No Number Metal Dissolver Pad

New sump pump on order
Sump to be rebricked and cement work to be refurbished according to plan
Cleaned and inspected

G2E-16 Slop Tank Area Pad

SS lined sump
Pump works on automatic
Cleaned and inspected

Extraction

20-A-1 5A & 5B Area Pad

Brick and cement in good condition
Automatic sump control switch needed

G1-2N-850 17A, B & C Area Pad

Cement floor and trenches in bad condition - prepare Engineering Request to size a new pump and specify repairs to brick and cement.

G1-640 512 Area Pad

Cement sump in good condition
Prepare Engineering Request to size a replacement pump, present pump is too small
Perimeter cement walls in good condition
Install manual control on replacment pump

Digestion

No Number Digestion Storage Pad

Cement sump in good condition
New pressure gage across filter not registering properly
Sump water is pumped to storm sewer
Works on automatic

No Number Hot Side Ore Pit

Cement pit in good condition
Steam siphon line needs to be lowered further into sump

No Number Cold Side Ore Pit

Cement pit in good condition
Steam siphon line needs to be lowered further into sump
Sump water is pumped to digestion area floor sump

No Number F1-23 & F1-24 Acid Tanks Sump

SS lined
Works on automatic
Perimeter area in good condition

NAR Area

14-4A-P-6 Harshaw Tower Pad (Equipment not in use)

Sump pump inoperative
Install steam siphon to drain accumulation of rain water; can be pumped into Hot Raff. Bldg.

Digestion

F1-37 East Cold Side (By Office Door)

Doesn't work on auto.
SS liner
Switch positions not identified
Sump cleaned and inspected; water tested
Pump linkage in bad condition

F1-36 West Cold Side

Doesn't work on automatic
SS liner
Raise door sill on south side
Switch positions not identified
Sump cleaned and inspected; water tested
High and low pump probes not working
Electrical wires exposed
Pump line flange uncoupled

F1-35 East Hot Side

SS liner
Doesn't work on automatic
Float mechanism hanging up - linkage needs to be reworked. Rework pump and reposition
Switch positions not identified

F1-38 West Hot Side

SS liner
Float mechanism in bad condition; linkage broken off
Electrical conduit in bad condition; wires exposed
Pump inoperative
Switch positions not identified

Enriched UNH Tank Farm

Perimeter concrete looks good
Joints in large pit needs minor sealing

G2E-140-3 Pump House Sump Pit

SS liner
Pump is controlled by high and low level probes
Minor calking of floor - foundation needed by doorway
Works on automatic
Sump water is pumped to F1-26A

Combined Raffinate (Outdoors)

F3E-224 East Pad

No Liner, acid brick
SS lined trenches
Switch positions well identified
Sump pit in good condition
Noisy pump - bottom graphite bearing probably bad
Works on automatic
Sump pump control rod stroke needs lengthening

F3E-225 West Pad

No liner, acid brick
Pump very noisy - either impeller or sleeve fitting is bad
Switch positions not identified

Refinery Sump

No Number West Pad (North of F2E-608) (Outdoors)

Pumps either into F2E-601 or F2E-608
Switch positions not identified
Works on automatic
SS liner
Minor acid brick repairs required

G18E-7 1st Floor Ref. Sump Bldg. (Indoors)

Works on automatic
Floor and calking repairs required

G2E-610 East Pad (Outdoors)

Sump full - pump doesn't work - electrical repairs needed
Does not work on automatic - needs automatic control

Denitration (Outdoors)

G3E-282 N.E. Pad

No liner, cement construction
Sump inspected - in good condition
Trench & curbing leading into sump is cracked at railroad crossing; other cement areas of trench in questionable condition. Recommend that entire trench be inspected by cement masons and repairs made as necessary

No Number S.E. Pad

Pump inoperative
Switch should be set on automatic
Curb broken; repairs needed

Nitric Acid Recovery (Outdoors)

G2-24 West Pad

Works on automatic
SS liner
Area in good condition
Water from Nash pumps in Hot Raff coming in - difficult to check for leakage

G3-64 East Pad

SS liner
Works on automatic
Switch positions not identified
Perimeter in good condition

Denitration (Indoors)

F3E-222 S.E. End

No liner, acid brick
Doesn't work on automatic; leave set on manual
Float control needs counterweights added
Switch positions identified
Floor-foundation needs to be calked
Sump cleaned and inspected, good condition - water tested

F1-220 S.W. End

SS liner
Works on automatic
Sump cleaned and inspected, good condition - water tested

F3E-223 N.E. End

Cemented over; not in use; out of service for 2% U-235 campaign

F1-221 N.W. End

Pump is very sluggish; check for pumping rate
Works on automatic
Steam eductor
Acid brick needs repairs
Switch positions not identified

G3E-244 OK Liquor Pit (Outdoors)

SS liner
Sump cleaned and inspected, good condition
Cement and acid brick trench in bad condition; recommend SS liner be installed in trench
Pit condition appears to be good
Pump removed for maintenance - replace with Plant 8 pump from liquid effluent pit

Hot Raffinate (Indoors)

G1-325 E. Tank Room by Tank F1-302

SS liner; 1 year old - good condition
Float type
Leave on automatic setting; pump works on automatic

No Number W. Tank Room

SS liner; 1 year old - good condition
Pump works on automatic

G1-307 Center Room - 1st Floor

SS liner; 1 year old - good condition
Pump works on automatic

G3E-419 N.E. of Hot Raff. Bldg. Pad (Outdoors)

Acid brick liner; good condition
Trench appears in control
Float controller - works on automatic

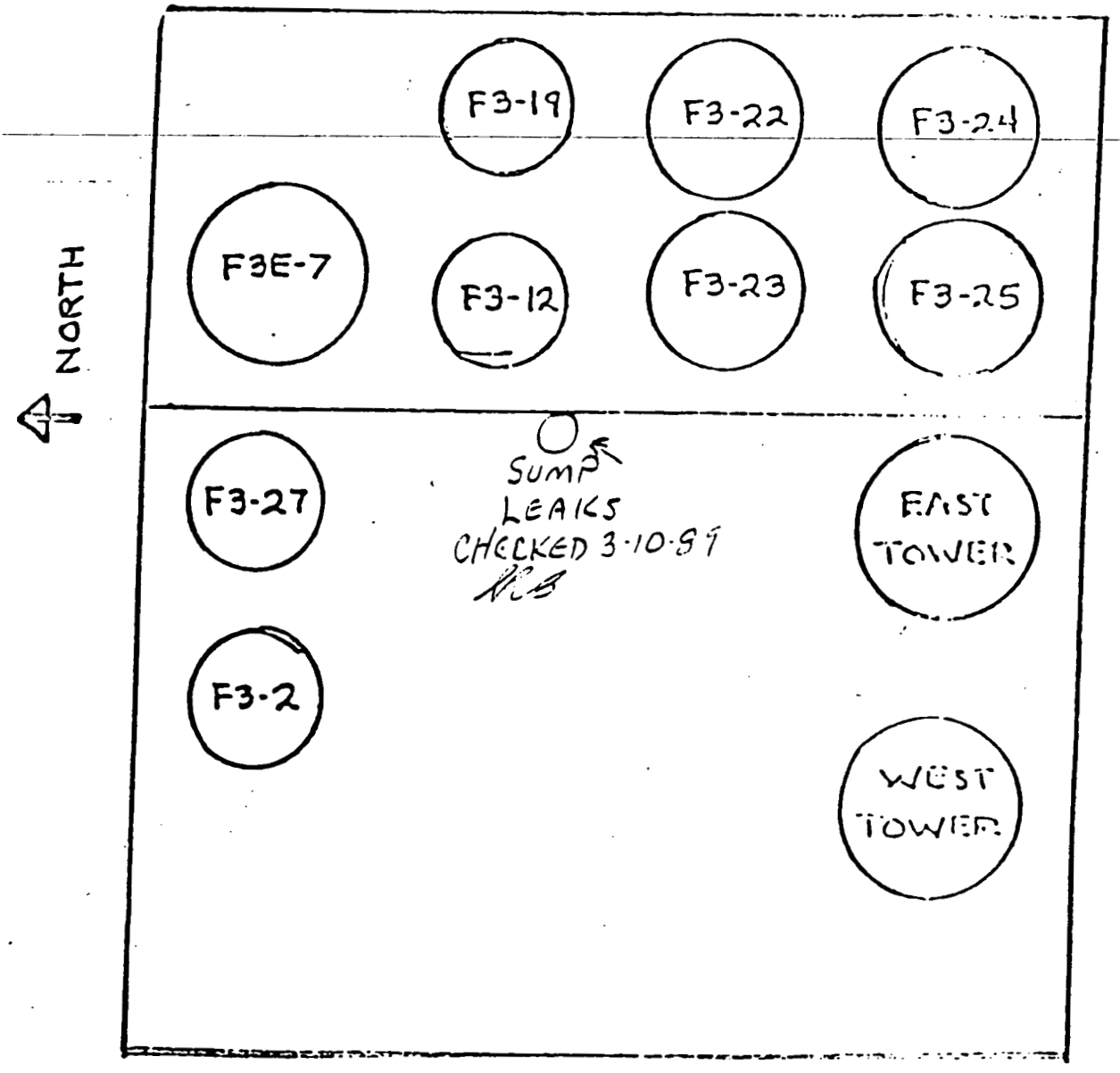
DATE

CHEMICAL AREA

269

DIKED AREA INSPECTION REPORT

NITRIC ACID RECOVERY AREA



REMARKS:

DATE

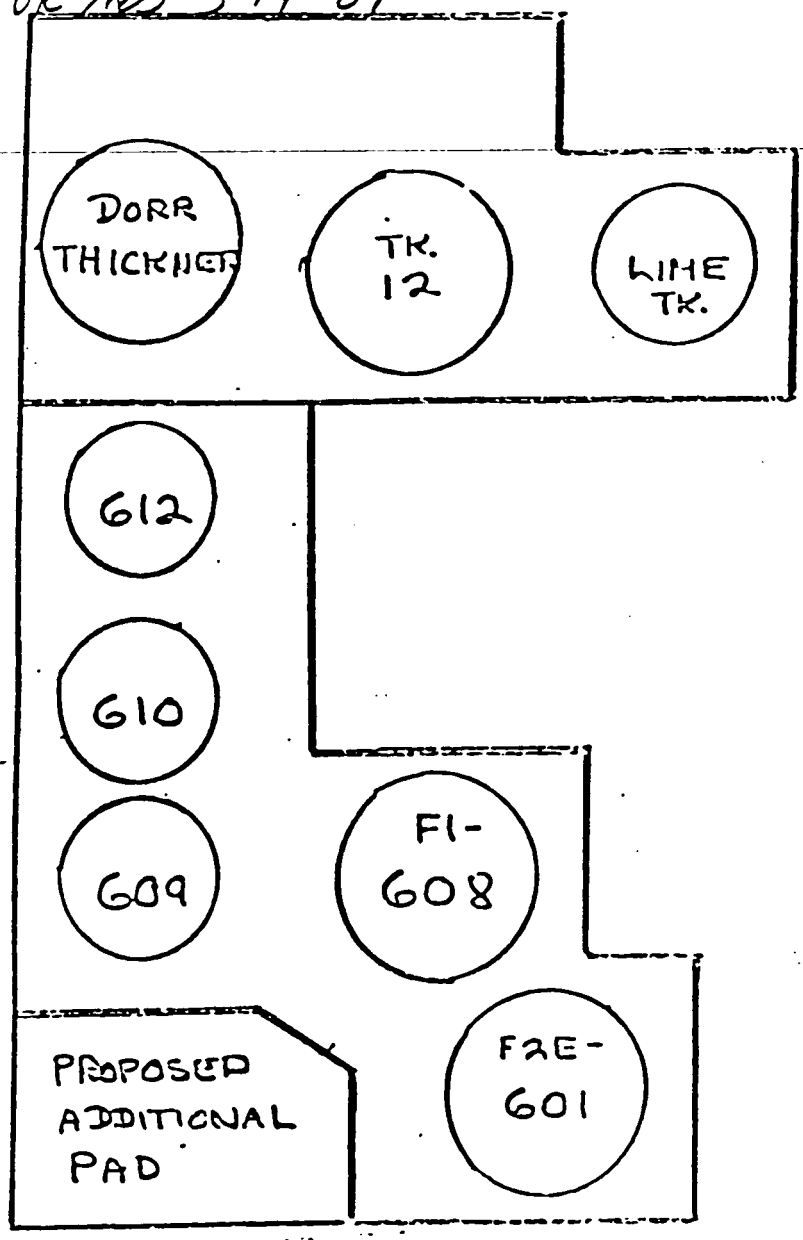
CHEMICAL AREA

269

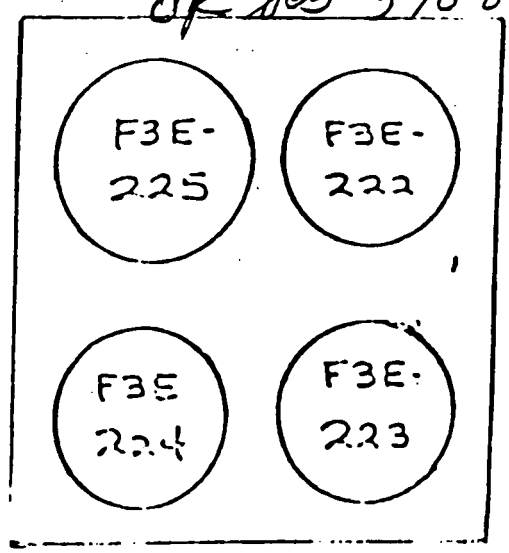
DIKED AREA INSPECTION REPORT

REFINERY SUMP & DENITRATION

OK KB 3-14-89



OK KB 3-10-8



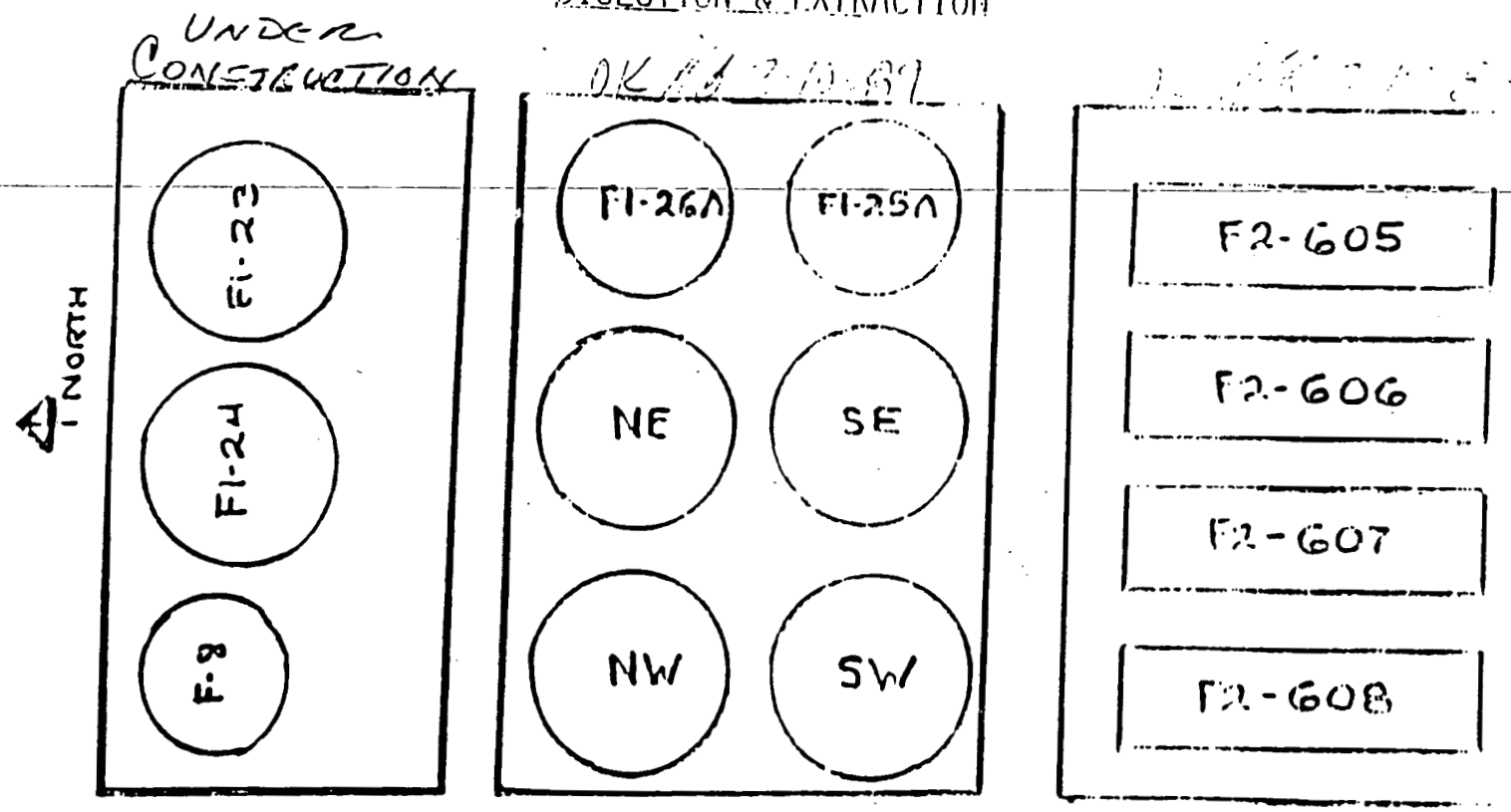
REMARKS:

DATE

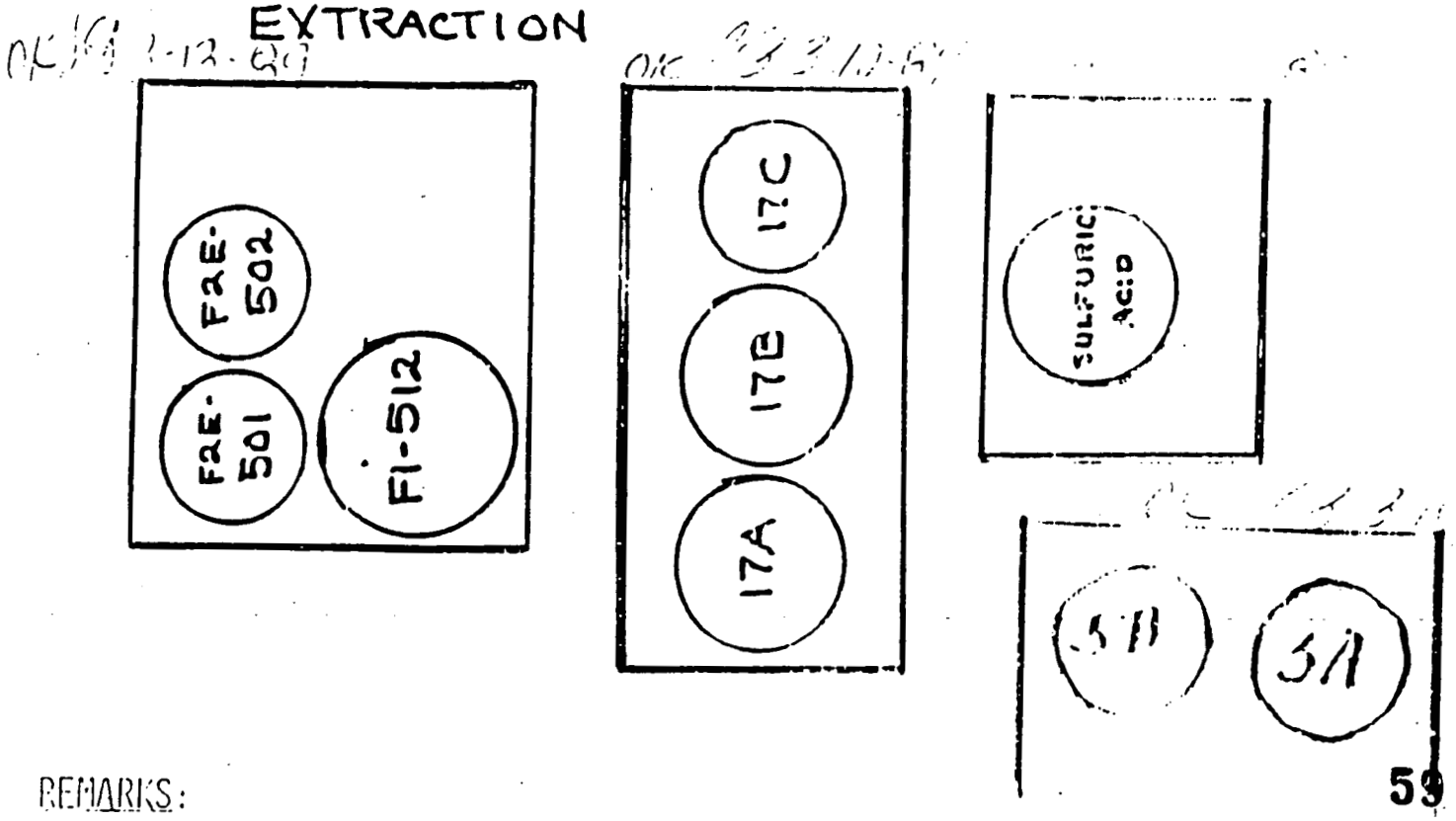
CHEMICAL AREA

DIKED AREA INSPECTION REPORT

DIGESTION & EXTRACTION



EXTRACTION



REMARKS:

INSPECTED BY

REFINERY SUMP PUMPS

Date 6/30/71 THRU 7-6-71

269

Pump Number	Location	Works On Auto.	Doesn't Work On Auto.	Leaks	Doesn't Leak	Remarks
F1-36	West Cold Side Digestion		X		X	
F1-37	East Cold Side Digestion		X		X	
F1-38	West Hot Side Digestion		X		X	
F1-35	East Hot Side Digestion		X		X	
G2E-50	Metal Dissolver Building		X		X	
No Number	Metal Dissolver Pad			X		Pump out - Pad leaks
20-A-1	5A & 5B Area Pad		X			Sump in good condition
G2E-16	Slop Tank Area Pad	X			X	
G1-2N-850	17A, B & C Area Pad		X		X	
G1-540	512 Area Pad		X		X	Pump no good ~~not operable~~ for this year
No Number	West Cold Side Extraction		X		X	
F1-104	East Cold Side Extraction		X		X	
No Number	West Hot Side Extraction		X		X	
F1-102	Center Hot Side Extraction	X			X	
F1-514	East Hot Side Extraction	X			X	
F3E-222	S.E. End Denitration		X		X	
F1-220	S.W. End Denitration	X			X	
F3E-223	N.E. End Denitration					OUT SERVICE FOR 2 yr
F1-221	N.W. End Denitration				X	PUMP WILL NOT PUMP (SLOW
G3E-282	N.E. Pad - Denitration					OUT
	S.E. Pad - Denitration		X		X	PUMP WILL NOT OPERATE
G3E-244	OK Liquor Pit					NO PUMP - OUT FOR MAINT.
G18E-[illegible]	1st Fl. Refinery Sump	X			X	
~~[illegible]~~ [illegible].	W. Pad Refinery Sump	X			X	60
G2E-610	E. Pad Refinery Sump		X		X	PUMP WILL NOT OPERATE

Date _____

REFINERY SUMP PUMPS CONTINUED:

Pump Number	Location	Works On Auto.	Doesn't Work On Auto.	Leaks	Doesn't Leak	Remarks
G3-24	West Pad - N.A.R.	X			X	
G3-64	East Pad - N.A.R.	X			X	
F3E-224	E. Pad Comb. Raff.	X			X	
F3E-225	W. Pad Comb. Raff.	X			X	
14-4A-P-6	Harshaw Tower Pad		X		X	Pump does not operate need syphon to keep water o
G1-325	Hot Raff. E. Tank Room	X			X	
	Hot Raff. W. Tank Room	X			X	
G1-30[illegible]	Hot Raff. - Center Room - low floor	X			X	
	Cold Side Ore Pit		X		X	Steam Syphon
	Hot Side Ore Pit		X		X	~ ~
No Number	N.W. Dig. Storage Pad	X			X	
C2E-140-3	NFS Pump House	X			X	
[illegible]	[illegible] - Hot Raff. Bldg.		X		X	
Acid Storage Area F-23E24		X			X.	

B-

Ball - O.K.
Schonegg
Gardner
Jackson
Way 7-6

July 2, 1971

TO: W. J. Adams

269

FROM: A. R. Diehl

File

The Refinery Sumps Certification Committee has inspected and do hereby certify that the sumps listed below are in an acceptable "controlled" condition to permit their immediate production usage. This certification should not be misinterpreted to mean that all electrical and mechanical operating components are in an acceptable condition; minor work requests and job orders will be prepared to accomplish the necessary maintenance.

Prior to startup however, Production must assign personnel for perimeter inspection of sumps each shift until it is determined by the Refinery Sumps Committee that the sumps may be operated without continuous perimeter inspection.

Refinery Sump

G18E-7	1st Fl. Refinery Sump
	W. Pad Refinery Sump
G2E-610	E. Pad Refinery Sump

Denitration

F3E-222	S.E. End Denitration
F1-220	S.W. End Denitration
F3E-223	N.E. End Denitration
F1-221	N.W. End Denitration
	S.E. Pad - Denitration
G3E-244	OK Liquor Pit

Nitric Acid Recovery

G3-24	West Pad - N.A.R.
G3-64	East Pad - N.A.R.

Combined Raffinate

F3E-224	E. Pad - Comb. Raff.
F3E-225	W. Pad - Comb. Raff.

Hot Raffinate

G1-325	Hot Raff. East Tank Room
	Hot Raff. West Tank Room
G1-307	Hot Raff. Center Room - 1st Floor

A R Diehl — A. R. Diehl, Chairman

J. E. Beckelheimer — J. E. Beckelheimer

Jack Farr — J. Farr

Distribution: S. F. Audia, J. E. Beckelheimer, C. R. Chapman, P. G. DeFazio, A. R. Diehl, J. Farr, H. Martin, C. A. Schwan

62

July 2, 1971

W. J. Adams

The Refinery Sumps certification committee recommends immediate plugging and sealing of the deluge release drain located in the extreme northwest corner of the Extraction Area - hot side.

Certification Committee:

A. R. Diehl

J. E. Beckelheimer

J. Farr

Distribution: C. R. Chapman
P. G. DeFazio
S. F. Audia
H. Martin
C. A. Schwan
A. R. Diehl
J. E. Beckelheimer
J. Farr

COMBINED RAFFINATE AREA

7-3-71 2ND SHIFT

OPERATING	YES	NO	SUMPS — F3E-224 EAST PAD COMB RAFF. } F3E-225 WEST PAD COMB RAFF. }	OK	NOT OK
1600		✓		—	
1700		✓		—	
1800		✓		—	
1900		✓		—	
2000		✓		—	
2100	✓			✓	
2200	✓			✓	
2300	✓			✓	
2400	✓			✓	

REMARKS:

1. Floor sumps checked by Frank Rosenberger.

E Eckenegg

DENITRATION AREA

7-3-71 2ND SHIFT

OPERATING	YES	NO	Floor Sumps:		F3E-222 - SE END DENITRATION		OK	NOT OK
1600		✓			F1-220 - SW END DENITRATION		—	—
					F3E-223 - NE END DENITRATION		—	—
1700	✓				F1-221 - NW END DENITRATION		✓	
					- SE PAD DENITRATION.			
1800	✓				G3E-244 - OK LIQUOR PIT.		✓	
1900	✓						✓	
2000	✓						✓	
2100	✓						✓	
2200	✓						✓	
2300	✓						✓	
2400	✓						✓	

REMARKS:

1. THE DENITRATION AREA FLOOR SUMPS WERE CHECKED BY FRANK ROSENBERGER.

Eckhoney

REFINERY SUMP AREA

7-3-71 2ND SHIFT.

OPERATING	YES	NO	FLOOR SUMP				(INSIDE) G18E-7,	(EAST PAD) G2E-610,	WEST PAD			OK	NOT OK
1600		✓											
1700	✓											✓	
1800	✓											✓	
1900	✓											✓	
2000	✓											✓	
2100	✓											✓	
2200	✓											✓	
2300	✓											✓	
2400		✓											

REMARKS:

1. THE R. SUMP AREA FLOOR SUMPS WERE CHECKED BY CARL FRISICH.

E. Sehoney

HOT RAFFINATE AREA

7-4-71 2ND SHIFT.

OPERATING	YES	NO	FLOOR SINKS:	G1-325 - HOT RAFF EAST TANK ROOM HOT RAFF WEST TANK ROOM G1-307 HOT RAFF. CENTER ROOM 1st floor	OK	NOT OK
1600		✓			—	
1700	✓				✓	
1800	✓				✓	
1900	✓				✓	
2000	✓				✓	
2100	✓				✓	
2200	✓				✓	
2300	✓				✓	
2400	✓				✓	

REMARKS:

1. Sumps checked by Louie Black.

E. Stetkevich

DENITRATION AREA

7-4-71 2ND SHIFT

OPERATING	YES	NO	FLOOR SUMPS		OK	NOT OK
			F3E-222	– SE END DENITRATION		
			F1-220	– SW END DENITRATION	✓	
1600	✓		F3E-223	– NE END DENITRATION	✓	
			F1-221	– NW END DENITRATION	✓	
1700	✓		G3E-244	– ok Lynn Pit	✓	
				– SE PAD DENITRATION	✓	
1800	✓				✓	
1900	✓				✓	
2000	✓				✓	
2100	✓				✓	
2200	✓				✓	
2300	✓				✓	
2400	✓				✓	

REMARKS:

1. SUMPS CHECKED BY PETE EBERHART.

E. Stroney

COMBINED RAFFINATE AREA

7-4-71 2ND SHIFT

OPERATING	YES	NO	Sumps	OK	NOT OK
			F3E-224 - EASTPAD COMB. RAFF.		
			F3E-225 - WESTPAD COMB RAFF.		
1600		✓	G3-24 WEST NAR		
			G3-64 EAST NAR		
1700		✓		✓	
1800	✓			✓	
1900	✓			✓	
2000	✓			✓	
2100	✓			✓	
2200	✓			✓	
2300	✓			✓	
2400	✓			✓	

REMARKS:

1. Sumps checked by Frank Rosenberger.

E Schonegg

Refinery Sump Area

7-4-71 2ND Shift.

Operating	Yes	No	Floor Sumps	618E-7 inside G2E-610 East Pad West Pad				OK	Not OK
1600		✓							
1700	✓							✓	
1800	✓							✓	
1900	✓							✓	
2000	✓							✓	
2100	✓							✓	
2200	✓							✓	
2300	✓							✓	
2400		✓							

Remarks:

1. Sumps checked by Carl Fiesich.

Jackson EJ
Schonegg EJ
York
Beal PB
Gardner RG

File

July 7, 1971

PRODUCTION STARTUP OF THE REFINERY EXTRACTION AREA

W. J. Adams

A. R. Diehl

The Refinery Sumps Certification Committee approves startup of the Refinery extraction area commencing July 6, 2nd shift, provided two operators are assigned to the extraction area full time. One of the two operators must remain on the ground floor at all times to ensure that the proper operating integrity of all sumps within the extraction area is maintained. An operator from the digestion area must be assigned to extraction during the lunch period in order to maintain the required two man coverage.

Sealing of the extreme northwest deluge release drain in the extraction area has been completed and work is progressing on the remaining five drains on the hot side. The six deluge release drains on the cold side will also be sealed when the hot side work is completed.

The committee will review and advise accordingly of the need for an additional operator assignment to the extraction area upon completion of the required maintenance work. Job orders and minor work requests are being prepared to achieve this objective.

Refinery Sumps Certification Committee

A. R. Diehl, Chairman

J. E. Beckelheimer

J. Farr

Distribution:

S. F. Audia
J. E. Beckelheimer (3x)
C. R. Chapman
P. G. DeFazio
A. R. Diehl
J. Farr
H. Martin
C. A. Schwan - B. Gessiness

Metal Shop

Sump Check Test 7-7-71

Time	Initial	Conn-	Remarks
0800	ES	off	mty
1000	ES	off	mty
1100	ES	off	mty
1200	ES	off	mty
1:00 pm	ES	off	mty
2:00	ES	off	mty
3:00	ES	off	mty
4:00	ES	off	mty

Slop Tank Cleaner's

Time	Initial	Cond-			Remarks
		17aBC	B Down 52B	Slop Tks	
900	ES	mt	mt	Rudding	Hand
1000	ES	mt	mt	washing SW	
1100	ES	mt	mt	"	
1200	ES	mt	mt	"	
1 00	ES	MT	MT	"	17A, 17B Hand
2 00	ES	MT	MT	"	" " "
3 00	ES	MT	MT	"	" " "
4 00	ES	MT	MT	"	" " "

Digestion area
Sump Check Lists
8-7-71- 1st

Time	Initial	Comp	Remarks
900 AM	ES	S.W. pump ok	S.E, NE, NW. 4 lots are broken
1000/A	ES	"	"
1100/A	ES	"	"
1200/N	ES	"	"
100/P	ES	"	"
200/P	ES	"	"
300/P	ES	"	"
400/P	ES	"	"

Dianne

DB 7-9-71
EF 7-12-71

July 9, 1971

REFINERY OPERATING STATUS REPORT

W. J. Adams

A. R. Diehl

The current production operating status of the Refinery, as approved by the Sumps Certification Committee, is that all areas of the Refinery either have returned to routine production activities or may do so when desired. No leakage has been detected from the thirty-nine sumps in the Refinery complex.

The Digestion and Extraction areas and the Metal Dissolver Building equipment may be operated only when a pumpman is assigned full time by Production to monitor the sumps around the clock to ensure proper control of liquid streams. Considerable maintenance improvements are required in these particular areas and until such time as full control is regained, it will be necessary to monitor the sumps. Monitoring is to include a check of the sump pump operation, unusual noise, vibration or flooding conditions, and recording of the date and time inspected.

REFINERY OPERATING STATUS

Processing Area	Startup Date & Time
Refinery Sump	July 2, 1st shift
Denitration and OK Liquor	July 2, 1st shift
Nitric Acid Recovery	July 2, 1st shift
Combined Raffinate	July 6, 1st shift
Hot Raffinate	July 6, 1st shift
Extraction* and Auxiliaries* (Solvent Storage, 5A & 5B, and 17A, B & C Pads)	July 6, 1st shift
Digestion* plus Metal Dissolver Building* plus Auxiliary* (Slop Tanks)	July 9, 1st shift

* To be monitored by assignment of pumpman

The committee will continue to monitor the Refinery sumps and peripheral areas for needed improvements and will issue periodic status reports.

REFINERY SUMPS CERTIFICATION COMMITTEE

A. R. Diehl, Chairman J. E. Beckelheimer J. Farr

Distributions:

S. F. Audia
J. E. Beckelheimer
C. R. Chapman
P. G. DeFazio
A. R. Diehl
J. Farr
H. Martin
C. A. Schwan - B. Gessiness

PB 7-12-71

July 12, 1971

REMOVAL OF PUMPMAN FROM REFINERY EXTRACTION AREA

W. J. Adams

A. R. Diehl

Letter A. R. Diehl to W. J. Adams, Refinery Operating Status Report, dated July 9, 1971

The special assignment of a pumpman by Production to monitor the Refinery Extraction area floor sumps while repairs to the hot side sumps were in progress and the deluge drains were being plugged may now be withdrawn, effectively immediately. All six deluge drains have been plugged with cement and covered with acid brick and the two float-type automatic sump pump controls are repaired and functioning properly. The west sump pump (no number) probe-type control does not function perfectly in an organic environment; plant maintenance is considering a change to make this a float-type control installation.

The Refinery Sumps Certification Committee believes that the Extraction area floor area is in sufficiently controlled condition to permit removal of the pumpman for better use elsewhere. A pumpman must remain on assignment in the Digestion area to monitor the sumps until the necessary repairs have been completed.

Refinery Sumps Certification Committee

A. R. Diehl, Chairman	J. E. Beckelheimer	J. Farr

Distribution:

S. F. Audia
J. E. Beckelheimer
C. R. Chapman
P. G. DeFasio
A. R. Diehl
J. Farr
R. W. Lippincott
H. Martin
H. S. Nelson
C. A. Schwan - B. Gessiness

JEB

269

NATIONAL LEAD COMPANY
OF OHIO
August 3, 1971

SUBJECT: MINUTES - REFINERY SUMPS AND TANKS MEETING

TO: Distribution

FROM: S. F. Audia

A meeting was held on July 16, 1971 to discuss the Refinery sump systems. Those in attendance were S. F. Audia, W. J. Adams, J. E. Beckelheimer, A. R. Diehl, J. Farr, N. R. Leist and F. W. Neblett.

Problem Presented - Sumps and overflow of tanks have been the reason for U losses in the past and these incidences must be put under control for the future.

The sumps have been certified to the fact that they are not leaking but the basins or areas have not. The basins are more prone to leaks than the sumps over a period of time. The use of the basins and floors as holding tanks must be eliminated.

Possible Solutions for Discussion

1. Put sumps on automatic control with normal flow to specified tanks.

2. All critical tanks equipped with high level alarms.

3. Maintain sufficient monitoring of sump systems and level alarms to assure good operations (check lists).

Several specific sumps were discussed (there are 39 altogether) and the fact that automatic controls would only create more problems under certain conditions. Drawings are available for piping of all sumps. All sumps in Digestion are now equipped for automatic control. The need for keeping pumps in good order was pointed out.

W. J. Adams proposed incorporating one large receiving tank for each area of the Refinery (25-A for Digestion, 5E for Extraction and 1-OK liquor tank for Demtration and OK liquor area). N. R. Leist stated that additional tanks (one for each side of Digestion and one for Solvent Storage Area) would be advantageous.

The effect of using the receiving tanks systems (that has been done in the past), which would decrease available tankage for production operations, was reviewed.

In the discussions, it was obvious that one uniform approach would not satisfy all conditions. The consensus was that each sump area should be studied individually and specific recommendations be made for each. S. F. Audia will discuss this with Management and an action group (Process, Engineering and Production) assigned if this approach is satisfactory.

S. F. Audia

FWN/mw

Distribution:

W. J. Adams
S. F. Audia
J. E. Beckelheimer
P. G. DeFazio
A. R. Diehl
J. Farr
N. R. Leist
S. Marshall
F. W. Neblett
M. S. Nelson - C. R. Chapman
J. A. Quigley, M.D.

Central Files

August 13, 1971

RECOMMENDATIONS FOR IMPROVED CONTROL OF REFINERY SUMPS

W. J. Adams

A. R. Diehl

Methods for improving the containment and control of liquors received into the numerous Refinery sumps have been studied by the Refinery Sumps Certification Committee. We conclude that the following recommended actions are necessary to assure that no material is lost from the Refinery via the sumps and that a minimum of down-time will be experienced in the event of sump pump failure.

Recommendations

1. Engineering and Procurement a) review and establish adequacy levels for the stocking of spare parts for Refinery sumps, b) review and recommend the standardization of parts in so far as practicable (float control mechanisms and electrical "on-off" switches are examples for consideration), and c) evaluate and recommend to HLO Management for approval the purchase of one spare Duroc submersible sump pump, less motor and automatic float control, for standby emergency installation.

2. Engineering assign sump identification numbers to unnumbered Refinery sumps; Engineering and Process Quality to indicate these new identifications in appropriate drawings and operating procedures.

3. Advance Planning integrate into the Refinery operator training program an explanation of Refinery sump operations.

4. Engineering determine the type, size and cost of installing screens to cover all thirty-nine sumps located in the Refinery. The screens will prevent foreign objects from falling into the open sumps and thereby minimize the possibility of damage to pumps and control mechanisms.

5. Production establish a residue removal schedule for each sump. The frequency of cleanout will obviously vary from sump to sump, but none should exceed a three-month period. Removal of heavy sludge deposits will reduce wear to moving parts and simplify visual inspection of the sump pumps and sump containment vessels.

6. Production obtain 4 two-way portable radios for Refinery communications. The availability of radios will speed emergency messages to plant supervision and thus hasten corrective action in the event of incidents resulting from equipment malfunction or failure.

Prior to the end of August, this Committee will reinspect each of the thirty-nine Refinery sumps and prepare a report of its findings. We intend to report on such important items as a) visual indications of sump leakage, b) general condition of sump equipment, c) status of maintenance repairs, d) condition of peripheral area concrete, brick, etc., and e) additional recommendations for improvement of sumps.

Refinery Sumps Certification Committee

A R Diehl		
A. R. Diehl, Chairman	J. Z. Beckelheimer	J. Farr

ARD/dfm

Distribution: S. F. Audin
J. E. Beckelheimer
P. G. DeFazio - A. F. Pennak
A. R. Diehl
J. Farr
L. M. Levy - F. E. Savage
H. Martin - W. C. Hill
M. S. Nelson - C. R. Chapman
C. E. Polson - D. A. Tippenhauer
C. A. Schman - S. Gessiness
W. W. Wright

August 16, 1971

REFINERY SUMPS, PADS AND DISCHARGE LINES DESTINATIONS

W. J. Adams

J. E. Beckelheimer

1. The sump for Digestion ore pad located West end of Plant 2 is classified as a controlled pad and receives material from the following locations:

   A. All surface water from West pad.

   B. Cold side ore pit will discharge to this pad or Southwest floor sump under D1-3 digester.

   C. Hot side ore pit will discharge to this pad or Northwest floor sump under D1-8 digester.

   D. Metal dissolver pad sump pump will discharge to this pad or F1-26A.

   The pump from this sump pit is equipped with a filter and the only place the pump discharges to is to the storm sewer at catch basin #8.

2. Sump for Metal Dissolver Pad - This sump receives any material from the metal dissolver area pad.

   It can be lined up to discharge to three places - F1-25, F1-26A or Digestion West pad sump. If you have a pump failure the sump will overflow to catch basin #10.

3. High Enrichment Storage Area - Pad for F-605, 606, 607 and 608 storage tanks and pump house. This sump discharges to F1-25A or 26A only.

4. Pad enclosing NE, SE, NW, SW, 26A and 25A tanks. This sump pump will discharge to F1-26A or 25A. NOTE: The line from this sump to Refinery Sump is blanked off.

5. Pad enclosing 5A and 5B solvent tanks. This sump pump discharges to the 129 slop tank or the Northwest Hot Side sump.

6. Pad enclosing 17A, 17B and 17C solvent tanks. This sump pump discharges to 129 slop tanks or Northwest Hot side sump.

15. All Extraction floor sumps will discharge to any one of the three slop tanks 129, 130, 131 or the Refinery Sump as directed.

16. All Denitration floor sumps will discharge to the Refinery Sump or into the Denitration off-spec lines that goes back to Digestion.

17. The Metal Dissolver Building floor sump will discharge to East or West M.D. tanks, F1-25A or 129 slop tank in Extraction.

J. E. Beckelheimer

JEB/jm

August 17, 1971

PLANT 8 SUMPS, PADS AND DISCHARGE LINES DESTINATIONS

W. J. Adams

J. E. Beckelheimer

The following is a list of all sumps and control pads discharge flows as well as the discharge flow from all vacuum pump cooling liners.

1. Control pad Northwest end Plant 8. Material goes into trench then to settling pit to discharge pit. This pump pumps thru a filter and discharges into storm sewer at manhole 68.

2. Control pad Southeast end Plant 8 at Drum Washer. Material from drum washer drains thru a trench to sump inside building that can be pumped to any one of the digesters.

3. Control pad North side Plant 8 at Box Furnace and tanks 21A, 22A and 28A. This sump can be lined up to pump back into any one of the three tanks 21A, 22A and 28A.

4. Control Pad East end Plant 8. All flows from this pad go into a settling pit then into the storm sewer at manhole 23.

5. The cooling water from all six vacuum pumps in Plant 8 is discharged to the storm sewer South side Plant 8 between manhole #73 and #74.

6. The floor sump West end wet side Plant 8 receives all floor slops from wet side, NPR annex and drum washer. This material can be pumped back into any one of the digesters.

7. Pit enclosing W8-8 tank. This pit can be pumped back into W8-8 tank or inside to any of the digesters.

8. The roof drai ns on the south side have diverters so that rain water can be diverted to the storm sewers or to the floor sump.

9. Metal Dissolver Pad sump. This sump can be pumped back into the two dissolver tanks or inside the building into any of the digesters.

J. E. Beckelheimer

JEB/jm

NATIONAL LEAD COMPANY OF OHIO

August 18, 1971

SUBJECT: RECOMMENDATIONS FOR IMPROVED CONTROL OF REFINERY SUMPS

TO: Distribution

FROM: W. Adams

REFERENCE: Letter, Diehl to Adams, same subject, dated 8/13/71

The reference letter contained six recommendations, prepared by the Refinery Sumps Certification Committee, for improving the containment and control of Refinery sump liquors. We have considered these recommendations and it is our conclusion that the implementation of each of them will contribute significantly to better control of the Refinery sumps. However, the Production Division by itself cannot implement all of the listed recommendations. Responsibility for the implementation of most of them must be assumed by other divisions. By copy of this letter, the following assignments of responsibility are requested.

Recommendations

No. 1. Engineering - A. Pennak or designated representative. Maintenance - J. Farr. Procurement - W. Wright or designated representative for purchase of additional parts and change in stock quantities.

No. 2. A. Pennak or designated representative. C. E. Polson for procedural changes.

No. 3. F. Savage. Work has already begun to implement this recommendation.

No. 4. A. Pennak or designated representative.

No. 5. J. Beckelheimer.

No. 6. A requisition for two way radios has already been submitted. W. Wright to advise as to delivery date.

In addition to the above recommendations, standard operating procedures are being prepared for the Refinery sumps by W. Adams. C. E. Polson and the Quality Control Department are requested to assist as required.

In the event that there are questions or disagreements as to the above listed assignments of responsibility please notify me in writing at an early date. If the assignments are accepted please prepare a short status report on their progress for submission to me no later than September 1st.

W. Adams

WA/jm

Distribution: S. F. Audia
J. E. Beckelheimer
P. G. DeFazio - A. Pennak
A. R. Diehl
J. Farr
L. M. Levy - F. N. Savage
H. Martin - W. C. Hill
M. S. Nelson - C. R. Chapman
C. E. Polson - D. A. Tippenhauer
C. A. Schwan - B. Gessiness
W. W. Wright
S. Marshall
J. A. Quigley, M.D.

August 20, 1971

NEW SUMP PUMP FOR 512 TANK AREA - PLANT 2 EXTRACTION

S. F. Audia

P. G. DeFazio

Request for Engineering Services dated July 7, 1971
Engineering Project No. 2-272

The sump pump requirements for the diked area around tank 512 were briefly discussed with J. Beckelheimer and it was agreed that a sump pump with a capacity of 25 GPM would suffice. We are therefore proposing that a 316 stainless steel Galigher cantilever sump pump with a capacity of 25 GPM be installed in the sump within the diked area. The cantilever pump, although it has poor efficiency and a relatively high price, is a unit that is best suited for service of this type. As you know, there are no bearings, guides, or seals below the mounting plate.

The existing centrifugal pump would be removed from service and surplused.

Since the sump pump would operate automatically on a float actuated level switch, the discharge line to the refinery sump and the line to tank 501 would remain full of liquid and be subject to freezing since the lines would not be manually drained after each pumpdown cycle. We propose to steam trace and insulate the lines subject to freezing.

We have estimated the overall installation would cost approximately $3,000. If you are in agreement with the above proposal, please advise and we will prepare the Job Order Request and Job Order for your approval.

P. G. DeFazio

EMM/wfk

cc: W. J. Adams
J. Beckelheimer
J. Farr
W. C. Hill

August 26, 1971

REFINERY SUMPS COMMITTEE MEETING - AUGUST 24, 1971

W. J. Adams

A. R. Diehl

1. Letter, M. S. Nelson to Distribution, Refinery Operations and Control, dated July 7, 1971
2. Letter, S. F. Audia to Distribution, Minutes - Refinery Sumps and Tanks Meeting, dated August 3, 1971

The Refinery Sumps Committee wishes to clarify its position with respect to two points: 1. guaranteeing "control" of Refinery sumps to prevent losses and 2. responsibility for designating the destination point (tank or system) to which the contents of each sump is to be pumped.

1. We believe that all 39 sump pump switches with the exception of the switch at the OK Liquor Pit (03E-422) must be set and maintained on automatic control at all times to insure the rapid withdrawal and transfer of routine and accidentally generated liquors from sumps within the Refinery. A Committee recommendation for a manual sump pump operating procedure elsewhere in the Refinery in light of the minimum manpower coverage of production activities would be unwise. The potential for accidental spillage into sumps while unattended and the resultant uncontrolled flooding and loss of material pose too great a risk. The OK Liquor Storage Tank Pit will accommodate a major leakage from any of the four existing tanks, thus, the risk of material loss under a manual sump pump operating procedure at this location becomes minimal.

2. The Refinery Sumps Committee was appointed by Management for the purpose of inspecting sumps and peripheral containment systems in the Refinery and to certify to their integrity and condition following the incident in the Extraction Area on June 30, 1971. Further, these Committee actions were to be continued at such frequency as the Sumps Committee recommends. We believe that it was not Management's intent for the Sumps Committee to recommend or advise Production on the best disposition of sump liquors. The Committee's interests are not so directed in the conduct of its present investigative and certification efforts and, further, the Committee, per se, is unqualified to make such recommendations.

Refinery Sumps Committee:

Original Signed by
A. R. Diehl
A. R. Diehl, Chairman

J. E. Beckelheimer

J. Farr

ARD/mas

Distribution: S. F. Audia, J. E. Beckelheimer ✓, P. G. DeFazio, A. R. Diehl, J. Farr, H. Martin - W. C. Hill, M. S. Nelson - C. R. Chapman, C. A. Schwan - B. Gessiness

Original Signed by
A. R. Diehl

A. R. Diehl, Chairman
Refinery Sumps Committee

ARD/wbb

cc: S. F. Audia
J. E. Beckelheimer
P. G. DeFazio-A. F. Pennak
J. Farr
H. Martin-W. C. Hill
M. S. Nelson-C. R. Chapman
C. A. Schwan-B. Gessiness
W. W. Wright

November 4, 1971

REFINERY SUMPS COMMITTEE--REVERSION TO INACTIVE STATUS

C. R. Chapman

A. R. Diehl

Letter, Nelson to Distribution, 7/7/71, Refinery Operations and Control

In my opinion, the original objectives of the Refinery Sumps Committee established in (1) of the reference letter have been met and the Committee has served its usefulness, per se, and should be placed in an inactive status.

WHAT MECH. IMPROVEMENTS?

Mechanical improvements to the sumps, their cleanouts, routine shift inspections, improved communications capabilities, and the general awareness on the part of operating personnel of the loss and pollution potential have greatly improved the Refinery's position relative to the control of sump effluents. Moreover, the new standard operating procedure prepared by the Production Division for the inspection and control of Refinery sumps when implemented will reasonably insure that inadvertent uranium losses from the Refinery do not occur. Routine testing and inspections established by the SOP should safeguard against this possibility.

Subject to Management's wishes, the Refinery Sumps Committee could be reactivated or called upon as an advisory group should the need arise.

Original Signed by
A. R. Diehl

A. R. Diehl, Chairman
Refinery Sumps Committee

ARD/wbb

cc: S. F. Audia-W. J. Adams
J. E. Beckelheimer
P. G. DeFazio-A. F. Pennak
J. Farr
H. Martin-W. C. Hill
M. S. Nelson
C. A. Schwan-B. Gessiness

November 8, 1971

REFINERY SUMPS COMMITTEE

A. R. Diehl

C. R. Chapman

Letter, Diehl to Chapman, "Refinery Sumps Committee--Reversion to Inactive Status" dated November 4, 1971

The Refinery Sumps Committee has functioned well. As a result there is added confidence that the Refinery will not experience losses of material or contamination of surroundings from faulty sumps. The work of the Sumps Committee is much appreciated.

Although things remain to be accomplished before all of the Refinery sumps are in A-1 condition, we believe that corrective actions have been initiated in all cases and are in various stages of progress. Hence we agree with placing the Committee in an inactive status. If it appears that progress is not being made as planned, we shall call on the Committee again.

Original Signed By
C. R. CHAPMAN
Assistant Manager
C. R. Chapman

CRC/rb

cc: S. F. Audia - W. J. Adams
J. E. Beckelheimer ✓
P. G. DeFazio - A. F. Pennak
J. Farr
H. Martin - W. C. Hill
M. S. Nelson
C. A. Schwan - B. Gessiness

JCD

269

November 9, 1971

REFINERY SUMPS COMMITTEE

S. F. Audia

W. Adams

Letter, Diehl to Chapman, dated 11/4/71, subject: Refinery Sumps Committee Reversion to Inactive Status

The reference letter requests that the Refinery Sumps Committee be placed in an inactive status. The justification for this request is simply that the committee has served it's purpose.

We must agree that the committee has completed it's original task and we have no objection to its being placed in inactive status. We would further agree with the reference letter's contention that there has been a significant improvement in the Refinery's position relavent to control of sump effluents. Nevertheless, no one should be deceived into believing that all the objectives outlined by this committee and others concerned with sump effluent control have been achieved. The latest sump inspection reports have indicated that a number of pumps and their controls are still either defective or unreliable. In fact the number of inoperable or unreliable installations has remained at a relatively constant level in spite of maintenance's best effort. Obviously there are still some problems which must be solved. Until satisfactory solutions are found we must rely heavily on the routine inspections of the sumps as our first line of defense against losses.

W. ADAMS
Superintendent
Chemical Plants
W. Adams

WA/jm

cc: J. E. Beckelheimer
C. R. Chapman
A. R. Diehl
J. Farr

December 9, 1971

REFINERY SUMP IMPROVEMENTS

S. F. Audia

P. G. DeFazio

Letter, Audia to DeFazio dated December 6, 1971; subject: Protective Screens forRefinery Floor Sumps Engineering Project No. 3-275

In accordance with the referenced letter we have prepared a Job Order Request, Job Order H-8505, and Letter of Justification for the improvement of the Refinery Sumps. Please approve these documents, insert the proper accounting charge, and return to the Project Engineering Department for processing.

Original Signed By
A. F. PENNAK
Sen. Proj. Engineer

for P. G. DeFazio

EGM/wfk

Enc.

cc: W. J. Adams - w/o enc.
J. E. Beckelheimer " "
A. R. Diehl " "
J. Farr " "
H. Martin " "

NATIONAL LEAD COMPANY OF OHIO

CINCINNATI, OHIO 45239

January 5, 1972

SUBJECT REFINERY SUMP QUARTERLY INSPECTION

TO J. E. Beckelheimer

FROM W. A. York

REFERENCE

Prior to the 1/3/72 inventory all of the 39 sumps in the Refinery area were cleaned of all residual material. Tags were placed on each of these as to time & date of cleanout & signed by the responsible foreman on shift.

Looking back to the July 3rd thru 7th visual inspection reports there were three floats broken in the Digestion area on SE, NE & NW sumps. The sumps for the other areas were listed as in OK condition.

Since this time July 3rd there has been rebuilt sump pumps installed in the OK liquor storage pit, SE Denitration, SE Extraction, center hot side Extraction, Metal Dissolver building pit, SW cold side Digestion.

There has been a repair made in the OK liquor pit, stainless steel pans have been installed & acid brick & mortar used to deflect all leakage to the sump catch basin.

A visual check & inspection was made on 1/3/72 of all 39 Refinery sumps. This inspection was made by William A. York & chemical operator Carl Firsich. The operator filled each sump catch basin with water & the level of the water checked on each one hour after filling & isolation. All 39 were visually OK.

There were three leaks on 17A, B & C sump pump, one leak on East hot side pump & one leak on the hot side ore pit. MWR's have been issued for these repairs.

There were two automatic switches (Off, Manual, Auto.) not working on the SE & SW Denitration sump pumps. MWR's have been issued.

There are two sump pumps not in use, one under 218 pot NE end of Denitration & and at the Harshaw tower.

There are four sumps that do not have automatic controls, 5A & 5B, 17A, B & C, OK liquor & the east pad at the Refinery sump. MWR's have been issued.

Since we have been making the hourly sump inspections on each shift we have been getting minor repairs made to our sump pumps & have had no "U" losses due to our sumps.

William A. York

WAY/dfm

William A. York

The conclusion of the writer is that our sumps are in fair condition, but do require constant maintenance to keep malfunctions corrected.

cc: W. J. Adams
S. F. Audia

REFINERY SUMP PUMPS

Date 1-3-71

William A. [illegible]

Pump Number	Location	Works On Auto.	Doesn't Work On Auto.	Leaks	Doesn't Leak	Remarks
F1-36	West Cold Side Digestion	✓			✓	Filled @ 830/AM Full @ 930/AM
F1-37	East Cold Side Digestion	✓			✓	Filled @ 830/A Full @ 930/A
F1-38	West Hot Side Digestion	✓			✓	Filled @ 830/A Full @ 930/A
F1-38	East Hot Side Digestion	✓		TOP WEEP HOLES LEAK?		Filled @ 830/A Full @ 930/A
G22-8[illegible]	Metal Dissolver Building	✓			✓	Filled @ 900/A Full @ 1000/A
No Number	Metal Dissolver Pad					Pump removed for new pump installation
20-A-[illegible]	6A & 6B Area Pad		NO AUTO			Filled @ 930/A Full @ 1030/A
G23-13	Slop Tank Area Pad				✓	Filled @ 930/A Full @ 1030/A
G1-23-850	17A, B & C Area Pad		NO AUTO	✓		Filled @ 930/A Full @ 1030/A
G1-64[illegible]	512 Area Pad USING STEAM EDUCTOR		CEN. PUMP NOT PUMPING			Pumping out basin
No Number	West Cold Side Extraction		NO AUTO		✓	Filled @ 1000/A Full @ 1100/A
F1-10[illegible]	East Cold Side Extraction	✓			✓	Filled @ 930/A Full @ 1030/A
No Number	West Hot Side Extraction	✓			✓	Filled @ 1045/A Full @ 1145/A
F1-10[illegible]	Center Hot Side Extraction	✓			✓	Filled @ 1045/A Full @ 1145/A
F1-6[illegible]	East Hot Side Extraction	✓			✓	Filled @ 1045/A Full @ 1145/A
F25-[illegible]22	S.E. End Denitration	✓	SWITCH BAD		✓	Filled @ 1100/A Full @ 1230/P
F1-22[illegible]	S.W. End Denitration	✓	SWITCH BAD		✓	Filled @ 1230/P Full @ 130/P
F23-2[illegible]23	N.E. End Denitration	NOT IN USE				
F1-22[illegible]	N.W. End Denitration	✓			✓	Filled @ 1230/P Full @ 130/P
25-2[illegible]32	N.E. Pad - Denitration		✓ [redacted]	[redacted]	✓	Filled @ 1230/P Full @ 130/P
	S.E. Pad - Denitration	NO SUMP NO PUMP				Basin full
G[illegible]-2[illegible]4	OK Liquor Pit		NO AUTO		✓	Filled @ 1000/A Full @ 1130/A
G18-[illegible]	Int. Pit Refinery Sump	✓			✓	Filled @ 200/P Full @ 300/P
Steam Stud	No. Int. Refinery Sump	✓			✓	Filled @ 200/P Full @ 300/P
G2-[illegible]10	E. Int. Refinery Sump		NO AUTO		✓	Filled @ 200/P Full @ 300/P

Date 1-3-72

REFINERY SUMP PUMPS CONTINUED:

Pump Number	Location	Works On Auto.	Doesn't Work On Auto.	Leaks	Doesn't Leak	Remarks
G?-24	West Pad - N.A.R.	✓			✓	Filled @ 12 30/P Full @ 1 34/P
G3-64	East Pad - N.A.R.	✓			✓	Filled @ 12 30/P Full @ 1 30/P
PS6-224	S. Pad Comb. Raff.	✓			✓	Filled @ 1 00/P Full @ 2 00/P
PS2-225	W. Pad Comb. Raff.	✓			✓	Filled @ 1 00/P Full @ 2 00/P
14-4A-P-6	Hardness Tower Pad	PUMP NOT OPERATING				Basin full
01-325	Hot Raff. E. Tank Room	✓			✓	Filled @ 1 00/P Full @ 2 00/P
	Hot Raff. W. Tank Room	✓			✓	Filled @ 1 00/P Full @ 2 00/P
01-707	Hot Raff. - Center Room - 1st Floor	✓			✓	Filled @ 1 00/P Full @ 2 00/P
	Cold Side Ore Pit	STEAM EDUCTOR				Filled @ 2 00/P Full @ 3 00/P
	Hot Side Ore Pit	STEAM EDUCTOR		✓		Filled @ 2 00/P Full @ 3 00/P
No Number	W.W. Pip. Storage Pad	✓			✓	Full of water to spill over to pump pad
G2?-140-3	NPS Pump House	✓			✓	Filled @ 3 00/P Full @ 4 00/P
G?-419	Front - Hot Raff. Bldg.	✓			✓	Filled @ 1 30/P Full @ 2 30/P

Visual inspection of these Sumps made by William A. Yack 1-3-72

269

NATIONAL LEAD COMPANY OF OHIO

CINCINNATI 39, OHIO

April 5, 1972

SUBJECT QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

TO W. J. Adams

FROM J. E. Beckelheimer

REFERENCE

An inspection and leak check was made of all sumps in the Refinery on April 3rd and 4th by J. E. Beckelheimer.

All sumps were found to be very clean. The operators had done a good job on cleaning out the sumps over the weekend.

No sumps were found to be leaking BUT one is questionable. This is the sump located at the 17A, B and C solvent tanks. This sump is in poor condition. The JOR is in Engineering for the repairs to this sump pit liner.

One sump pump, the Northeast hot side digestion, was out for Maintenance repairs. This is a critical location and a steam syphon was installed until repairs could be completed on the pump.

New sump pumps have been installed at two locations (Metal Dissolver Building and Metal Dissolver Pad) and are in very good operating order.

See attached inspection sheet.

Summary - The condition of the sump pumps has improved over the last inspection. We now only have four pumps that should have automatic controls installed. (5A and 5B, 17A, B and C, West cold side extraction and 512 pit).

NOTE - Upon cleaning out of the sumps a very large amount of tramp metal such as nuts, bolts, welding rods, wire, chunks of metal, gloves and paper was removed from the sumps. IF Maintenance people as well as operators would clean up after each job I am sure we would have less damage to the pumps.

SPECIAL NOTE - The two storm sewer pH monitors are now in operation at manholes number 12 and 66 and are working very well.

J. E. Beckelheimer

J. E. Beckelheimer

JEB/jm

cc: S. F. Audia

98

April 5, 1972

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

W. J. Adams

J. E. Beckelheimer

An inspection and leak check was made of all sumps in the Refinery on April 3rd and 4th by J. E. Beckelheimer.

All sumps were found to be very clean. The operators had done a good job on cleaning out the sumps over the weekend.

No sumps were found to be leaking BUT one is questionable. This is the sump located at the 17A, B and C solvent tanks. This sump is in poor condition. The JCR is in Engineering for the repairs to this sump pit liner.

One sump pump, the Northeast hot side digestion, was out for Maintenance repairs. This is a critical location and a steam syphon was installed until repairs could be completed on the pump.

New sump pumps have been installed at two locations (Metal Dissolver Building and Metal Dissolver Pad) and are in very good operating order.

See attached inspection sheet.

Summary - The condition of the sump pumps has improved over the last inspection. We now only have four pumps that should have automatic controls installed. (5A and 5B, 17A, B and C, West cold side extraction and 512 pit).

NOTE - Upon cleaning out of the sumps a very large amount of tramp metal such as nuts, bolts, welding rods, wire, chunks of metal, gloves and paper was removed from the sumps. IF Maintenance people as well as operators would clean up after each job I am sure we would have less damage to the pumps.

SPECIAL NOTE - The two storm sewer pH monitors are now in operation at manholes number 12 and 66 and are working very well.

J. E. Beckelheimer

JEB/jm

cc: S. F. Audia

Date April 3rd - 84

REFINERY SUMP PUMPS CONTINUED:

Page

Pump Number	Location	Works On Auto.	Doesn't Work On Auto.	Leaks	Doesn't Leak	Remarks
G3-24	West Pad - N.A.R.	✓			✓	
G3-64	East Pad - N.A.R.	✓			✓	
F3E-224	E. Pad Comb. Raff.	✓			✓	
F3E-225	W. Pad Comb. Raff.	✓			✓	
14-4A-P-6	Harshaw Tower Pad					Pump out of Sea
G1-325	Hot Raff. E. Tank Room	✓			✓	
	Hot Raff. W. Tank Room	✓			✓	
G1-307	Hot Raff. - Center Room - 1st Floor	✓			✓	
	Cold Side Ore Pit		✓		✓	Steam Syphon This Location
	Hot Side Ore Pit		✓		✓	Steam Syphon This Location
No Number	N.W. Dig. Storage Pad	✓			✓	
G2E-140-3	NFS Pump House	✓			✓	
G3E-419	Front - Hot Raff. Bldg.	✓			✓	

July 10, 1972

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

W. J. Adams

J. E. Beckelheimer

The quarterly inspection & leak check was made of all sumps in the Refinery on July 6th & 7th.

All sumps were clean & each sump had a tag showing the operator who cleaned the sump & the foreman on shift.

No sumps were found to be leaking. The sump located at 17A, B & C solvent tanks was checked with dye & water, but no leaks were detected.

One sump was put back into operation, the north east sump in back of 218 pot in denitration. This was out of service because of the 2.0% run. The automatic controls are still out.

A JOR was written to resurface the pad at the solvent treatment pump area.

Two sump pumps have been rebuilt during this period & are now back in operation & working very satisfactorily. #1 north west hot side digestion & center hot side extraction. The west cold side extraction is the next one to be rebuilt.

Summary - The condition of the sump pumps has improved. We now have five pumps that do not have automatic controls (north east end of denitration, 5A & 5B, 17A, B & C, west cold side extraction & 512 pit).

NOTE - The sump screens have not as yet been installed & when the sumps were cleaned, a large amount of nuts, bolts, welding rod, wire, paper & tramp metal were found in the sumps. This causes damage to the pump when pulled up into the pump.

See attached inspection sheet.

J. E. Beckelheimer

JEB/dfm

cc: S. F. Audia

Name: J.E. Beckelhimer

Shift: 1st

Date: July 6th & 7th

REFINERY SUMP PUMPS

Pump Number	Location	Works On Auto.	Doesn't Work On Auto.	Leaks	Doesn't Leak	Remarks
F1-36	West Cold Side Digestion	✓			✓	
F1-37	East Cold Side Digestion	✓			✓	
F1-38	West Hot Side Digestion	✓			✓	
F1-35	East Hot Side Digestion	✓			✓	
G2E-50	Metal Dissolver Building	✓			✓	
No Number	Metal Dissolver Pad	✓			✓	
20-A-1	5A & 5B Area Pad		✓		✓	
G2E-16	Slop Tank Area Pad	✓			✓	
G1-2N-850	17A, B & C Area Pad		✓		✓	
G1-540	512 Area Pad		✓		✓	
No Number	West Cold Side Extraction		✓		✓	
F1-104	East Cold Side Extraction	✓			✓	
No Number	West Hot Side Extraction	✓			✓	
F1-102	Center Hot Side Extraction	✓			✓	
F1-514	East Hot Side Extraction	✓			✓	
F3E-222	S.E. End Denitration	✓			✓	
F1-220	S.W. End Denitration	✓			✓	
F3E-223	N.E. End Denitration		✓		✓	AUTOMATIC CONTROLS NOT HOOKED UP
F1-221	N.W. End Denitration	✓			✓	
G3E-282	N.E. Pad - Denitration	✓			✓	
	S.E. Pad - Denitration				✓	NO PUMP AT THIS LOCATION
G3E-244	OK Liquor Pit		✓		✓	NO AUTOMATIC CONTROLS ON THIS PUMP.

File

269

To: E.M. Nutter 12.3.72

From: E. Schonegg

Subj: Monthly Sump check, per 2C.910 Section 2

A routine monthly sump check was made on 12.3.72 from 10^00 hrs to 11^00 hrs. Operator C. Finsich accompanied this inspector today.

The following attached inspection sheet describes the conditions found.

The pink copies of MWR's written are attached also.

Please note & evaluate item # 36.

E Schonegg

Name: E Schoneff

Shift: Day

Date: 12.3.72

10⁰⁰ Am → 11⁰⁰ Am

REFINERY SUMP PUMPS
Per 2C.910
Section # 2

Pump Number	Location	Works On Manual	Works On Auto.	Leaks	Doesn't Leak	Remarks
[illegible] (1)	West Cold Side Digestion	OK	OK		✓	Pumps ok. SCREEN DIRTY.
[illegible] (2)	East Cold Side Digestion	OK	OK		✓	Pumps ok. SCREEN DIRTY.
[illegible] (3)	West Hot Side Digestion	OK	OK	✓		TWO LEAKS. SCREEN DIRTY. Pumps ok
[illegible] (4)	East Hot Side Digestion	OK	OK		✓	Pumps ok. SCREEN DIR
[illegible] (5)	Main Digester Building	OK	OK			Pumps ok.
[illegible] (6)	Vacuum Digester Pad	OK	OK		✓	Pumps ok.
[illegible] (7)	D & E Area Pad	OK	OK	✓		2 FLANGES BURST GASKETS. Pumps ok.
[illegible] (8)	Slop Tank Area Pad	OK	OK		✓	Pumps ok.
[illegible] (9)	A, B & C Area Pad	OK	OK	✓		2 flanges BURST GASKETS. Pumps ok.
[illegible] (10)	[illegible] Area Pad	OK	NO		✓	WILL NOT PUMP.
[illegible] (11)	[illegible]	OK	OK		✓	Pumps ok. PUMP VIBRAT
[illegible] (12)	[illegible]	OK	OK		✓	Pumps ok.
[illegible] (13)	[illegible]	OK	OK		✓	Pumps ok. PUMP VIBRAT
[illegible] (14)	[illegible]	OK	OK		✓	Pumps ok. SCREEN DIRTY.
[illegible] (15)	[illegible]	OK	OK		✓	Pumps ok. PUMP VERY DIRT SCREEN OFF. ALSO DIRTY.
[illegible] (16)	[illegible]	OK	OK		✓	Pumps ok. SCREEN DIRTY
[illegible] (17)	[illegible]	OK	OK		✓	Pumps ok. SCREEN DIR.
[illegible] (18)	[illegible]	NO	NO	COULDN'T CHECK		PUMP WOULD NOT OPERATE
[illegible] (19)	[illegible]	OK	OK		✓	Pumps ok. SCREEN DIR.
[illegible] (20)	[illegible]	OK	OK		✓	Pumps ok.
[illegible] (21)	[illegible]	THERE IS NO PUMP LOCATED IN THIS SUMP PIT.				
[illegible] (22)	[illegible]	OK	NO		✓	Pumps ok.

Name: E.S.

Shift: DAY

Date: 12.3.72

REFINERY SUMP PUMPS CONTINUED:

Sump Number	Location	Works On Manual	Work On Auto	Leaks	Doesn't Leak	Remarks
23	1st Fl. Refinery Sump	OK	OK		✓	Pump looses prime when setting
24	W. Pad Refinery Sump	No	No	Couldn't check		Pump will not operate electrical requires extensive repair.
25	E. Pad Refinery Sump	OK	OK		✓	Pumps ok.
26	East Pad - [illegible]	OK	OK		✓	Pumps ok. Screen dirty.
27	East Pad - [illegible]	OK	OK		✓	Pumps ok. Screen dirty.
28	E. Pad Comb. Raff.	OK	OK		✓	Pumps ok.
29	W. Pad Comb. Raff.	OK	OK		✓	Pumps ok.
30	[illegible] Tower Pad	Out of Production Service.				
31	[illegible] Raff. E. Tank Room	OK	OK		✓	Pumps ok.
32	[illegible] Raff. W. Tank Room	OK	OK		✓	Pumps ok.
33	[illegible]	OK	OK		✓	Pumps ok. Screen dirty.
34	[illegible]	Steam eductor			✓	Pumps ok.
35	[illegible]	Steam eductor			✓	Pumps ok.
36	[illegible]	OK	Did not check		Cannot see	You have to have a fork truck to remove the cover to really check this - however the grating is off.
37	[illegible]	OK	OK		✓	Pumps ok.
38	[illegible]	OK	OK	✓		Pumps ok. Pump base head leak

SUMPS CLEANED

Name: _____

REFINERY SUMP PUMPS

Shift: _____

Date: _____

Pump Number	Location	Works On Auto.	Doesn't Work On Auto.	Leaks	Doesn't Leak	Remarks
[illegible]-35	West Cold Side Digestion		Cleaned ~~Cleaned~~			12/23/72 ~~12-20-72~~
[illegible]-37	East Cold Side Digestion	1st	CLEANED			12-21-72 PB
[illegible]-38	West Hot Side Digestion	2nd	Cleaned			12/21/72
[illegible]-39	East Hot Side Digestion	1st	CLEANED			12 21-72 PB
[illegible]-60	Metal Dissolver Building	3rd	Cleaned			12/23-72
No Number	Metal Dissolver Pad	1st	Cleaned			12-22-72 way
[illegible]-1	5A & 5B Area Pad	1st	Cleaned			12-22-72 way
[illegible]-18	Slop Tank Area Pad	1st	Cleaned			12-22-72 way
[illegible]-2M-860	17A, B & C Area Pad	2nd	Cleaned			12-22-72 way
[illegible]-840	51D Area Pad	1st	Cleaned			12-23-72 way
No Number	West Cold Side Extraction	2nd	Cleaned			12.23.72
[illegible]04	East Cold Side Extraction	1st	CLEANED			12-19-72 PB
[illegible] Number	West Hot Side Extraction	1st	CLEANED			12-19-72 PB
[illegible]02	Lower Hot Side Extraction	1st	CLEANED			12-19-72 PB
[illegible]14	East Hot Side Extraction	1st	CLEANED			12-19-72 PB.
[illegible]-802	[illegible]	2nd	Cleaned			12-22-72 way
[illegible]0	[illegible]	2nd	Cleaned			12-22-72 way
[illegible]-783	[illegible]	2nd	Cleaned			12/21/72
[illegible]	[illegible]	2nd	Cleaned			12.23.72
[illegible]	[illegible]	1st	Cleaned			12-23-72 way
[illegible]	[illegible]					
[illegible]	[illegible]	2nd	Cleaned			12.23.72

Names: _____

Shift: _____

Date: _____

REFINERY SUMP PUMPS CONTINUED:

Pump Number	Location	Works On Auto.	Doesn't Work On Auto.	Leaks	Doesn't Leak	Remarks
018E-7	1st Fl. Refinery Sump	2nd	Cleaned			12/24/72 RY
Steam Educt.	W. Pad Refinery Sump	1st	Cleaned			12/25/72 wey
02E-610	E. Pad Refinery Sump	2nd	Cleaned			12/24/72 RY
03-24	West Pad - N.A.R.	3rd	Cleaned			12/24/72 RY
03-64	East Pad - N.A.R.	3rd	Cleaned			12/24/72 RY
03E-224	E. Pad Comb. Raff.	3rd	Cleaned			12/24/72 RY
03E-225	W. Pad Comb. Raff.	2nd	Cleaned			12/23/72 ES
14-4A-P-d	Harshaw Tower Pad					
11-325	Hot Raff. E. Tank Room	2nd	Cleaned			12.23.72 Ed
	Hot Raff. W. Tank Room	3rd	Cleaned			12/24/72 RY
11-30"	Hot Raff. - Center Room - 1st Floor	2nd	Cleaned			12.23.72 Ed
	Cold Side Ore Pit	1st	Cleaned			12-24-72 wey
	Hot Side Ore Pit	3rd	CLEANED		12.20.72	Ed
[illegible] Number	N.W. Bldg. Storage Pad	1st	CLEANED		12.28.72	Ed
[illegible]-140-3	NPI Pump House	2nd	Cleaned		12-24-72	wey
[illegible]E-4-B	Front - Hot Raff. Bldg.	1st	Cleaned		12-23-72	wey

269 file

NATIONAL LEAD COMPANY OF OHIO

CINCINNATI, OHIO 45239

December 27, 1972

SUBJECT QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

TO E. M. Nutter

FROM P. D. Ball

REFERENCE

The quarterly inspection and leak check was made of all the sumps in the Refinery on December 26th and 27th.

All sumps were clean and each sump had a tag showing the operator that cleaned the sump and the foreman on the shift. No sumps were found to be leaking.

Three sumps were rebuilt during this period:

1. The east pad to Refinery Sump.
2. The N.E. pad - Denitration.
3. The Metal Dissolver pad.
4. The west pad pump at the Refinery Sump is being replaced.

A portable electric pump has been put in the S.E. pad sump - Denitration.

Automatic controls have been installed on 5A & 5B sump, 17A, B & C sump and N.E. Denitration. This pump in Denitration will be replaced.

The sump screens have been installed. During this cleanout, the foreign material in the sumps was almost zero.

See attached inspection sheet.

P. D. Ball

P. D. Ball

PDB/dfm

cc: W. J. Adams
S. F. Audia

Name: PAUL D. Ball

Shift: DAY

Date: DEC. 26 & 27 8

REFINERY SUMP PUMPS

Pump Number	Location	Works On Auto.	Doesn't Work On Auto.	Leaks	Doesn't Leak	Remarks
F1-36	West Cold Side Digestion	✓			✓	
F1-37	East Cold Side Digestinn	✓			✓	
F1-38	West Hot Side Digestion	✓			✓	
F1-35	East Hot Side Digestion	✓			✓	
G2E-50	Metal Dissolver Building	✓			✓	
No Number	Metal Dissolver Pad	✓			✓	W.O.R. ISSUED TO TRACE AND INSULATE DISCHARGE LINE
20-A-1	5A & 5B Area Pad	✓			✓	
G2E-16	Slop Tank Area Pad	✓			✓	
G1-2N-850	17A, B & C Area Pad	✓			✓	
G1-540	512 Area Pad		✓		✓	
No Number	West Cold Side Extraction		✓		✓	
F1-104	East Cold Side Extraction	✓			✓	
No Number	West Hot Side Extraction	✓			✓	
F1-102	Center Hot Side Extraction	✓			✓	
F1-614	East Hot Side Extraction	✓			✓	
F3E-222	S.E. End Denitration	✓			✓	
F1-220	S.W. End Denitration	✓			✓	
F6E-223	N.E. End Denitration		✓			NEEDS SCREWED FOR [illegible] TO REPLACE PUMP
F1-221	N.W. End Denitration	✓			✓	NEED SEALS REPLACED FOR IN
G3E-282	N.E. Pad - Denitration	✓			✓	
	S.E. Pad - Denitration		✓		✓	[illegible] PUMP
G3E-244	OK Liquor Pit		✓		✓	NO AUTOMATIC CONTROL ON THIS KIND

Name: _____

Shift: _____

Date: _____

REFINERY SUMP PUMPS CONTINUED:

Pump Number	Location	Works On Auto.	Doesn't Work On Auto.	Leaks	Doesn't Leak	Remarks
G18E-7	1st Fl. Refinery Sump	✓			✓	
Steam Educt.	W. Pad Refinery Sump		✓			PUMP BEING REPACK.
G2E-610	E. Pad Refinery Sump	✓			✓	
G3-24	West Pad - N.A.R.	✓			✓	
G3-84	East Pad - N.A.R.	✓			✓	
F3E-224	E. Pad Comb. Raff.	✓			✓	
F3E-225	W. Pad Comb. Raff.	✓			✓	
14-4A-P-6	Harshaw Tower Pad					No PUMP
G1-325	Hot Raff. E. Tank Room	✓			✓	
	Hot Raff. W. Tank Room	✓			✓	
G1-307	Hot Raff. - Center Room - 1st Floor	✓			✓	
	Cold Side Ore Pit		✓		✓	STEAM EDUCTOR
	Hot Side Ore Pit		✓		✓	STEAM EDUCTOR
No Number	N.W. Dig. Storage Pad					
G2E-140-3	NFS Pump House	✓			✓	
G3E-419	Front - Hot Raff. Bldg.	✓			✓	PUMP GASKET LEAKING PUMP WILL BE REPLACED

Name: [illegible]

Shift: 1

Date: 1-27-73

REFINERY SUMP PUMPS

Pump Number	Location	Works On Auto. (10% Am 20% Pm)	Doesn't Work On Auto.	Leaks	Doesn't Leak	Remarks
F1-36	West Cold Side Digestion	✓				
F1-37	East Cold Side Digestion	✓				
F1-38	West Hot Side Digestion	✓				
F1-35	East Hot Side Digestion	✓				
G2E-60	Metal Dissolver Building	✓				
No Number	Metal Dissolver Pad	✓				
20-A-1	5A & 5B Area Pad	✓				
G2E-16	Slop Tank Area Pad	✓				
G1-2N-860	17A, B & C Area Pad	✓				
G1-540	512 Area Pad		✓	WATER		
No Number	West Cold Side Extraction	✓			(MWR)	NOISE - NO SCREE
F1-104	East Cold Side Extraction	✓				
No Number	West Hot Side Extraction	✓			(MWR)	NOISE SCREEN OFF
F1-102	Center Hot Side Extraction	✓				
F1-514	East Hot Side Extraction	✓				
F3E-222	S.E. End Denitration	✓				
F1-220	S.W. End Denitration	✓			(MWR)	BRICK
F3E-223	N.E. End Denitration	✓				NO SCREEN
F1-221	N.W. End Denitration	✓			(MWR)	NOISE - NO SCRE
G3E-282	N.E. Pad - Denitration	✓				
	S.E. Pad - Denitration	✓				
G3E-244	OK Liquor Pit		✓			

Name: [illegible]

REFINERY SUMP PUMPS CONTINUED:

Shift: 1 269

Date: 1-27-73

Pump Number	Location	Works On Auto.	Doesn't Work On Auto.	Leaks	Doesn't Leak	Remarks
G18E-7	1st Fl. Refinery Sump	✓			(✓)	FLOOR LOOSE
Steam Educt.	W. Pad Refinery Sump	✓				NO SCREEN
G2E-610	E. Pad Refinery Sump	✓				
G3-24	West Pad - N.A.R.	✓				
G3-64	East Pad - N.A.R.	✓				
F3E-224	E. Pad Comb. Raff.	✓				
F3E-225	W. Pad Comb. Raff.	✓				
14-4A-P-6	Harshaw Tower Pad					WATER
G1-325	Hot Raff. E. Tank Room	✓				
	Hot Raff. W. Tank Room	✓				
G1-307	Hot Raff. - Center Room - 1st Floor	✓				
	Cold Side Ore Pit		✓			STEAM EDUCTOR
	Hot Side Ore Pit		✓			STEAM EDUCTOR
No Number	N.W. Cig. Storage Pad	✓				
G2E-140-3	DFS Pump House	✓				SCREEN OFF
G3E-419	Front - Hot Raff. Bldg.	✓				

Name: E H Jackson

Shift: DAY

Date: 3-10-73

[illegible] SUMP PUMPS

[illegible] Number	Location	Works On Auto.	Doesn't Work On Auto.	Leaks	Doesn't Leak	Remarks
[illegible]	West Cold Side Digestion	ok				
[illegible]	East Cold Side Digestion	ok				
[illegible]	West Hot Side Digestion	ok				
[illegible]	East Hot Side Digestion	ok				
[illegible]	Metal Dissolver Building	ok				
[illegible]	Metal Dissolver Pad	ok				
[illegible]	5A & 5B Area Pad	ok				
[illegible]	Clop Tank Area Pad	ok				
[illegible]-2N-860	[illegible] & C Area Pad	ok				
[illegible]	[illegible] Area Pad		✓			Pump won't prime. Using air pump.
[illegible]	[illegible]	ok				
[illegible]	[illegible]	ok				
[illegible]	[illegible]	ok				
[illegible]	[illegible]	ok				
[illegible]	[illegible]	ok				
[illegible]	[illegible]	ok				
[illegible]	[illegible]	ok				
[illegible]	[illegible]	ok				
[illegible]	[illegible]	ok				
[illegible]	[illegible]	ok				

113

Portable pump.
manual only on t

✓

Name: [illegible]

Shift: [illegible]

Date: [illegible]

REFINERY SUMP PUMPS CONTINUED:

Pump Number	Location	Works On Auto.	Doesn't Work On Auto.	Leaks	Doesn't Leak	Remarks
[illegible]	1st Fl. Refinery Sump	ok				
[illegible]	W. Pad Refinery Sump	ok				
[illegible]	E. Pad Refinery Sump	ok				
[illegible]	West Pad - N.A.R.	ok				
[illegible]	East Pad - N.A.R.	ok				
13E-224	E. Pad Comb. Raff.	ok				
13E-225	W. Pad Comb. Raff.	ok				
14-4A-F-6	Harshaw Tower Pad		✓			No Power to pump - No Seal water
[illegible]-325	Hot Raff. E. Tank Room	ok				
	Hot Raff. W. Tank Room	ok				
	Hot Raff. - Center Room - 1st Floor	ok				
	[illegible]		✓			Steam Eductor
	[illegible]		✓			Steam Eductor c
[illegible]	[illegible] Storage [illegible]	ok				
[illegible]	[illegible] Pump House	ok				
[illegible]	[illegible] - Hot Raff. [illegible]	ok				Leaks at base

March 30, 1973

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

R. M. Spenceley

E. M. Nutter

The quarterly inspections and leak checks of all sumps were made on March 29 and 30, 1973. Thirty-four of the sumps were clean and were tagged indicating date of cleanout. The remaining four will be cleaned on Sunday April 1st. No leaks were noted on any of the sumps.

The following repairs or replacements were completed during this quarter:

1. The pump was replaced at the east Refinery Sump pad.

2. The pump for the sump in the east tank room of Hot Raffinate was rebuilt.

3. Automatic controls were installed and the pump was rebuilt at SW Extraction.

4. A new pump was installed and the whole sump pit was rebricked at NE Denitration.

The screens which have been installed at each sump continue to keep tramp metal and other trash out of the sumps; however, as noted on the attached inspection sheet a few screens have been removed and not properly replaced.

Original Signed By
E. M. NUTTER
GENERAL FOREMAN

E. M. Nutter

EMN/dfm

cc: S. F. Audia w/attachment
P. D. Ball

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

269

Date: MARCH 29-30, 1973

Name: E. M. NUTTER Shift: 1 Time [1ST INSPECTION] [2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓		No		
F1-37	East Cold Side Digestion	✓		✓		No		
F1-38	West Hot Side Digestion	✓		✓		No		
F1-35	East Hot Side Digestion	✓		✓		No		
G2E-50	Metal Dissolver Building	✓		✓		No		
No. Number	Metal Dissolver Pad	✓		✓		No		
20-A-1	5A & 5B Area Pad	✓		✓		No		
G2E-16	Slop Tank Area Pad	✓		✓		No		
G1-2N-85017A, B & C Area Pad		✓		✓		No		
G1-540	512 Area Pad	PAD PUMPED OUT WITH PORTABLE PUMP 3/29/73						JO APPROVED FOR INSTALLATION OF STEAM EDUCTOR
No Number	West Cold Side Extraction	✓		✓		No		
F1-104	East Cold Side Extraction	✓		✓		No		
No Number	West Hot Side Extraction	✓		✓		No		HALF OF COVER SCREEN MISSING
F1-102	Center Hot Side Extraction	✓		✓		No		
F1-514	East Hot Side Extraction	✓		✓		No		
F3E-222	S. E. End Denitration	✓		✓		No		
F1-220	S. W. End Denitration	✓		✓		No		
F3E-223	N. E. End Denitration	✓		✓		No		FLOAT LEVELS NEED ADJUSTING FOR IMPROVED AUTO OPERATION
F1-221	N. W. End Denitration	✓		✓		No		
G3E-282	N. E. Pad – Denitration	✓		✓		No		PUMP VIBRATES BADLY. SO BAD THAT IT ACTUATES PUMP SWITCH TO
	S. E. Pad – Denitration			✓		No		WE CHECK PUMP OPERATION, BUT SUM BELONGS TO GEN. SUMP AREA.
G3E-244	OK Liquor Pit	✓				No		OPERATES MANUALLY ONLY
G18E-7	1st Floor Refinery Sump	✓		✓		No		ORDER IN TO REPAIR CONCRETE AROUND SUMP
Steam Educt.	W. Pad Refinery Sump	✓		✓		No		SCREEN MISSING
G2E-610	E. Pad Refinery Sump	✓		✓		No		
G3-24	West Pad – N.A.R.	✓		✓		No		FLOAT SWITCH STICKS OCCASIONALLY
G3-64	East Pad – N.A.R.	✓		✓		No		
F3E-224	E. Pad Combined Raffinate	✓		✓		No		
F3E-225	W. Pad Combined Raffinate	✓		✓		No		
14-4A-0-6	Harshaw Tower Pad					DID NOT CHECK		NO PUMP
G1-325	Hot Raffinate E. Tank Room	✓		✓		No		
	Hot Raffinate W. Tank Room	✓		✓		No		
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		No		
	Cold Side Ore Pit	✓				No		STEAM EDUCTOR
	Hot Side Ore Pit	✓				No		STEAM EDUCTOR
No Number	N. W. Digestion Storage Pad	✓		✓		No		
G2E-140-3	NFS Pump House	✓		✓		No		
G3E-419	Front – Hot Raffinate Bldg.	✓		✓		No		

MINOR WORK REQUESTS SUBMITTED WHERE REQUIRED.

116

July 3, 1973

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

R. M. Spenceley

E. M. Nutter

The quarterly inspections and leak checks of all sumps were completed on July 2, 1973. All of the sumps bore tags indicating the date of cleanout, the operators name and the foreman's name who inspected the cleanout. No leaks were noted at any of the sumps.

The following repairs or replacements were completed during this quarter:

1. A steam eductor was installed at the 512 area pit. Accumulated water can now be transferred to the NW floor sump in the Denitration area.

2. A crack in the Denitration pad perimeter trench was repaired this period.

3. The pump at NE Denitration pad was removed and overhauled.

4. Several minor repairs were completed to five other pumps.

The inspection sheet with comments is attached.

Original Signed By
E. M. NUTTER
GENERAL FOREMAN

E. M. Nutter

EMN/dfm

cc: S. F. Audia w/attachment
Refinery Files

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION — REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: June 29 & July 2

Name: E. M. Nutter Shift: Time [ ] 1ST INSPECTION — 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓		No		259
F1-37	East Cold Side Digestion	✓		✓		No		
F1-38	West Hot Side Digestion	✓		✓		No		
F1-35	East Hot Side Digestion	✓		✓		No		
G2E-50	Metal Dissolver Building	✓		✓		No		
No. Number	Metal Dissolver Pad	✓		✓		No		
20-A-1	5A & 5B Area Pad	✓		✓		No		
G2E-16	Slop Tank Area Pad	✓		✓		No		
G1-2N-85017	A, B & C Area Pad	✓		✓		No		
G1-540	512 Area Pad	—		—		No		STEAM EDUCTOR — OPERATES C
No Number	West Cold Side Extraction	✓		✓		No		
F1-104	East Cold Side Extraction	✓		✓		No		
No Number	West Hot Side Extraction	✓		✓		No		
F1-102	Center Hot Side Extraction	✓		✓		No		
F1-514	East Hot Side Extraction	✓		✓		No		
F3E-222	S. E. End Denitration	✓		✓		No		FLOAT SWITCH STICKS
F1-220	S. W. End Denitration	✓		✓		No		
F3E-223	N. E. End Denitration	✓		✓		No		
F1-221	N. W. End Denitration	✓		✓		No		
G3E-282	N. E. Pad — Denitration	✓		✓		No		
	S. E. Pad — Denitration			✓		No		
G3E-244	OK Liquor Pit	✓				No		MANUALLY OPERATED ONLY
G18E-7	1st Floor Refinery Sump	✓		✓		No		CONCRETE SURROUNDING SUMP NEEDS REPAIRS
~~Steam Educt.~~	W. Pad Refinery Sump	✓		✓		No		
G2E-610	E. Pad Refinery Sump	✓		✓		No		
G3-24	West Pad — N.A.R.	✓		✓		No		FLOAT STICKS OCCASIONALLY.
G3-64	East Pad — N.A.R.	✓		✓		No		
F3E-224	E. Pad Combined Raffinate	✓		✓		No		
F3E-225	W. Pad Combined Raffinate	✓		✓		No		
14-4A-0-6	Harshaw Tower Pad					No Check		NO PUMP
G1-325	Hot Raffinate E. Tank Room	✓		✓		No		
	Hot Raffinate W. Tank Room	✓		✓		No		
G1-307	Hot Raffinate — Center Room 1st. Fl.	✓		✓		No		
	Cold Side Ore Pit					No		— STEAM EDUCTOR
	Hot Side Ore Pit					No		— STEAM EDUCTOR
No Number	N. W. Digestion Storage Pad	✓		✓		No		
G2E-140-3	NFS Pump House	✓		✓		No		
G3E-419	Front — Hot Raffinate Bldg.	✓		✓		No		PUMP MISS

118

MINOR FAILURE REQUESTS SUBMITTED WHERE APPLICABLE.

NLO-PRO-2410 (3/19/73)

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Sump Clean Out Check Off Sheet

269

Date: 7-1-

Name: _____ Shift: _____ Time _____ 1ST INSPECTION _____ 2ND INSP

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion						6/18	Cleaned NIGHT
F1-37	East Cold Side Digestion		—				6/17	Cleaned NIGHT
F1-38	West Hot Side Digestion						6/18	Cleaned Afternoon
F1-35	East Hot Side Digestion						6/18	Cleaned Afternoon
G2E-50	Metal Dissolver Building						6/29	Cleaned 2nd sh
No Number	Metal Dissolver Pad						7/1	Cleaned 1st Sh
20-A-1	5A & 5B Area Pad						6/18	Cleaned Afternoon
G2E-16	Slop Tank Area Pad						6/18	Cleaned Afternoon
G1-2N-85017A, B & C Area Pad							6/18	Cleaned Afternoon
G1-540	512 Area Pad						6/20	Cleaned Day
No Number	West Cold Side Extraction						6/19	Cleaned NIGHT
F1-104	East Cold Side Extraction						6/19	Cleaned NIGHT
No Number	West Hot Side Extraction						6/19	Cleaned NIGHT
F1-102	Center Hot Side Extraction						7/1	Cleaned Day
F1-514	East Hot Side Extraction						6/19	Cleaned NIGHT
F3E-222	S. E. End Denitration						6/19	Cleaned Afternoon
F1-220	S. W. End Denitration						6/19	Cleaned Afternoon
F3E-223	N. E. End Denitration						6/20	Cleaned NIGHT
F1-221	N. W. End Denitration						6/20	Cleaned Day
G3E-282	N. E. Pad – Denitration						6/25	Cleaned Day
	S. E. Pad – Denitration						7/1	Cleaned Day
G3E-244	OK Liquor Pit						6/20	Cleaned Day
G18E-7	1st Floor Refinery Sump						6/30	cleaned 2nd
Steam Educt.	W. Pad Refinery Sump						6/30	Cleaned 2nd
G2E-610	E. Pad Refinery Sump						6/30	cleaned 2nd
G3-24	West Pad – N.A.R.						6/25	Cleaned Day
G3-64	East Pad – N.A.R.						6/25	Cleaned Day
F3E-224	E. Pad Combined Raffinate						6/27	cleaned 2nd sh
F3E-225	W. Pad Combined Raffinate						6/27	cleaned 2nd shift
14-4A-0-6	Harshaw Tower Pad							
G1-325	Hot Raffinate E. Tank Room						6/29	cleaned 2nd
	Hot Raffinate W. Tank Room						7/1	Cleaned 3rd
G1-307	Hot Raffinate – Center Room 1st. Fl.						6/27	cleaned 2nd
	Cold Side Ore Pit						6/19	Cleaned NIGHT
	Hot Side Ore Pit						6/28	Cleaned Day
No Number	N. W. Digestion Storage Pad						6/20	Cleaned Day
G2E-140-3	NFS Pump House						6/29	Cleaned Night
G3E-419	Front – Hot Raffinate Bldg.						6/25	Cleaned Day

Quarterly Check 269

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 6/28/73

Name: E Jackson Shift: _____ Time 0900 (1ST INSPECTION) (2ND INSPECTION)

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓				Rod Sticks MWR
F1-37	East Cold Side Digestion	✓		✓				
F1-38	West Hot Side Digestion	✓		✓				
F1-35	East Hot Side Digestion	✓		✓				
G2E-50	Metal Dissolver Building	✓		✓				
No Number	Metal Dissolver Pad	✓		✓				
20-A-1	5A & 5B Area Pad	✓		✓				
G2E-16	Slop Tank Area Pad	✓		✓				
G1-2N-85017	A, B & C Area Pad	✓		✓				
G1-540	512 Area Pad	✓		✓				
No Number	West Cold Side Extraction	✓		✓				
F1-104	East Cold Side Extraction	✓		✓				
No Number	West Hot Side Extraction	✓		✓				
F1-102	Center Hot Side Extraction	✓		✓				
F1-514	East Hot Side Extraction	✓		✓				
F3E-222	S. E. End Denitration	✓		✓				Rod Sticks MWR
F1-220	S. W. End Denitration	✓		✓				
F3E-223	N. E. End Denitration	✓		✓				
F1-221	N. W. End Denitration	✓		✓				
G3E-282	N. E. Pad – Denitration	✓		✓				
	S. E. Pad – Denitration	—		✓				
G3E-244	OK Liquor Pit	✓		—				
G18E-7	1st Floor Refinery Sump	✓		✓				
Steam Educt.	W. Pad Refinery Sump	✓		✓				
G2E-610	E. Pad Refinery Sump	✓		✓				
G3-24	West Pad – N.A.R.	✓		✓				
G3-64	East Pad – N.A.R.	✓		✓				
F3E-224	E. Pad Combined Raffinate	✓		✓				
F3E-225	W. Pad Combined Raffinate	✓		✓				
14-4A-0-6	Harshaw Tower Pad			✓				Portable
G1-325	Hot Raffinate E. Tank Room							Kicked out - M.W.R.
	Hot Raffinate W. Tank Room	✓		✓				
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓				
	Cold Side Ore Pit	✓		—				
	Hot Side Ore Pit	✓		—				
No Number	N. W. Digestion Storage Pad	✓		✓				120
G2E-140-3	NFS Pump House	✓		✓				
G3E-419	Front – Hot Raffinate Bldg.			✓				Won't run on manual M.W.

File

October 1, 1973

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

R. M. Spenceley

E. M. Nutter

The quarterly inspections and leak checks of all sumps were completed on October 1, 1973. Where practical, the sump pads were flooded to effect a good leak check. No leaks were found in any of the sumps, but a leak was noted in the trench near the west sump on the Combined Raffinate Area pad. A work request has been submitted for the necessary repairs. On October 1st all sumps were clean and each bore a tag indicating the date of clean-out, the operator's name and the foreman's name who inspected the cleanout.

The following repairs or replacements were completed during this quarter:

1. Rebuilt the pump in Metal Dissolver building sump pit and replaced the motor.

2. Rebuilt the pump at sump on east pad of Denitration.

3. Installed new float and switch at east sump at Combined Raffinate.

4. Installed new pump, sump pit liner and resurfaced the pit area at tanks 5A and 5B.

5. Rebuilt the pump at east Hot Raffinate area sump.

6. Repaired float switch at NW Digestion pad.

7. Repaired hole in slop tank area pad.

8. Resurfaced bases of tank and steel supports on Combined Raffinate pad.

The inspection sheet with comments is attached.

Original Signed By
E. M. NUTTER
GENERAL FOREMAN
E. M. Nutter

cc: S. F. Audia w/attachment
Refinery Files

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date:

Name: Sump Cleaned Shift: Time 1ST INSPECTION 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion							Cleaned 9/26/73 EJ
F1-37	East Cold Side Digestion							Cleaned 9/26/73 EJ
F1-38	West Hot Side Digestion							Cleaned 9/28/73 EJ
F1-35	East Hot Side Digestion							Cleaned 9/26/73 EJ
G2E-50	Metal Dissolver Building							Cleaned 9/29/73 RJ
No. Number	Metal Dissolver Pad							Cleaned 9/27 EJ
20-A-1	5A & 5B Area Pad							Cleaned 9/18 RJ
G2E-16	Slop Tank Area Pad							Cleaned 9/28/73 WAY
G1-2N-85	017A, B & C Area Pad							Cleaned 9/18 RJ
G1-540	512 Area Pad							Cleaned 9/29/73 WAY
No Number	West Cold Side Extraction							Cleaned 9/28/73 EJ
F1-104	East Cold Side Extraction							Cleaned 9/27/73 EJ
No Number	West Hot Side Extraction							Cleaned 9/28/73 EJ
F1-102	Center Hot Side Extraction							Cleaned 9/27/73 EJ
F1-514	East Hot Side Extraction							Cleaned 9/27 [illegible]
F3E-222	S. E. End Denitration							Cleaned 9-19 EJ
F1-220	S. W. End Denitration							Cleaned 9-19 CR
F3E-223	N. E. End Denitration							Cleaned 9-19 RJ
F1-221	N. W. End Denitration							Cleaned 9-21 DE
G3E-282	N. E. Pad – Denitration							Cleaned 9-22 DE
	S. E. Pad – Denitration							Cleaned 9-22 DE
G3E-244	OK Liquor Pit							Cleaned 9-22 EJ
G18E-7	1st Floor Refinery Sump							Cleaned 9 30 73 RJ
Steam Educt.	W. Pad Refinery Sump							Cleaned 9/30/73 RJ
G2E-610	E. Pad Refinery Sump							Cleaned 9 30 73 RJ
G3-24	West Pad – N.A.R.							Cleaned 9/18 RJ
G3-64	East Pad – N.A.R.							Cleaned 9/22 EJ
F3E-224	E. Pad Combined Raffinate							Cleaned 9/23 EJ
F3E-225	W. Pad Combined Raffinate							Cleaned 9/24 EJ
14-4A-0-6	Harshaw Tower Pad							
G1-325	Hot Raffinate E. Tank Room							Cleaned 9 30 73 RJ
	Hot Raffinate W. Tank Room							Cleaned 9/27 EJ
G1-307	Hot Raffinate – Center Room 1st. Fl.							Cleaned 9/27 EJ
	Cold Side Ore Pit							Cleaned 9/29 EJ
	Hot Side Ore Pit							Cleaned 9/25 EJ
No Number	N. W. Digestion Storage Pad							Cleaned 9/26 WAY
G2E-140-3	NFS Pump House							Cleaned 9/18 RJ
G3E-419	Front – Hot Raffinate Bldg.							Cleaned 9/26 RJ

269

122

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: SEPT. 25, 26, 27 [redacted]

Name: E. N. NUTTER – PAUL BAIL

Shift: 1 Time [redacted]

1ST INSPECTION – 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓		No		FLOODED
F1-37	East Cold Side Digestion	✓		✓		No		FLOODED
F1-38	West Hot Side Digestion	✓		✓		No		FLOODED
F1-35	East Hot Side Digestion	✓		✓		No		FLOODED
G2E-50	Metal Dissolver Building	✓		✓		No		FLOODED
No. Number	Metal Dissolver Pad	✓		✓		No		FLOODED
20-A-1	5A & 5B Area Pad	✓		✓		No		FLOODED
G2E-16	Slop Tank Area Pad	✓		✓		No		FLOODED
G1-2N-85017	A, B & C Area Pad	✓		✓		No		FLOODED
G1-540	512 Area Pad	✓		✓		No		FLOODED + STEAM EJECTOR
No Number	West Cold Side Extraction	✓		✓		No		FLOODED
F1-104	East Cold Side Extraction	✓		✓		No		FLOODED
No Number	West Hot Side Extraction	✓		✓		No		FLOODED
F1-102	Center Hot Side Extraction	✓		✓		No		FLOODED
F1-514	East Hot Side Extraction	✓		✓		No		FLOODED
F3E-222	S. E. End Denitration	✓		✓		No		FLOODED
F1-220	S. W. End Denitration	✓		✓		No		FLOODED
F3E-223	N. E. End Denitration	✓		✓		No		FLOODED
F1-221	N. W. End Denitration	✓		✓		No		FLOODED
G3E-282	N. E. Pad – Denitration	✓		✓		No		FLOODED
	S. E. Pad – Denitration			✓		No		FLOODED
G3E-244	OK Liquor Pit		✓			No		FLOODED
G18E-7	1st Floor Refinery Sump	✓		✓		No		
Steam Educt.	W. Pad Refinery Sump	✓		✓		No		
G2E-610	E. Pad Refinery Sump	✓		✓		No		FLOODED
G3-24	West Pad – N.A.R.	✓		✓		No		
G3-64	East Pad – N.A.R.	✓		✓		No		FLOODED
F3E-224	E. Pad Combined Raffinate	✓		✓		No		FLOODED
F3E-225	W. Pad Combined Raffinate	✓		✓		YES		FLOODED. LEAK IN TOP OF TRENCH APPROX. 4' WEST OF SUMP.
14-4A-0-6	Harshaw Tower Pad					NO CHECK		NO PUMP
G1-325	Hot Raffinate E. Tank Room	✓		✓		No		FLOODED
	Hot Raffinate W. Tank Room	✓		✓		NO		
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		No		FLOODED
	Cold Side Ore Pit	✓		STEAM EJECTOR		No		FLOODED
	Hot Side Ore Pit	✓		STEAM EJECTOR		No		FLOODED
No Number	N. W. Digestion Storage Pad	✓		✓		NO		WALLS THROUGHOUT LOCATION OF TANK.
G2E-140-3	NFS Pump House	✓		✓		NO		
G3E-419	Front – Hot Raffinate Bldg.	✓		✓		NO		

NLO-PRO-2410 (3/19/73)

January 2, 1974

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

R. M. Spenceley

E. M. Nutter

The quarterly inspections and leak checks of all sumps were completed on December 31, 1973. To effect a good leak check the sump pads were flooded where practical to do so. A leak was found in the floor sump located on the SE side of the Denitration Area. The leak was repaired but a second leak check on December 28th indicated leakage in the same area of the sump pit. A stainless steel liner is being fabricated for installation in the sump. Since the leak is at the very top of the sump pit the level is being closely monitored to minimize leakage until the liner is installed. No other leaks were found in the sumps; however, two leaks in floor areas were noted. One is located in Denitration near the SW corner of supports for 207 pot and the other is located in the Nitric Acid Recovery area just south of the center floor sump. Work Requests have been submitted for the repair of both.

During the quarter only routine minor repairs were made to pumps, floats, etc.

The inspection sheet with comments is attached.

Original Signed By
E. M. NUTTER
GENERAL FOREMAN

E. M. Nutter

EMN/dfm

cc: S. F. Audia w/attachment
Refinery Files

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

Date: [redacted]

NOTE: Inspections are to be made twice each shift.

Name: E. M. NUTTER – PAUL BALL Shift: Time [redacted]

1ST INSPECTION 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion	✓		✓	26	No*		12/17/73 [redacted]
F1-37	East Cold Side Digestion	✓		✓		No*		12/17/73 [redacted]
F1-38	West Hot Side Digestion	✓		✓		No		12/28/73 [redacted]
F1-35	East Hot Side Digestion	✓		✓		No*		12/13/73 [redacted]
G2E-50	Metal Dissolver Building	✓		✓		No*		12/18/73 [redacted]
No. Number	Metal Dissolver Pad	✓		✓		No*		12/27/73 [redacted]
20-A-1	5A & 5B Area Pad	✓		✓		No		12/27/73
G2E-16	Slop Tank Area Pad	✓		✓		No*		12/27/73
G1-2N-85017A, B & C Area Pad		✓		✓		No*		12/27/73
G1-540	512 Area Pad	✓				No		12/13/73 Steam Eductor – No Pump
No Number	West Cold Side Extraction	✓		✓		No*		12/17/73
F1-104	East Cold Side Extraction	✓		✓		No*		12/17/73
No Number	West Hot Side Extraction	✓		✓		No*		12/17/73
F1-102	Center Hot Side Extraction	✓		✓		No*		12/17/73
F1-514	East Hot Side Extraction	✓		✓		No*		12/18/73
F3E-222	S. E. End Denitration	✓		✓		*	YES	12/18/73 [redacted]
F1-220	S. W. End Denitration	✓		✓		No*		12/18/73 [redacted]
F3E-223	N. E. End Denitration	✓		✓		No*		12/18/73 [redacted]
F1-221	N. W. End Denitration	✓		✓		No*		12/18/73 [redacted]
G3E-282	N. E. Pad – Denitration	✓		✓		No*		12/18/73
	S. E. Pad – Denitration			✓		No*		12/18/73 Auto Submersible Pump
G3E-244	OK Liquor Pit	✓		✓		No*		12/18/73
G18E-7	1st Floor Refinery Sump	✓		✓		No*		12/11/73
Steam Educt.	W. Pad Refinery Sump	✓		✓		No		12/27/73
G2E-610	E. Pad Refinery Sump	✓		✓		No*		12/14/73
G3-24	West Pad – N.A.R.	✓		✓		No		12/14/73
G3-64	East Pad – N.A.R.	✓		✓		No*		12/11/73
F3E-224	E. Pad Combined Raffinate	✓		✓		No*		12/11/73
F3E-225	W. Pad Combined Raffinate	✓		✓		No*		12/11/73
14-4A-0-6	Harshaw Tower Pad	–		–		–		–
G1-325	Hot Raffinate E. Tank Room	✓		✓		No*		[illegible]
	Hot Raffinate W. Tank Room	✓		✓		No*		[illegible]
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		No*		[illegible]
	Cold Side Ore Pit	✓				No*		[illegible]
	Hot Side Ore Pit	✓				No*		[illegible]
No Number	N. W. Digestion Storage Pad			✓				[illegible]
G2E-140-3	NFS Pump House	✓		✓		No*		[illegible]
G3E-419	Front – Hot Raffinate Bldg.	✓		✓		No		[illegible]

* Sump was flooded for leak check

File

269

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: DECEMBER, 197

Name: Floor Sump Clean out Record Shift: Time

1ST INSPECTION 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion							12-22-73 2nd EJ
F1-37	East Cold Side Digestion							12-22-73 1st way
F1-38	West Hot Side Digestion							12-23-73 1st way
F1-35	East Hot Side Digestion							12-23-73 1st way
G2E-50	Metal Dissolver Building							12-26-73 KD
No. Number	Metal Dissolver Pad							12 25 73 KD
20-A-1	5A & 5B Area Pad							12-29-73 TL-3rd EJ
G2E-16	Slop Tank Area Pad							12-26-73 CR
G1-2N-85017A, B & C Area Pad								12-29-73 TL 3rd EJ
G1-540	512 Area Pad							12-28-73 2nd way
No Number	West Cold Side Extraction							12 24 73 2nd KD
F1-104	East Cold Side Extraction							12/23/73 3rd RH
No Number	West Hot Side Extraction							12/23/73 3rd KD
F1-102	Center Hot Side Extraction							12-24-73 2nd KD
F1-514	East Hot Side Extraction							12-24-73 2nd KD
F3E-222	S. E. End Denitration							12-20-73 3rd C.R.
F1-220	S. W. End Denitration							12-20-73 2nd EJ
F3E-223	N. E. End Denitration							12-21-73 2nd EJ
F1-221	N. W. End Denitration							12-21-73 2nd EJ
G3E-282	N. E. Pad – Denitration							12-26-73 1st CR
	S. E. Pad – Denitration							12-26-73 1st CR
G3E-244	OK Liquor Pit							12-27-73 KD
G18E-7	1st Floor Refinery Sump							12-24-73 1st CR
Steam Educt.	W. Pad Refinery Sump							12-25-73 1st CR
G2E-610	E. Pad Refinery Sump							12-24-73 2nd KD
G3-24	West Pad – N.A.R.							12-25-73 2nd KD
G3-64	East Pad – N.A.R.							12-28-73 2nd way
F3E-224	E. Pad Combined Raffinate							12/27/73 RG 3rd
F3E-225	W. Pad Combined Raffinate							12-28-73 2nd way
14-4A-0-6	Harshaw Tower Pad							
G1-325	Hot Raffinate E. Tank Room							12 24 73 KD 2nd
	Hot Raffinate W. Tank Room							12-24-73 2 KD
G1-307	Hot Raffinate – Center Room 1st. Fl.							12 24 73 2nd KD
	Cold Side Ore Pit							12/25/73 RG
	Hot Side Ore Pit							12/25/73 RG
No Number	N. W. Digestion Storage Pad							12-24-73 1st CR
G2E-140-3	NFS Pump House							12-28-73 1st CR
G3E-419	Front – Hot Raffinate Bldg.							12-25-73 1st C

126

269

File

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: [redacted]

Name: _____ Shift: _____ Time [redacted]
1ST INSPECTION . 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion	✓		✓		NO		12/17/73 float sticks occasionally
F1-37	East Cold Side Digestion	✓		✓		NO		12/17/73
F1-38	West Hot Side Digestion	✓		✓				Did not leak check
F1-35	East Hot Side Digestion	✓		✓		NO		12/17/73
G2E-50	Metal Dissolver Building	✓		✓		NO		12/18
No. Number	Metal Dissolver Pad	✓		✓		NO		12/27
20-A-1	5A & 5B Area Pad	✓		✓				
G2E-16	Slop Tank Area Pad	✓		✓		NO		12-27
G1-2N-85017A, B & C Area Pad		✓		✓		NO		12/27
G1-540	512 Area Pad	✓					12/18	Steam eductor - did not float [illegible]
No Number	West Cold Side Extraction	✓		✓		NO		12/17/73
F1-104	East Cold Side Extraction	✓		✓		NO		12/17/73 Brick needs - repair
No Number	West Hot Side Extraction	✓		✓		NO		12/17/73
F1-102	Center Hot Side Extraction	✓		✓		NO		12/17/73 float sticks
F1-514	East Hot Side Extraction	✓		✓		NO		12/17/73
F3E-222	S. E. End Denitration	✓		✓		YES		12/18 repaired 12/24/73 still leaks
F1-220	S. W. End Denitration	✓		✓		NO		12/18
F3E-223	N. E. End Denitration	✓		✓		NO		12/18
F1-221	N. W. End Denitration	✓		✓		NO		12/18
G3E-282	N. E. Pad – Denitration	✓		✓		NO		12/18
	S. E. Pad – Denitration	—		✓		NO		12/18
G3E-244	OK Liquor Pit	✓		✓		NO		12/18
G18E-7	1st Floor Refinery Sump	✓		✓		NO		12/14/73
Steam Educt.	W. Pad Refinery Sump							
G2E-610	E. Pad Refinery Sump	✓		✓		NO		12/19/73
G3-24	West Pad – N.A.R.	✓		✓				Did not, ~~[illegible]~~ flood
G3-64	East Pad – N.A.R.	✓		✓		NO		12/18
F3E-224	E. Pad Combined Raffinate	✓		✓		NO		12/18
F3E-225	W. Pad Combined Raffinate	✓		✓		NO		12/18
14-4A-0-6	Harshaw Tower Pad	—	—	—	—	—	—	—
G1-325	Hot Raffinate E. Tank Room	✓		✓		NO		12/18
	Hot Raffinate W. Tank Room	✓		✓		NO		12/18
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		NO		12/18
	Cold Side Ore Pit	✓				NO		Steam Eductor 12/14
	Hot Side Ore Pit	✓				NO		Steam Eductor 12/14
No Number	N. W. Digestion Storage Pad							
G2E-140-3	NFS Pump House	✓		✓		NO		12/18
G3E-419	Front – Hot Raffinate Bldg.							

April 2, 1974

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

R. M. Spencoley

R. C. Kispert

The quarterly inspection and leak checks of all sumps in the Refinery were completed on April 1, 1974. All sump pits and adjacent pad areas were flooded with the exception of the ore settling basin at the NW corner of the Digestion area storage pad.

Leaks were indicated at four sump locations as follows:

1. NE Denitration - The leak was determined to exist in the brickwork within the sump pit. A JOR has been submitted to fabricate and install a stainless steel insert. A MWR has been submitted to repair the leak in the brick.

2. NE Pad Denitration - Two leaks were determined: a pad leak at the guard post west of the sump pump and another within the sump pit or east perimeter trench. The pad leak has been repaired and a MWR has been submitted for repair of the other leak.

3. West Pad Combined Raffinate - This pad area leaks at the retaining wall adjacent to the trench that runs west from the sump. MWR submitted for repairs.

4. Front Hot Raffinate Building - Leak exists in either the sump pit or perimeter trench. MWR submitted for repairs.

All pumps operated satisfactorily on both manual and automatic when checked. Subsequent to the check, the sump pump at the west end of the hot side in digestion failed to operate. A MWR has been submitted for repairs.

The inspection sheet with comments is attached.

R. C. Kispert

R. C. Kispert

RCK/dfm

cc: S. F. Audia
Refinery Files

April 2, 1974

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

R. M. Spencelay

R. C. Kispert

The quarterly inspection and leak checks of all sumps in the Refinery were completed on April 1, 1974. All sump pits and adjacent pad areas were flooded with the exception of the ore settling basin at the NW corner of the Digestion area storage pad.

Leaks were indicated at four sump locations as follows:

1. NE Denitration - The leak was determined to exist in the brickwork within the sump pit. A JOR has been submitted to fabricate and install a stainless steel insert. A MWR has been submitted to repair the leak in the brick.

2. NE Pad Denitration - Two leaks were determined: a pad leak at the guard post west of the sump pump and another within the sump pit or east perimeter trench. The pad leak has been repaired and a MWR has been submitted for repair of the other leak.

3. West Pad Combined Raffinate - This pad area leaks at the retaining wall adjacent to the trench that runs west from the sump. MWR submitted for repairs.

4. Front Hot Raffinate Building - Leak exists in either the sump pit or perimeter trench. MWR submitted for repairs.

All pumps operated satisfactorily on both manual and automatic when checked. Subsequent to the check, the sump pump at the west end of the hot side in digestion failed to operate. A MWR has been submitted for repairs.

The inspection sheet with comments is attached.

R.C. Kispert

R. C. Kispert

RCK/dfm

cc: S. F. Audia
Refinery Files

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

269

Date: MARCH 1974

NOTE: Inspections are to be made twice each shift.

Name: R.C. KISPERT Shift: _____ Time [1ST INSPECTION] [2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓		No*		3/21/74
F1-37	East Cold Side Digestion	✓		✓		No*		3/21/74
F1-38	West Hot Side Digestion	✓		✓		No*		3/21/74
F1-35	East Hot Side Digestion	✓		✓		No*		3/21/74
G2E-50	Metal Dissolver Building	✓		✓		No*		3/26/74
No Number	Metal Dissolver Pad	✓		✓		No*		3/26/74
20-A-1	5A & 5B Area Pad	✓		✓		No*		3/26/74
G2E-16	Slop Tank Area Pad	✓		✓		No*		3/26/74 Flooded entire dike area
G1-2N-85017A, B & C Area Pad		✓		✓		No*		3/26/74
G1-540	512 Area Pad	Steam Eductor				No*		3/27/74
No Number	West Cold Side Extraction	✓		✓		No*		3/27/74
F1-104	East Cold Side Extraction	✓		✓		No*		3/27/74
No Number	West Hot Side Extraction	✓		✓		No*		3/25/74
F1-102	Center Hot Side Extraction	–	–	–	–	No*		3/25/74 Pump not working. [illegible] educted to E. Floor Sump
F1-514	East Hot Side Extraction	✓		✓		No*		3/25/74
F3E-222	S. E. End Denitration	✓		✓		No*		3/25/74
F1-220	S. W. End Denitration	✓		✓		No*		3/25/74
F3E-223	N. E. End Denitration	✓		✓			Yes*	3/25/74 Sump pit leaks. Cut from by recheck on 3/28/74
F1-221	N. W. End Denitration	✓		✓		No*		3/25/74
G3E-282	N. E. Pad – Denitration	✓		✓			Yes*	3/26/74 [illegible]
	S. E. Pad – Denitration	–		✓		No*		3/27/74 Hole Submersible Pump
G3E-244	OK Liquor Pit	✓		✓		No*		3/26/74 Flooded entire dike area
G18E-7	1st Floor Refinery Sump	✓		✓		No*		3/[illegible]/74
Steam Educt.	W. Pad Refinery Sump	✓		✓		No*		3/[illegible]/74
G2E-610	E. Pad Refinery Sump	✓		✓		No*		3/27/74
G3-24	West Pad – N.A.R.	✓		✓		No*		4/1/74
G3-64	East Pad – N.A.R.	✓		✓		No*		3/27/74
F3E-224	E. Pad Combined Raffinate	✓		✓		No*		3/21/74
F3E-225	W. Pad Combined Raffinate	✓		✓			Yes*	3/21/74 [illegible]
14-4A-0-6	Harshaw Tower Pad	–		–		–		
G1-325	Hot Raffinate E. Tank Room	✓		✓		No*		3/[illegible]/74
	Hot Raffinate W. Tank Room	✓		✓		No*		[illegible]/74
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		No*		[illegible]/74
	Cold Side Ore Pit	[illegible]		[illegible]		No*		[illegible]/74
	Hot Side Ore Pit	[illegible]		[illegible]		No*		[illegible]/74
No Number	N. W. Digestion Storage Pad	[illegible]		✓				[illegible]
G2E-140-3	NFS Pump House	✓		✓		No*		[illegible]
G3E-419	Front – Hot Raffinate Bldg.	✓		✓			Yes*	[illegible]

* [illegible]

130

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

SUMP CLEAN OUT

269

Date: March 1974

Name: _____ Shift: _____ Time _____ 1ST INSPECTION _____ 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion							R Mohrman 3-22
F1-37	East Cold Side Digestion							Cleaned R Mohrman 3-2
F1-38	West Hot Side Digestion							Cleaned 3/20
F1-35	East Hot Side Digestion							Cleaned 3/20
G2E-50	Metal Dissolver Building							Cleaned 3/27
No. Number	Metal Dissolver Pad							Cleaned R Mohrman 3
20-A-1	5A & 5B Area Pad							Cleaned 3/28 EJ
G2E-16	Slop Tank Area Pad							Cleaned 3/27
G1-2N-85017A, B & C Area Pad								Cleaned 3/28 EJ
G1-540	512 Area Pad							Cleaned 3/28
No Number	West Cold Side Extraction							CLEANED 3/26/74 EJ.
F1-104	East Cold Side Extraction							CLEANED 3/26/74 EJ
No Number	West Hot Side Extraction							CLEANED 3/26/74 EJ
F1-102	Center Hot Side Extraction							CLEANED 3/26/74 EJ
F1-514	East Hot Side Extraction							CLEANED 3/26/74 EJ
F3E-222	S. E. End Denitration							Cleaned 3-26-74 CWS EJ
F1-220	S. W. End Denitration							Cleaned-3-26-74 CWS-E.S
F3E-223	N. E. End Denitration							Cleaned R Mohrman 3 2
F1-221	N. W. End Denitration							Cleaned-3-26-74 CWS + E.S
G3E-282	N. E. Pad – Denitration ✓							Cleaned 3 27 74 KJ
	S. E. Pad – Denitration							Cleaned 3-27 Kd
G3E-244	OK Liquor Pit ✓							Cleaned 3 26 Kd
G18E-7	1st Floor Refinery Sump							Cleaned R Mohrman 3-2
Steam Educt.	W. Pad Refinery Sump							Cleaned 3/28
G2E-610	E. Pad Refinery Sump							Cleaned 3/28
G3-24	West Pad – N.A.R.							Cleaned 3/23
G3-64	East Pad – N.A.R.							Cleaned 3/23 Roeder TV
F3E-224	E. Pad Combined Raffinate							Cleaned 3 22 R Mohrman
F3E-225	W. Pad Combined Raffinate							Cleaned 3/23 Roeder TV
14-4A-0-6	Harshaw Tower Pad							
G1-325	Hot Raffinate E. Tank Room							Cleaned 3/23 Roeder
	Hot Raffinate W. Tank Room							Cleaned 3/23 Roeder
G1-307	Hot Raffinate – Center Room 1st. Fl.							Cleaned 3 27 Kd
	Cold Side Ore Pit							Cleaned 3 27 Kd
	Hot Side Ore Pit							
No Number	N. W. Digestion Storage Pad							Cleaned 3/27
G2E-140-3	NFS Pump House							Cleaned 3/28
G3E-419	Front – Hot Raffinate Bldg.							Cleaned 3/23 Roeder TV

131

NLO-PRO-2410 (3/19/73)

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

269

Date: _____

NOTE: Inspections are to be made twice each shift.

Name: _____ Shift: _____ Time _____ (1ST INSPECTION) _____ (2ND INSPECTION)

PUMP NUMBER & SUMP LOCATION			OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion		✓		✓		No	?	3/21/74 Flooded
F1-37	East Cold Side Digestion		✓		✓		No		3/21/74 Flooded
F1-38	West Hot Side Digestion		✓		✓		No		3/21/74 Flooded
F1-35	East Hot Side Digestion		✓		✓		No		3/21/74 Flooded
G2E-50	Metal Dissolver Building	✓	✓		✓		No		3/26/74 Flooded
No Number	Metal Dissolver Pad	✓	✓		✓		No		3/26/74 Flooded pit only. Runs out on grade
20-A-1	5A & 5B Area Pad	✓	✓		✓		No		3/26/74 Flooded
G2E-16	Slop Tank Area Pad	✓	✓		✓		No		3/26/74 Flooded
G1-2N-85017A, B & C Area Pad			✓		✓		No		3/26/74 Flooded
G1-540	512 Area Pad		Steam Eductor				No		3/27/74 Flooded
No Number	West Cold Side Extraction	—	✓		✓		No		3/27/74 Flooded
F1-104	East Cold Side Extraction	—	✓		✓		No		3/27/74 Flooded
No Number	West Hot Side Extraction	✓	✓		✓		No		3/25/74 Flooded
F1-102	Center Hot Side Extraction	✓		✓		✓	No		3/25/74 Flooded
F1-514	East Hot Side Extraction	✓	✓		✓		No		3/25/74 Flooded
F3E-222	S. E. End Denitration	✓	✓		✓		No		3/25/74 Flooded
F1-220	S. W. End Denitration	✓	✓		✓		No		3/25/74 Flooded
F3E-223	N. E. End Denitration	? ✓	✓		✓			Leak	3/25/74 Leaks
F1-221	N. W. End Denitration	✓	✓		✓		No		3/25/74 Flooded
G3E-282	N. E. Pad – Denitration	✓	✓		–		No		3/27/74 Flooded
	S. E. Pad – Denitration	✓	✓		✓		Leak		Pad leak in West Post 3/26 Another leak in insert a trench
G3E-244	OK Liquor Plt	✓	✓		–		No		3/26/74 Flooded
G18E-7	1st Floor Refinery Sump		✓		✓		No		3/28/74 Flooded
Steam Educt.	W. Pad Refinery Sump		✓		✓		No		3/28/74 Flooded
G2E-610	E. Pad Refinery Sump		✓		✓		No		3/27/74 Flooded
G3-24	West Pad – N.A.R.		✓		✓		No		4/1/74
G3-64	East Pad – N.A.R.		✓		✓		No		3/27/74 Flooded
F3E-224	E. Pad Combined Raffinate		✓		✓		No		3/21/74 Flooded
F3E-225	W. Pad Combined Raffinate		✓		✓		Leaks		3/21/74 Flooded (Leak in Brick WEST TRENCH
14-4A-0-6	Harshaw Tower Pad	✓	—	—	—	—			
G1-325	Hot Raffinate E. Tank Room	✓	✓		✓		No		3/25/74 Flooded
	Hot Raffinate W. Tank Room	✓	✓		✓		No		3/25/74 Flooded
G1-307	Hot Raffinate – Center Room 1st. Fl.		✓		✓		No		3/26/74 Flooded
	Cold Side Ore Pit		Steam Eductor						3/28/74 Flooded
	Hot Side Ore Pit		Steam Eductor				—		Construction Checked Eductor
No Number	N. W. Digestion Storage Pad		✓		✓		—		3/27/74 Did not flood
G2E-140-3	NFS Pump House		✓		✓		No		3/27/74 Flooded.
G3E-419	Front – Hot Raffinate Bldg.		✓		✓		No		Pad or trench leaks

132

July 2, 1974

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

R. M. Spenceley

R. C. Kispert

The quarterly inspection and leak checks of all sumps in the Refinery were completed on July 1, 1974. All sump pits and adjacent pad areas were flooded with the exception of the ore settling basin at the NW corner of the digestion area storage pad.

Leaks were indicated at five sump locations as follows:

1. NE Denitration - Leak exists within the sump pit. Awaiting the installation of the stainless steel liner under JO H-8697.

2. NE Pad Denitration - Leak exists within the sump pit or perimeter trench. JOR submitted for repairs (7/2/74).

3. West Pad Combined Raffinate - Major leak at the south retaining wall adjacent to the trench that runs west from the pad sump. JOR submitted to repair and rebrick the wall (6/26/74).

4. Metal Dissolver Pad - Small hole in wall of east compartment of the sump pit. MWR submitted for repair (6/26/74).

5. East Pad - NAR - Minor leak in the pad area surrounding the sump pit. MWR submitted for repair (7/2/74).

All pumps operated satisfactorily on both manual and automatic when checked. The automatic trip switch on the east-NAR sump pump needs lubrication to operate freely. A MWR submitted for servicing this switch.

R. C. Kispert

cc: S. F. Audia
Refinery Files

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

269

Date: JUNE 1974

Name: R. C. KISPERT Shift: _____ Time [1ST INSPECTION] [2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	OK		OK		No*		7/1/74
F1-37	East Cold Side Digestion	OK		OK		No*		6/25/74
F1-38	West Hot Side Digestion	OK		OK		No*		6/25/74
F1-35	East Hot Side Digestion	OK		OK		No*		6/25/74
G2E-50	Metal Dissolver Building	OK		OK		No*		7/1/74
No. Number	Metal Dissolver Pad	OK		OK			Yes*	6/26/74 Leak in east compartment of sump
20-A-1	5A & 5B Area Pad	OK		OK		No*		7/1/74
G2E-16	Slop Tank Area Pad	OK		OK		No*		7/1/74 Flooded entire pit
G1-2N-85	017A, B & C Area Pad	OK		OK		No*		6/28/74
G1-540	512 Area Pad	Steam Eductor				No*		7/1/74
No Number	West Cold Side Extraction	OK		OK		No*		6/27/74
F1-104	East Cold Side Extraction	OK		OK		No*		6/27/74
No Number	West Hot Side Extraction	OK		OK		No*		6/27/74
F1-102	Center Hot Side Extraction	OK		OK		No*		6/27/74
F1-514	East Hot Side Extraction	OK		OK		No*		6/27/74
F3E-222	S. E. End Denitration	OK		OK		No*		6/26/74
F1-220	S. W. End Denitration	OK		OK		No*		6/26/74
F3E-223	N. E. End Denitration	OK		OK			Yes*	6/27/74 Pit leaks. Awaiting installation of SS liner.
F1-221	N. W. End Denitration	OK		OK		No*		6/26/74
03E-132	N. E. Pad – Denitration	OK		OK			Yes*	6/26/74
	S. E. Pad – Denitration	–		OK		No*		7/1/74 Note submersible pump
03E-114	[illegible] Liquor Pit	OK		–		No*		6/27/74 Flooded entire pit
01BE-[illegible]	[illegible] Floor Refinery Sump	OK		OK		No*		7/1/74
Steam [illegible]	N. Pad Refinery Sump	OK		OK		No*		7/1/74
02E-[illegible]10	S. Pad Refinery Sump	OK		OK		No*		6/28/74
03-24	West Pad – [illegible]	OK		OK		No*		6/27/74
03-04	East Pad – [illegible]	OK			X		Yes*	6/27/74 Auto switch arm sticks. Minor leak at sump well
F3E-224	S. Pad Combined Raffinate	OK		OK		No*		6/25/74
F3E-225	N. Pad Combined Raffinate	OK		OK			Yes*	6/25/74 Storm sewer wall needs minor repair
[illegible]-A-[illegible]	[illegible]marshow Tower Pad	–		–		–		
01-325	Hot Raffinate E. Tank Room	OK		OK		OK*		7/1/74
	Hot Raffinate W. Tank Room	OK		OK		No*		7/1/74
01-327	Hot Raffinate – Center Room 1st. Fl.	OK		OK		No*		7/1/74
	Cold Side Die Pit	Steam Eductor				No*		6/27/74
	Hot Side Die Pit	Steam Eductor				No*		6/27/74
No Number	[illegible] Digestion Storage Pad	–		OK		–		6/27/74 Dust Pit Hood, Inspected following cleanout
02E-[illegible]3	NFS Pump House	OK		OK		No*		7/1/74 Flooded entire pit
03E-[illegible]19	Front – Hot Raffinate Bldg.	OK		OK		No*		7/1/74

* Flooded sump for leak check

134

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

269

REFINERY SUMPS INSPECTION RECORD

Date: _____

NOTE: Inspections are to be made twice each shift.

Name: CHECK OFF LIST for INVENTORY CLEAN OUT Shift: _____ Time: _____

1ST INSPECTION 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION	OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
~~F1-36 West Cold Side Digestion~~							Cleaned 6/29/74
~~F1-37 East Cold Side Digestion~~							Cleaned 6/25/74
~~F1-38 West Hot Side Digestion~~							Cleaned 6/25/74
~~F1-35 East Hot Side Digestion~~							Cleaned 6/28
~~C2E-60 Metal Dissolver Building~~							Cleaned 6/29/74 Night
~~No. Number Metal Dissolver Pad~~							CLEANED 6/26/74 P. Ball
~~20-A-1 3A & 3B Area Pad~~							CLEANED 6/28/74 Day Shift P. Ball
~~C2E-16 Slag Tank Area Pad~~							Cleaned 6/28
~~C1-2N-050174 A, B & C Area Pad~~							Cleaned 6/27/74
~~G1-540 512 Area Pad~~							Cleaned 6/28/74 Day Shift PB
~~No Number West Cold Side Extraction~~							Cleaned 6/27/74 E)
~~F1-104 East Cold Side Extraction~~							CLEANED 6/27/74 E)
~~No Number West Hot Side Extraction~~							CLEANED 6/27/74 E)
~~F1-102 Center Hot Side Extraction~~							CLEANED 6/27/74 E)
~~F1-514 East Hot Side Extraction~~							CLEANED 6/27/74 E)
~~F3E-222 S. E. End Denitration~~							Cleaned 6/25/74
~~F1-220 S. W. End Denitration~~							Cleaned 6/25
~~F3E-223 N. E. End Denitration~~							Cleaned 6/26/74 E)
~~F1-221 N. W. End Denitration~~							CLEANED 2nd Shift 6.25.74
~~G3E-282 N. E. Pad – Denitration~~							CLEANED Day Shift 6.26.74
S. E. Pad – Denitration							
~~G3E-244 2K Liquor Pit~~							Cleaned 6/26/74 2nd Shift
~~G18E-7 1st Floor Refinery Sump~~							Cleaned 6/28/74 E)
Steam Educt. ~~W. Pad Refinery Sump~~							Cleaned 6/29/74 E)
~~G2E-610 E. Pad Refinery Sump~~							Cleaned 6/27/74
~~G3-24 West Pad – N.A.R.~~							CLEANED 6/27/74 E)
~~G3-64 East Pad – N.A.R.~~							CLEANED 6/27/74 E)
~~F3E-224 E. Pad Combined Raffinate~~							Cleaned 6/22
~~F3E-225 W. Pad Combined Raffinate~~							Cleaned 6/23
~~14-4A-0-6 Marshaw Tower Pad~~							CLEANED 6/29 E)
G1-326 ~~Hot Raffinate E. Tank Room~~							Cleaned 6/29/74 E)
~~Hot Raffinate W. Tank Room~~							Cleaned 6/29/74
G1-307 ~~Hot Raffinate – Center Room 1st. Fl.~~							Cleaned 6/29/74 E)
~~Cold Side Ore Pit~~							CLEANED 6/27/74 E)
~~Hot Side Ore Pit~~							CLEANED 6/27/74 E)
No ~~Number N. W. Digestion Storage Pad~~							CLEANED Day Shift 6/27/74
~~C2E-140-3 NFS Pump house~~							Clean 6/29/74
~~G3E-419 From – Hot Raffinate Bldg.~~							Cleaned 6/23

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

269

NOTE: Inspections are to be made twice each shift.

Date: _____

Name: _____ Shift: _____ Time [1ST INSPECTION] [2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	OK		OK		OK*		7/1/74
F1-37	East Cold Side Digestion	OK		OK		OK*		6/25/74
F1-38	West Hot Side Digestion	OK		OK		OK*		6/25/74
F1-35	East Hot Side Digestion	OK		OK		OK*		6/25/74
G2E-50	Metal Dissolver Building	OK		OK		OK*		7/1/74
No Number	Metal Dissolver Pad	OK		OK			X	6/26/74 Leak in east cryopad
20-A-1	5A & 5B Area Pad	OK		OK		OK*		7/1/74
G2E-16	Slop Tank Area Pad	OK		OK		OK*		7/1/74 Flooded entire pit
G1-2N-85017	A, B & C Area Pad	OK		OK		OK*		6/28/74
G1-540	512 Area Pad	Steam Eductor				OK*		7/1/74
No Number	West Cold Side Extraction	OK		OK		OK*		6/27/74
F1-104	East Cold Side Extraction	OK		OK		OK*		6/27/74
No Number	West Hot Side Extraction	OK		OK		OK*		6/27/74
F1-102	Center Hot Side Extraction	OK		OK		OK*		6/27/74
F1-514	East Hot Side Extraction	OK		OK		OK*		6/27/74
F3E-222	S. E. End Denitration	OK		OK		OK*		6/26/74
F1-220	S. W. End Denitration	OK		OK		OK*		6/26/74 Switch defective
F3E-223	N. E. End Denitration	OK		OK		—	X	6/27/74 Sump pit leaks
F1-221	N. W. End Denitration	OK		OK		OK*		6/26/74
G3E-282	N. E. Pad – Denitration	OK		OK		—	X	6/26/74 Leaks
	S. E. Pad – Denitration	[illegible]		OK		OK*		7/1/74 Auto submersible pump
G3E-244	OK Liquor Pit	OK		—		OK*		6/27/74 Flooded entire pit
G18E-7	1st Floor Refinery Sump	OK		OK		OK*		7/1/74
Steam Educt.	W. Pad Refinery Sump	OK		OK		OK*		7/1/74
G2E-610	E. Pad Refinery Sump	OK		OK		OK*		6/28/74
G3-24	West Pad – N.A.R.	OK		OK		OK*		6/27/74
G3-64	East Pad – N.A.R.	OK			X	—	X	6/27/74 switch sticks, pad leaks at sump lip
F3E-224	E. Pad Combined Raffinate	OK		OK		OK*		6/25/74 Auto trip switch stick
F3E-225	W. Pad Combined Raffinate	OK		OK		—	X	6/25/74 Pad leaks
T4-4A-0-6	Harshaw Tower Pad	—		—		—		
G1-325	Hot Raffinate E. Tank Room					OK*		7/1/74 Switch out
	Hot Raffinate W. Tank Room	OK		OK		OK*		7/1/74
G1-307	Hot Raffinate – Center Room 1st. Fl.	OK		OK		OK*		7/1/74
	Cold Side Ore Pit	Steam Eductor				OK*		6/27/74
	Hot Side Ore Pit	Steam Eductor				OK*		6/27/74
No Number	N. W. Digestion Storage Pad	[illegible]		OK		—		6/27/74 Did not flood
G2E-140-3	NFS Pump House	OK		OK		OK*		7/1/74 Flooded entire pit
G3E-419	Front – Hot Raffinate Bldg.	OK		OK		OK*		7/1/74

136

* Flooded Sump Pad For Leak Check

October 2, 1974

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

R. M. Spenceley

E. M. Nutter

The quarterly inspection and leak checks of all sumps in the Refinery area were completed on October 1, 1974. All sump pits and adjacent pad areas were flooded with the exception of the settling basin at the NW corner of the digestion area storage pad.

Leaks were indicated at three sump locations as follows:

1. SE Denitration - Run off from the floor on the north side of the sump pit leaks around top lip of the stainless steel liner. Request for repair was submitted on 9/30/74.

2. NE Pad Denitration - The trench wall leaks at south side of driveway at railroad. Request for repairs was submitted on 9/19/74, and patch was installed on 9/23/74.

3. West Pad Combined Raffinate - Minor leak indicated when sump pit is nearly full A JOR has been submitted for the installation of a stainless steel liner.

Although no leak in the sump pit or adjacent floor area was found, a JOR has been submitted for the installation of a stainless steel liner in the metal dissolver pi area floor sump. Also, extensive repairs to the pit wall and floor area south of the metal dissolver are underway after a hole was found in the wall very near the floor sump.

All pumps operated satisfactorily; however, MWR's have been submitted to lubricate a few float rods at various sumps.

The inspection sheet with comments is attached.

Original Signed By
E. M. NUTTER
GENERAL FOREMAN

E. M. Nutter

EMN/dfm

cc: S. F. Audia
Refinery Files

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Name: E. M. NUTTER Shift: Date: SEPTEMBER 74 Time [redacted]
1ST INSPECTION 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion	OK		OK		No*		9/23/74
F1-37	East Cold Side Digestion	OK		OK		No*		9/23/74
F1-38	West Hot Side Digestion	OK		OK		No*		9/23/74
F1-35	East Hot Side Digestion	OK		OK		No*		9/23/74
G2E-50	Metal Dissolver Building	OK		OK		No*		9/23/74 SEE CORRECTIONS ON LETTER
No. Number	Metal Dissolver Pad	OK		OK		No*		9/26/74
20-A-1	5A & 5B Area Pad	OK		OK		No*		10/1/74
G2E-16	Slop Tank Area Pad	OK		OK		No*		10/1/74
G1-2N-85017A, B & C Area Pad		OK		OK		No*		10/1/74
G1-540	512 Area Pad	[illegible]		[illegible]		No*		9/20/74
No Number	West Cold Side Extraction	OK		OK		No*		9/30/74
F1-104	East Cold Side Extraction	OK		OK		No*		9/30/74
No Number	West Hot Side Extraction	OK		OK		No*		9/30/74
F1-102	Center Hot Side Extraction	OK		OK		No*		9/30/74
F1-514	East Hot Side Extraction	OK		OK		No*		9/30/74
F3E-222	S. E. End Denitration	OK		OK		YES*		9/30/74 LEAKING [illegible]
F1-220	S. W. End Denitration	OK		OK		No*		9/19/74
F3E-223	N. E. End Denitration	OK		OK		No*		9/19/74
F1-221	N. W. End Denitration	OK		OK		No*		9/19/74
G3E-282	N. E. Pad – Denitration	OK		OK		YES*		9/19/74 LEAK IN TREENCH NEAR LINE
	S. E. Pad – Denitration	-		OK		No*		9/19/74 Out Submersible Pump
G3E-244	OK Liquor Pit	<		–		No*		9/20/74
G18E-7	1st Floor Refinery Sump	OK		OK		No*		9/20/74
Steam Educt.	W. Pad Refinery Sump	[illegible]		OK		No*		9/20/74
G2E-610	E. Pad Refinery Sump	OK		OK		No*		9/20/74
G3-24	West Pad – N.A.R.	OK		OK		No*		9/24/74
G3-64	East Pad – N.A.R.	OK		OK		No*		9/24/74 [illegible]
F3E-224	E. Pad Combined Raffinate	OK		OK		No*		9/24/74
F3E-225	W. Pad Combined Raffinate	OK		OK		YES*		9/24/74 [illegible]
14-4A-0-6	Harshaw Tower Pad	–		–		–		•
G1-325	Hot Raffinate E. Tank Room	OK		OK		No*		9/12/74
	Hot Raffinate W. Tank Room	OK		OK		No*		9/12/74
G1-307	Hot Raffinate – Center Room 1st. Fl.	OK		OK		No*		9/12/74
	Cold Side Ore Pit	[illegible]		OK		No*		9/24/74
	Hot Side Ore Pit	[illegible]		[illegible]		No*		9/24/74
No Number	N. W. Digestion Storage Pad	-		OK		-		9/27/74
G2E-140-3	NFS Pump House	OK		OK		No*		9/24/74
G3E-419	Front – Hot Raffinate Bldg.	OK		OK		No*		9/24/74

138

* [illegible]

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

269 Sept. '74

REFINERY SUMPS INSPECTION RECORD

Sump Cleanout

Date:

NOTE: Inspections are to be made twice each shift.

Name: _____ Shift: _____ Time _____

1ST INSPECTION 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion							Cleaned 9-20-74 Kd
F1-37	East Cold Side Digestion							Cleaned 9-20-74 Kd
F1-38	West Hot Side Digestion							Cleaned 9-20-74 Kd
F1-35	East Hot Side Digestion							Cleaned 9-20-74 Kd
G2E-50	Metal Dissolver Building							Cleaned
No. Number	Metal Dissolver Pad							Cleaned 9-19-74-EJ
20-A-1	5A & 5B Area Pad							Cleaned 9-28-74-EJ
G2E-16	Slop Tank Area Pad							Cleaned 9-21-74-EJ
G1-2N-85017A, B & C Area Pad								Cleaned 9-28-74-EJ
G1-540	512 Area Pad							OK 10/1/74
No Number	West Cold Side Extraction							Cleaned 9/29/74 KA
F1-104	East Cold Side Extraction							Cleaned 9-26-74 EJ
No Number	West Hot Side Extraction							Cleaned 9-26-74 EJ
F1-102	Center Hot Side Extraction							Cleaned 9-26-74 EJ
F1-514	East Hot Side Extraction							Cleaned 9-26-74 EJ
F3E-222	S. E. End Denitration							CLEANED 9/23/74 NITRS Ed
F1-220	S. W. End Denitration							CLEANED 9/23/74 Ed
F3E-223	N. E. End Denitration							CLEANED 9/23/74 Ed
~~F1~~-221	N. W. End Denitration							Cleaned 9/22/74 KE
G3E-282	N. E. Pad – Denitration							Cleaned 9/28/74 DAY E
	S. E. Pad – Denitration							
G3E-244	OK Liquor Pit							Cleaned 9/28/74 DAY Ed
G18E-7	1st Floor Refinery Sump							Cleaned 9-20-74 Kd
Steam Educt.	W. Pad Refinery Sump							Cleaned 9-20-74 EJ
G2E-610	E. Pad Refinery Sump							Cleaned 9-20-74 Kd
G3-24	West Pad – N.A.R.							Cleaned 9-30-74 Kd
G3-64	East Pad – N.A.R.							Cleaned 9-30-74 Kd
F3E-224	E. Pad Combined Raffinate							Cleaned 9-29-74 EJ
F3E-225	W. Pad Combined Raffinate							Cleaned 9-29-74 EJ
14-4A-0-6	Harshaw Tower Pad							OK 9-30-74 EJ
G1-325	Hot Raffinate E. Tank Room							Cleaned 9/21/74 KA
	Hot Raffinate W. Tank Room							Cleaned 9/22/74
G1-307	Hot Raffinate – Center Room 1st. Fl.							Cleaned 9/21/74 KA
	Cold Side Ore Pit							Cleaned 9/28/74 KA
	Hot Side Ore Pit							Cleaned 9/27/74
No Number	N. W. Digestion Storage Pad							Cleaned 9/27/74 PB
G2E-140-3	NFS Pump House							OK 9/29/74
G3E-419	Front – Hot Raffinate Bldg.							Cleaned 9/29/74 EJ

139

January 2, 1975

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

R. M. Spenceley

E. M. Hutter

The quarterly inspection and leak check of each sump in the Refinery area were completed on January 2, 1975. Where practical to do so the sumps and adjacent floor or pad areas were flooded to effect a good leak check.

Leaks were indicated at two sump locations as follows:

1. West Pad Combined Raffinate - Minor leak noted when sump is filled to approximately one inch from top lip of pit. No leak indicated below this point. Job Order request has been submitted to make repairs.

2. SE Denitration - When sump is filled to overflowing, slow leakage is noted until level drops to lower edge of first row of brick. This indicates leak around top lip of stainless steel liner. Request for repair was submitted 9/30/74.

The selector switch for the SW Denitration sump failed to operate pump when on manual and failed to turn pump off manually. The float switch operated satisfactorily. With the exception of needed lubrication on a few float rods all other switches and pumps operated well.

The recently installed float controlled steam eductor for the Hot Side ore pit was found to be inoperative because the steam supply line was frozen. No provision was made for a steam trap on the supply line so the line was dead ended except when the sump was being emptied. A steam trap has been installed.

The inspection sheet with comments is attached.

E. M. Hutter

EMH/drm

cc: S. F. Audia
Refinery Files

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

7/12

969

Date: December 1974

Name: _____ Shift: _____ Time [1ST INSPECTION | 2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓		NO		Flooded 12/10
F1-37	East Cold Side Digestion	✓		✓		NO		" 12/10
F1-38	West Hot Side Digestion	✓		✓		NO		" 12/10
F1-35	East Hot Side Digestion	✓		✓		NO		" 12/10
G2E-50	Metal Dissolver Building	–		–		NO		" 12/10
No Number	Metal Dissolver Pad	✓		✓		NO		" 12/10
20-A-1	5A & 5B Area Pad	✓		✓		NO		" 12/16
G2E-16	Slop Tank Area Pad	–		✓		NO		" 12/16
G1-2N-85017A, B & C Area Pad		–		–		NO		" 12/16
G1-540	512 Area Pad	✓				NO		Partially flooded 12/10
No Number	West Cold Side Extraction	✓		✓		NO		Flooded 12/10
F1-104	East Cold Side Extraction	✓		✓		NO		" 12/10
No Number	West Hot Side Extraction	✓		✓		NO		" 12/16
F1-102	Center Hot Side Extraction	✓		✓		NO		Not Flooded 12/16
F1-514	East Hot Side Extraction	✓		✓		NO		Flooded 12/10
F3E-222	S. E. End Denitration	✓		✓		YES		" 12/10
F1-220	S. W. End Denitration	✓		✓		NO		" Switch Bad 12/10
F3E-223	N. E. End Denitration	✓		✓		YES		" 12/10
F1-221	N. W. End Denitration	✓		✓		NO		" 12/10
G3E-282	N. E. Pad – Denitration	✓		✓		NO		Trench filled – [redacted] 12/16
	S. E. Pad – Denitration			✓		NO		Submersible pump 12/10/74 flood.
G3E-244	OK Liquor Pit	✓				NO		Flooded 12/6/74
G18E-7	1st Floor Refinery Sump	✓		✓		NO		Flooded 12/17/74
Steam Educt.	W. Pad Refinery Sump	✓		✓		NO		Flooded 12/17/74
G2E-610	E. Pad Refinery Sump	✓		✓				
G3-24	West Pad – N.A.R.	✓		✓		NO		Flooded 12/17
G3-64	East Pad – N.A.R.	✓		✓		NO		Flooded 12/17
F3E-224	E. Pad Combined Raffinate	✓		✓		NO		FLOODED 12/12
F3E-225	W. Pad Combined Raffinate	✓		✓		YES		" 12/12
14-4A-0-6	Harshaw Tower Pad	—		—		—	—	—
G1-325	Hot Raffinate E. Tank Room	✓		✓		NO		Flooded 12/5/74
	Hot Raffinate W. Tank Room	✓		✓		NO		" "
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		NO		" "
	Cold Side Ore Pit	✓				NO		Flooded 12/12
	Hot Side Ore Pit	✓		✓		NO		now uses steam eductor 12/12
No Number	N. W. Digestion Storage Pad							
G2E-140-3	NFS Pump House	✓		✓		NO		Flooded 12/12/74
G3E-419	Front – Hot Raffinate Bldg.	✓		✓		NO		Not flooded

141

NLO-PRO-2410 (3/19/73)

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: DECEMBER 1974

Name: E. M. NUTTER Shift: _____ Time [1ST INSPECTION | 2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓		NO		ALL SUMP & ADJACENT PAD AREAS WERE FLOODED
F1-37	East Cold Side Digestion	✓		✓		NO		EXCEPT WHERE NOTED
F1-38	West Hot Side Digestion	✓		✓		NO		
F1-35	East Hot Side Digestion	✓		✓		NO		
G2E-50	Metal Dissolver Building	✓		✓		NO		
No. Number	Metal Dissolver Pad	✓		✓		NO		
20-A-1	5A & 5B Area Pad	✓		✓		NO		
G2E-16	Slop Tank Area Pad	✓		✓		NO		
G1-2N-85017	A, B & C Area Pad	✓		✓		NO		
G1-540	512 Area Pad	✓		—		NO		STEAM EDUCTOR
No Number	West Cold Side Extraction	✓		✓		NO		
F1-104	East Cold Side Extraction	✓		✓		NO		
No Number	West Hot Side Extraction	✓		✓		NO		
F1-102	Center Hot Side Extraction	✓		✓		NO		FLOOR AREA NOT FLOODED
F1-514	East Hot Side Extraction	✓		✓		NO		
F3E-222	S. E. End Denitration	✓		✓		YES		
F1-220	S. W. End Denitration	✓		✓		NO		SWITCH BAD
F3E-223	N. E. End Denitration	✓		✓		NO		
F1-221	N. W. End Denitration	✓		✓		NO		
G3E-282	N. E. Pad – Denitration	✓		✓		NO		TRENCH FILLED TO OVERFLOWING
	S. E. Pad – Denitration			✓		NO		Submersible pump
G3E-244	OK Liquor Pit	✓		✓		NO		
G18E-7	1st Floor Refinery Sump	✓		✓		NO		
Steam Educt.	W. Pad Refinery Sump	✓		✓		NO		PAD AREA NOT FLOODED
G2E-610	E. Pad Refinery Sump	✓		✓		NO		PAD AREA NOT FLOODED
G3-24	West Pad – N.A.R.			✓		NO		
G3-64	East Pad – N.A.R.	✓		✓		NO		
F3E-224	E. Pad Combined Raffinate	✓		✓		NO		
F3E-225	W. Pad Combined Raffinate	✓		✓		YES		
14-4A-0-6	Harshaw Tower Pad	—		—		—		
G1-325	Hot Raffinate E. Tank Room	✓		✓		NO		
	Hot Raffinate W. Tank Room	✓		✓		NO		
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		NO		
	Cold Side Ore Pit	✓		—		NO		[illegible]
	Hot Side Ore Pit			✓		NO		[illegible]
No Number	N. W. Digestion Storage Pad			✓				[illegible]
G2E-140-3	NFS Pump House			✓				
G3E-419	Front – Hot Raffinate Bldg.	✓		✓				NO FLOOD

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

PB 1/2/75

269 EWM 1/2/75

Date: December 1974

Name: Sump Cleanout Shift: _____ Time _____ 1ST INSPECTION 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion							Cleaned 12/28 Kd
F1-37	East Cold Side Digestion							Cleaned 12/16 2nd K
F1-38	West Hot Side Digestion							Cleaned 12/16 2nd K
F1-35	East Hot Side Digestion							Cleaned 12/16 2nd K
✓ G2E-50	Metal Dissolver Building							Cleaned 12/ 3rd E
No. Number	Metal Dissolver Pad							Cleaned 12/29/74 Kd
20-A-1	5A & 5B Area Pad							Cleaned 12 29 74 Kd
G2E-16	Slop Tank Area Pad							Cleaned 12/29/74 1st way
G1-2N-85017A, B & C Area Pad								Cleaned 12-29-74 Kd
✓ G1-540	512 Area Pad							Cleaned 12 31 74 K
No Number	West Cold Side Extraction							Cleaned 12-30-74 K
F1-104	East Cold Side Extraction							Cleaned 12/26/74 3rd K
✓ No Number	West Hot Side Extraction							Cleaned 12-31-74 K
F1-102	Center Hot Side Extraction							Cleaned 12/26/74 3rd K
F1-514	East Hot Side Extraction							Cleaned 12/26/74 3rd K
F3E-222	S. E. End Denitration							Cleaned 12/26 3rd K
F1-220	S. W. End Denitration							Cleaned 12/25 3rd K
F3E-223	N. E. End Denitration							Cleaned 12/25 3rd K
F1-221	N. W. End Denitration							Cleaned 12/23 3rd K
G3E-282	N. E. Pad – Denitration							Cleaned 12/29/74 1st
✓	S. E. Pad – Denitration							Cleaned 12-31-74 K
G3E-244	OK Liquor Pit							Cleaned 12/29/74 1st W
G18E-7	1st Floor Refinery Sump							Cleaned 12/31/74 3rd K
Steam Educt.	W. Pad Refinery Sump							Cleaned 12/31/74 3rd K
G2E-610	E. Pad Refinery Sump							Cleaned 12/31/74 3rd K
G3-24	West Pad – N.A.R.							Cleaned 12 29 74 Kd
G3-64	East Pad – N.A.R.							Cleaned 12 29 74 Kd
F3E-224	E. Pad Combined Raffinate							Cleaned 12 28 Kd
F3E-225	W. Pad Combined Raffinate							Cleaned 12/29/74 3rd K
14-4A-0-6	Harshaw Tower Pad							—
G1-325	Hot Raffinate E. Tank Room							Cleaned 12/20 3rd K
	Hot Raffinate W. Tank Room							Cleaned 12/24 3rd K
G1-307	Hot Raffinate – Center Room 1st. Fl.							Cleaned 12/24 3rd K
	Cold Side Ore Pit							Cleaned 12 28 74 Kd
	Hot Side Ore Pit							Cleaned 12/28/74 3rd K
✓ No Number	N. W. Digestion Storage Pad							Cleaned 1/1/75 1st K
✓ G2E-140-3	NFS Pump House							Cleaned 12 31 74 K
G3E-419	Front – Hot Raffinate Bldg.							Cleaned 12-29-74 Kd

April 1, 1975

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

W. J. Adams

E. M. Hutter

The quarterly inspection and leak check of each sump in the Refinery area were completed on March 31, 1975. Where practical to do so the sumps and adjacent floor or pad areas were flooded to effect a good leak check.

Leaks were indicated at four sump locations as follows:

1. West Pad Combined Raffinate - A leak in the brick at the east end of the trench was found. A job order request was submitted on 3/26/75, for repairs. When this leak is repaired the sump and trench will immediately be leak checked to determine if there are other leaks.

2. NE Pad Denitration - The curbing leaks very slightly east of the sump pump. Minor work request was submitted on 3/26/75.

3. 17A, B and C Area Pad - There are several cracks in the concrete floor of the pit area. When the safety shower is turned on, water flows from the cracks. A close inspection shows that the small freeze-prevention holes in the shower water lines are below the concrete surface, and when the shower is turned on water flows under the recently installed concrete cap of the pit area. A job order request was submitted on 3/26/75, for repairs, and a minor work request was submitted on 3/25/75, to raise the safety shower above the floor of the pit.

4. Front of Hot Raffinate - A very small leak was noted when the area surrounding the sump was flooded. It was determined that the sealer around the support column base located just east of the sump was defective. A minor work request was submitted on 3/25/75. A minor work request was also submitted to repair the damaged brick on the west side of the sump near the top. No leak was found there however.

The selector switch for the SE Denitration pump was found defective. The small submersible pump in the SE Denitration pad sump would not operate and the discharge line from the east sump on the Combined Raffinate pad was found to be partially plugged. All other pumps operated satisfactorily.

The inspection sheet with comments is attached.

EMH/dc

E. M. Hutter

cc: R. M. Spencelay
Refinery Files

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

269

Date: MARCH 1975

Name: E. M. NUTTER Shift: _____ Time [1ST INSPECTION] [2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	OK		OK		No		3/25 Unless otherwise
F1-37	East Cold Side Digestion	OK		OK		No		3/25 noted all sumps
F1-38	West Hot Side Digestion	OK		OK		No		3/25 and adjacent
F1-35	East Hot Side Digestion	OK		OK		No		3/25 areas were flooded
G2E-50	Metal Dissolver Building	OK		OK		No		3/26
No Number	Metal Dissolver Pad	OK		OK		No		3/31
20-A-1	5A & 5B Area Pad	OK		OK		No		3/25
G2E-16	Slop Tank Area Pad	OK		OK		No		3/25
G1-2N-85017A, B & C Area Pad		OK		OK		YES		3/25 Leaks at east end of pi
G1-540	512 Area Pad	OK		STEAM EDUCTOR		No		3/25
No Number	West Cold Side Extraction	OK		OK		No		3/25
F1-104	East Cold Side Extraction	OK		OK		No		3/25
No Number	West Hot Side Extraction	OK		OK		No		3/25
F1-102	Center Hot Side Extraction	OK		OK		No		3/25 Not flooded
F1-514	East Hot Side Extraction	OK		OK		No		3/25
F3E-222	S. E. End Denitration	OK		OK		No		3/26
F1-220	S. W. End Denitration	OK		OK		No		3/26 Selector switch defective
F3E-223	N. E. End Denitration	OK		OK		No		3/31
F1-221	N. W. End Denitration	OK		OK		No		3/31
G3E-282	N. E. Pad – Denitration	OK		OK		YES		3/26 Leak in curbing E of pum
	S. E. Pad – Denitration	No		No		No		3/26 Pump did not operate at time of inspection. OK on 3/27
G3E-244	OK Liquor Pit	OK		–		No		3/31
G18E-7	1st Floor Refinery Sump	OK		OK		NO		3/26
Steam Educt.	W. Pad Refinery Sump	OK		OK		OK		3/26
G2E-610	E. Pad Refinery Sump	OK		OK		No		3/26
G3-24	West Pad – N.A.R.	OK		OK		No		3/25
G3-64	East Pad – N.A.R.	OK		OK		No		3/25
F3E-224	E. Pad Combined Raffinate	OK		OK		No		3/27
F3E-225	W. Pad Combined Raffinate	OK		OK		YES		3/27 LEAKS AT EAST END OF TRENCH
14-4A-0-6	Harshaw Tower Pad	–		–		–		–
G1-325	Hot Raffinate E. Tank Room	OK		OK		No		3/26
	Hot Raffinate W. Tank Room	OK		OK		No		3/26
G1-307	Hot Raffinate – Center Room 1st. Fl.	OK		OK		No		3/26
	Cold Side Ore Pit	OK		[illegible]		No		3/31 – STEAM EDUCTOR
	Hot Side Ore Pit	OK		OK		No		[illegible]
No Number	N. W. Digestion Storage Pad	OK		OK		No		[illegible]
G2E-140-3	NFS Pump House	OK		OK		No		[illegible]
G3E-419	Front – Hot Raffinate Bldg.	OK		OK		YES		[illegible]

145

File

269

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD for Inventory

Date: March 1975

NOTE: Inspections are to be made twice each shift.

Name : _____ Shift: _____ Time [1ST INSPECTION | 2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion							Cleaned 3/28/75 [illegible]
F1-37	East Cold Side Digestion							Cleaned 3/28/75 [illegible]
F1-38	West Hot Side Digestion							Cleaned 3/28/75 [illegible]
F1-35	East Hot Side Digestion							Cleaned 3/28/75 [illegible]
G2E-50	Metal Dissolver Building							Cleaned 3/29/75 1st [illegible]
No. Number	Metal Dissolver Pad							Cleaned 3/30/75 [illegible]
20-A-1	5A & 5B Area Pad							Cleaned 3/30/75 1st [illegible]
G2E-16	Slop Tank Area Pad							Cleaned 3/29/75 [illegible]
G1-2N-85017A, B & C Area Pad								Cleaned 3/30/75 1st [illegible]
G1-540	512 Area Pad							Cleaned 3/30/75 1st [illegible]
No Number	West Cold Side Extraction							Cleaned 3/28/75 [illegible]
F1-104	East Cold Side Extraction							Cleaned 3/28/75 [illegible]
No Number	West Hot Side Extraction							Cleaned 3/28/75 1st [illegible]
F1-102	Center Hot Side Extraction							Cleaned 3/28/75 [illegible]
F1-514	East Hot Side Extraction							Cleaned 3/28/75 [illegible]
F3E-222	S. E. End Denitration							Cleaned 3/25/75 [illegible]
F1-220	S. W. End Denitration							Cleaned 3/25/75 [illegible]
F3E-223	N. E. End Denitration							Cleaned 3 29 75 [illegible]
F1-221	N. W. End Denitration							Cleaned 3-25-75 [illegible]
G3E-282	N. E. Pad – Denitration							Cleaned 3/30/75 [illegible]
	S. E. Pad – Denitration							
G3E-244	CK Liquor Pit							Cleaned 3/30/75 [illegible]
G18E-7	1st Floor Refinery Sump							Cleaned 3-30-75 [illegible]
Steam Educt.	W. Pad Refinery Sump							Cleaned 3/31/75 [illegible]
G2E-610	E. Pad Refinery Sump							Cleaned 3/31/75 [illegible]
G3-24	West Pad – N.A.R.							Cleaned 3/30/75 [illegible]
G3-64	East Pad – N.A.R.							Cleaned 3/30/75 [illegible]
F3E-224	E. Pad Combined Raffinate							Cleaned 3/30/75 [illegible]
F3E-225	W. Pad Combined Raffinate							Cleaned 3/30/75 1st [illegible]
14-4A-0-6	Harshaw Tower Pad							
G1-325	Hot Raffinate E. Tank Room							Cleaned 3/28/75 [illegible]
	Hot Raffinate W. Tank Room							Cleaned 3/28/75 1st [illegible]
G1-307	Hot Raffinate – Center Room 1st. Fl.							Cleaned 3/30/75 [illegible]
	Cold Side Ore Pit							Checked 3 30 75 [illegible]
	Hot Side Ore Pit							Cleaned 3-29-75 [illegible]
No Number	N. W. Digestion Storage Pad							" 3/31/75 [illegible]
G2E-140-3	NFS Pump House							Cleaned 3-3-75 [illegible]
G3E-419	Front – Hot Raffinate Bldg.							Cleaned 3/30/75 [illegible]

146

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

269

Date: 4. 1. 75

Name: E. Schonegg & Art Dudley Shift: AM'N Time: 1ST INSPECTION 2ND INSPECTION

	PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
✓	F1-36	West Cold Side Digestion	✓		✓				OK
✓	F1-37	East Cold Side Digestion (MWR)	✓		✓	BOLTS MISSING			BAD SWITCH. CHECK VALVE LEAK
✓	F1-38	West Hot Side Digestion (MWR)	✓		✓				~~OR~~ LEAK @ WELD UPPER BLOWOUT
✓	F1-35	East Hot Side Digestion (MWR)	✓		✓				BOLTS MISSING UPPER BLOWOUT LEAK
✓	G2E-50	Metal Dissolver Building (MWR)	✓		✓				BOLTS MISSING DISCH'G BLOWOUT LEAK
	No. Number	Metal Dissolver Pad							
	20-A-1	5A & 5B Area Pad							
	G2E-16	Slop Tank Area Pad							
	G1-2N-85017	A, B & C Area Pad							
	G1-540	512 Area Pad							
✓	No Number	West Cold Side Extraction (MWR)	✓		✓				2" DISCHG VALVE LEAK
✓	F1-104	East Cold Side Extraction (MWR)	✓		✓				CHECK VALVE LEAK.
✓	No Number	West Hot Side Extraction (MWR)	✓		✓				BOLTS MISSING DISCHG FLANGE.
✓	F1-102	Center Hot Side Extraction (MWR)	✓		✓				VALVE LEAKING – CHECK LEAKS
✓	F1-514	East Hot Side Extraction (MWR)	✓		✓	(BOLTS MISSING)			1" DISCH'G LINE LEAK, 3" COCK LEAK
✓	F3E-222	S. E. End Denitration (MWR)	✓		✓				LEAK @ SMALL BLOWOUT NIPPLE.
✓	F1-220	S. W. End Denitration (MWR)	✓		✓	DISC VALVE LEAK.			UPPER BLOWOUT VALVE LEAK
✓	F3E-223	N. E. End Denitration (MWR)	✓		✓				BAD SWITCH. DISCH BLOWOUT LEAK
✓	F1-221	N. W. End Denitration MWR	✓		✓				CHECK LEAK,
	G3E-282	N. E. Pad – Denitration							
		S. E. Pad – Denitration							
	G3E-244	OK Liquor Pit							
	G18E-7	1st Floor Refinery Sump							
	Steam Educt.	W. Pad Refinery Sump							
	G2E-610	E. Pad Refinery Sump							
	G3-24	West Pad – N.A.R.							
	G3-64	East Pad – N.A.R.							
	F3E-224	E. Pad Combined Raffinate							
	F3E-225	W. Pad Combined Raffinate							
	14-4A-0-0	Harshaw Tower Pad							
	G1-325	Hot Raffinate E. Tank Room							
		Hot Raffinate W. Tank Room							
	G1-307	Hot Raffinate – Center Room 1st. Fl.							
		Cold Side Ore Pit							
		Hot Side Ore Pit							
	No Number	N. W. Digestion Storage Pad							
	G2E-140-3	NFS Pump House							
	G3E-419	Front – Hot Raffinate Bldg.							

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 4/1/75

Name: Westbeck

Shift: Afternoon Time: 1000/PM

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion							
F1-37	East Cold Side Digestion							
F1-38	West Hot Side Digestion			See other sheet				
F1-35	East Hot Side Digestion							
G2E-50	Metal Dissolver Building							
No. Number	Metal Dissolver Pad	OK		OK		NONE		
20-A-1	5A & 5B Area Pad	OK		OK		NONE		
G2E-16	Slop Tank Area Pad	OK		OK		NONE		
G1-2N-85017A, B & C Area Pad		OK		OK		NONE		
G1-540	512 Area Pad	STEAM		EDUCTOR		OK		NO LEAKS
No Number	West Cold Side Extraction							
F1-104	East Cold Side Extraction							
No Number	West Hot Side Extraction							
F1-102	Center Hot Side Extraction			See other sheet				
F1-514	East Hot Side Extraction							
F3E-222	S. E. End Denitration							
F1-220	S. W. End Denitration							
F3E-223	N. E. End Denitration							
F1-221	N. W. End Denitration							
G3E-282	N. E. Pad – Denitration	OK		OK		NONE		
	S. E. Pad – Denitration	SUBMERGED		PUMP		(SUMP FULL)		MOTOR DISCONNECT
G3E-244	OK Liquor Pit	OK		NO AUTO SWITCH		NONE		
G18E-7	1st Floor Refinery Sump	OK		NOT	OK	USING		STEAM EDUCTOR
Steam Educt.	W. Pad Refinery Sump	OK		NOT	OK	NONE		READJUST (FLOAT ON) SETTING
G2E-610	E. Pad Refinery Sump	OK		OK		NONE		BEARING NOISY
G3-24	West Pad – N.A.R.	OK		OK		NONE		
G3-64	East Pad – N.A.R.	OK		OK		NONE		
F3E-224	E. Pad Combined Raffinate	OK		OK		NONE		BEARINGS BAD
F3E-225	W. Pad Combined Raffinate	OK		OK		NONE		
14-4A-0-6	Harshaw Tower Pad	NOT		IN		USE		
G1-325	Hot Raffinate E. Tank Room	OK		OK		NONE		
	Hot Raffinate W. Tank Room	OK		OK		→		2 BOLT MISSING ON DISCHG FLG
G1-307	Hot Raffinate – Center Room 1st. Fl.	OK		OK		NONE		
	Cold Side Ore Pit	STEAM		EDUCTOR		OPERATES		OK NO LEAKS
	Hot Side Ore Pit	OK		OK		NONE		
No Number	N. W. Digestion Storage Pad	OK		OK		NONE		
G2E-140-3	NFS Pump House	OK		OK		NONE		
G3E-419	Front – Hot Raffinate Bldg.	OK		OK		NONE		

NLO-PRO-2410 (3/19/73)

7.10

June 30, 1975

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

W. J. Adams

E. M. Nutter

The quarterly inspection and leak check of sumps in the Refinery area were completed on June 30, 1975. Where practical to do so, the sumps and adjacent floor or pad areas were flooded to effect a good leak check.

Leaks were indicated at three sump locations as follows:

1. 17A, B and C Area Pad - A very slight leak was noted around the base of tank 17C. A Minor Work Request and a Job Order Request were submitted on 3/26/75, for needed repairs to this area. To date, nothing has been done. Maintenance has been requested to expedite.

2. NE Pad - Denitration - A small leak was indicated in the trench curbing directly east of the sump pump. This is the same area where a leak was repaired in March 1975.

3. West Pad - NAR - The pad just south of the floor sump is badly cracked. Maintenance has been requested to expedite repairs.

A stainless steel liner is being installed in the sump in the metal dissolver building. As a result, this sump was not checked. Although no leak was noted, a job order request has been submitted to repair the loose brick at the SE sump in the Extraction area. The selector switch for the SW sump in Denitration was found defective. All other pumps operated satisfactorily.

The inspection sheet with comments is attached.

Original Signed By
E. M. NUTTER
GENERAL FOREMAN
E. M. Nutter

EMN/dfm

cc: R. M. Spenceley
Refinery Files

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: JUNE 1975

Name: E. M. MUTTER Shift: _____ Time [1ST INSPECTION] [2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓		No		UNLESS OTHERWISE NOTED ALL SUMPS WERE FLOODED
F1-37	East Cold Side Digestion	✓		✓		No		
F1-38	West Hot Side Digestion	✓		✓		No		
F1-35	East Hot Side Digestion	✓		✓		No		
G2E-50	Metal Dissolver Building							DID NOT CHECK MAINTENANCE INSTALLING METAL SUMP LINER
No. Number	Metal Dissolver Pad	✓		✓		No		
20-A-1	5A & 5B Area Pad	✓		✓		No		
G2E-16	Slop Tank Area Pad	✓		✓		No		
G1-2N-85017A, B & C Area Pad		✓		✓			YES	SLIGHT LEAK AROUND BASE OF TANK 17C
G1-540	512 Area Pad	✓				No		MANUAL STEAM EDUCTOR
No Number	West Cold Side Extraction	✓		✓		No		
F1-104	East Cold Side Extraction	✓		✓		No		
No Number	West Hot Side Extraction	✓		✓		No		
F1-102	Center Hot Side Extraction	✓		✓		No		
F1-514	East Hot Side Extraction	✓		✓		No		
F3E-222	S. E. End Denitration	✓		✓		No		
F1-220	S. W. End Denitration	✓		✓		No		
F3E-223	N. E. End Denitration	✓		✓		No		
F1-221	N. W. End Denitration	✓		✓		No		
G3E-282	N. E. Pad – Denitration	✓		✓			YES	SMALL LEAK IN TRENCH WALL [illegible]
	S. E. Pad – Denitration			✓		No		[illegible]
G3E-244	OK Liquor Pit					No		IT ONLY PARTIALLY FLOODED
G18E-7	1st Floor Refinery Sump	✓		✓		No		
Steam Educt.	W. Pad Refinery Sump	✓		✓		No		
G2E-610	E. Pad Refinery Sump	✓		✓		No		
G3-24	West Pad – N.A.R.	✓		✓			YES	LEAK IN [illegible] JUST [illegible] OF SUMP
G3-64	East Pad – N.A.R.	✓		✓		No		
F3E-224	E. Pad Combined Raffinate	✓		✓		[illegible]		
F3E-225	W. Pad Combined Raffinate	✓		✓		No		
14-4A-0-6	Harshaw Tower Pad							[illegible]
G1-325	Hot Raffinate E. Tank Room	✓		✓		[illegible]		
	Hot Raffinate W. Tank Room	✓		✓		No		
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		[illegible]		
	Cold Side Ore Pit							
	Hot Side Ore Pit	✓		✓		[illegible]		
No Number	N. W. Digestion Storage Pad			✓				[illegible]
G2E-140-3	NFS Pump House							
G3E-419	Front – Hot Raffinate Bldg.							

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: JUNE '75

Name: _____ Shift: _____ Time _____ 1ST INSPECTION _____ 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion	✓		✓		NO		6/24
F1-37	East Cold Side Digestion	✓		✓		NO		6/24
F1-38	West Hot Side Digestion	✓		✓		NO		6/24
F1-35	East Hot Side Digestion	✓		✓		NO		6/24
G2E-50	Metal Dissolver Building							Did not Check – office work
No Number	Metal Dissolver Pad	✓		✓		NO		Flooded 6/19/75 Now in let Screen
20-A-1	5A & 5B Area Pad	✓		✓		NO		6/16/75
G2E-16	Slop Tank Area Pad	✓		✓		NO		6/19/75
G1-2N-85	017A, B & C Area Pad	✓		✓		YES		6/19/75 Slight leak at crack Repaired 17c
G1-540	512 Area Pad	✓				NO		Steam Eductor
No Number	West Cold Side Extraction	✓		✓		NO		6/24
F1-104	East Cold Side Extraction	✓		✓		NO		6/24 Brick loose – S. Side of Su
No Number	West Hot Side Extraction	✓		✓		NO		6/30
F1-102	Center Hot Side Extraction	✓		✓		NO		6/24
F1-514	East Hot Side Extraction	✓		✓		NO		6/24
F3E-222	S. E. End Denitration	✓		✓		NO		6/24
F1-220	S. W. End Denitration	✓		✓		NO		6/24 Switch bad
F3E-223	N. E. End Denitration	✓		✓		NO		6/30
F1-221	N. W. End Denitration	✓		✓		NO		6/30
G3E-282	N. E. Pad – Denitration	✓		✓		YES		6/19/75 Leak in trench wall directly east of sump.
	S. E. Pad – Denitration			✓		NO		Submersible pump 6/19/75
G3E-244	OK Liquor Pit	✓		✓		NO		6/24 – partially flooded
G18E-7	1st Floor Refinery Sump	✓		✓		NO		6/24 · removed pump
Steam Educt.	W. Pad Refinery Sump	✓		✓		NO		6/19/75 floated sticks
G2E-610	E. Pad Refinery Sump	✓		✓		NO		6/19/75
G3-24	West Pad – N.A.R.	✓		✓		YES		6/19/75 Leaks just south of sump
G3-64	East Pad – N.A.R.	✓		✓		NO		6/24
F3E-224	E. Pad Combined Raffinate	✓		✓		NO		6/19/75
F3E-225	W. Pad Combined Raffinate	✓		✓		NO		6/19/75
14-4A-0-6	Harshaw Tower Pad	—		—		—		Area Down
G1-325	Hot Raffinate E. Tank Room	✓		✓		NO		6/24
	Hot Raffinate W. Tank Room	✓		✓		NO		6/24
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		NO		6/24
	Cold Side Ore Pit	✓				NO		Steam Eductor 6/24
	Hot Side Ore Pit	✓		✓		NO		6/24
No Number	N. W. Digestion Storage Pad			✓		NO		Visible Check of pit
G2E-140-3	NFS Pump House	✓		✓		NO		6/24
G3E-419	Front – Hot Raffinate Bldg.	✓		✓		NO		6/19/75

INSPECTION OF CONDITION AND OPERATION OF REFINERY SUMPS

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

269

Date: 6/22/75

NOTE: Inspections are to be made twice each shift.

Name: METZ + Wayock. Shift: AFTERNOON Time: 1630 TILL 1800 (1st INSPECTION, 2nd INSPECTION)

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	OK		OK				MUC's have been submitted for needed repairs Wayock 6-22-75
F1-37	East Cold Side Digestion	OK		OK				
F1-38	West Hot Side Digestion	OK		OK				
F1-35	East Hot Side Digestion	OK		OK				
G2E-50	Metal Dissolver Building	OK		OK				
No. Number	Metal Dissolver Pad	OK		OK				
20-A-1	5A & 5B Area Pad	OK		OK				
G2E-16	Slop Tank Area Pad	OK		OK				
G1-2N-85017A, B & C Area Pad		OK		OK				
G1-540	512 Area Pad	STEAM EDUCTOR – OPERATES OK MANUAL						
No Number	West Cold Side Extraction	OK		OK				
F1-104	East Cold Side Extraction	OK		OK				
No Number	West Hot Side Extraction	OK		OK				
F1-102	Center Hot Side Extraction	OK		OK				
F1-514	East Hot Side Extraction	OK		OK				
F3E-222	S. E. End Denitration	OK		OK				
F1-220	S. W. End Denitration	OK		OK				
F3E-223	N. E. End Denitration	OK		OK	← REPAIR MOTOR MOUNT – LOOSE			
F1-221	N. W. End Denitration	OK		OK				
G3E-282	N. E. Pad – Denitration	OK		OK				
	S. E. Pad – Denitration	SMALL SUBMERGED ELECT. SUMP PUMP – NOT WORKIN						
G3E-244	OK Liquor Pit	OK		NO AUTO CONTROL				
G18E-7	1st Floor Refinery Sump	OK		OK	← USING STEAM EDUCTOR AS			
Steam Educt.	W. Pad Refinery Sump	OK		OK	PUMP WILL RUN BUT WON'T			
G2E-610	E. Pad Refinery Sump	OK		OK	PUMP OUT MATL.			
G3-24	West Pad – N.A.R.	OK		OK	ADJUST LIMITS ON FLOAT ARM			
G3-64	East Pad – N.A.R.	OK		OK	HIGH LEVEL WON'T START PUMP			
F3E-224	E. Pad Combined Raffinate	OK		OK				
F3E-225	W. Pad Combined Raffinate	OK		OK				
14-4A-0-6	Harshaw Tower Pad	NOT IN USE						
G1-325	Hot Raffinate E. Tank Room	OK		OK				
	Hot Raffinate W. Tank Room	OK		OK	← VIBRATES VERY BAD – 2 BOLTS			
G1-307	Hot Raffinate – Center Room 1st. Fl.	OK		OK	MISSING FROM DISCH SAMPLE			
	Cold Side Ore Pit	STEAM		EDUCTOR	→ COCK			
	Hot Side Ore Pit	OK		OK	→ OPERATED MANUALLY – OK			
No Number	N. W. Digestion Storage Pad	OK		OK				
G2E-140-3	NFS Pump House	OK		OK				
G3E-419	Front – Hot Raffinate Bldg.	OK		OK				

152

NLO-280-2M10 (3/19/73)

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: In Inventory 269

Name: Sump Cleanout Shift: Check Off Sheet

1ST INSPECTION 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion							6/27/75 3rd – JOM
F1-37	East Cold Side Digestion							6/27/75 3rd – JOM
F1-38	West Hot Side Digestion							6/28/75 3rd – EJ
F1-35	East Hot Side Digestion							6/28/75 3rd – EJ
G2E-50	Metal Dissolver Building							6/26/75 – 3rd/ind Cleaned for Mortage
No. Number	Metal Dissolver Pad							6/27/75 2nd
20-A-1	5A & 5B Area Pad							6-28-75 1st DE
G2E-16	Slop Tank Area Pad							6-28-75 1st DE
G1-2N-85017A, B & C Area Pad								6-28-75 1st DE
G1-540	512 Area Pad						—	6-29-75 3rd way
No Number	West Cold Side Extraction							=
F1-104	East Cold Side Extraction							6-28-75 1st DE
No Number	West Hot Side Extraction							6/28/75 2nd
F1-102	Center Hot Side Extraction							6/28/75 2nd
F1-514	East Hot Side Extraction							6-28-75 1st DE
F3E-222	S. E. End Denitration							6/27/75 2nd
F1-220	S. W. End Denitration							6/28/75 3rd EJ
F3E-223	N. E. End Denitration							6/28/75 3rd EJ
F1-221	N. W. End Denitration							6/28/75 3rd EJ
G3E-282	N. E. Pad – Denitration							6/27/75 1st EJ
	S. E. Pad – Denitration							GENERAL SUMPS PUMP
G3E-244	OK Liquor Pit							6/27/75 1st EJ
G18E-7	1st Floor Refinery Sump							6-28-75 1st DE
Steam Educt.	W. Pad Refinery Sump							6-28-75 1st DE
G2E-610	E. Pad Refinery Sump							6-28-75 1st DE
G3-24	West Pad – N.A.R.							6/28/75 2nd
G3-64	East Pad – N.A.R.							6/28/75 2nd
F3E-224	E. Pad Combined Raffinate							6/28/75 2nd
F3E-225	W. Pad Combined Raffinate						—	6/29/75 3rd way
14-4A-0-6	Harshaw Tower Pad						—	
G1-325	Hot Raffinate E. Tank Room							6-28-75 1st DE
	Hot Raffinate W. Tank Room							6-28-75 1st DE
G1-307	Hot Raffinate – Center Room 1st. Fl.							6-28-75 1st DE
	Cold Side Ore Pit							6/26/75 2nd
	Hot Side Ore Pit							6/27/75 3rd JOM
No Number	N. W. Digestion Storage Pad							6/27/75 1st EJ
G2E-140-3	NFS Pump House							6/28/75 OK
G3E-419	Front – Hot Raffinate Bldg.							6/28/75 2nd

October 2, 1975

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

W. J. Adams

E. M. Nutter

The quarterly inspection and leak check of sumps in the Refinery area were completed on October 1, 1975. Where practical to do so, the sumps and adjacent floor or pad areas were flooded to effect a good leak check.

No leaks were noted at any of the sumps or pads; however, a job order request has been submitted to repair the acid brick wall surrounding the slop tank pit area in Digestion. Minor work requests were submitted to repair the submersible pump at SE Denitration pad; to repair the selector switch on pump at SW Denitration; and to repair pump guard at west tank room in Hot Raffinate.

The inspection sheet with comments is attached.

Original Signed By
E. M. NUTTER
GENERAL FOREMAN

E. M. Nutter

EMN/dfm

cc: R. M. Spenceley
Refinery Files

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

269

Date: SEPTEMBER 1975

Name: E. M. MUTTER Shift: _____ Time _____ 1ST INSPECTION _____ 2ND INSPECTION _____

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion	✓		✓		NO		UNLESS OTHERWISE NOTED ALL SUMPS WERE FLOODED
F1-37	East Cold Side Digestion	✓		✓		NO		
F1-38	West Hot Side Digestion	✓		✓		NO		
F1-35	East Hot Side Digestion	✓		✓		NO		
G2E-50	Metal Dissolver Building	✓		✓		NO		
No. Number	Metal Dissolver Pad	✓		✓		NO		
20-A-1	5A & 5B Area Pad	✓		✓		NO		
G2E-16	Slop Tank Area Pad	✓		✓		NO		
G1-2N-85	017A, B & C Area Pad	✓		✓		NO		
G1-540	512 Area Pad	✓		✓		NO		DID NOT FLOOD WHILE [illegible]
No Number	West Cold Side Extraction	✓		✓		NO		
F1-104	East Cold Side Extraction	✓		✓		NO		NOT FLOODED [illegible] LEAKS [illegible] SUMPS.
No Number	West Hot Side Extraction	✓		✓		NO		
F1-102	Center Hot Side Extraction	✓		✓		NO		
F1-514	East Hot Side Extraction	✓		✓		NO		
F3E-222	S. E. End Denitration	✓		✓		NO		REPAIRED SELECTOR SWITCH FOR PUMP.
F1-220	S. W. End Denitration	✓		✓		NO		
F3E-223	N. E. End Denitration	✓		✓		NO		
F1-221	N. W. End Denitration	✓		✓		NO		
G3E-282	N. E. Pad – Denitration	✓		✓		NO		
	S. E. Pad – Denitration					N/C		[illegible] FOR RETAINERS
G3E-244	OK Liquor Pit	✓				[illegible]		
G18E-7	1st Floor Refinery Sump	✓		✓		[illegible]		
Steam Educt.	W. Pad Refinery Sump	✓		✓		[illegible]		
G2E-610	E. Pad Refinery Sump	✓						
G3-24	West Pad – N.A.R.			✓				[illegible]
G3-64	East Pad – N.A.R.	✓		✓				
F3E-224	E. Pad Combined Raffinate	✓		✓				[illegible]
F3E-225	W. Pad Combined Raffinate					[illegible]		
14-4A-0-6	Harshaw Tower Pad	✓		✓		—		[illegible]
G1-325	Hot Raffinate E. Tank Room							
	Hot Raffinate W. Tank Room							
G1-307	Hot Raffinate – Center Room 1st. Fl.							
	Cold Side Ore Pit	✓						
	Hot Side Ore Pit							
No Number	N. W. Digestion Storage Pad							
G2E-140-3	NFS Pump House							
G3E-419	Front – Hot Raffinate Bldg.							

155

File

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

269

Date: Sept. 1975

Name: E. M. NUTTER Shift: _____ Time [1ST INSPECTION | 2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓		No		9/18
F1-37	East Cold Side Digestion	✓		✓		No		9/18
F1-38	West Hot Side Digestion	✓		✓		No		9/18
F1-35	East Hot Side Digestion	✓		✓		No		9/18
G2E-50	Metal Dissolver Building	✓		✓		No		9/18
No. Number	Metal Dissolver Pad	✓		✓		No		9/18
20-A-1	5A & 5B Area Pad	✓		✓		No		9/18
G2E-16	Slop Tank Area Pad	✓		✓		No		9/18 switch bad on "OFF" position
G1-2N-85017	A, B & C Area Pad	✓		✓		No		9/18
G1-540	512 Area Pad	✓		—		No		9/18 whole Area not flooded
No Number	West Cold Side Extraction	✓		✓		No		9/30
F1-104	East Cold Side Extraction	✓		✓		No		9/30 Not flooded
No Number	West Hot Side Extraction	✓		✓		No		9/30
F1-102	Center Hot Side Extraction	✓		✓		No		9/30
F1-514	East Hot Side Extraction	✓		✓		No		9/30
F3E-222	S. E. End Denitration	✓		✓		No		9/22
F1-220	S. W. End Denitration	✓		✓		No		9/22 Selector switch Bad
F3E-223	N. E. End Denitration	✓		✓		No		9/22
F1-221	N. W. End Denitration	✓		✓		No		9/22
G3E-282	N. E. Pad – Denitration	✓		✓		No		10/1
	S. E. Pad – Denitration					No		9/22 Submersible pumps out for repairs
G3E-244	CK Liquor Pit	✓		—		No		9/22
G18E-7	1st Floor Refinery Sump	✓		✓		No		9/22
Steam Educt.	W. Pad Refinery Sump	✓		✓		No		9/22
G2E-610	E. Pad Refinery Sump	✓		✓		No		9/22
G3-24	West Pad – N.A.R.	✓		✓		No		9/30 Red liquor work extensive
G3-64	East Pad – N.A.R.	✓		✓		No		9/30
F3E-224	E. Pad Combined Raffinate	✓		✓		No		FLOODED ONLY TRENCH & IMMEDIATE GROUND MADE WALKING ON OUTER WALL
F3E-225	W. Pad Combined Raffinate	✓		✓		No		9/19/75
14-4A-0-6	Harshaw Tower Pad	–	–	–	–	–	–	
G1-325	Hot Raffinate E. Tank Room	✓		✓		No		9/30
	Hot Raffinate W. Tank Room	✓		✓		No		9/30 Pumps NOISY
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		No		9/30
	Cold Side Ore Pit	✓		—		No		Steam eductor
	Hot Side Ore Pit	✓		✓		No		Auto Steam eductor
No Number	N. W. Digestion Storage Pad			✓		No		visually checked [illegible] Basin
G2E-140-3	NFS Pump House	✓		✓		No		9/19
G3E-419	Front – Hot Raffinate Bldg.	✓		✓		No		10/1

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

PB 10/2/75 EWM 10/2/75 269 File

Date: 9/25/75

Name: Inventory Shift: _____ Time _____ 1ST INSPECTION 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion							Cleaned 3rd. 10-1-75 K
F1-37	East Cold Side Digestion							Cleaned 3rd 9/27/75 K
F1-38	West Hot Side Digestion							Cleaned 3rd 9-27-75 K.
F1-35	East Hot Side Digestion							Cleaned 3rd 9/27/75 K
G2E-50	Metal Dissolver Building							Cleaned 3rd 9/28/75 E
No. Number	Metal Dissolver Pad							Cleaned 2nd 9-25-75 E
20-A-1	5A & 5B Area Pad							Cleaned 2nd 9-27-75
G2E-16	Slop Tank Area Pad							Cleaned 2nd 9-25-75 E
G1-2N-85017A, B & C Area Pad								Cleaned 2nd 9-27-75 DE
G1-540	512 Area Pad							Cleaned 1st 9-28 way
No Number	West Cold Side Extraction							Cleaned 2nd 9-30 DE
F1-104	East Cold Side Extraction							Cleaned 2nd 9-27-75 DE
No Number	West Hot Side Extraction							Cleaned 1st 9-28 way
F1-102	Center Hot Side Extraction							Cleaned 1st 9-28 way
F1-514	East Hot Side Extraction							Cleaned 2nd 9-27-75 DE
F3E-222	S. E. End Denitration							Cleaned 3rd 9.26.75 Ef
F1-220	S. W. End Denitration							CLEANED 1st - 9/27/75 JDM
F3E-223	N. E. End Denitration							Cleaned 3rd 9.26.75 Ef
F1-221	N. W. End Denitration							Cleaned 2nd 9-27-75 DE
G3E-282	N. E. Pad – Denitration							
	S. E. Pad – Denitration							CLEANED 1st - 9/27 JDM
G3E-244	OK Liquor Pit							Cleaned 2nd 9/27 DE
G18E-7	1st Floor Refinery Sump							CLEANED 1st - 9/28 JDM
Steam Educt.	W. Pad Refinery Sump							CLEANED 1st - 9/28 JDM
G2E-610	E. Pad Refinery Sump							CLEANED 1st - 9/28 JDM
G3-24	West Pad – N.A.R.							CLEANED 1st - 9/28 JDM
G3-64	East Pad – N.A.R.							CLEANED 1st 9/28 JDM
F3E-224	E. Pad Combined Raffinate							Cleaned 1st 9/30 way
F3E-225	W. Pad Combined Raffinate							Cleaned 1st 9/29 way
14-4A-0-6	Harshaw Tower Pad							
G1-325	Hot Raffinate E. Tank Room							Cleaned 3rd 9/28/75 E
	Hot Raffinate W. Tank Room							Cleaned 3rd 9-28-75 K
G1-307	Hot Raffinate – Center Room 1st. Fl.							Cleaned 3rd 9/28/75 E
	Cold Side Ore Pit							Cleaned 1st 9/28 way
	Hot Side Ore Pit							Cleaned 3rd 9/28/75 E
No Number	N. W. Digestion Storage Pad							Cleaned 1st 9/29 way
G2E-140-3	NFS Pump House							Cleaned 1st 9/28 way
G3E-419	Front – Hot Raffinate Bldg.							CLEANED - 1st - 9/28 JDM

January 5, 1976

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

W. J. Adams

E. M. Nutter

The quarterly inspection and leak check of sumps in the Refinery area were completed on January 2, 1976. Except as noted on the attached inspection sheet the sumps and adjacent floor or pad areas were flooded to effect a good leak check.

Two leaks were found in the trench curbing at the Denitration pad. Both were at locations where previous leaks were noted. Temporary repairs were made, but more permanent repairs are scheduled.

During this quarter a large section of the trench at the east end of the Combined Raffinate pad was repaired. Also, extensive repairs were made to the Nitric Acid Recovery pad. Minor Work Requests have been submitted for the repair of two selector switches and for lubrication of the float rods at four sumps. Since this inspection was made the pump for sump F1-514 in Extraction failed and was replaced on 12/30/75.

The inspection sheet with comments is attached.

E. M. Nutter

E. M. Nutter

EMN/dfm

cc: R. M. Spenceley
Refinery Files

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

269

Date: DECEMBER 1975

NOTE: Inspections are to be made twice each shift.

Name: E. M. NUTTER Shift: _____ Time _____ 1ST INSPECTION _____ 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	UNLESS OTHERWISE NOTED
F1-36	West Cold Side Digestion	✓		✓		NO		ALL SUMPS WERE FLOODED
F1-37	East Cold Side Digestion	✓		✓		NO		
F1-38	West Hot Side Digestion	✓		✓		NO		
F1-35	East Hot Side Digestion	—		—		NO		PUMP OUT FOR REPAIRS. USING STEAM EDUCTOR
G2E-50	Metal Dissolver Building	✓		✓		NO		
No Number	Metal Dissolver Pad	✓		✓		NO		
20-A-1	5A & 5B Area Pad	✓		✓		NO		
G2E-16	Slop Tank Area Pad	✓		✓		NO		
G1-2N-85017A, B & C Area Pad		✓		✓		NO		
G1-540	512 Area Pad	✓		—		NO		
No Number	West Cold Side Extraction	✓		✓		NO		
F1-104	East Cold Side Extraction	✓		✓		NO		
No Number	West Hot Side Extraction	✓		✓		NO		
F1-102	Center Hot Side Extraction	✓		✓		NO		
F1-514	East Hot Side Extraction	✓		✓		NO		FLOAT RUN STICKS
F3E-222	S. E. End Denitration	✓		✓		NO		
F1-220	S. W. End Denitration	✓		✓		NO		SELECTOR SWITCH OPERATION ERRATIC
F3E-223	N. E. End Denitration	✓		✓		NO		
F1-221	N. W. End Denitration	✓		✓		NO		
G3E-282	N. E. Pad – Denitration	✓		✓		YES		[illegible]
	S. E. Pad – Denitration	—		✓		NO		SUBMERSIBLE PUMP IN SERVICE
G3E-244	OK Liquor Pit	✓		—		NO		
G18E-7	1st Floor Refinery Sump	✓		✓		NO		FLOAT [illegible] - TICKS [illegible]
Steam Educt.	W. Pad Refinery Sump	✓		✓		NO		FLOAT [illegible] TICKS
G2E-610	E. Pad Refinery Sump	✓		✓		[illegible]		
G3-24	West Pad – N.A.R.	✓		✓		[illegible]		
G3-64	East Pad – N.A.R.	✓		✓		[illegible]		FLOAT [illegible]
F3E-224	E. Pad Combined Raffinate	✓		✓		NO		
F3E-225	W. Pad Combined Raffinate	✓		✓		NO		
14-4A-0-6	Harshaw Tower Pad	—		—		—		[illegible]
G1-325	Hot Raffinate E. Tank Room	✓		✓		[illegible]		
	Hot Raffinate W. Tank Room	✓				[illegible]		[illegible]
G1-307	Hot Raffinate – Center Room 1st. Fl.					NO		
	Cold Side Ore Pit	✓		—				
	Hot Side Ore Pit	✓		✓		[illegible]		[illegible]
No Number	N. W. Digestion Storage Pad			✓				[illegible]
G2E-140-3	NFS Pump House	✓				[illegible]		
G3E-419	Front – Hot Raffinate Bldg.	✓				[illegible]		

159

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: December 1975

269

Name: _____ Shift: _____ Time [1ST INSPECTION | 2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion	✓		✓		No		12/10/75
F1-37	East Cold Side Digestion	✓		✓		No		12/9/75
F1-38	West Hot Side Digestion	✓		✓		No		12/11/75
F1-35	East Hot Side Digestion					No		Pump out - eductor used 12/11
G2E-50	Metal Dissolver Building	✓		✓		No		12/9/75
No Number	Metal Dissolver Pad	✓		✓		No		12/5/75
20-A-1	5A & 5B Area Pad	✓		✓		No		12/5
G2E-16	Slop Tank Area Pad	✓		✓		No		12/5
G1-2N-85017	A, B & C Area Pad	✓		✓		No		12/5
G1-540	512 Area Pad	✓		—		No		12/12 Not flooded
No Number	West Cold Side Extraction	✓		✓		No		12/12
F1-104	East Cold Side Extraction	✓		✓		No		12/11
No Number	West Hot Side Extraction	✓		✓		No		12/10
F1-102	Center Hot Side Extraction	✓		✓		No		
F1-514	East Hot Side Extraction	✓		✓		No		12/11
F3E-222	S. E. End Denitration	✓		✓		No		
F1-220	S. W. End Denitration	✓		✓		No		
F3E-223	N. E. End Denitration	✓		✓		No		
F1-221	N. W. End Denitration	✓		✓		No		
G3E-282	N. E. Pad – Denitration	✓		✓		Yes		Two leaks in transfer well. Temporarily repaired 12/5
	S. E. Pad – Denitration	—		✓		NO		
G3E-244	CK Liquor Pit	✓		—		No		12/4
G18E-7	1st Floor Refinery Sump	✓		✓		No		
Steam Educt.	W. Pad Refinery Sump	✓		✓		No		12/5
G2E-610	E. Pad Refinery Sump	✓		✓		No		
G3-24	West Pad – N.A.R.	✓		✓		No		
G3-64	East Pad – N.A.R.	✓		✓		No		
F3E-224	E. Pad Combined Raffinate	✓		✓		No		12/5
F3E-225	W. Pad Combined Raffinate	✓		✓		No		12/5
14-4A-0-6	Harshaw Tower Pad	—			—		—	—
G1-325	Hot Raffinate E. Tank Room	✓		✓		No		12/12
	Hot Raffinate W. Tank Room	✓		✓		No		12/15
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		No		12/15
	Cold Side Ore Pit	✓		✓		No		12/16
	Hot Side Ore Pit	✓		✓		No		12/16
No Number	N. W. Digestion Storage Pad	—		✓		No		Visually inspected
G2E-140-3	NFS Pump House	✓		✓		No		12/12
G3E-419	Front – Hot Raffinate Bldg.	✓		✓		No		

160

April 1, 1976

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

J. F. Schiltz

E. M. Nutter

The quarterly inspection and leak check of sumps in the Refinery area were completed on April 1, 1976. Except as noted on the attached inspection sheet the sumps and adjacent floor or pad areas were flooded to effect a good leak check.

Leaks were indicated at four sump locations as follows:

1. N.E. Pad Denitration - A small leak was found in the trench curbing near the east driveway. This is the same area where leaks have been found in the past.

2. S.E. Denitration - When sump is full and surrounding floor area flooded the sump pit leaks around the top lip of the stainless steel liner. A check of the scale pit located nearby indicates the water from the sump leaks into the scale pit.

3. West Pad - N.A.R. - Minor leak in the pad area surrounding the sump pit was indicated.

4. East Pad - N.A.R. - Very slight leak was noted when sump and surrounding pad were flooded. Could not specifically locate the leak.

Minor Work Requests and Job Order Requests have been submitted for repairs.

The pump at the west pad of the Refinery Sump would not operate at time of inspection. It was repaired before leak check was completed. The pump at the sump east of the Hot Raffinate building is out for repairs. A steam eductor is being used to empty the sump. The float was off the rod at the east sump at the Refinery Sump. This was repaired immediately. All of these items were noted on inspection sheets completed by the operators on dark shifts preceding my inspection.

The inspection sheet with comments is attached.

Original Signed By
E. M. NUTTER

E. M. Nutter

EMN/dfm

cc: W. J. Adams
Refinery Files

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

269

Date: MARCH 1976

Name: E. M. NUTTER Shift: _____ Time _____ 1ST INSPECTION _____ 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion	✓		✓		No		3/25/76
F1-37	East Cold Side Digestion	✓		✓		No		3/25/76
F1-38	West Hot Side Digestion	✓		✓		No		3/25/76
F1-35	East Hot Side Digestion	✓		✓		No		3/25/76
G2E-50	Metal Dissolver Building	✓		✓		No		3/31/76
No Number	Metal Dissolver Pad	✓		✓		No		3/25/76
20-A-1	5A & 5B Area Pad	✓		✓		No		3/31/76
G2E-16	Slop Tank Area Pad	✓		✓		No		3/25/76 Switch Bad - Selector -
G1-2N-85	017A, B & C Area Pad	✓		✓		No		3/31/76
G1-540	512 Area Pad	✓		✓		No		Steam Eductor
No Number	West Cold Side Extraction	✓		✓		No		3/29/76
F1-104	East Cold Side Extraction	✓		✓		No		3/29/76
No Number	West Hot Side Extraction	✓		✓		No		3/29/76
F1-102	Center Hot Side Extraction	✓		✓		No		3/29/76
F1-514	East Hot Side Extraction	✓		✓		No		3/29/76
F3E-222	S. E. End Denitration	✓		✓		YES		3/29/76
F1-220	S. W. End Denitration	✓		✓		No		3/30/76
F3E-223	N. E. End Denitration	✓		✓		No		3/30/76
F1-221	N. W. End Denitration	✓		✓		No		3/30/76
G3E-282	N. E. Pad – Denitration	✓		✓		YES		LEAK AT TRENCH WALL S SIDE OF DRIVEWAY
	S. E. Pad – Denitration			✓		No		Auto Submersible pump
G3E-244	OK Liquor Pit	✓		✓		No		3/26/76
G18E-7	1st Floor Refinery Sump	✓		✓		No		3/26/76
Steam Educt.	W. Pad Refinery Sump	✓		✓		No		Pump Bad 3/31/76
G2E-610	E. Pad Refinery Sump	✓		No		No		FLOAT OFF ROD MWR Submitted - repaired 3/24/
G3-24	West Pad – N.A.R.	✓		✓		YES		3/30/76
G3-64	East Pad – N.A.R.	✓		✓		YES		3/30/76
F3E-224	E. Pad Combined Raffinate	✓		✓		No		3/26/76
F3E-225	W. Pad Combined Raffinate	✓		✓		No		3/26/76
14-4A-0-6	Harshaw Tower Pad	—	—	—	—	—	—	OUT OF SERVICE
G1-325	Hot Raffinate E. Tank Room	✓		✓		No		3/30/76
	Hot Raffinate W. Tank Room	✓		✓		No		3/30/76
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		No		3/30/76
	Cold Side Ore Pit	✓		—		No		3/31/76
	Hot Side Ore Pit	✓		✓		No		3/30/76
No Number	N. W. Digestion Storage Pad	—		✓		No		visibly inspected
G2E-140-3	NFS Pump House	✓		✓		No		3/26/76
G3E-419	Front – Hot Raffinate Bldg.	NO		NO		No		Pump out of Service 3/30/76

Steam ejector

162

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

269

Date: MARCH '76

NOTE: Inspections are to be made twice each shift.

Name: E. M. NUTTER Shift: _____ Time [1ST INSPECTION] [2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion	✓		✓		No		
F1-37	East Cold Side Digestion	✓		✓		No		
F1-38	West Hot Side Digestion	✓		✓		No		
F1-35	East Hot Side Digestion	✓		✓		No		
G2E-50	Metal Dissolver Building	✓		✓		No		
No. Number	Metal Dissolver Pad	✓		✓		No		
20-A-1	5A & 5B Area Pad	✓		✓		No		
G2E-16	Slop Tank Area Pad	✓		✓		No		
G1-2N-85017	A, B & C Area Pad	✓		✓		No		
G1-540	512 Area Pad	✓				No		STEAM EDUCTOR
No Number	West Cold Side Extraction	✓		✓		No		
F1-104	East Cold Side Extraction	✓		✓		No		
No Number	West Hot Side Extraction	✓		✓		No		
F1-102	Center Hot Side Extraction	✓		✓		No		
F1-514	East Hot Side Extraction	✓		✓		No		
F3E-222	S. E. End Denitration	✓		✓		YES		
F1-220	S. W. End Denitration	✓		✓		No		
F3E-223	N. E. End Denitration	✓		✓		No		
F1-221	N. W. End Denitration	✓		✓		No		
G3E-282	N. E. Pad – Denitration	✓		✓		YES		
	S. E. Pad – Denitration			✓		NO		AUTO SUBMERSIBLE PUMP
G3E-244	OK Liquor Pit	✓				N/O		
G18E-7	1st Floor Refinery Sump	✓		✓		No		SURROUNDING FLOOR NOT FLOODED
Steam Educt.	W. Pad Refinery Sump	✓		✓		No		
G2E-610	E. Pad Refinery Sump	✓		NO		NO		FLOAT REPAIRED. SOON AFTER CHECK
G3-24	West Pad – N.A.R.	✓		✓		YES		
G3-64	East Pad – N.A.R.	✓		✓		YES		
F3E-224	E. Pad Combined Raffinate	✓		✓		No		
F3E-225	W. Pad Combined Raffinate	✓		✓		No		
14-4A-0-6	Harshaw Tower Pad							OUT OF SERVICE
G1-325	Hot Raffinate E. Tank Room	✓		✓		No		
	Hot Raffinate W. Tank Room	✓		✓		NO		
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		NO		
	Cold Side Ore Pit	✓				N/O		MANUAL STEAM EDUCTOR
	Hot Side Ore Pit	✓		✓		N/O		STEAM EDUCTOR
No Number	N. W. Digestion Storage Pad			✓		NO		NOT FLOODED
G2E-140-3	NFS Pump House	✓		✓		N/O		
G3E-419	Front – Hot Raffinate Bldg.	N/O		N/O		N/O		PUMP OUT FOR REPAIRS. PUMPS & STEAM EDUCTOR

163

July 1, 1976

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

J. F. Schiltz

E. M. Nutter

The quarterly inspection and leak check of sumps in the Refinery area were completed on June 30, 1976. To effect a good leak check the sumps and adjacent floor or pad were flooded. Leaks were indicated at two sump locations as follows:

1. N.E. Pad - Denitration - Leakage through cracks in the concrete pad in the area west of the sump was noted. Repairs requested on Job Order Request dated 5/26/76.

2. East Pad - N.A.R. - Small leak was noted when sump and surrounding pad area were flooded. Could not specifically locate the leak. Repairs are requested on Job Order K-1251 dated 4/1/76.

Since the last quarterly inspection a new pump has been installed at the sump outside the Hot Raffinate building and the pumps at both the east and west pads at the Refinery Sump were removed and repaired.

As a result of this inspection Minor Work Requests have been issued for the repair of the pump switch at sump in slop tank pit area and the replacement of some acid brick in the trench near sump on east Refinery Sump pad.

The inspection sheet with comments is attached.

Original Signed By
E. M. NUTTER

E. M. Nutter

EMN/dfm

cc: W. J. Adams
Refinery Files

[redacted] FOREMEN SUMP CHECK for MAY 1976 269

File

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 5-29-76

Name: R M Johnson Shift: 2 Time [1ST INSPECTION] [2ND INSPECTI

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion	✓		✓				
F1-37	East Cold Side Digestion	✓		✓				
F1-38	West Hot Side Digestion	✓		✓				
F1-35	East Hot Side Digestion	✓		✓				
G2E-50	Metal Dissolver Building	✓		✓				
No. Number	Metal Dissolver Pad	✓		✓				
20-A-1	5A & 5B Area Pad	✓		✓				
G2E-16	Slop Tank Area Pad	✓		✓				
G1-2N-85017	A, B & C Area Pad	✓		✓				
G1-540	512 Area Pad	✓		✓				
No Number	West Cold Side Extraction	✓		✓				
F1-104	East Cold Side Extraction	✓		✓				
No Number	West Hot Side Extraction	✓		✓				
F1-102	Center Hot Side Extraction	✓		✓				
F1-514	East Hot Side Extraction	✓		✓				
F3E-222	S. E. End Denitration	✓		✓				
F1-220	S. W. End Denitration	✓		✓				
F3E-223	N. E. End Denitration	✓		✓				
F1-221	N. W. End Denitration	✓		✓				
G3E-282	N. E. Pad – Denitration	✓		✓				
	S. E. Pad – Denitration			✓				Automatic sump pump.
G3E-244	OK Liquor Pit	✓						Hand only
G18E-7	1st Floor Refinery Sump	✓		✓				
Steam Educt.	W. Pad Refinery Sump	✓		✓				
G2E-610	E. Pad Refinery Sump	✓		✓				Pump Noisy ✓ [illegible]
G3-24	West Pad – N.A.R.	✓		✓				
G3-64	East Pad – N.A.R.	✓		✓				
F3E-224	E. Pad Combined Raffinate	✓		✓				
F3E-225	W. Pad Combined Raffinate	✓		✓				
14-4A-0-6	Harshaw Tower Pad	—	—	—				
G1-325	Hot Raffinate E. Tank Room	✓		✓				
	Hot Raffinate W. Tank Room	✓		✓				
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓				
	Cold Side Ore Pit	✓						Manual only
	Hot Side Ore Pit	✓		✓				Steam Eductor
No Number	N. W. Digestion Storage Pad	✓		✓				
G2E-140-3	NFS Pump House	✓		✓				
G3E-419	Front – Hot Raffinate Bldg.							Pump out for maint. Portab[illegible] [illegible] in sump.

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

269

Date: June 1976

Name: _____ Shift: _____ Time [1ST INSPECTION | 2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion	✓		✓		No		6/28
F1-37	East Cold Side Digestion	✓		✓		No		6/28
F1-38	West Hot Side Digestion	✓		✓		No		6/28
F1-35	East Hot Side Digestion	✓		✓		No		6/28
G2E-50	Metal Dissolver Building	✓		✓		No		6/14
No. Number	Metal Dissolver Pad	✓		✓		No		6/14
20-A-1	5A & 5B Area Pad	✓		✓		No		6/14
G2E-16	Slop Tank Area Pad	✓		✓		No		6/8 - switch bad
G1-2N-85017A, B & C	Area Pad	✓		✓		No		6/14. Pump kicked out - noisy
G1-540	512 Area Pad	✓		—		No		6/14 partially filled pit
No Number	West Cold Side Extraction	✓		✓		No		6/28
F1-104	East Cold Side Extraction	✓		✓		No		6/28
No Number	West Hot Side Extraction	✓		✓		No		6/28
F1-102	Center Hot Side Extraction	✓		✓		No		6/28
F1-514	East Hot Side Extraction	✓		✓		No		6/28
F3E-222	S. E. End Denitration	✓		✓		No		6/14
F1-220	S. W. End Denitration	✓		✓		No		6/28
F3E-223	N. E. End Denitration	✓		✓		No		6/28
F1-221	N. W. End Denitration	✓		✓		No		6/28
G3E-282	N. E. Pad – Denitration	✓		✓		YES		6/18 Leaks in pad cracks
	S. E. Pad – Denitration			✓		No		Submersible pump
G3E-244	OK Liquor Pit	✓		—		No		6/14
G18E-7	1st Floor Refinery Sump	✓		✓		No		6/22
Steam Educt.	W. Pad Refinery Sump	✓		✓		No		6/22
G2E-610	E. Pad Refinery Sump	✓		✓		No		6/8 Brick loose S side of trench near sump.
G3-24	West Pad – N.A.R.	✓		✓		No		6/22 & 6/29
G3-64	East Pad – N.A.R.	✓		✓		Yes		6/22 Slight leak - ?
F3E-224	E. Pad Combined Raffinate	✓		✓		No		6/22
F3E-225	W. Pad Combined Raffinate	✓		✓		No		6/22
14-4A-0-6	Harshaw Tower Pad	—					—	—
G1-325	Hot Raffinate E. Tank Room	✓		✓		No		6/22
	Hot Raffinate W. Tank Room	✓		✓		No		6/22
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		No		6/22
	Cold Side Ore Pit	✓				No		6/22
	Hot Side Ore Pit	✓		✓		No		6/22
No Number	N. W. Digestion Storage Pad			✓		No		walls of pit check for cracks
G2E-140-3	NFS Pump House	✓		✓		No		6/14
G3E-419	Front – Hot Raffinate Bldg.	✓		✓		No		6/29

166

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

269

NOTE: Inspections are to be made twice each shift.

Date: JUNE 1976

Name: E. M. NUTTER Shift: _____ Time [1ST INSPECTION] [2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion	✓		✓		No		
F1-37	East Cold Side Digestion	✓		✓		No		
F1-38	West Hot Side Digestion	✓		✓		No		
F1-35	East Hot Side Digestion	✓		✓		No		
G2E-50	Metal Dissolver Building	✓		✓		No		
No. Number	Metal Dissolver Pad	✓		✓		No		
20-A-1	5A & 5B Area Pad	✓		✓		No		
G2E-16	Slop Tank Area Pad	✓		✓		No		SLITTY PAD
G1-2N-85017A, B & C Area Pad		✓		✓		No		PUMP NOISY
G1-540	512 Area Pad	✓		✓		No		
No Number	West Cold Side Extraction	✓		✓		No		
F1-104	East Cold Side Extraction	✓		✓		No		
No Number	West Hot Side Extraction	✓		✓		No		
F1-102	Center Hot Side Extraction	✓		✓		No		
F1-514	East Hot Side Extraction	✓		✓		No		
F3E-222	S. E. End Denitration	✓		✓		No		
F1-220	S. W. End Denitration	✓		✓		No		
F3E-223	N. E. End Denitration	✓		✓		No		
F1-221	N. W. End Denitration	✓		✓		No		
G3E-282	N. E. Pad – Denitration	✓		✓		YES		LEAKS AT [illegible]
	S. E. Pad – Denitration	–		✓		No		[illegible] PUMPS
G3E-244	OK Liquor Pit	✓		–		No		
G18E-7	1st Floor Refinery Sump	✓		✓		No		
Steam Educt.	W. Pad Refinery Sump	✓		✓		No		
G2E-610	E. Pad Refinery Sump	✓		✓		No		[illegible]
G3-24	West Pad – N.A.R.	✓		✓		No		
G3-64	East Pad – N.A.R.	✓		✓		YES		[illegible]
F3E-224	E. Pad Combined Raffinate	✓		✓		No		
F3E-225	W. Pad Combined Raffinate	✓		✓		No		
14-4A-0-6	Harshaw Tower Pad	–	–	–	–	–	–	OUT OF SERVICE
G1-325	Hot Raffinate E. Tank Room	✓		✓		No		
	Hot Raffinate W. Tank Room	✓		✓		No		
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		No		
	Cold Side Ore Pit	✓		–		No		
	Hot Side Ore Pit	✓		✓		No		
No Number	N. W. Digestion Storage Pad	–		✓		No		[illegible]
G2E-140-3	NFS Pump House					No		
G3E-419	Front – Hot Raffinate Bldg.	✓		✓		No		

167

NLO-PRO-2410 (3/19/73)

October 1, 1976

QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

J. F. Schiltz

E. M. Butter

The quarterly inspection and leak check of sumps in the Refinery Area were completed on September 30, 1976. Except as noted on the attached inspection sheet the sumps and adjacent floor and pad areas were flooded to effect a good leak check.

The only leak found was in the sump at the west end of the Combined Raffinate Area pad. The exact location of the small leak was not found but appears to be between the two top rows of acid brick which lines the sump and adjacent trench. A Job Order Request has been submitted for repairs.

During this quarter repairs were made at the following locations:

1. East Pad - N.A.R. - The area surrounding the sump was dug up and concrete and sealant were reinstalled.

2. West Pad - N.A.R. - Concrete and sealant were poured around the north and west sides of the sump.

3. Slop Pit Area - Repairs were made to the acid brick at the bases of the tanks and new sealant was poured on the top of the acid brick wall which surrounds the slop pit.

The inspection sheet with comments is attached.

E. M. Butter

EMB/dfm

cc: W. J. Adams
Refinery Files

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

269

Date: SEPTEMBER 1976

Name: E. M. NUTTER Shift: _____ Time _____ 1ST INSPECTION _____ 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion		✓		✓		NO	
F1-37	East Cold Side Digestion		✓		✓		NO	
F1-38	West Hot Side Digestion		✓		✓		NO	
F1-35	East Hot Side Digestion		✓		✓		NO	
G2E-50	Metal Dissolver Building		✓		✓		NO	
No. Number	Metal Dissolver Pad		✓		✓		NO	
20-A-1	5A & 5B Area Pad		✓		✓		NO	
G2E-16	Slop Tank Area Pad		✓		✓		NO	
G1-2N-85017A, B & C Area Pad			✓		✓		NO	
G1-540	512 Area Pad		✓				NO	[illegible] FLOODED.
No Number	West Cold Side Extraction		✓		✓		NO	
F1-104	East Cold Side Extraction		✓		✓		NO	
No Number	West Hot Side Extraction		✓		✓		NO	
F1-102	Center Hot Side Extraction		✓		✓		NO	
F1-514	East Hot Side Extraction		✓		✓		NO	
F3E-222	S. E. End Denitration		✓		✓		NO	
F1-220	S. W. End Denitration		✓		✓		NO	
F3E-223	N. E. End Denitration		✓		✓		NO	
F1-221	N. W. End Denitration		✓		✓		NO	
G3E-282	N. E. Pad – Denitration		✓		✓		NO	
	S. E. Pad – Denitration		–		–		NO	[illegible]
G3E-244	OK Liquor Pit		✓		–		NO	FLOODED
G18E-7	1st Floor Refinery Sump		✓		✓		NO	
Steam Educt.	W. Pad Refinery Sump		✓		✓		NO	
G2E-610	E. Pad Refinery Sump		✓		✓		NO	
G3-24	West Pad – N.A.R.		✓		✓		NO	
G3-64	East Pad – N.A.R.		✓		✓		NO	
F3E-224	E. Pad Combined Raffinate		✓		✓		NO	
F3E-225	W. Pad Combined Raffinate		✓		✓		NO	
14-4A-0-6	Harshaw Tower Pad		–		–		–	
G1-325	Hot Raffinate E. Tank Room				✓		NO	
	Hot Raffinate W. Tank Room		✓		✓		NO	
G1-307	Hot Raffinate – Center Room 1st. Fl.		✓		✓		NO	
	Cold Side Ore Pit		✓		–			
	Hot Side Ore Pit				✓			
No Number	N. W. Digestion Storage Pad		✓		✓			
G2E-140-3	NFS Pump House				✓			
G3E-419	Front – Hot Raffinate Bldg.		✓		✓		NO	

169

269 file

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 9-28-76

Name: _____ Shift: _____ Time [1ST INSPECTION] [2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	–						Cleaned 9-30-76 EJ
F1-37	East Cold Side Digestion							Cleaned 9-28-76 EJ
F1-38	West Hot Side Digestion							Cleaned 9-29-76 EJ
F1-35	East Hot Side Digestion	–						Cleaned 9-30-76 EJ
G2E-50	Metal Dissolver Building	–						Cleaned 9/30/76 [illegible]
No. Number	Metal Dissolver Pad	–						Cleaned 9-30-76 EJ
20-A-1	5A & 5B Area Pad							Cleaned 9/29/76 [illegible]
G2E-16	Slop Tank Area Pad							Cleaned 9/29/76 [illegible]
G1-2N-85017	A, B & C Area Pad							Cleaned 9/29/76 [illegible]
G1-540	512 Area Pad	–						
No Number	West Cold Side Extraction							Cleaned 9-29-76 EJ
F1-104	East Cold Side Extraction							Cleaned 9/29/76 [illegible]
No Number	West Hot Side Extraction							Cleaned 9/29/76 [illegible]
F1-102	Center Hot Side Extraction							Cleaned 9/29/76 [illegible]
F1-514	East Hot Side Extraction							Cleaned 9/29/76 [illegible]
F3E-222	S. E. End Denitration							Cleaned 9/28/76 [illegible]
F1-220	S. W. End Denitration							Cleaned 9/29/76 [illegible]
F3E-223	N. E. End Denitration							Cleaned 9/29/76 [illegible]
F1-221	N. W. End Denitration							Cleaned 9/29/76 [illegible]
G3E-282	N. E. Pad – Denitration							Cleaned 9/28/76 [illegible]
	S. E. Pad – Denitration							Cleaned 9/28/76 [illegible]
G3E-244	OK Liquor Pit							Cleaned 9/29/76 [illegible]
G18E-7	1st Floor Refinery Sump							Cleaned 9/29/76 [illegible]
Steam Educt.	W. Pad Refinery Sump							Cleaned 9/29/76 [illegible]
G2E-610	E. Pad Refinery Sump							Cleaned 9/29/76
G3-24	West Pad – N.A.R.	–						Cleaned 9/29/76 HC
G3-64	East Pad – N.A.R.	–						Cleaned 9/29/76 HC
F3E-224	E. Pad Combined Raffinate							Cleaned 9/28/76 [illegible]
F3E-225	W. Pad Combined Raffinate							Cleaned 9/28/76 [illegible]
14-4A-0-6	Harshaw Tower Pad							[illegible]
G1-325	Hot Raffinate E. Tank Room							cleaned 9-30-76 [illegible]
	Hot Raffinate W. Tank Room							cleaned 9-30-76 [illegible]
G1-307	Hot Raffinate – Center Room 1st. Fl.							Cleaned 9/29/76 HC
	Cold Side Ore Pit	–						Cleaned 9/29/76 [illegible]
	Hot Side Ore Pit	–						Cleaned 9/29/76 [illegible]
No Number	N. W. Digestion Storage Pad							Cleaned 9/[illegible]
G2E-140-3	NFS Pump House							Clean 9/[illegible]
G3E-419	Front – Hot Raffinate Bldg.							Cleaned 9/[illegible]

170

File

269

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: Sept. 76

Name: E M NUTTER Shift: _____ Time _____ 1ST INSPECTION _____ 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion		✓		✓		No	9/29
F1-37	East Cold Side Digestion		✓		✓		No	9/29
F1-38	West Hot Side Digestion		✓		✓		No	9/29
F1-35	East Hot Side Digestion		✓		✓		No	9/29
G2E-50	Metal Dissolver Building		✓		✓		No	9/21/76
No. Number	Metal Dissolver Pad		✓		✓		No	9/9/76
20-A-1	SA & SB Area Pad		✓		✓		No	9/9/76
G2E-16	Slop Tank Area Pad		✓		✓		No	9/21/76
G1-2N-85017A, B & C Area Pad			✓		✓		No	9/9/76
G1-540	512 Area Pad		✓				No	9/10/76 Partially flooded
No Number	West Cold Side Extraction		✓		✓		No	9/29 Pumps very slowly
F1-104	East Cold Side Extraction		✓		✓		No	9/29
No Number	West Hot Side Extraction		✓		✓		No	9/29
F1-102	Center Hot Side Extraction		✓		✓		No	9/29
F1-514	East Hot Side Extraction		✓		✓		No	9/29
F3E-222	S. E. End Denitration		✓		✓		No	9/23/76
F1-220	S. W. End Denitration		✓		✓		No	9/23/76
F3E-223	N. E. End Denitration		✓		✓		No	
F1-221	N. W. End Denitration		✓		✓		No	9/29
G3E-282	N. E. Pad – Denitration		✓		✓		No	9/10/76
	S. E. Pad – Denitration		—		—		No	No pump
G3E-244	OK Liquor Pit		✓				No	
G18E-7	1st Floor Refinery Sump		✓		✓		No	9/9/76
Steam Educt.	W. Pad Refinery Sump		✓		✓		No	9/6/76
G2E-610	E. Pad Refinery Sump		✓		✓		No	9/6/76
G3-24	West Pad – N.A.R.		✓		✓		No	9/22/76
G3-64	East Pad – N.A.R.		✓		✓		No	9/22/76
F3E-224	E. Pad Combined Raffinate		✓		✓		No	9/21/76
F3E-225	W. Pad Combined Raffinate		✓		✓	YES		9/21/76
14-4A-0-6	Harshaw Tower Pad		—		—			—
G1-325	Hot Raffinate E. Tank Room		✓		✓		No	9/20/76
	Hot Raffinate W. Tank Room		✓		✓		No	9/20/76
G1-307	Hot Raffinate – Center Room 1st. Fl.		✓		✓		No	9/20/76
	Cold Side Ore Pit		✓				No	9/20/76
	Hot Side Ore Pit		✓		✓		No	9/2
No Number	N. W. Digestion Storage Pad				✓		N	9/29 Disaster cleanup [illegible] pit
G2E-140-3	NFS Pump House		✓		✓		No	9/20/76
G3E-419	Front – Hot Raffinate Bldg.		✓		✓		No	9/20/76

171

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 10-27-76

Name: D. Eschenbrenner Shift: Night Time: 0100 (1ST INSPECTION) | (2ND INSPECTION)

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion			✓				
F1-37	East Cold Side Digestion			✓				
F1-38	West Hot Side Digestion			✓				
F1-35	East Hot Side Digestion			✓				
G2E-50	Metal Dissolver Building			✓				
No. Number	Metal Dissolver Pad			✓				Lava stuck
20-A-1	5A & 5B Area Pad			✓				
G2E-16	Slop Tank Area Pad			✓				
G1-2N-85017	A, B & C Area Pad			✓				
G1-540	512 Area Pad	✓						
No Number	West Cold Side Extraction			✓				
F1-104	East Cold Side Extraction			✓				
No Number	West Hot Side Extraction			✓				
F1-102	Center Hot Side Extraction			✓				
F1-514	East Hot Side Extraction			✓				
F3E-222	S. E. End Denitration			✓				
F1-220	S. W. End Denitration			✓				
F3E-223	N. E. End Denitration			✓				
F1-221	N. W. End Denitration			✓				
G3E-282	N. E. Pad – Denitration			✓				
	S. E. Pad – Denitration no pump							
G3E-244	OK Liquor Pit	✓						
G18E-7	1st Floor Refinery Sump			✓				
Steam Educt.	W. Pad Refinery Sump			✓				
G2E-610	E. Pad Refinery Sump			✓				
G3-24	West Pad – N.A.R.			✓				
G3-64	East Pad – N.A.R.			✓				
F3E-224	E. Pad Combined Raffinate			✓				
F3E-225	W. Pad Combined Raffinate			✓				
14-4A-0-6	Harshaw Tower Pad out of service							
G1-325	Hot Raffinate E. Tank Room			✓				
	Hot Raffinate W. Tank Room			✓				
G1-307	Hot Raffinate – Center Room 1st. Fl.			✓				
	Cold Side Ore Pit Sediment ✓							
	Hot Side Ore Pit			✓				
No Number	N. W. Digestion Storage Pad			✓				
G2E-140-3	NFS Pump House			✓				
G3E-419	Front – Hot Raffinate Bldg.			✓				

Sump Clean out.

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

269

Date: December 1976

Name: _____ Shift: _____ Time _____ 1ST INSPECTION _____ 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS OK	LEAKS NO	REMARKS
F1-36	West Cold Side Digestion					✓		Cleaned 12 28 76 K.L
F1-37	East Cold Side Digestion					✓		Cleaned 12-27-76 KL
F1-38	West Hot Side Digestion					✓		Cleaned 12-29-76 way
F1-35	East Hot Side Digestion					✓		Cleaned 12-28-76 way
G2E-50	Metal Dissolver Building					✓		Cleaned 12/30/76
No. Number	Metal Dissolver Pad					✓		
20-A-1	5A & 5B Area Pad					✓		
G2E-16	Slop Tank Area Pad					✓		
G1-2N-85017A, B & C Area Pad						✓		
G1-540	512 Area Pad					✓		
No Number	West Cold Side Extraction					✓		Cleaned 12/28/76
F1-104	East Cold Side Extraction					✓		Cleaned 12/28/76
No Number	West Hot Side Extraction					✓		Cleaned 12/28/76
F1-102	Center Hot Side Extraction					✓		Cleaned 12/28/76
F1-514	East Hot Side Extraction					✓		Cleaned 12/28/76
F3E-222	S. E. End Denitration					✓		Cleaned 12-28-76 way
F1-220	S. W. End Denitration					✓		Cleaned 12/28/76
F3E-223	N. E. End Denitration					✓		Cleaned 12/28/76
F1-221	N. W. End Denitration					✓		Cleaned 12-28-76 KL
G3E-282	N. E. Pad – Denitration					✓		
	S. E. Pad – Denitration					✓		
G3E-244	OK Liquor Pit					✓		
G18E-7	1st Floor Refinery Sump					✓		Cleaned 12-29-76 way
Steam Educt.	N. Pad Refinery Sump					✓		
G2E-610	E. Pad Refinery Sump					✓		
G3-24	West Pad – N.A.R.					✓		
G3-64	East Pad – N.A.R.					✓		
F3E-224	E. Pad Combined Raffinate					✓		
F3E-225	W. Pad Combined Raffinate						✓	
14-4A-0-6	Harshaw Tower Pad							
G1-325	Hot Raffinate E. Tank Room					✓		Cleaned 12/29/76
	Hot Raffinate W. Tank Room					✓		Cleaned 12/29/76 way
G1-307	Hot Raffinate – Center Room 1st. Fl.					✓		Cleaned 12-28-76
	Cold Side Ore Pit					✓		
	Hot Side Ore Pit					✓		Cleaned 12-28-76 KL
No Number	N. W. Digestion Storage Pad					✓		
G2E-140-3	NFS Pump House					✓		Cleaned 12-29-76 way
G3E-419	Front – Hot Raffinate Bldg.					✓		

SUMPS NOT CLEANED WHERE CHECKED – NO BUILD-UP

173

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

269

Date: 1-31-77

NOTE: Inspections are to be made twice each shift.

Name: 874 Shift: 1st Time 10 0%A (1ST INSPECTION) 2 00%P (2ND INSPECTION)

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion			✓	✓			
F1-37	East Cold Side Digestion			✓	✓			
F1-38	West Hot Side Digestion			✓	✓			
F1-35	East Hot Side Digestion			✓	✓			
G2E-50	Metal Dissolver Building			✓	✓			
No Number	Metal Dissolver Pad							Frozen
20-A-1	5A & 5B Area Pad							Frozen
G2E-16	Slop Tank Area Pad							Frozen
G1-2N-85017	A, B & C Area Pad							Frozen
G1-540	512 Area Pad							Frozen
No Number	West Cold Side Extraction			✓	✓			
F1-104	East Cold Side Extraction			✓	✓			
No Number	West Hot Side Extraction			✓	✓			
F1-102	Center Hot Side Extraction			✓	✓			
F1-514	East Hot Side Extraction			✓	✓			
F3E-222	S. E. End Denitration			✓	✓			
F1-220	S. W. End Denitration			✓	✓			
F3E-223	N. E. End Denitration			✓	✓			
F1-221	N. W. End Denitration			✓	✓			
G3E-282	N. E. Pad – Denitration							Frozen
	S. E. Pad – Denitration							
G3E-244	OK Liquor Pit	✓	✓					Pumpworks – line froze
G18E-7	1st Floor Refinery Sump	✓	✓					Steam eductor
Steam Educt.	W. Pad Refinery Sump			✓	✓			
G2E-610	E. Pad Refinery Sump	✓	✓					Frozen
G3-24	West Pad – N.A.R.			✓	✓			
G3-64	East Pad – N.A.R.			✓	✓			
F3E-224	E. Pad Combined Raffinate			✓	✓			
F3E-225	W. Pad Combined Raffinate							Frozen
14-4A-0-6	Harshaw Tower Pad							out of service
G1-325	Hot Raffinate E. Tank Room			✓	✓			
	Hot Raffinate W. Tank Room			✓	✓			
G1-307	Hot Raffinate – Center Room 1st. Fl.			✓	✓			
	Cold Side Ore Pit	✓	✓					
	Hot Side Ore Pit	✓	✓					
No Number	N. W. Digestion Storage Pad			✓	✓			
G2E-140-3	NFS Pump House			✓	✓			
G3E-419	Front – Hot Raffinate Bldg.			✓	✓			

174

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 1-31-72

Name: R Hinkle Shift: 2nd Time: 6:PM (1ST INSPECTION) | 10:PM (2ND INSPECTION)

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion			✓	✓			
F1-37	East Cold Side Digestion			✓	✓			
F1-38	West Hot Side Digestion			✓	✓			
F1-35	East Hot Side Digestion			✓	✓			
G2E-50	Metal Dissolver Building			✓	✓			
No. Number	Metal Dissolver Pad			—	—			FROZE
20-A-1	5A & 5B Area Pad			—	—			FROZE
G2E-16	Slop Tank Area Pad			—	—			FROZE
G1-2N-85017A, B & C	Area Pad			—	—			FROZE
G1-540	512 Area Pad			—	—			FROZE
No Number	West Cold Side Extraction			✓	✓			
F1-104	East Cold Side Extraction			✓	✓			
No Number	West Hot Side Extraction			✓	✓			
F1-102	Center Hot Side Extraction			✓	✓			
F1-514	East Hot Side Extraction			✓	✓			
F3E-222	S. E. End Denitration			✓	✓			
F1-220	S. W. End Denitration			✓	✓			
F3E-223	N. E. End Denitration			✓	✓			
F1-221	N. W. End Denitration			✓	✓			
G3E-282	N. E. Pad – Denitration			—	—			FROZE
	S. E. Pad – Denitration			—	—			
G3E-244	OK Liquor Pit	✓	✓					
G18E-7	1st Floor Refinery Sump			✓	✓			
Steam Educt.	W. Pad Refinery Sump			✓	✓			
G2E-610	E. Pad Refinery Sump			—	—			FROZE Steam eductor
G3-24	West Pad – N.A.R.			✓	✓			
G3-64	East Pad – N.A.R.			✓	✓			
F3E-224	E. Pad Combined Raffinate			✓	✓			
F3E-225	W. Pad Combined Raffinate			—	—			FROZE
14-4A-0-6	Harshaw Tower Pad	—	—	—	—			
G1-325	Hot Raffinate E. Tank Room			✓	✓			
	Hot Raffinate W. Tank Room			✓	✓			
G1-307	Hot Raffinate – Center Room 1st. Fl.			✓	✓			
	Cold Side Ore Pit	✓	✓					
	Hot Side Ore Pit	✓	✓					
No Number	N. W. Digestion Storage Pad			—	—			FROZE
G2E-140-3	NFS Pump House			✓	✓			
G3E-419	Front – Hot Raffinate Bldg.			✓	✓			

175

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

269

Date: 2-1-77

NOTE: Inspections are to be made twice each shift.

Name: B Gehle Shift: 3rd Time 03⁰⁰ (1ST INSPECTION) 0615 (2ND INSPECTION)

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion			✓	✓			
F1-37	East Cold Side Digestion			✓	✓			
F1-38	West Hot Side Digestion			✓	✓			
F1-35	East Hot Side Digestion			✓	✓			
G2E-50	Metal Dissolver Building			✓	✓			
No Number	Metal Dissolver Pad			—	—			frozen
20-A-1	5A & 5B Area Pad			—	—			"
G2E-16	Slop Tank Area Pad			✓	✓			✓
G1-2N-85017	A, B & C Area Pad			—	—			"
G1-540	512 Area Pad			—	—			"
No Number	West Cold Side Extraction			✓	✓			
F1-104	East Cold Side Extraction			✓	✓			
No Number	West Hot Side Extraction			✓	✓			
F1-102	Center Hot Side Extraction			✓	✓			
F1-514	East Hot Side Extraction			✓	✓			
F3E-222	S. E. End Denitration			✓	✓			
F1-220	S. W. End Denitration			✓	✓			
F3E-223	N. E. End Denitration			✓	✓			
F1-221	N. W. End Denitration			✓	✓			
G3E-282	N. E. Pad – Denitration			✓	✓			Pumps – flood frozen
	S. E. Pad – Denitration			—	—			Pump out
G3E-244	OK Liquor Pit	—	—					Pump works – line frozen
G18E-7	1st Floor Refinery Sump	✓	✓					Steam educt.
Steam Educt.	W. Pad Refinery Sump			✓	✓			
G2E-610	E. Pad Refinery Sump	—	–					frozen – eductor not working
G3-24	West Pad – N.A.R.			✓	✓			
G3-64	East Pad – N.A.R.			✓	✓			
F3E-224	E. Pad Combined Raffinate			✓	✓			
F3E-225	W. Pad Combined Raffinate			—	—			frozen
14-4A-0-6	Harshaw Tower Pad			—	—			out
G1-325	Hot Raffinate E. Tank Room			✓	✓			
	Hot Raffinate W. Tank Room			✓	✓			
G1-307	Hot Raffinate – Center Room 1st. Fl.			✓	✓			
	Cold Side Ore Pit	✓	✓					
	Hot Side Ore Pit	—	—					frozen
No Number	N. W. Digestion Storage Pad			✓	✓			
G2E-140-3	NFS Pump House			✓	✓			
G3E-419	Front – Hot Raffinate Bldg.			✓	✓			

176

NLO-PRO-2410 (3/19/73)

B 3/24

NATIONAL LEAD COMPANY OF OHIO

269

CINCINNATI, OHIO 45239

March 24, 1977

SUBJECT QUARTERLY INSPECTION OF REFINERY FLOOR AND PAD SUMPS

TO J. E. Beckelheimer

FROM P. D. Ball

REFERENCE

The quarterly inspection and leak check of sumps in the Refinery Area was completed on March 23, 1977. Except as noted on attached inspection sheet the sumps and adjacent floor and pad areas were flooded to insure a good leak check. Leaks were indicated at the following sump locations:

1. SE sump in Denitration - Leakage around the top lip of the stainless steel liner

2. NE pad - Denitration - Small leakage when flooded. Suspect leaking at cracks which were previously repaired.

3. Curb at Metal Dissolver pad is cracked and needs repair.

A Job Order Request has been submitted for the above repairs.

During this quarter repairs were made at the following locations:

1. Slop Pit Area - Hole filled in and sealant poured in east side of sump. Only temporary repair. When flooded, did not leak.

2. Small section of floor near the NW sump in Denitration.

The inspection sheet with comments is attached.

P. D. Ball

P. D. Ball

PDB/dfm

cc: W. Adams
J. Schiltz
Refinery Files

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: March 24 1977

Name: _____ Shift: _____ Time _____ 1ST INSPECTION _____ 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion		✓		✓			
F1-37	East Cold Side Digestion		✓		✓			
F1-38	West Hot Side Digestion		✓		✓			
F1-35	East Hot Side Digestion		✓		✓			
G2E-50	Metal Dissolver Building		✓		✓			
No. Number	Metal Dissolver Pad		✓		✓			curb needs repaired
20-A-1	5A & 5B Area Pad		✓		✓			
G2E-16	Slop Tank Area Pad		✓		✓			
G1-2N-85017	A, B & C Area Pad		✓		✓			
G1-540	512 Area Pad		✓		✓			steam eductor Manually
No Number	West Cold Side Extraction		✓		✓			
F1-104	East Cold Side Extraction		✓		✓			
No Number	West Hot Side Extraction		✓		✓			
F1-102	Center Hot Side Extraction		✓		✓			
F1-514	East Hot Side Extraction		✓		✓			
F3E-222	S. E. End Denitration		✓		✓			leaks
F1-220	S. W. End Denitration		✓		✓			
F3E-223	N. E. End Denitration		✓		✓			
F1-221	N. W. End Denitration		✓		✓			
G3E-282	N. E. Pad – Denitration		✓		✓			
	S. E. Pad – Denitration		–					Small pump out for repairs
G3E-244	OK Liquor Pit		✓		✓			Partially flooded
G18E-7	1st Floor Refinery Sump		✓		✓			
Steam Educt.	W. Pad Refinery Sump		✓		✓			
G2E-610	E. Pad Refinery Sump		✓		✓			
G3-24	West Pad – N.A.R.		✓		✓			
G3-64	East Pad – N.A.R.		✓		✓			
F3E-224	E. Pad Combined Raffinate		✓		✓			
F3E-225	W. Pad Combined Raffinate		✓		✓			
14-4A-0-6	Harshaw Tower Pad		–		–			
G1-325	Hot Raffinate E. Tank Room		✓		✓			
	Hot Raffinate W. Tank Room		✓		✓			
G1-307	Hot Raffinate – Center Room 1st. Fl.		✓		✓			
	Cold Side Ore Pit		✓		–			Steam eductor
	Hot Side Ore Pit		✓		✓			steam eductor with switch
No Number	N. W. Digestion Storage Pad		✓		✓			
G2E-140-3	NFS Pump House		✓		✓			
G3E-419	Front – Hot Raffinate Bldg.		✓		✓			

Sump Cleanout

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

269

Date: _____

NOTE: Inspections are to be made twice each shift.

Name: _____ Shift: _____ Time [1ST INSPECTION] [2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion							Cleaned 3-18-77 DE
F1-37	East Cold Side Digestion							Cleaned 3/15/77 DE
F1-38	West Hot Side Digestion							Cleaned 3/14/77 EJ
F1-35	East Hot Side Digestion							~~Cleaned 3/15/77 DE~~
G2E-50	Metal Dissolver Building							Cleaned 3-15-77 DE
No. Number	Metal Dissolver Pad							Cleaned 3/10/77 EJ
20-A-1	5A & 5B Area Pad							Cleaned 3/16/77 EJ
G2E-16	Slop Tank Area Pad							Cleaned 3/14/77 EJ
G1-2N-85017A, B & C Area Pad								Cleaned 3/16/77 E.S
G1-540	512 Area Pad							Cleaned 3-17-77 DE
No Number	West Cold Side Extraction							Cleaned 3-15-77 DE
F1-104	East Cold Side Extraction							CLEANED 3/14/77 EJ
No Number	West Hot Side Extraction							Cleaned 3-15-77 DE
F1-102	Center Hot Side Extraction							Cleaned 3-15-77 DE
F1-514	East Hot Side Extraction							Cleaned 3-15-77 DE
F3E-222	S. E. End Denitration							Cleaned 3-15-77 DE
F1-220	S. W. End Denitration							Cleaned 3-16-77 - DE
F3E-223	N. E. End Denitration							Cleaned 3-16-77 DE
F1-221	N. W. End Denitration							Cleaned 3-16-77 DE
G3E-282	N. E. Pad – Denitration							Cleaned 3/16/77 EJ
	S. E. Pad – Denitration							
G3E-244	OK Liquor Pit							Cleaned 3-15-77 EJ
G18E-7	1st Floor Refinery Sump							Cleaned 3-17-77 DE
Steam Educt.	W. Pad Refinery Sump							Cleaned 3-17-77 DE
G2E-610	E. Pad Refinery Sump							Cleaned 3-17-77 DE
G3-24	West Pad – N.A.R.							Cleaned 3/15/77 WAY
G3-64	East Pad – N.A.R.							Cleaned 3/15/77 WAY
F3E-224	E. Pad Combined Raffinate							Cleaned 3-16-77 DE
F3E-225	W. Pad Combined Raffinate							Cleaned 3/15/77 EJ
14-4A-0-6	Harshaw Tower Pad							
G1-325	Hot Raffinate E. Tank Room							Cleaned 3-17-77 DE
	Hot Raffinate W. Tank Room							Cleaned 3-16-77 DE
G1-307	Hot Raffinate – Center Room 1st. Fl.							Cleaned 3-16-77 DE
	Cold Side Ore Pit							Cleaned 3/16/77 EJ
	Hot Side Ore Pit							Cleaned 3-7-77 EJ
No Number	N. W. Digestion Storage Pad							CLEANED 3-10-77 EJ
G2E-140-3	NFS Pump House							Cleaned 3-17-77 DE
G3E-419	Front – Hot Raffinate Bldg.							Cleaned 3-17-77 DE

179

3/18/77

Physical Inspection of Refinery Sump

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 3/18/77 269

Name: William A. Yeh Shift: Day Time [ ] 1ST INSPECTION [ ] 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	OK		OK				
F1-37	East Cold Side Digestion	OK		OK				
F1-38	West Hot Side Digestion	OK		OK				
F1-35	East Hot Side Digestion	OK		OK				
G2E-50	Metal Dissolver Building	OK		OK				
No. Number	Metal Dissolver Pad	OK		OK				
20-A-1	5A & 5B Area Pad	OK		OK				
G2E-16	Slop Tank Area Pad	OK		OK				
G1-2N-85017	A, B & C Area Pad	OK		OK				
G1-540	512 Area Pad	OK		—				
No Number	West Cold Side Extraction	OK		OK				
F1-104	East Cold Side Extraction	OK		OK				
No Number	West Hot Side Extraction	OK		OK				
F1-102	Center Hot Side Extraction	OK		OK				
F1-514	East Hot Side Extraction	OK		OK				
F3E-222	S. E. End Denitration	OK		OK				
F1-220	S. W. End Denitration	OK		OK				
F3E-223	N. E. End Denitration	OK		OK				DISCHG. VALVE LEAKS MWR in
F1-221	N. W. End Denitration	OK		OK				
G3E-282	N. E. Pad – Denitration	OK		OK				
	S. E. Pad – Denitration							
G3E-244	OK Liquor Pit	OK		—				
G18E-7	1st Floor Refinery Sump							USING STEAM EDUCTOR
Steam Educt.	W. Pad Refinery Sump	OK		OK				
G2E-610	E. Pad Refinery Sump	OK		OK				
G3-24	West Pad – N.A.R.	OK		OK				
G3-64	East Pad – N.A.R.	OK		OK				
F3E-224	E. Pad Combined Raffinate	OK		OK				
F3E-225	W. Pad Combined Raffinate	OK		*				* BELT OUT OF AUTO CONTROL ARM – MWR in
14-4A-0-6	Harshaw Tower Pad							OUT OF SERVICE
G1-325	Hot Raffinate E. Tank Room	OK		OK				
	Hot Raffinate W. Tank Room	OK		OK				
G1-307	Hot Raffinate – Center Room 1st. Fl.	OK		OK				
	Cold Side Ore Pit							USING STEAM EDUCTOR
	Hot Side Ore Pit	OK		OK				STEAM EDUCTOR
No Number	N. W. Digestion Storage Pad	OK		OK				
G2E-140-3	NFS Pump House	—		OK				
G3E-419	Front – Hot Raffinate Bldg.	OK		OK				

REFINERY SUMPS INSPECTION

August 5, 1977

	✓	✓	OK	
	✓	✓	OK	
	✓	✓	OK	steel Pumping
	✓	✓	OK	
	✓	✓	OK	
	✓	✓	OK	
	✓	✓	OK	
	✓	✓	OK	
	✓	✓	OK	
			OK	Steam Manual
	✓		OK	Float assembly OFF
	✓	✓	OK	
	✓	✓	OK	
	✓	✓	OK	
	✓	✓	OK	
	✓	✓	OK	
	✓	✓	OK	
		✓	OK	Will not work on Manual
			OK	Float off rod
	✓	✓		leaks out slowly
	✓		OK	operates manually
	✓	✓	OK	
	✓	✓	OK	
	✓	✓	OK	Pump noisy
	✓	✓	OK	
	✓	✓		leak - north side
	✓	✓	OK	
	✓	✓		leaks when flooded
				OUT OF SERVICE
	✓	✓	OK	Pump removed
	✓	✓	OK	Pump noisy
	✓	✓	OK	
			OK	Steam manual
	✓	✓	OK	Steam operated
	✓	✓	OK	
	✓	✓	OK	
	✓	✓	OK	

NATIONAL [illegible] COMPANY

REFINERY [illegible] INSPECTION REPORT

July 1977

Cleaned 8/3/77
Cleaned 8/3/77
Cleaned 8/3/77
Cleaned 8/3/77
Clean 7/12/77
Clean 8/2/77 PB
Clean 8/2 2nd C.S.
Clean 8/2/77 PB

Clean 7/14/77
Clean 7/14/77
Clean 8/3/77
Clean 7/13/77
Clean 7/13/77
Clean 7/14/77
Clean 7/14/77
Clean 7/14/77
Clean 8/1/77
Clean 8/2/77 PB

Cleaned 8/1/77 PB
Cleaned 8/3
Clean 8/3 PB
Cleaned 8/3/77

Clean 7/13/77
Clean 7/14/77
Clean 7/12/77
Clean 8/12/77
Clean 8/12/77
Clean 8/3/77
Clean 8/3/77
Clean 8/3/77
Clean 8/3/77
Clean 8/1/77 PB

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 9/30/81

Name: _____ Shift: _____ Time [1ST INSPECTION] [2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓				
F1-37	East Cold Side Digestion	✓		✓				
F1-38	West Hot Side Digestion	✓		✓				
F1-35	East Hot Side Digestion	✓		✓				
G2E-50	Metal Dissolver Building not done							
No Number	Metal Dissolver Pad	✓		✓				
20-A-1	5A & 5B Area Pad	✓		✓				
G2E-16	Slop Tank Area Pad	✓		✓				NEEDS HEAD GASKET REPLACED
G1-2N-85017A, B & C Area Pad		✓		✓				
G1-540	512 Area Pad not done							
No Number	West Cold Side Extraction	✓		✓				~~DOESNOT WORK~~
F1-104	East Cold Side Extraction	✓		✓				
No Number	West Hot Side Extraction	✓						DOESN'T WORK
F1-102	Center Hot Side Extraction	✓		✓				
F1-514	East Hot Side Extraction	✓						NEED SWITCH REPAIRED WON'T SHUT ON AUTO
F3E-222	S. E. End Denitration	✓		✓				PULLING OUT
F1-220	S. W. End Denitration	✓		✓				
F3E-223	N. E. End Denitration							~~PUMP~~ DOESNOT RUN
F1-221	N. W. End Denitration	✓		✓				
G3E-282	N. E. Pad – Denitration							
	S. E. Pad – Denitration							
G3E-244	OK Liquor Pit working on Foreline	✓						CLEANED
G18E-7	1st Floor Refinery Sump	✓						
Steam Educt.	W. Pad Refinery Sump	✓						
G2E-610	E. Pad Refinery Sump	✓						PUMP OUT FOR REPAIR
G3-24	West Pad – N.A.R.	✓		✓				
G3-64	East Pad – N.A.R.	✓		✓				
F3E-224	E. Pad Combined Raffinate							CANNOT CHECK - MASONS WORKING
F3E-225	W. Pad Combined Raffinate	✓		✓				
14-4A-0-6	Harshaw Tower Pad not done							
G1-325	Hot Raffinate E. Tank Room	✓		✓				
	Hot Raffinate W. Tank Room	✓		✓				
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓				
	Cold Side Ore Pit not done							
	Hot Side Ore Pit not done							
No Number	N. W. Digestion Storage Pad not done	✓		✓				CLEANED
G2E-140-3	NFS Pump House not done							
G3E-419	Front – Hot Raffinate Bldg.	✓		✓				

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: Nov 25, 1985

Name: Bowling & Fitzgerald Shift: 1st Time: 1ST INSPECTION | 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	O.K.		O.K.		No		
F1-37	East Cold Side Digestion	O.K.		O.K.		No		
F1-38	West Hot Side Digestion G1-66	C.K.		C.K.		No		
F1-35	East Hot Side Digestion G1-65	C.K.		O.K.		No		
G2E-50	Metal Dissolver Building	OK		OK		NO		
No. Number	Metal Dissolver Pad	OK		OK		NO		
20-A-1	5A & 5B Area Pad	OK		OK		NO		
G2E-16	Slop Tank Area Pad	OK		OK		NO		
G1-2N-85	017A, B & C Area Pad	—		—		—		out of service
G1-540	512 Area Pad	—		—		—		Steam educt.
No Number	West Cold Side Extraction	OK		OK				
F1-104	East Cold Side Extraction	OK		OK				
No Number	West Hot Side Extraction	OK		OK				
F1-102	Center Hot Side Extraction	OK		OK				
F1-514	East Hot Side Extraction	OK		OK				
F3E-222	S. E. End Denitration	~~O.K.~~		~~O.K.~~		O.K.		out of service
F1-220	S. W. End Denitration	—		O.K.		O.K.		Main breaker kicks out on manual.
F3E-223	N. E. End Denitration	O.K.		O.K.		O.K.		
F1-221	N. W. End Denitration	O.K.		O.K.		O.K.		
G3E-282	N. E. Pad – Denitration	OK		OK				
	S. E. Pad – Denitration	OK		OK				
G3E-244	OK Liquor Pit	OK		—		OK		no info
G18E-7	1st Floor Refinery Sump	OK		OK		OK		
Steam Educt.	W. Pad Refinery Sump	OK		OK		OK		Bad gasket Need W.O.
G2E-610	E. Pad Refinery Sump	Steam Eductor						Down for maintance
G3-24	West Pad – N.A.R.	OK		OK				
G3-64	East Pad – N.A.R.	OK		OK				
F3E-224	E. Pad Combined Raffinate	OK		~~[illegible]~~				Switch is stiff won't ~~[illegible]~~ stay off
F3E-225	W. Pad Combined Raffinate	OK		OK				
14-4A-0-6	Harshaw Tower Pad	OK		NO				Will Not pump
G1-325	Hot Raffinate E. Tank Room	O.K.		O.K.		O.K.		
	Hot Raffinate W. Tank Room	O.K.		O.K.		O.K.		
G1-307	Hot Raffinate – Center Room 1st. Fl.	O.K.		O.K.		O.K.		
	Cold Side Ore Pit Steam Eductor	OK						
	Hot Side Ore Pit Steam Eductor	OK						
No Number	N. W. Digestion Storage Pad	OK		OK				
G2E-140-3	NFS Pump House	OK		OK				
G3E-419	Front – Hot Raffinate Bldg.	O.K.		O.K.		O.K.		switch at pump stick ~~Needs replacing~~

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: _____

Name: MEYER & BANKS Shift: 2 Time [1ST INSPECTION | 2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓				NO LEAKS
F1-37	East Cold Side Digestion	✓		✓				NO LEAKS
F1-86	West Hot Side Digestion	✓		✓				No leaks
F1-85	East Hot Side Digestion	✓		✓				Leaks pump near w/s
G2E-50	Metal Dissolver Building	✓		✓				No leaks
No. Number	Metal Dissolver Pad	✓		✓				No leaks
20-A-1	5A & 5B Area Pad	✓		✓				No leaks
G2E-16	Slop Tank Area Pad	✓		✓				No leaks
G1-2N-85017A, B & C Area Pad		Steam eductor						
G1-540	512 Area Pad	—		—				Steam eductor
No Number	West Cold Side Extraction	✓		✓				NO LEAKS
F1-104	East Cold Side Extraction	✓		✓				No leaks
No Number	West Hot Side Extraction	✓		✓				No leaks
* F1-102	Center Hot Side Extraction	✓		✓				Breaker kick out
F1-514	East Hot Side Extraction	✓		✓				No leaks
F3E-222	S. E. End Denitration	✓		✓				no leaks
F1-220	S. W. End Denitration	✓		✓				no leaks
F3E-223	N. E. End Denitration	✓		✓				no leaks
F1-221	N. W. End Denitration	✓		✓				no leaks.
~~G3E-282~~	~~N. E. Pad – Denitration~~							
	S. E. Pad – Denitration	✓		✓				No Leaks
G3E-244	OK Liquor Pit	✓	—	—	—	—	—	off. [illegible]
G18E-7	1st Floor Refinery Sump	✓		✓				no leaks
Steam Educt.	W. Pad Refinery Sump	✓		✓				no leaks connected to pump
G2E-610	E. Pad Refinery Sump	✓		✓				no leaks
G3-24	West Pad – N.A.R.	Can't [illegible]						
G3-64	East Pad – N.A.R.	Can't not check						
F3E-224	E. Pad Combined Raffinate	✓		✓				No leaks
F3E-225	W. Pad Combined Raffinate							
14-4A-0-6	Harshaw Tower Pad	✓		No		Yes		Leaks – Does not operate automatic
G1-325.	Hot Raffinate E. Tank Room	✓		✓				No leaks
	Hot Raffinate W. Tank Room	✓		✓				No leaks
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓				No leaks
	Cold Side Ore Pit	—		—				Steam eductor
	Hot Side Ore Pit	—		—				Steam eductor
Number	N. W. Digestion Storage Pad	Down for Main						[illegible]
140-3	NFS Pump House	✓		✓				No leaks
-419	Front – Hot Raffinate Bldg.	✓		✓				No leaks

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: *Inspections are to be made twice each shift.*

Date: 2-25-86

Name: 2990 – 2991 Shift: 2 Time [1ST INSPECTION] [2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓				No Leaks
F1-37	East Cold Side Digestion	✓		✓				No Leaks
F1-38	West Hot Side Digestion	✓		✓				No LEAKS
F1-35	East Hot Side Digestion	✓		✓				NO LEAKS
G2E-50	Metal Dissolver Building	✓		✓				NO LEAKS
No Number	Metal Dissolver Pad	✓		✓				No LEAKS
20-A-1	5A & 5B Area Pad	✓		✓				No LEAKS
G2E-16	Slop Tank Area Pad	✓		✓				No LEAKS
G1-2N-85	017A, B & C Area Pad							VIABRATION MOTOR-BAR
G1-540	512 Area Pad	✓						STEAM Educt
No Number	West Cold Side Extraction	✓		✓				No LEAKS
F1-104	East Cold Side Extraction	✓		✓				No LEAKS
No Number	West Hot Side Extraction	✓		✓				No Leaks
F1-102	Center Hot Side Extraction	✓		✓				No Leaks
F1-514	East Hot Side Extraction	✓		✓				No LEAKS
F3E-222	S. E. End Denitration	✓		✓				Leaks in Second Cell 2
F1-220	S. W. End Denitration	✓		✓				No Leaks
F3E-223	N. E. End Denitration	✓		✓				No Leaks Still Painting
F1-221	N. W. End Denitration	✓		✓				No Leaks in Denitration
G3E-282	N. E. Pad – Denitration	✓		✓				No Leaks
	S. E. Pad – Denitration	✓		✓				No Leaks
G3E-244	OK Liquor Pit	✓						No Leaks
G18E-7	1st Floor Refinery Sump	✓						STEAM COND.
Steam Educt.	W. Pad Refinery Sump	✓		✓				
G2E-610	E. Pad Refinery Sump	✓		✓				NO LEAKS
G3-24	West Pad – N.A.R.	✓		✓				NO LEAKS
G3-64	East Pad – N.A.R.	✓		✓				NO LEAKS
F3E-224	E. Pad Combined Raffinate	✓		✓				NO LEAKS
F3E-225	W. Pad Combined Raffinate	✓		✓				NO LEAKS
14-4A-0-6	Harshaw Tower Pad	✓		NO				NO LEAKS
G1-325	Hot Raffinate E. Tank Room	✓		✓				
	Hot Raffinate W. Tank Room	✓		✓				
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓				VIBRATION
	Cold Side Ore Pit	✓						STEAM Educt
	Hot Side Ore Pit	✓						STEAM Educt
No Number	N. W. Digestion Storage Pad	✓		✓				NO LEAKS
G2E-140-3	NFS Pump House	✓		✓				NO LEAKS
G3E-419	Front – Hot Raffinate Bldg.	✓		✓				NO LEAKS

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 5-18-86

Name: 946-1101 Shift: 1st Time [ ] 1ST INSPECTION [ ] 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓		✓		
F1-37	East Cold Side Digestion	✓		✓		✓		
F1-38	West Hot Side Digestion	✓		✓		✓		
F1-35	East Hot Side Digestion	✓		✓		✓		
G2E-50	Metal Dissolver Building	✓		✓		✓		
No Number	Metal Dissolver Pad	✓		✓				Cracks in Concrete @ edge of sump
20-A-1	5A & 5B Area Pad	✓		✓		✓		
G2E-16	Slop Tank Area Pad	✓		✓		✓		
G1-2N-85017A, B & C Area Pad		✓		✓		✓		Pump [illegible] Need a new check valve pump
X G1-540	512 Area Pad Steam Educt							
No Number	West Cold Side Extraction	✓		✓		✓		
F1-104	East Cold Side Extraction	✓		✓		✓		
No Number	West Hot Side Extraction	✓		✓		✓		
F1-102	Center Hot Side Extraction	✓		✓		✓		
F1-514	East Hot Side Extraction	✓		✓		✓		
F3E-222	S. E. End Denitration	✓		✓		✓		
F1-220	S. W. End Denitration	✓		✓		✓		
F3E-223	N. E. End Denitration	✓		✓		✓		
F1-221	N. W. End Denitration	✓		✓		✓		
G3E-282	N. E. Pad – Denitration							No Sump Pump
	S. E. Pad – Denitration							
G3E-244	OK Liquor Pit	✓		✓		✓		
X G18E-7	1st Floor Refinery Sump	✓		✓				
X Steam Educt.	W. Pad Refinery Sump	✓		✓		✓		Corrected back to pump
X G2E-610	E. Pad Refinery Sump	✓		✓		✓		and concrete needs
G3-24	West Pad – N.A.R.	✓		✓		✓		repairing. 35 Hole in [illegible]
G3-64	East Pad – N.A.R.	✓		✓		✓		on Nozzle of sump
F3E-224	E. Pad Combined Raffinate	✓		✓		✓		Bus or Hole in floor [illegible]
F3E-225	W. Pad Combined Raffinate	✓		✓		✓		side of sump.
14-4A-0-6	Horshaw Tower Pad							NO Pump
G1-325	Hot Raffinate E. Tank Room	✓		✓		✓		
	Hot Raffinate W. Tank Room	✓		✓		✓		
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		✓		Hard to see inspection
X	Cold Side Ore Pit STEAM Educt	✓				✓		
	Hot Side Ore Pit Steam Educt	✓				✓		
No Number	N. W. Digestion Storage Pad							Pump will not run.
G2E-140-3	NFS Pump House	✓		✓		✓		
G3E-419	Front – Hot Raffinate Bldg.	✓		✓		✓		

187

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

Date: 28-86

NOTE: Inspections are to be made twice each shift.

Name: R K Edwards Shift: 3 Time ____ 1ST INSPECTION ____ 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓				
F1-37	East Cold Side Digestion	✓		✓				
F1-38	West Hot Side Digestion	✓		✓				
F1-35	East Hot Side Digestion	✓		✓				
G2E-50	Metal Dissolver Building	✓		✓				
No Number	Metal Dissolver Pad	✓		✓				
20-A-1	5A & 5B Area Pad	✓		✓				
G2E-16	Slop Tank Area Pad	✓		✓				
G1-2N-85017	A, B & C Area Pad	✓		✓				
G1-540	512 Area Pad							Steam eductor
No Number	West Cold Side Extraction	✓		✓				
F1-104	East Cold Side Extraction	✓		✓				
No Number	West Hot Side Extraction	✓		✓				
F1-102	Center Hot Side Extraction	✓		✓				
F1-514	East Hot Side Extraction	✓		✓				
F3E-222	S. E. End Denitration	✓		✓				
F1-220	S. W. End Denitration	✓		✓				
F3E-223	N. E. End Denitration	✓		✓				
F1-221	N. W. End Denitration	✓		✓				
G3E-282	N. E. Pad – Denitration	✓		✓				
	S. E. Pad – Denitration	✓		✓				
G3E-244	OK Liquor Pit	✓						
G18E-7	1st Floor Refinery Sump	✓		✓				
Steam Educt.	W. Pad Refinery Sump	✓		✓				
G2E-610	E. Pad Refinery Sump	✓		✓				
G3-24	West Pad – N.A.R.	Construction Area						
G3-64	East Pad – N.A.R.							Could Not Check
F3E-224	E. Pad Combined Raffinate	✓		✓				
F3E-225	W. Pad Combined Raffinate							
14-4A-0-6	Harshaw Tower Pad	✓						
G1-325	Hot Raffinate E. Tank Room	✓		✓				
	Hot Raffinate W. Tank Room	✓		✓				
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓				
	Cold Side Ore Pit							Steam eductor
	Hot Side Ore Pit							Steam eductor
No Number	N. W. Digestion Storage Pad							
G2E-140-3	NFS Pump House	✓		✓				
G3E-419	Front – Hot Raffinate Bldg.	✓		✓				

NATIONAL LEAD COMPANY OF OHIO

PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

P. K/AK

Date: 9/22/86

NOTE: Inspections are to be made twice each shift.

Name: MEYER & SCHUNEMAN Shift: 2 Time [ ] 1ST INSPECTION 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓		OK		
F1-37	East Cold Side Digestion	✓		✓		OK		
F1-38	West Hot Side Digestion	✓		✓		OK		
F1-35	East Hot Side Digestion	✓		✓		OK		
G2E-50	Metal Dissolver Building	✓		✓		OK		
No Number	Metal Dissolver Pad	✓		✓		OK		
20-A-1	5A & 5B Area Pad.	✓		✓		OK		
G2E-16	Slop Tank Area Pad	✓		✓		OK		
G1-2N-85017A, B & C Area Pad		✓		✓		OK		
G1-540	512 Area Pad							STEAM EDUCTOR
No Number	West Cold Side Extraction	✓		✓		OK		
F1-104	East Cold Side Extraction	✓		✓		OK		
No Number	West Hot Side Extraction	✓		✓		OK		
F1-102	Center Hot Side Extraction	✓		✓		OK		
F1-514	East Hot Side Extraction	✓		✓		OK		
F3E-222	S. E. End Denitration	✓		✓		OK		
F1-220	S. W. End Denitration	✓		✓		OK		
F3E-223	N. E. End Denitration	✓		✓		OK		
F1-221	N. W. End Denitration	✓		✓		OK		
G3E-282	N. E. Pad – Denitration	✓		✓				
	S. E. Pad – Denitration	✓		✓				
G3E-244	OK Liquor Pit	✓		✓		OK		
G18E-7	1st Floor Refinery Sump	✓		✓		OK		
Steam Educt.	W. Pad Refinery Sump	✓		✓		OK		
G2E-610	E. Pad Refinery Sump	✓		✓		OK		
G3-24	West Pad – N.A.R.	✓		✓				
G3-64	East Pad – N.A.R.	✓		✓				
F3E-224	E. Pad Combined Raffinate	✓		✓				
F3E-225	W. Pad Combined Raffinate							S-E
14-4A-0-6	Harshaw Tower Pad	✓						
G1-325	Hot Raffinate E. Tank Room	✓		✓		OK		
	Hot Raffinate W. Tank Room	✓		✓		OK		
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		OK		
	Cold Side Ore Pit					OK		S-E
	Hot Side Ore Pit					OK		S-E
No Number	N. W. Digestion Storage Pad							
G2E-140-3	NFS Pump House	✓		✓				
G3E-419	Front – Hot Raffinate Bldg.	✓		✓				

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 30-87

Name: K Cooley / [illegible] Shift: 1st Time [illegible]
1ST INSPECTION 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓		✓		
F1-37	East Cold Side Digestion	✓		✓		✓		
F1-38	West Hot Side Digestion	✓		✓		✓		
F1-35	East Hot Side Digestion	✓		✓		✓		
G2E-50	Metal Dissolver Building	✓		✓		✓		
No. Number	Metal Dissolver Pad	✓	✓	✓	✓	✓	✓	[illegible]
20-A-1	5A & 5B Area Pad	✓		✓		✓		
G2E-16	Slop Tank Area Pad	✓		✓		✓		
G1-2N-85017	A, B & C Area Pad							
G1-540	512 Area Pad		✓		✓		✓	Steam Inducted
No Number	West Cold Side Extraction	✓		✓		✓		
F1-104	East Cold Side Extraction	✓		✓		✓		
No Number	West Hot Side Extraction	✓		✓		✓		
F1-102	Center Hot Side Extraction	✓		✓		✓		
F1-514	East Hot Side Extraction	✓		✓		✓		
F3E-222	S. E. End Denitration	✓		✓	✓	✓		Doesn't work on automatic
F1-220	S. W. End Denitration	✓		✓		✓		Vibration
F3E-223	N. E. End Denitration	✓		✓		✓		
F1-221	N. W. End Denitration	✓		✓		✓		
G3E-282	N. E. Pad – Denitration	✓		✓		✓		
	S. E. Pad – Denitration	✓		✓		✓		
G3E-244	OK Liquor Pit	✓		✓		✓		[illegible] outlet [illegible]
G18E-7	1st Floor Refinery Sump	✓		✓		✓		
Steam Educt.	W. Pad Refinery Sump	✓		✓		✓		
G2E-610	E. Pad Refinery Sump	✓		✓		✓		
G3-24	West Pad – N.A.R.	✓		✓		✓		
G3-64	East Pad – N.A.R.	✓		✓		✓		
F3E-224	E. Pad Combined Raffinate	✓		✓		✓		
F3E-225	W. Pad Combined Raffinate		✓		✓		✓	NO FLOW (Steam Induction)
14-4A-0-6	Harshaw Tower Pad	✓		✓		✓		
G1-325	Hot Raffinate E. Tank Room	✓		✓		✓		
	Hot Raffinate W. Tank Room	✓		✓		✓		
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		✓		
	Cold Side Ore Pit	✓		✓		✓		Steam Inducted
	Hot Side Ore Pit	✓		✓		✓		Steam Inducted
No Number	N. W. Digestion Storage Pad	✓		✓		✓		
G2E-140-3	NFS Pump House	✓		✓		✓		
G3E-419	Front – Hot Raffinate Bldg.	✓		✓		✓		

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

Date: [illegible]-87

NOTE: Inspections are to be made twice each shift.

Name: Willie L Simler Shift: 1st Time [illegible]
1ST INSPECTION 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	OK		OK				
F1-37	East Cold Side Digestion	OK		OK				
F1-38	West Hot Side Digestion	OK		OK				
F1-35	East Hot Side Digestion	OK		OK				
G2E-50	Metal Dissolver Building	OK		OK				
No. Number	Metal Dissolver Pad	OK		OK				
20-A-1	5A & 5B Area Pad	OK		OK				
G2E-16	Slop Tank Area Pad	OK		OK				
G1-2N-85017A, B & C Area Pad		OK		OK				
G1-540	512 Area Pad	Steam Educ						
No Number	West Cold Side Extraction	OK		OK				
F1-104	East Cold Side Extraction	OK		OK				
No Number	West Hot Side Extraction	OK		OK				
F1-102	Center Hot Side Extraction	OK		OK				
F1-514	East Hot Side Extraction	OK		OK				
F3E-222	S. E. End Denitration	OK		OK				
F1-220	S. W. End Denitration	OK		OK				
F3E-223	N. E. End Denitration	OK		OK				
F1-221	N. W. End Denitration	OK		OK				
G3E-282	N. E. Pad – Denitration	OK		OK				
	S. E. Pad – Denitration	OK		OK				
G3E-244	OK Liquor Pit	OK.		No Auto.				
G18E-7	1st Floor Refinery Sump	OK		OK				
Steam Educt.	W. Pad Refinery Sump	OK		OK				
G2E-610	E. Pad Refinery Sump	OK		OK				
G3-24	West Pad – N.A.R.	OK		OK				
G3-64	East Pad – N.A.R.	Don't work		OK				
F3E-224	E. Pad Combined Raffinate	OK		OK				
F3E-225	W. Pad Combined Raffinate	OK		OK				
14-4A-0-6	Harshaw Tower Pad							
G1-325	Hot Raffinate E. Tank Room	OK		OK				
	Hot Raffinate W. Tank Room	OK		OK				
G1-307	Hot Raffinate – Center Room 1st. Fl.	Don't know		OK				
	Cold Side Ore Pit	Steam		Educ				
	Hot Side Ore Pit	"		"				
No Number	N. W. Digestion Storage Pad	No Pump.						
G2E-140-3	NFS Pump House							
G3E-419	Front – Hot Raffinate Bldg.	OK		OK				

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 10-1-87

Name: _____ Shift: 1/2/3 Time [1ST INSPECTION] [2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion							cleaned T
F1-37	East Cold Side Digestion							Cleaned T
F1-38	West Hot Side Digestion							CLEANED T
F1-35	East Hot Side Digestion							cleaned T
G2E-50	Metal Dissolver Building							cleaned T
No. Number	Metal Dissolver Pad Outside							cleaned T
20-A-1	5A & 5B Area Pad							cleaned T
G2E-16	Slop Tank Area Pad							cleaned T
G1-2N-85017A, B & C Area Pad								cleaned T
G1-540	512 Area Pad							Cleaned
No Number	West Cold Side Extraction							CLEANED T
F1-104	East Cold Side Extraction							CLEANED T
No Number	West Hot Side Extraction							Cleaned T
F1-102	Center Hot Side Extraction							Cleaned T
F1-514	East Hot Side Extraction							Cleaned T
F3E-222	S. E. End Denitration							CLEANED T
F1-220	S. W. End Denitration							Cleaned T
F3E-223	N. E. End Denitration							Cleaned T
F1-221	N. W. End Denitration							Cleaned T
G3E-282	~~N. E. Pad – Denitration~~							
	S. E. Pad – Denitration							FIXED IN [ ]
G3E-244	OK Liquor Pit							Cleaned T
G18E-7	1st Floor Refinery Sump							T
Steam Educt.	W. Pad Refinery Sump							Cleaned
G2E-610	E. Pad Refinery Sump							cleaned
G3-24	West Pad – N.A.R.	✓	✓					Cleaned T
G3-64	East Pad – N.A.R.							Cleaned T
F3E-224	E. Pad Combined Raffinate	✓	✓					Cleaned T
F3E-225	W. Pad Combined Raffinate	✓	✓					Cleaned T
14	~~A-0-6~~ Harshaw Tower Pad							
G1-325	Hot Raffinate E. Tank Room							cleaned T
	Hot Raffinate W. Tank Room		✓					doesn't work, needs repair, cleaned
G1-307	Hot Raffinate – Center Room 1st. Fl.							cleaned T
	Cold Side Ore Pit							
	Hot Side Ore Pit							
No Number	N. W. Digestion Storage Pad Outside							DR
G2E-140-3	NFS Pump House							
G3E-419	Front – Hot Raffinate Bldg.							Cleaned T

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 5-29-88

Name: 1496 + 1131 Shift: 3rd Time [ ] 1ST INSPECTION [ ] 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓	✓	✓	✓	OK		CLEANED
F1-37	East Cold Side Digestion	✓	✓	✓	✓	OK		"
F1-38	West Hot Side Digestion	✓	✓	✓	✓	OK		"
F1-35	East Hot Side Digestion	✓	✓	✓	✓	OK		"
G2E-50	Metal Dissolver Building	CONSTRUCTION						"
No Number	Metal Dissolver Pad	✓	✓	✓	✓	✓		"
20-A-1	5A & 5B Area Pad	✓	✓	✓	✓	OK		
G2E-16	Slop Tank Area Pad							rope off no safety dike
G1-2N-85017	A, B & C Area Pad	✓	✓	✓	✓	OK		
G1-540	512 Area Pad	✓	✓	✓	✓	OK		
No Number	West Cold Side Extraction	✓	✓	✓	✓	OK		"
F1-104	East Cold Side Extraction	✓	✓	✓	✓	OK		"
No Number	West Hot Side Extraction	✓	✓	✓	✓	OK		"
F1-102	Center Hot Side Extraction	✓	✓	✓	✓	OK		"
F1-514	East Hot Side Extraction	✓	✓	✓	✓	OK		"
F3E-222	S. E. End Denitration	✓	✓	✓	✓	OK		"
F1-220	S. W. End Denitration	✓	✓	✓	✓	OK		"
F3E-223	N. E. End Denitration	✓	✓	✓	✓	OK		"
F1-221	N. W. End Denitration	✓	✓	✓	✓	OK		"
G3E-282	N. E. Pad – Denitration	✓	✓	✓	✓	OK		
	S. E. Pad – Denitration	✓	✓	✓	✓	OK		
G3E-244	OK Liquor Pit	✓	✓	✓	✓	OK		"
G18E-7	1st Floor Refinery Sump	✓	✓	✓	✓	OK		"
Steam Educt.	W. Pad Refinery Sump	✓	✓	✓	✓	OK		"
G2E-610	E. Pad Refinery Sump	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~OK~~		MAINT WORKING
G3-24	West Pad – N.A.R.	✓	✗	✓	✓	OK		MANUAL DOES NOT M
G3-64	East Pad – N.A.R.	✓	✓	✓	✓	OK		"
F3E-224	E. Pad Combined Raffinate	✓	✓	✓	✓	OK		"
F3E-225	W. Pad Combined Raffinate	✓	✓	✓	✓	OK		"
14-4A-0-6	Harshaw Tower Pad	✓	✓	✓	✓	OK		"
G1-325	Hot Raffinate E. Tank Room	✓	✓	✓	✓	OK		"
	Hot Raffinate W. Tank Room	✓	✓	✓	✓	OK		"
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓	✓	✓	✓	OK		"
	Cold Side Ore Pit	✓	✓	✓	✓	✓		
	Hot Side Ore Pit	✓	✓	✓	✓	✓		
No Number	N. W. Digestion Storage Pad	✓	✓	✓	✓	✓		"
G2E-140-3	NFS Pump House	✓	✓	✓	✓	OK		"
G3E-419	Front – Hot Raffinate Bldg.	✓	✓	✓	✓	OK		"

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 8-30-88

Name: 1496 2958 Shift: 1,2,3 Time [ ] 1ST INSPECTION 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		No		OK		[illegible]
F1-37	East Cold Side Digestion	✓		No		OK		[illegible]
~~F1-98~~ 66	West Hot Side Digestion	✓		✓		OK		
~~F1-85~~ 65	East Hot Side Digestion	✓		✓		OK		
G2E-50	Metal Dissolver Building	✓		✓		OK		
No Number	Metal Dissolver Pad	✓		✓		OK		
20-A-1	5A & 5B Area Pad	✓		✓		OK		
G2E-16	Slop Tank Area Pad	✓		✓		OK		
G1-2N-85017	A, B & C Area Pad	✓		✓		OK		
G1-540	512 Area Pad	✓				OK		Steam Educt
No Number	West Cold Side Extraction	✓		✓		OK		
F1-104	East Cold Side Extraction	✓		✓		OK		
No Number	West Hot Side Extraction	✓		✓		OK		
F1-102	Center Hot Side Extraction	✓		✓		OK		
F1-514	East Hot Side Extraction	✓		✓		OK		
F3E-222	S. E. End Denitration	✓		✓		OK		
F1-220	S. W. End Denitration	✓		✓		OK		
F3E-223	N. E. End Denitration	✓		✓		OK		
F1-221	N. W. End Denitration	✓		✓		OK		
~~G3E-282~~	~~N. E. Pad – Denitration~~							
	S. E. Pad – Denitration	✓		✓				
G3E-244	OK Liquor Pit	✓				OK		
G18E-7	1st Floor Refinery Sump	✓		✓		OK		
Steam Educt.	W. Pad Refinery Sump	✓		✓		OK		
G2E-610	E. Pad Refinery Sump	✓		✓		OK		
G3-24	West Pad – N.A.R.	✓		✓		OK		
G3-64	East Pad – N.A.R.	✓		✓		OK		
F3E-224	E. Pad Combined Raffinate	✓		✓		OK		
F3E-225	W. Pad Combined Raffinate	✓		No		OK		
~~14-4A-0-6~~	~~Harshaw Tower Pad~~							
G1-325	Hot Raffinate E. Tank Room	✓		✓		OK		
	Hot Raffinate W. Tank Room	✓		✓		OK		
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		OK		
	Cold Side Ore Pit	✓				OK		Steam Educt
	Hot Side Ore Pit	✓				OK		Steam Educt
No Number	N. W. Digestion Storage Pad			✓		OK		
G2E-140-3	NFS Pump House	✓		✓		OK		
G3E-419	Front – Hot Raffinate Bldg.	✓		✓		OK		

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 9-30-88

Name : _____ Shift: _____ Time _____ 1ST INSPECTION _____ 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓				
F1-37	East Cold Side Digestion	✓		✓				
F1-38	West Hot Side Digestion	✓		✓				
F1-35	East Hot Side Digestion	✓		No				
G2E-50	Metal Dissolver Building	✓		✓				
No. Number	Metal Dissolver Pad	✓		✓				
20-A-1	5A & 5B Area Pad	✓		✓				
G2E-16	Slop Tank Area Pad							
G1-2N-85017	A, B & C Area Pad	✓		✓				
G1-540	512 Area Pad	✓		✓				STEAM educted
No Number	West Cold Side Extraction	✓		✓				
F1-104	East Cold Side Extraction	✓		✓				
No Number	West Hot Side Extraction	✓		✓				
F1-102	Center Hot Side Extraction	✓		✓				
F1-514	East Hot Side Extraction	✓		✓				
F3E-222	S. E. End Denitration	✓		✓				
F1-220	S. W. End Denitration	✓		✓				
F3E-223	N. E. End Denitration	✓		✓				
F1-221	N. W. End Denitration	✓		✓				
G3E-282	N. E. Pad – Denitration	✓		✓				
	S. E. Pad – Denitration	✓		✓				
G3E-244	OK Liquor Pit							
G18E-7	1st Floor Refinery Sump	✓		✓				
Steam Educt.	W. Pad Refinery Sump	✓		✓				
G2E-610	E. Pad Refinery Sump	✓	✓	✓				
G3-24	West Pad – N.A.R.	✓		✓				
G3-64	East Pad – N.A.R.		✓	✓				does not work on man
F3E-224	E. Pad Combined Raffinate	✓		✓				
F3E-225	W. Pad Combined Raffinate	✓		✓				
14-4A-0-6	Harshaw Tower Pad	✓						
G1-325	Hot Raffinate E. Tank Room	✓						
	Hot Raffinate W. Tank Room	✓						
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓						
	Cold Side Ore Pit	✓		✓				STEAM educted
	Hot Side Ore Pit	✓		✓				"
No Number	N. W. Digestion Storage Pad	✓		✓				
G2E-140-3	NFS Pump House	✓			✓			LOOK STICKS
G3E-419	Front – Hot Raffinate Bldg.	✓		✓				

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: _____

Name: _____ Shift: _____ Time [1ST INSPECTION | 2ND INSPECTION]

PUMP NUMBER & SUMP LOCATION		OK ON MAN.		OK ON AUTO.		LEAKS		REMARKS
		1	2	1	2	1	2	
F1-36	West Cold Side Digestion							
F1-37	East Cold Side Digestion							
F1-38 66	West Hot Side Digestion	OK		OK		OK		CLEANED SCREEN + SUMP 3-6-[illegible]
F1-35 65	East Hot Side Digestion	OK		OK		OK		" " " 3-6-[illegible]
G2E-50	Metal Dissolver Building							
No Number	Metal Dissolver Pad							
20-A-1	5A & 5B Area Pad							
G2E-16	Slop Tank Area Pad							
G1-2N-85	017A, B & C Area Pad							
G1-540	512 Area Pad							
No Number	West Cold Side Extraction							
F1-104	East Cold Side Extraction	OK		OK		OK		CLEANED SCREEN + SUMP [illegible]
No Number	West Hot Side Extraction							
F1-102	Center Hot Side Extraction	OK		OK		OK		CLEANED SCREEN + SUMP 3-10-[illegible]
F1-514	East Hot Side Extraction	OK		OK		OK		CLEANED SCREEN + SUMP 3-13-[illegible]
F3E-222	S. E. End Denitration							
F1-220	S. W. End Denitration							
F3E-223	N. E. End Denitration							
F1-221	N. W. End Denitration	OK		OK		OK		CLEANED SCREEN + SUMP 3-14-[illegible]
G3E-282	N. E. Pad – Denitration							
	S. E. Pad – Denitration							
G3E-244	OK Liquor Pit							
G18E-7	1st Floor Refinery Sump							
Steam Educt.	W. Pad Refinery Sump							
G2E-610	E. Pad Refinery Sump							
G3-24	West Pad – N.A.R.							
G3-64	East Pad – N.A.R.							
F3E-224	E. Pad Combined Raffinate							
F3E-225	W. Pad Combined Raffinate							
14-4A-0-6	Harshaw Tower Pad							
G1-325	Hot Raffinate E. Tank Room							
	Hot Raffinate W. Tank Room							
G1-307	Hot Raffinate – Center Room 1st. Fl.							
	Cold Side Ore Pit							
	Hot Side Ore Pit							
No Number	N. W. Digestion Storage Pad							
G2E-140-3	NFS Pump House							
G3E-419	Front – Hot Raffinate Bldg.							

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: 26 Ge 57

Name: STAN BIPPUS BJB Shift: 1 Time [ ] 1ST INSPECTION [ ] 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	✓		✓		✓		
F1-37	East Cold Side Digestion	✓		✓		✓		(CLEANED) 5-27-5
F1-38	West Hot Side Digestion	✓		✓		✓		
F1-35	East Hot Side Digestion	✓		✓		✓		
G2E-50	Metal Dissolver Building	✓		✓		✓		
No Number	Metal Dissolver Pad	✓		✓		✓		
20-A-1	5A & 5B Area Pad	✓		✓		✓		
G2E-16	Slop Tank Area Pad	✓		✓		✓		
G1-2N-85017	A, B & C Area Pad	✓		✓		✓		
G1-540	512 Area Pad	✓		✓		✓		
No Number	West Cold Side Extraction	✓		✓		✓		
F1-104	East Cold Side Extraction	✓		✓		✓		
No Number	West Hot Side Extraction	✓		✓		✓		
F1-102	Center Hot Side Extraction	✓		✓		✓		
F1-514	East Hot Side Extraction	✓		✓		✓		
F3E-222	S. E. End Denitration	✓		✓		✓		
F1-220	S. W. End Denitration	✓		✓		✓		
F3E-223	N. E. End Denitration	✓		✓		✓		
F1-221	N. W. End Denitration	✓		✓		✓		
G3E-282	N. E. Pad – Denitration	✓		✓		✓		
	S. E. Pad – Denitration	✓		✓		✓		
G3E-244	OK Liquor Pit	✓				✓		OPER. ON MAN.
G18E-7	1st Floor Refinery Sump							CONSTRUCTION
Steam Educt.	W. Pad Refinery Sump							
G2E-610	E. Pad Refinery Sump	✓		✓		✓		
G3-24	West Pad – N.A.R.	✓		✓		✓		
G3-64	East Pad – N.A.R.	✓		✓				LEAK
F3E-224	E. Pad Combined Raffinate	✓		✓		✓		
F3E-225	W. Pad Combined Raffinate					✓		STEAM EDUCT.
14-4A-0-6	Harshaw Tower Pad							NOT IN SERVICE
G1-325	Hot Raffinate E. Tank Room	✓		✓		✓		
	Hot Raffinate W. Tank Room	✓		✓		✓		
G1-307	Hot Raffinate – Center Room 1st. Fl.	✓		✓		✓		
	Cold Side Ore Pit							STEAM EDUCT
	Hot Side Ore Pit							" "
No Number	N. W. Digestion Storage Pad	✓		✓		✓		
G2E-140-3	NFS Pump House	✓		✓		✓		
G3E-419	Front – Hot Raffinate Bldg.	✓		✓				LEAK

NATIONAL LEAD COMPANY OF OHIO
PRODUCTION DIVISION – REFINERY

REFINERY SUMPS INSPECTION RECORD

NOTE: Inspections are to be made twice each shift.

Date: [illegible]

Name: STAN BIRRUS Shift: _____ Time _____ 1ST INSPECTION _____ 2ND INSPECTION

PUMP NUMBER & SUMP LOCATION		OK ON MAN. 1	OK ON MAN. 2	OK ON AUTO. 1	OK ON AUTO. 2	LEAKS 1	LEAKS 2	REMARKS
F1-36	West Cold Side Digestion	OK	OK	OK	OK	OK		
F1-37	East Cold Side Digestion	OK	OK	OK	OK	OK		
F1-38	West Hot Side Digestion	OK	OK	OK	OK	OK		
F1-35	East Hot Side Digestion	OK	OK	OK	OK	OK		
G2E-50	Metal Dissolver Building							CAN NOT CHECK NO WATER
No. Number	Metal Dissolver Pad	OK	OK	OK	OK	OK		
20-A-1	5A & 5B Area Pad	OK	OK	OK	OK	OK		
G2E-16	Slop Tank Area Pad	OK	OK	OK	OK	OK		
G1-2N-85017A, B & C Area Pad		OK	OK	OK	OK	OK		
G1-540	512 Area Pad	OK	OK	OK	OK	OK		
No Number	West Cold Side Extraction	OK	OK	OK	OK	OK		
F1-104	East Cold Side Extraction	OK	OK	OK	OK	OK		
No Number	West Hot Side Extraction	OK	OK	OK	OK	OK		
F1-102	Center Hot Side Extraction	OK	OK	OK	OK	OK		
F1-514	East Hot Side Extraction	OK	OK	OK	OK	OK		
F3E-222	S. E. End Denitration	OK	OK	OK	OK	OK		
F1-220	S. W. End Denitration	OK	OK	OK	OK	OK		
F3E-223	N. E. End Denitration	OK	OK	OK	OK	OK		
F1-221	N. W. End Denitration	OK	OK	OK	OK	OK		
G3E-282	N. E. Pad – Denitration	OK	OK	OK	OK	OK		
	S. E. Pad – Denitration ✓	OK	OK	OK	OK	OK		
G3E-244	OK Liquor Pit	OK	OK	OK	OK	OK		
G18E-7	1st Floor Refinery Sump							CONSTRUCTION AREA
Steam Educt.	W. Pad Refinery Sump	OK	OK	OK	OK	OK		
G2E-610	E. Pad Refinery Sump	OK	OK	OK	OK	OK		
G3-24	West Pad – N.A.R.	OK	OK	OK	OK	OK		
G3-64	East Pad – N.A.R.	OK	OK	OK	OK			LEAK
F3E-224	E. Pad Combined Raffinate	OK	OK	OK	OK	OK		
F3E-225	W. Pad Combined Raffinate					OK		PUMP BAD, HAS STEAM EDUCTOR
14-4A-0-6	Harshaw Tower Pad							OUT OF SERVICE
G1-325	Hot Raffinate E. Tank Room	OK	OK	OK	OK	OK		
	Hot Raffinate W. Tank Room							CONSTRUCTION AREA
G1-307	Hot Raffinate – Center Room 1st. Fl.	OK	OK	OK	OK	OK		
	Cold Side Ore Pit					OK		STEAM EDUCT
	Hot Side Ore Pit					OK		" "
No Number	N. W. Digestion Storage Pad	OK	OK	OK	OK	OK		
G2E-140-3	NFS Pump House	OK	OK	OK	OK	OK		
G3E-419	Front – Hot Raffinate Bldg.	OK	OK	OK	OK	OK		