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40-8903

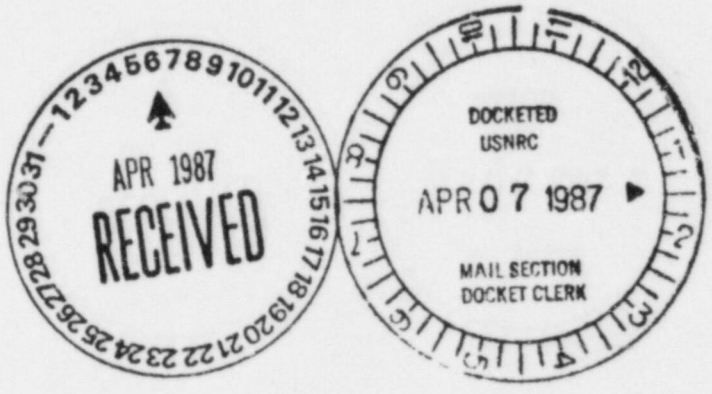
HOMESTAKE MINING COMPANY

P.O. BOX 98
GRANTS, NEW MEXICO
87020

RETURN ORIGINAL TO PDR, HQ.

April 1, 1987

CERTIFIED MAIL: P553212596



Mr. Harry J. Pettengill, Chief
Licensing Branch 2
Uranium Recovery Field Office
U.S. Nuclear Regulatory Commission
P.O. Box 25325
Denver, Colorado 80225

Re: License No. SUA-1471
Docket No. 40-8903

Dear Mr. Pettengill:

Homestake Mining Company is in receipt of your letter dated February 18, 1987 concerning Homestake's submittal to your office pursuant to your staff inspection of the Grants Operation During June, 1987. This letter is written in response to your letter. Due to the nature of NRC's request for commitments concerning Homestake's Interim Dust Control Program, additional response time was requested for internal review. Mr. Pete Garcia of your office allowed a submittal date of April 3, 1987. Homestake very much appreciates the allowance of the extension of time for submitting the requested information.

Your letter indicates that "Homestake has not submitted written programs for external and internal exposure control and for personal and facility contamination control as requested". As reported in Homestake's letters of October 17 and November 6, 1986, it was Homestake's understanding, through telephone conversations with Pete Garcia, that only the ALARA and Interim Dust Control programs needed to be submitted to the NRC, and that a schedule be committed to for having the other referenced program in place by a reasonable date, approved by the NRC, for review during the next routine inspection. The date which Homestake committed to was January 1, 1987. We apologize for the misunderstanding.

DESIGNATED ORIGINAL

Certified By Mary C. Hurd

Add Info
87-503

License No. SUA-1471
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Pursuant to your request for copies of Homestake's programs, please find attached the following programs:

1) Emission Control Device Program
2) HMC Occupational and Environmental Monitoring and Surveillance Program
3) Quality Assurance Program for Radiological Monitoring
4) HMC Uranium Mill Bioassay Program
5) HMC Respiratory Protection Program

The remainder of this letter will be in reference to your specific comments on Homestake's Dust Control Program.

As reported in Homestake's letter of October 17, 1986, the operation commenced their interim dust control program in 1977 by applying a chemical binder to those areas felt to be the most susceptible to wind erosion. Homestake commenced this program in the interest of keeping emissions from their operation as low as reasonably achievable. Each year Homestake would evaluate the effectiveness of the chemical stabilization program and enchance it where appropriate. In conjunction with the chemical stabilization program, Homestake also utilized snow fencing to control the effects of wind on the tailing embankment.

Homestake has evaluated and tested numerous kinds of chemical binding materials in the lab and on the pile in an effort to continually make the dust control program better. Homestake currently is utilizing a chemical binder from Nalco Chemical Company, Nalco IDA 656; a synthetic polyoner. This particular product was evaluated for the Bureau of Mines - Washington, D.C. by Environmental Services and Technology in a February, 1983 report entitled "Dust Control on Active Tailing Ponds". The report concludes that the Nalco product ranks among the top binder products in tailing dust control, as well as in cost effectiveness. Homestake is continuing, however, to test new products to enhance their program. For example, Homestake plans on testing a new product for Wen-don Company on their tailing pile during 1987.

Homestake commenced evaluating chemical binders in 1977 with numerous laboratory tests and eventually applied a large test plot on the west embankment (area most susceptible to wind erosion) late in the fall of that year. Each year since that time, Homestake has applied chemical binder to continuously increasing areas of the tailing pile. Attached are a series of maps showing areas of the tailing pile covered with chemical binder in successive years. Each year the since control program was evaluated and new areas susceptible to wind erosion were added into the overall program.

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Since the Nuclear Regulatory Commission re-asserted their authority in the State of New Mexico and made it clear what was expected in a Tailing Dust control Program, Homestake greatly expanded their chemical spray commitment. This is made clear by working at the areas covered in 1985 -vs- 1987's maps (attached). Homestake's commitment under the NRC is substantially greater (approximately 40%) than that of any other years. The program described in Homestake's Interim Dust Control Program greatly exceeds Homestake's previous chemical stabilization efforts.

Homestake has always applied their chemical binder in the fall of each year. Application is scheduled during the fall because the cold winter months prevent penetration of the chemical into the tailings materials, and not enough time between freezing weather conditions and the spring winds exist for covering the necessary areas. Routine maintenance of controlled areas is ongoing throughout all but the winter months. If an area degrades to the point where excessive dusting is occurring, a fresh coat of chemical binder is applied.

Pursuant to Amendment Numbers 19 and 30 in Homestake's Radioactive Materials License, weekly visual inspections have been incorporated into the Dust Control Program.

During 1987, Homestake commits to survey the land surrounding their mill and tailing facility in an effort to more clearly delineate the extent of excessive windblown tailings from their operation. An evaluation will be made upon the conclusion of that survey to determine what followup actions would be appropriate. Homestake believes at this time that it would be inappropriate and environmentally unsound to denude a large area of land surrounding their facilities of its dense, mature vegetation growth. This vegetation is currently keeping the ground surface very much intact and dramatically prevents the redistribution of surface materials. Denuding this area would create a dust bowl, as is exhibited in serveral locations around the Grants area, and a great detriment to the surrounding environment.

Homestake proposes to evaluate the radiation survey, locate any areas exhibited excessive radionuclide levels, clean those areas up and return the residue to the tailing pile, and initiate vegetation test plots to evaluate the success of different types of vegetation and application techniques. Homestake proposes to enlist the help of the NRC, Soil Conservation Service and/or local university in conducting these tests. Conducting the clean up effort in this manner should alleviate the potential environmental problem of creating a dust bowl by scouring the entire area free of its protective vegetation cover.

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Attached, please find a copy of Homestake's revised Dust Control Program.

If you have any further comments or questions, please don't hesitate to contact me.

Very truly yours,

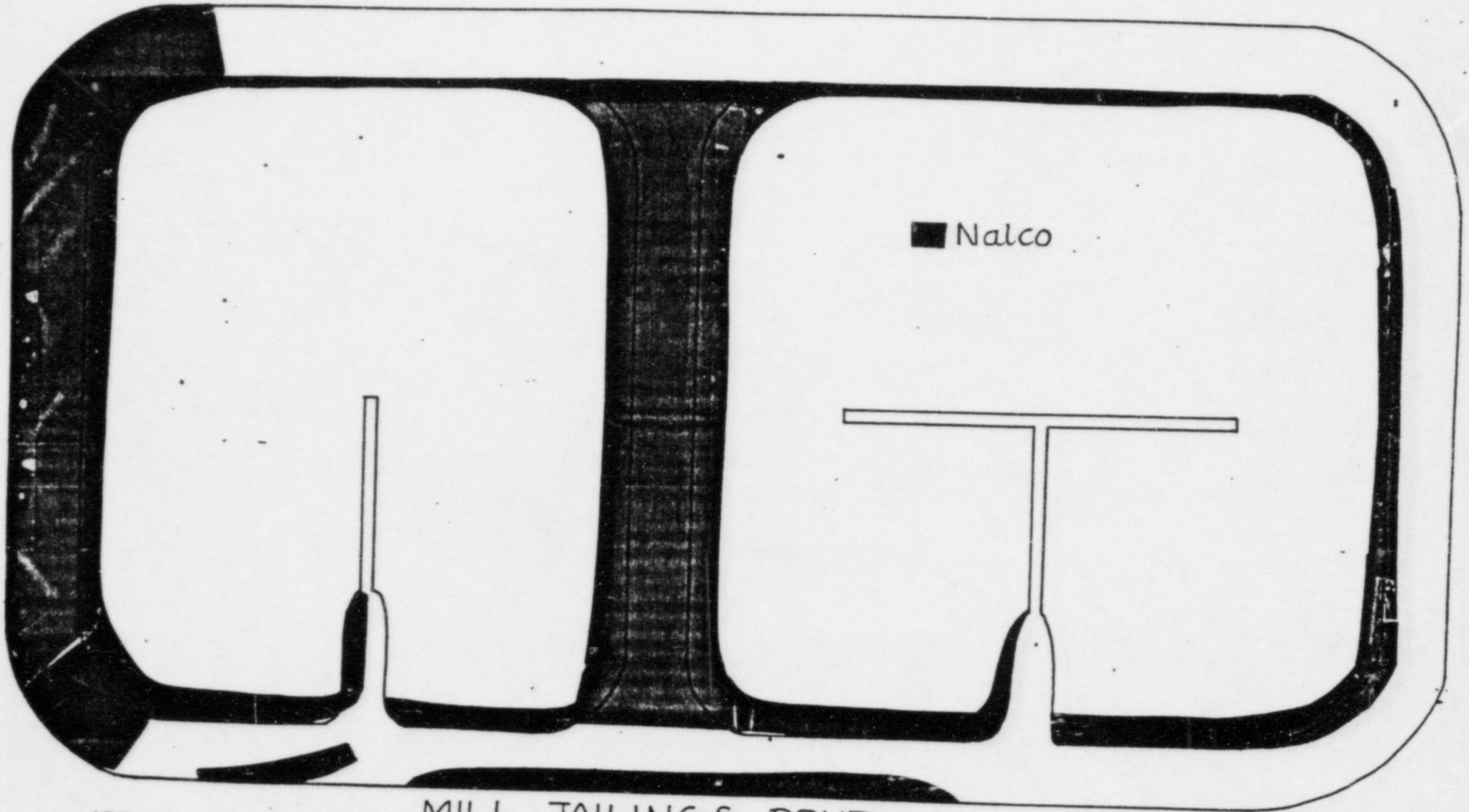
HOMESTAKE MINING COMPANY-GRANTS

Edward E. Kennedy

Edward E. Kennedy
Director of Environmental
Affairs

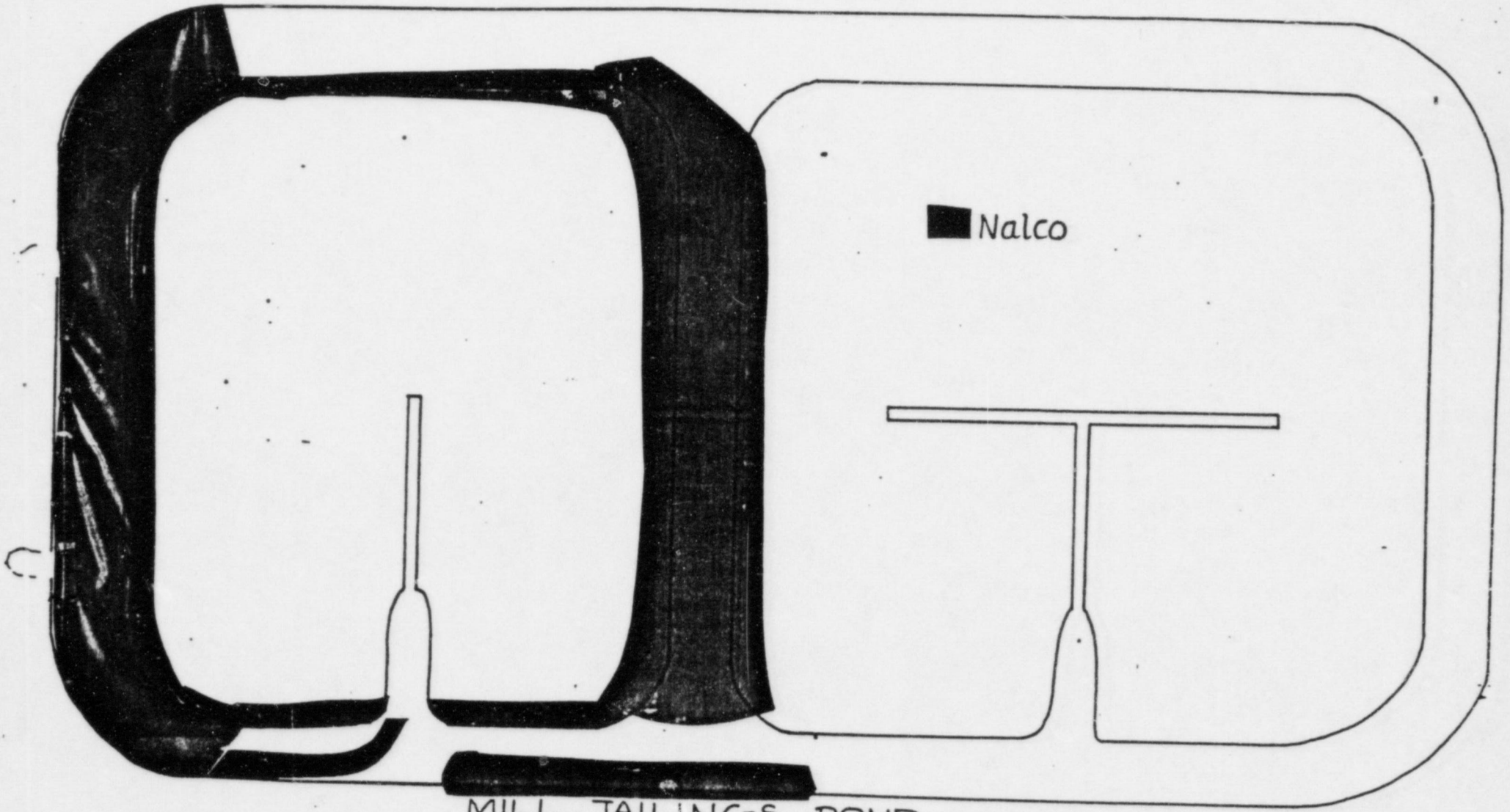
EEK/bgl

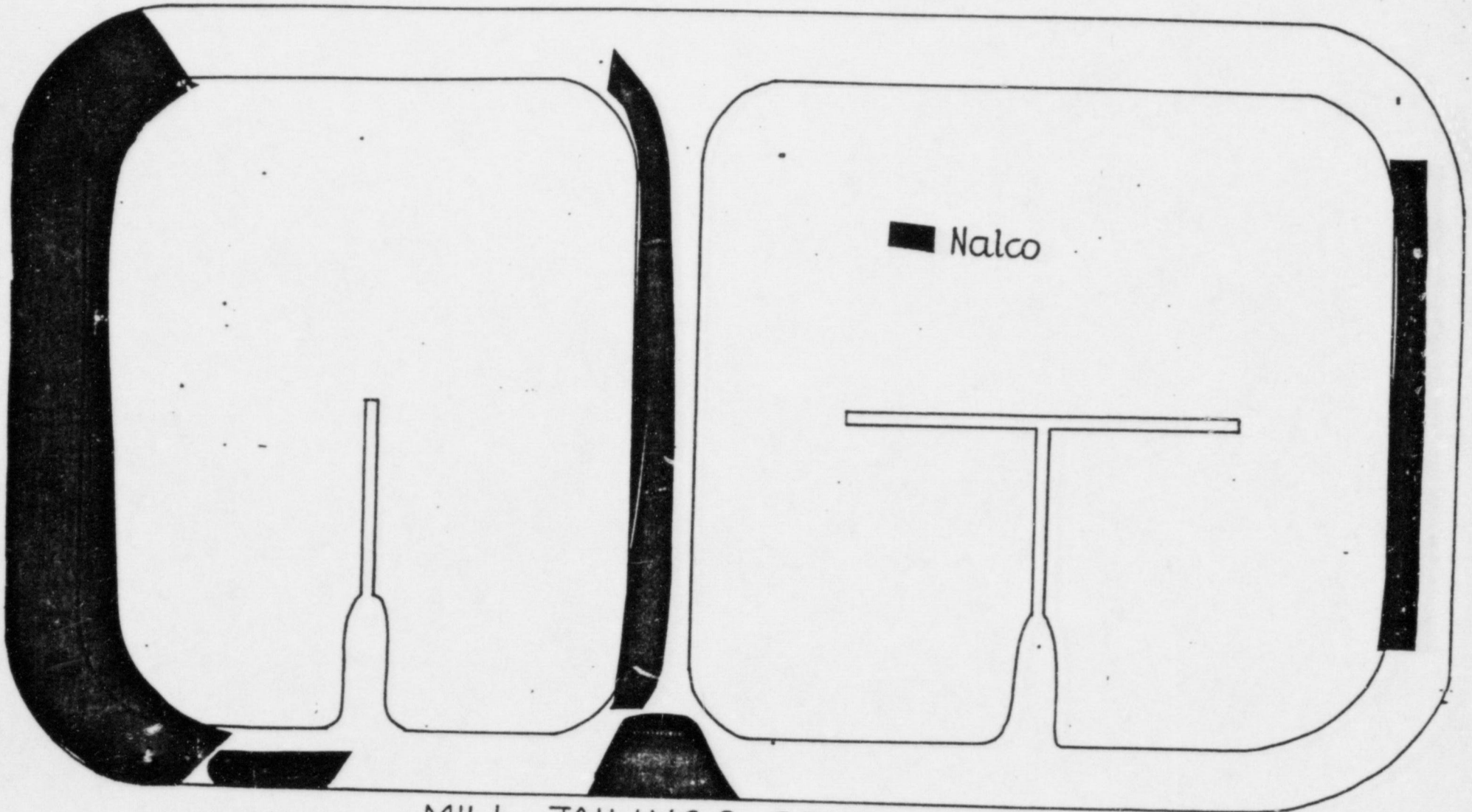
xc: T.G. White
T.R. Beck
R.F. Farrell
D.B. Crouch



1987 +

MILL TAILINGS POND


Nalco
MILL TAILINGS POND



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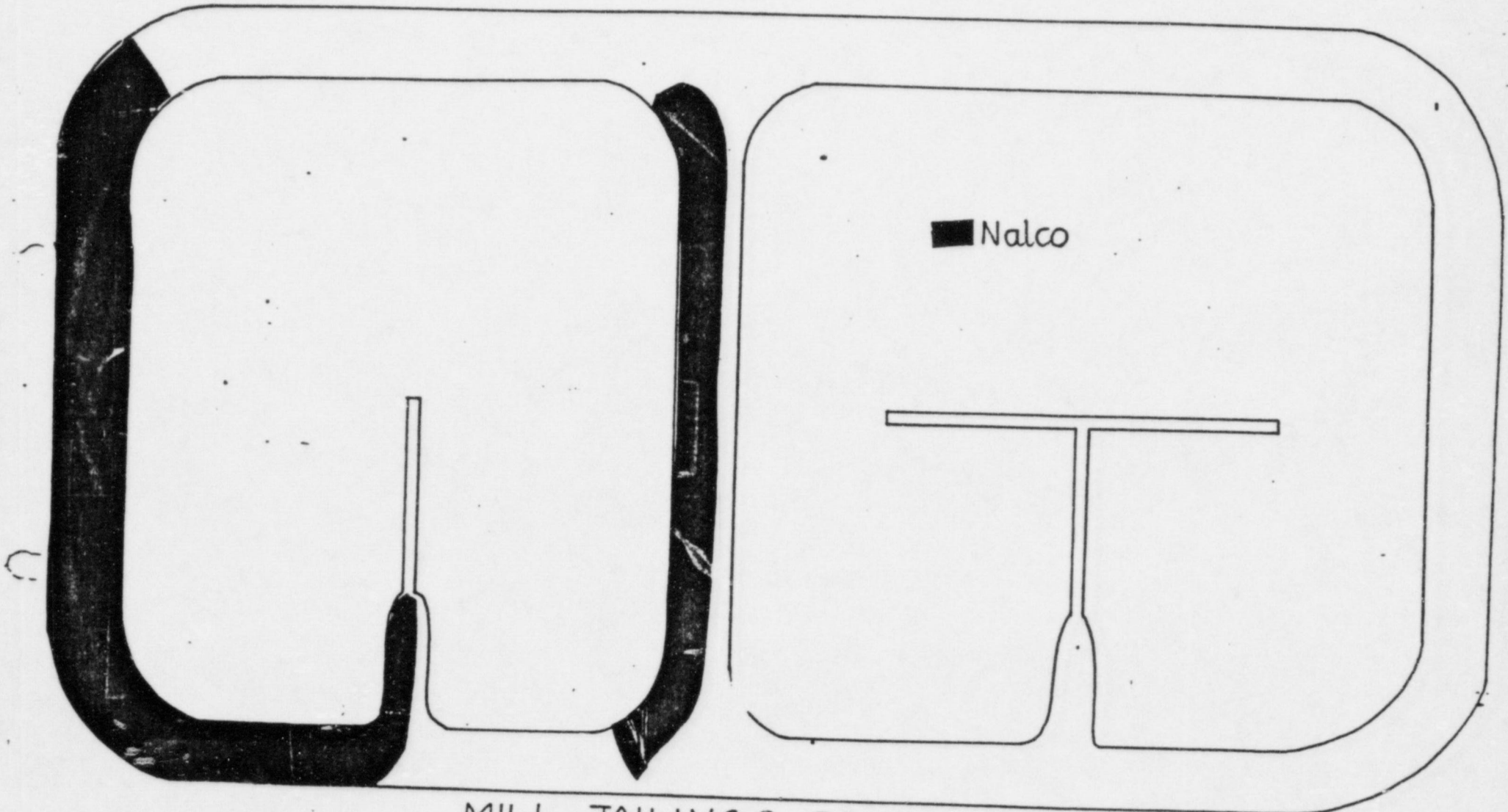
1984 & 1985



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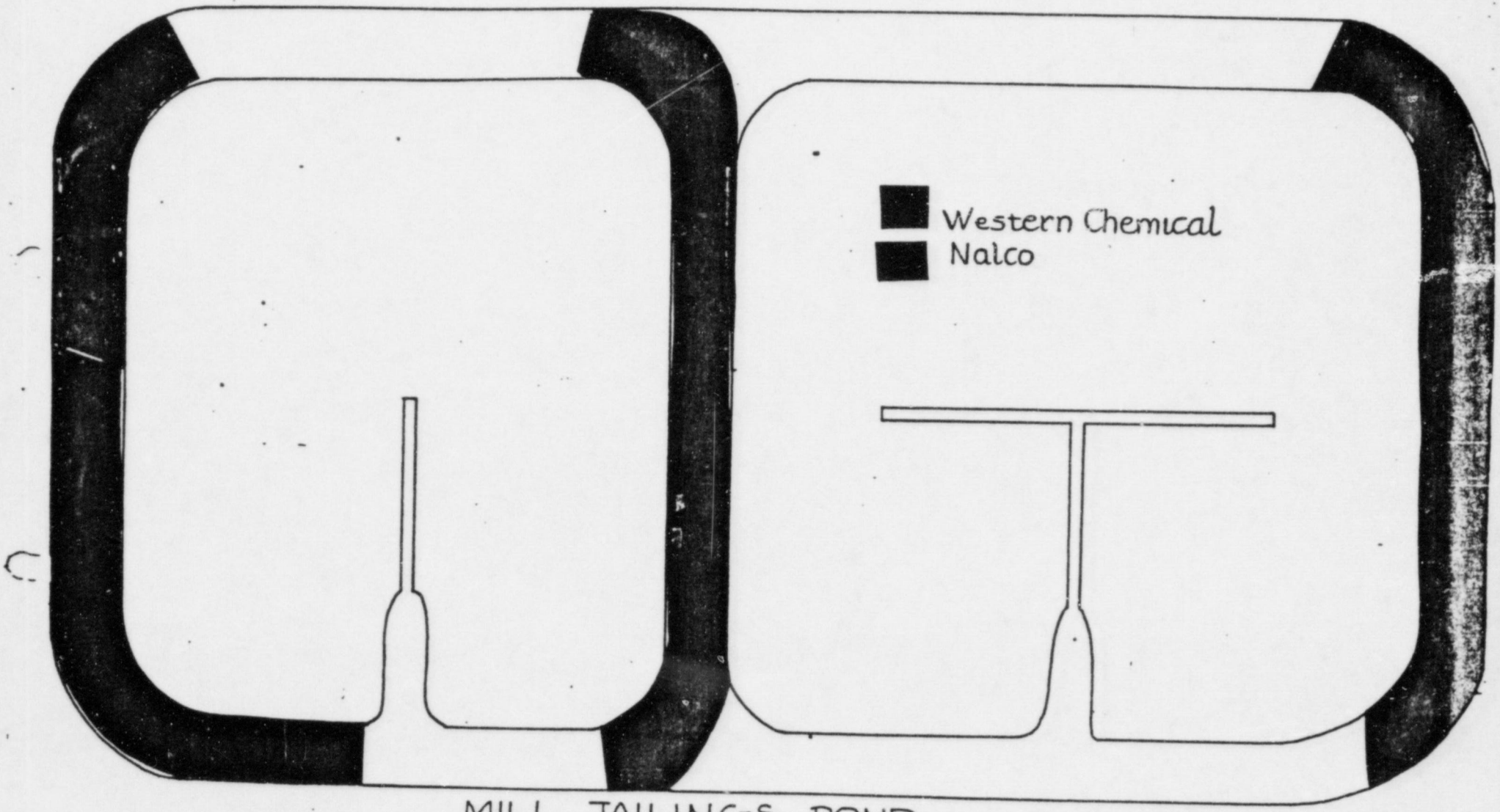
1983



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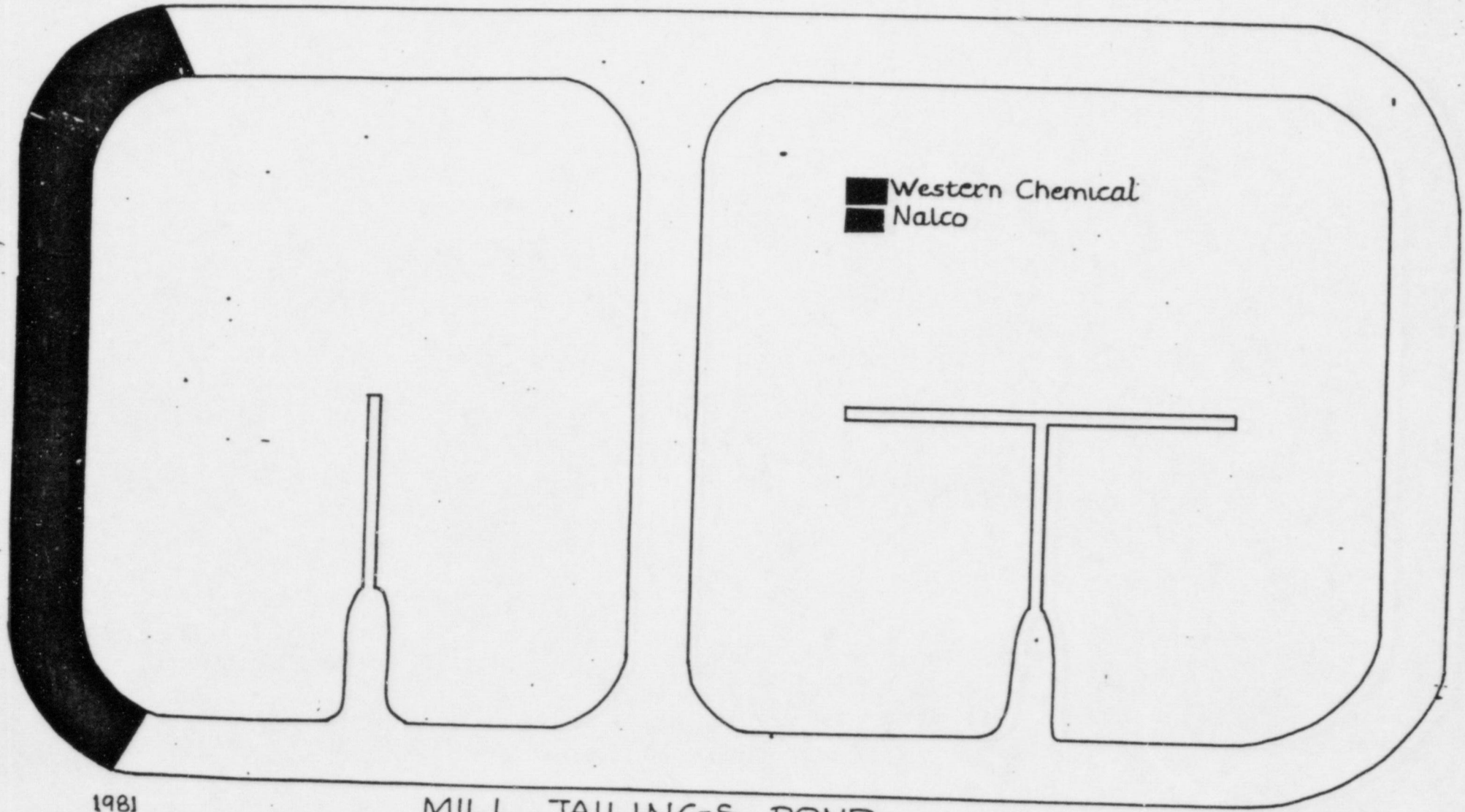

1981

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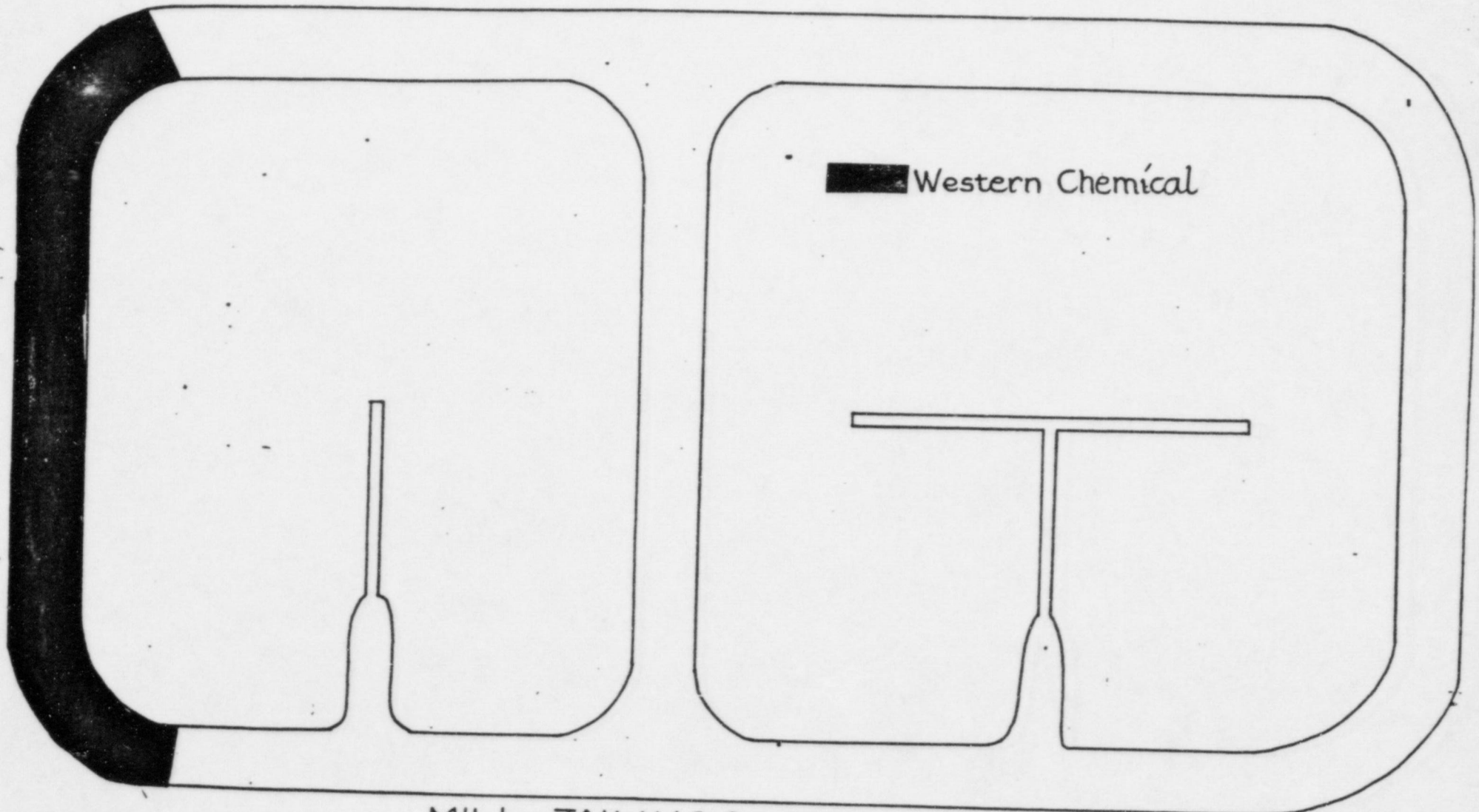

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Western Chemical

78-80

Homestake Mining Company - Grants Operation
Interim Dust Control of the Tailing Pile and Ore Piles

Criterion 8 of 10 CFR Part 40, Appendix A requires: "To control dusting from tailings, that portion not covered by standing liquids must be wetted or chemically stabilized to prevent or minimize blowing and dusting to the maximum extent reasonably achievable".

Under the as-low-as-reasonably-achievable (ALARA) concept, Homestake has a very vigorous dust prevention and control program in effect. Homestake has incorporated several methods designed to minimize the blowing of tailings and enhance the integrity of the impoundment embankments into their Interim Dust Control Program. Homestake feels that the dust control concepts utilized at the Grants Operation tailings impoundment are the most effective methods to minimize blowing and dusting to the maximum extent reasonably achievable.

Two types of physical barriers are incorporated into the dust control program for the tailing impoundment. Old, discarded vehicle tires are utilized in localized areas (also roadways and causeways) to help hold embankment in place and minimize blown tailings. This creates an area of deposition rather than erosion. Snow fencing is utilized to a very great extent along the embankment areas to help prevent blowing of tailings material. This also creates a depositional environment, rather than an erosional one.

Homestake maximizes, to the extent reasonable, the water level in the tailing facility to keep radiation doses from radon emission and wind blown particulates to ALARA. Homestake's Ground Water Protection Program allows the flexibility in the amount of water that can be discharged from their downstream collection system into the tailing pond. This concept of dust suppression by water level management is accomplished while staying in compliance with the operation's freeboard and beach requirement.

Homestake's most extensive tailings dust suppression program consists of chemically stabilizing those sides of the pile most susceptible to wind erosion. In addition, those beach areas not covered by standing water are also sprayed with the chemical stabilizing agent to the maximum extent reasonably achievable (see attached map).

Homestake currently utilizes a chemical binder manufactured by the Nalco Chemical Company, NAlco IDA 656, a synthetic polyoner (described in detail in Bureau of Mines report entitled "Dust Control on Active Tailings Piles", 1983). However, in Homestake's continuing efforts to maintain exposures and emissions ALARA, an on-going product evaluation program exists where various other products are tested to determine their enhancement over the product currently in use. Field tests actually performed on the tailing pile is Homestake's preferred method for evaluating alternative binder products.

The chemical binder currently in use by Homestake requires an annual application to perform at optional efficiency. Several manufacturing companies have, however, contacted Homestake and indicated their product would require much less frequency of application. Homestake's application frequency will depend upon the material being used. The windy season for the Grants, New Mexico area is almost solely restricted to about four to six weeks in April and May. Very little winds occur during the remaining portion of the year. Application of the chemical is also clinically restricted. Below freezing conditions for application prevents penetration of the material into the tailing sands, which is needed for chemically binding the sand grains together. Application during windy conditions is also restrictive because the application is made by a fine spray. In the Grants area, the windy season hits just when the winter freeze condition ends. Therefore, Homestake applies their chemical binder to the tailing pile in late summer and fall; as close to the windy season as practicable without appling during freezing temperatures.

The effectiveness of Homestake's control methods shall be evaluated weekly by means of a documented tailings area inspection conducted to identify localized areas which may require additional mitigative actions. In addition, Homestake personnel (General Manager, Mill Manager, Director of Environmental Affairs and or the Radiation Protection Administrator) will critically inspect the condition of the dust suppression program on a quarterly basis to determine if additional

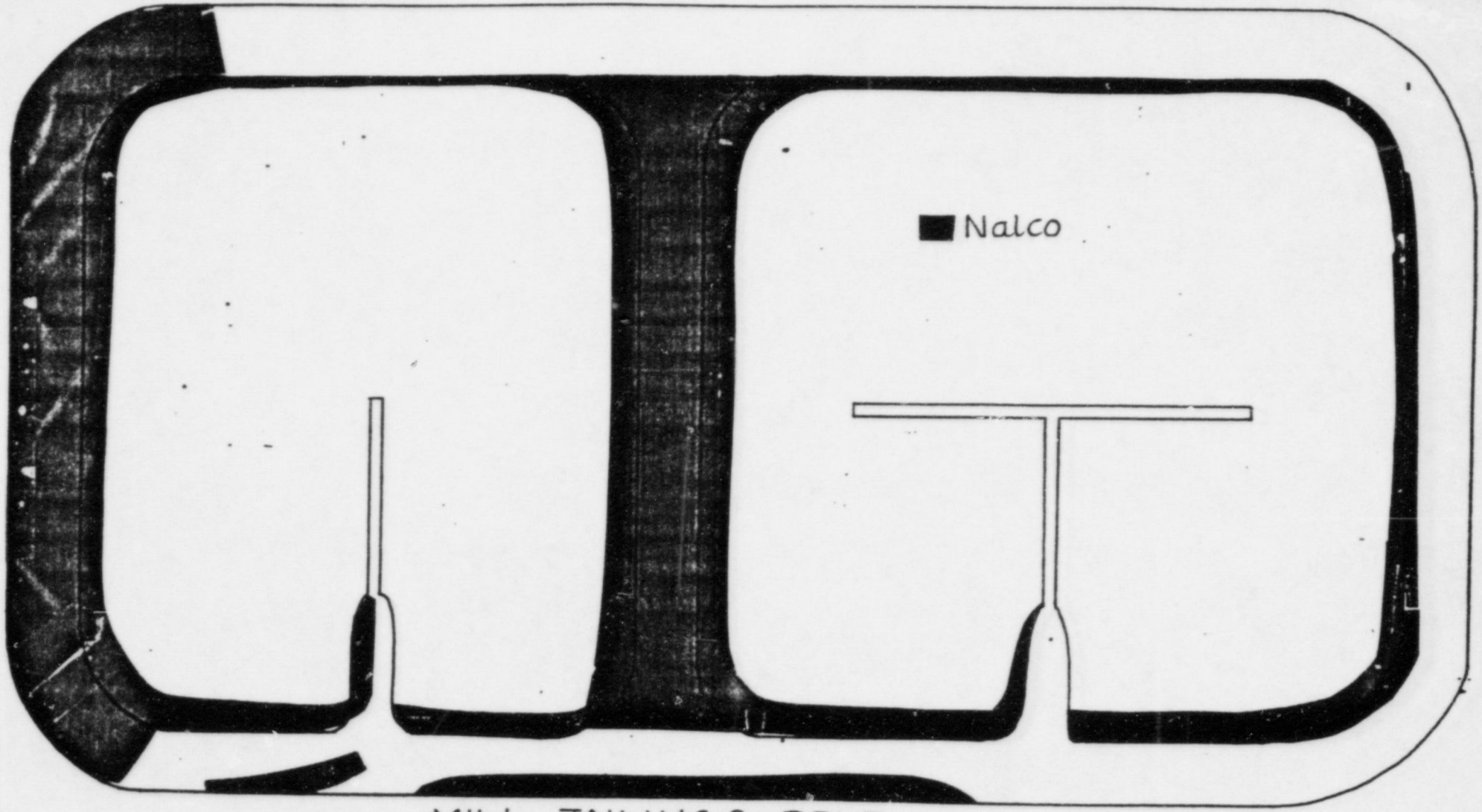
tires or snow fencing is needed or if those areas chemically stabilized need to be repaired or have another coat added. In the event significant evidence of blown tailings, or a significant breakdown in the dust suppression programs, is discovered during the inspection, appropriate steps shall be taken to rectify the situation and prevent the additional deposition of tailings materials onto areas beyond the impoundment. The RPA shall evaluate the radionuclide information semi-annually for any trends of blown tailings which may be occurring.

Homestake's ore piles normally are not subject to much dusting. Homestake's ore characteristically contains of about 8-10% moisture by weight. This moisture content typically will keep any significant amount of dust from blowing off the ore piles. Routinely, ore stockpiles are processed through the crushing circuit into the ore storage bins before any significant amount of moisture is evaporated from them. However, Homestake personnel, identified above, will routinely inspect the condition of ore pile area on a weekly basis and document their observations. Mitigative action will be implemented upon observations of extensive dusting where the ore moisture content is inadequately controlling blowing.

During 1987, Homestake commits to conducting a radiological survey in the area around their facility to determine the extent of elevated radiation levels attributable to their tailing pile. Upon completion of the survey, Homestake will evaluate what appropriate

mitigative actions should be taken. Isolated areas of excessively elevated radionuclide concentrations will be identified and scraped clean. The residue shall be returned to the tailing pile. Vegetation test plots will be conducted in those areas in concurrence with NRC, Soil Conservation Service and/or university assistance to evaluate the success of different kinds of vegetation, recovery rate, application and techniques. These test plots will be used to determine the procedures for conducting final land reclamation at the time Homestake ceases operation and goes into final reclamation and stabilization.

Subsequently, every two (2) years Homestake will conduct a followup radiation survey and delineate any other isolated area of elevated radionuclide concentrations which should be cleaned up.



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