

Section 13
CLOSURE PLAN FOR OPERATIONAL WASTE PILE

13.1 INTRODUCTION

Kaiser Aluminum & Chemical Corporation's Tacoma Works has a closed outdoor waste pile area, and an operational indoor waste pile storage area in Building 3. In December 1985, Kaiser stopped using the outdoor area, conducted some closure activities, and, under the approval of WDOE, began using the indoor waste pile storage area. Kaiser has submitted a separate closure plan document for closure of the outdoor waste pile area. This closure plan addresses only the closure of the indoor waste pile area operations in Building 3.

13.2 CLOSURE PERFORMANCE STANDARD

This closure plan is designed to close the waste pile in a manner that minimizes the need for further maintenance and controls and minimizes, or eliminates, escape of waste materials to the ground, surface waters, or atmosphere after closure.

13.3 PARTIAL CLOSURE

The waste pile operations are conducted in the south end of Building 3 (see Figure 13.1). Kaiser does not foresee a means to close part of the waste pile area while continuing operations in another part; therefore, partial closure is not planned.

13.4 FINAL CLOSURE

Economic conditions within the aluminum market could cause the Tacoma Works to be temporarily shut down but not de-commissioned. The waste pile area will not be formally closed should this situation occur. The area will, however, be maintained to minimize or eliminate escape of waste material during such a temporary plant down period.

If and when it is determined that facility operations will not resume, or when operations are ceased for facility de-commissioning, the waste pile area will be formally closed. For the purposes of this submittal, final closure of the waste pile is planned for June 2087, after closure of the aluminum production operations. After production operations are shut down, the cathode structures of each reduction cell will be transported to Building 3 for removal of spent pot-lining. The ductwork of the air emissions control system

will either be cleaned in place or dismantled and cleaned in Building 3. Both the spent potlining and duct dust will be transported for disposal to an offsite TSD facility. The cathode structure (steel shell) and collector bars will be sold to an operating aluminum production plant or sold as scrap metal. The electrolyte bath materials will be sold to an operating aluminum production facility.

The spent solvents and spent high-efficiency air filtration (HEAF) filters will continue to be managed under generator status requirements. The spent solvents will be temporarily stored at the satellite accumulation area and the spent HEAF filters will be temporarily stored in containers prior to shipment offsite within 90 days. Since the spent filter bags can no longer be recycled in the aluminum production process, they will be temporarily stored in containers and shipped offsite within 90 days, in accordance with generator status requirements.

All activities associated with the shutdown of aluminum production facilities are part of the overall plant shutdown and are not included in this closure plan. The management of the spent potlining and duct dust between the time the production operations cease and the last volume of waste is received at the waste pile area is part of normal waste pile area operations. It is expected that the final volume of spent potlining and/or duct dust would be received at the waste pile area Building 3 in June 2087.

13.4.1 TRANSPORT OF WASTE PILE MATERIALS

The maximum waste pile volume onsite at any time is 400 tons (approximately 16 truckloads). The material will be loaded into a truck in the same manner that it is during normal operations. The waste material will be transported by a licensed hazardous waste transportation contractor to a permitted offsite hazardous waste disposal facility.

13.4.2 DECONTAMINATION OF WASTE PILE STORAGE AREA IN BUILDING 3


After all the waste pile material has been transported off-site for disposal, any remaining waste material residues will be removed from the storage area in Building 3. The storage area retaining wall will be cleaned using brooms and the floor will be cleaned using a power sweeper. The walls and floor will be inspected to ensure that no visible waste materials remain in Building 3. All collected residue will be temporarily stored in containers and shipped offsite within 90 days, in accordance with generator status requirements.

0 100 200
SCALE IN FEET



LEGEND

 Waste Pile Storage Area

 Closed Waste Pile Area


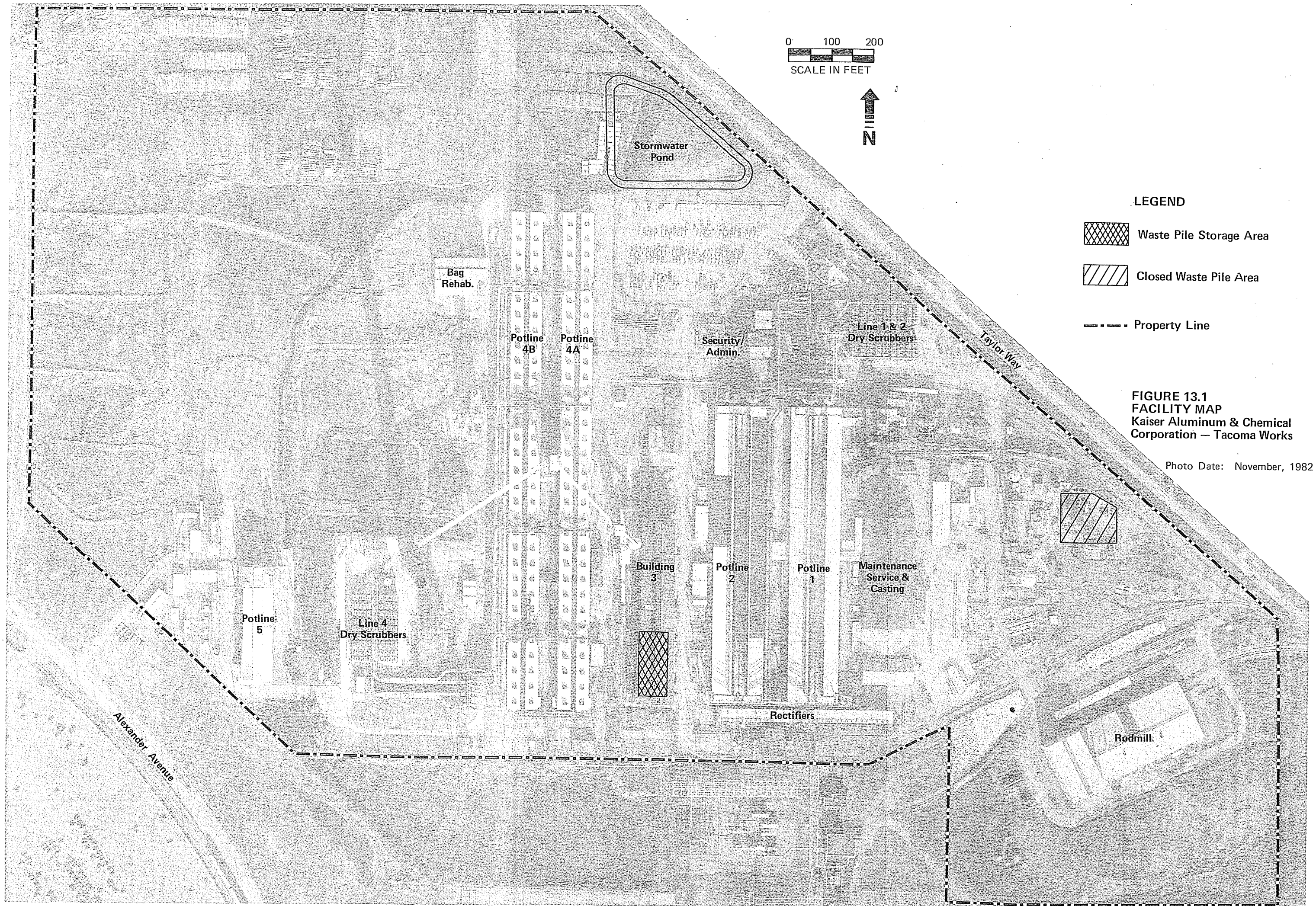
 Property Line

FIGURE 13.1
FACILITY MAP
Kaiser Aluminum & Chemical
Corporation – Tacoma Works

Photo Date: November, 1982



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13.4.3 EQUIPMENT DECONTAMINATION

Following waste pile and waste residue removal, the equipment used for waste pile operations (front-end loader, crawler with hydraulic breaker, crane, forklift, and power sweeper) will be decontaminated. The equipment will be cleaned using compressed air and brooms to remove remaining residues.

13.4.4 PROTECTIVE EQUIPMENT

Personnel involved in closure activities will be protected from undue exposure to the waste by using personal protective equipment similar to that used during normal waste pile operations. All workers will be issued respirators, safety glasses, and gloves.

13.5 CLOSURE SCHEDULE

The closure period will begin with the receipt of the final volume of waste. This final volume of waste may be duct dust or spent potlining from the last reduction cell. All spent potlining and/or duct dust will be transported offsite for disposal within 90 days of receipt of the final volume of waste. Closure activities, including removing waste residues, decontaminating equipment, inspection and closure certification, will be complete within 180 days of receipt of the final volume of waste as shown in Figure 13.2.

13.6 LOCATION OF CLOSURE PLAN

This closure plan and all amendments will be kept in the office of the staff environmental engineer at the Tacoma Works. The plan will be available for review by authorized regulatory agency personnel during normal working hours--Monday through Friday, 7:30 a.m. to 4:00 p.m.

13.7 CLOSURE PLAN AMENDMENT

Future conditions or changes at the Tacoma Works may require modifications to this closure plan. This closure plan will be amended whenever there is a change in operating plans or facility design that affects the closure plan, a change in the expected year of closure (before the closure plan has been approved) or during closure if unexpected events require a modification of the approved closure plan.

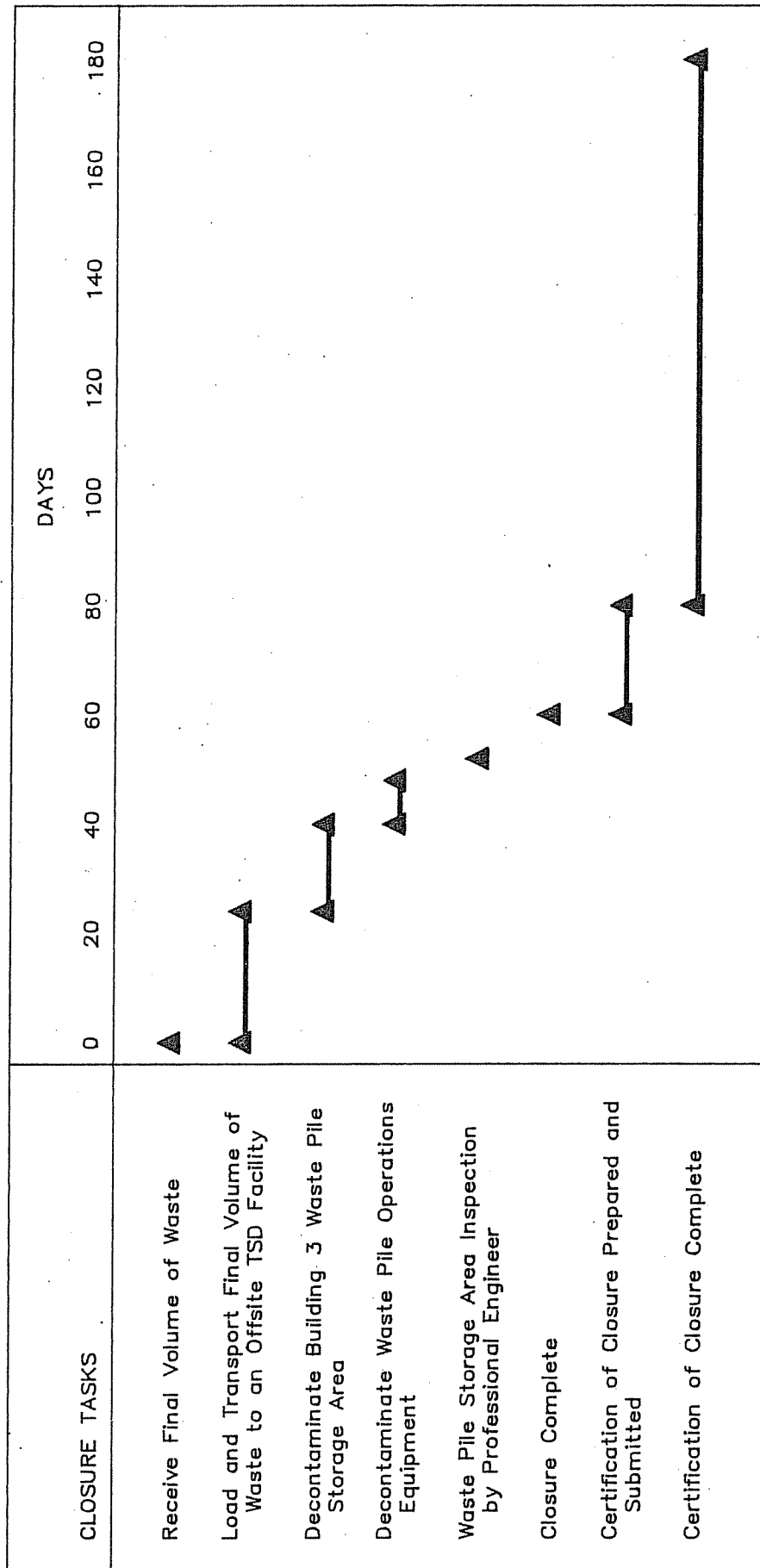


FIGURE 13.2
 CLOSURE SCHEDULE
 Kaiser Aluminum & Chemical
 Corporation — Tacoma Works

13.8 CERTIFICATION OF CLOSURE

Within 60 days of completion of waste pile closure, Kaiser will submit to WDOE a certification by a registered independent professional engineer that closure has been conducted in accordance with this plan.

13.9 CLOSURE COST ESTIMATE

Table 13.1 presents an estimate for closure costs. The costs are in 1987 dollars and are based on the costs to Kaiser of hiring a third party to perform closure activities at the facility. The cost estimate does not include provisions for escalation.

Table 13.1
 CLOSURE COST ESTIMATE
 WASTE PILE STORAGE AREA IN BUILDING 3

Description	No. Units	Unit	Unit Cost (\$)	Total Cost (\$)
Load Waste Pile Material (400 Tons)	8	Day	425	3,400 ^a
Transport Waste	400	Tons	40	16,000
Dispose of Waste at an Offsite TSD Facility	400	Tons	130	52,000
Decontaminate Building 3 Waste Pile Storage Area	5	Day	445	2,225 ^b
Decontaminate Waste Pile Operations Equipment	2	Day	200	<u>400^c</u>
Subtotal				74,025
Inspection				1,000
Mobilization, Bonds, Insurance, and Personnel Protective Equipment		%	5	<u>3,700</u>
TOTAL ESTIMATED CAPITAL COST				78,725

^a Front-end loader and one equipment operator.

^b Floor sweeper, one equipment operator, one general laborer.

^c Two general laborers.

The feasibility-level cost estimates shown have been prepared for guidance in project evaluation and implementation from the information available at the time of the estimate. The final costs of the project will depend on actual labor and material costs, actual site conditions, productivity, competitive market conditions, final project scope, final project schedule, and other variable factors.