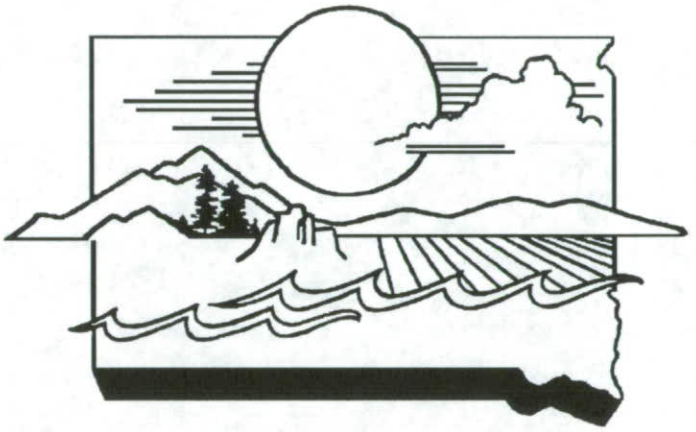
SUMMARY OF THE STATUS OF THE LARGE SCALE GOLD AND SILVER SURFACE MINING INDUSTRY IN THE BLACK HILLS FOR THE YEAR 1992



Protecting South Dakota's Tomorrow... Today

PREPARED BY THE OFFICE OF MINERALS AND MINING
S.D. DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
FEBRUARY, 1993

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INTRODUCTION

Pursuant to SDCL 45-6B-93, the Department of Environment and Natural Resources is required to publish an annual summary of the status of the large scale gold and silver surface mining industry in the Black Hills of South Dakota. This summary, which covers the time period January 1 to December 31, 1992, is based on annual reports submitted by permitted large scale gold and silver mine operators.

\S/

Robert E. Roberts
Secretary

MAJOR EVENTS IN THE LARGE SCALE GOLD AND SILVER INDUSTRY IN SOUTH DAKOTA IN 1992

SECOND CENTURY ENVIRONMENTAL PROTECTION ACT

In early 1992, the South Dakota Legislature approved the Second Century Environmental Protection Act. The passage of this act affected the large scale gold mining industry in several ways. The information contained in this report is now required to be submitted to the Department by each mining operation. Also, a 6,000 acre limit was placed on large scale gold and silver surface mining operations, with a requirement that 500 acres of surface mining disturbed land be reclaimed by September 1, 1997. No new permits or permit amendments will be issued until these 500 acres have been reclaimed. When the 500 acre requirement is met, the current reclamation standards will be reviewed. Finally, post closure plans and the description of critical resources are now required to be part of permit applications for all future mining operations covered under SDCL 45-6B.

SURFACE MINING INITIATIVE

On November 3, 1992, voters approved an initiated measure to place additional acreage limitations on large scale gold and silver operations. Expansions to existing large scale gold and silver operations are limited to 200 acres of surface mining disturbed land per each individual mine permit, and new operations are allowed 320 acres of surface mining disturbed land. Operators will be allowed to expand beyond these limits if they reclaim an acre of land for every acre of expansion, have agreed not to disturb an equal acreage of permitted affected land, or agree to perform reclamation of previously disturbed land inside or outside a permit area boundary. Reclamation acreage credit can also be assigned from one large scale gold or silver operator to another.

NEW PERMITS

In March, 1992, Homestake Mining Company was granted a permit to expand the Open Cut operation in Lead, South Dakota. A total of 182 acres will be disturbed by the new operation. This new permit allows Homestake to expand the Open Cut by 27.8 acres and construct a waste disposal facility in Sawpit Gulch which will disturb 91.4 acres. A haul road to Sawpit Gulch will be constructed over Deadwood Creek and Highway 14A. Concrete arch tunnels will be constructed to allow traffic on Highway 14A to pass under the haul road. A portion of Highway 85 through Lead will also need to be rerouted to make room for the expansion of the Open Cut. The new project will add approximately 4.5 years to the life of the Open Cut.

PERMIT AMENDMENTS

Wharf Resources submitted a application in November, 1992, to amend Large Scale Mining Permit Nos. 356, 434, and 435. The amendment would allow Wharf to increase ore production from 3.5 million to 4.5 million tons annually and increase waste rock production by 1.9 million tons annually. Wharf requested the amendment to allow flexibility to increase annual production without submitting amendment applications on an annual basis. At the end of the year, the Department was considering recommending conditional approval of the amendment application.

Richmond Hill submitted a permit amendment application on December 31, 1992 to initiate a long term acid mine drainage mitigation plan. The Department is presently reviewing the application for completeness, and a hearing is tentatively scheduled for Spring, 1993.

MAJOR TECHNICAL REVISIONS CONDITIONALLY APPROVED BY DEPARTMENT

February 6	Golden Reward - Permanently use trucks for pad unloading instead of the reclaimer unit.
February 27	Brohm Mining - Disposal of spent ore on the waste rock side of the Ruby Gulch Depository.
May 15	Wharf Resources - Increase total amount of ore on pad by placing ore between each pad.
May 20	Wharf Resources - Use a Counter Current Ion Exchange (CCIX) Unit to remove nitrates from neutralized process solution.
July 27	Brohm Mining - Bulk test the leachability of 60,000 tons of sulfide ore.
October 23	Golden Reward - Expand the Liberty Pit by 2.5 acres of previously permitted affected land.
November 13	Wharf Resources - Disturb 1.7 acres of new contiguous affected land with the Whiteside Cut Expansion.
December 17	Homestake Mining - Expand East Wasterock and Bobtail Wasterock Disposal Areas by filling in 8 acres of former utility corridor area.
December 29	Golden Reward - Expand the Pet Hill backfill area and disturb 6.7 acres of new contiguous affected land.

SPECIAL, EXCEPTIONAL, CRITICAL, OR UNIQUE LAND DETERMINATIONS

The Department received two Requests for Determination of Special, Exceptional, Critical, or Unique Lands for two potential large scale gold operations in October, 1992. Wharf Resources submitted a Request for the proposed Clinton Project immediately east and northeast of the current Wharf Mine. The Tinton Partners submitted a request for a proposed placer mining operation near Tinton. At this time, it is uncertain whether the Tinton Project will be a small or a large scale operation.

In early January, the Department determined that neither project constituted special, exceptional, critical, or unique lands and were not placed on the preliminary list.

One petition to nominate the 7,920 acre Dome Mountain - Lost Gulch and Anchor Hill Lookout area to the preliminary list of special, exceptional, critical, or unique lands was heard by the Board of Minerals and Environment in 1992. The annual hearing to update the preliminary list was held in Lead, South Dakota on September 16 and 17, 1992. After hearing testimony from those who favored and those who opposed the petition, the Board decided that exposed laccolithic formations along Two Bit Gulch would be the only areas within the nominated area that would be considered special, exceptional, critical, or unique lands.

NOTICES OF VIOLATION

Acid Mine Drainage at Richmond Hill Mine. During a January 1992 inspection at Richmond Hill, Department inspectors noticed sulfide rock in the waste dump and exposed sulfide rock in the mine pit. Subsequent spring sampling by Department personnel showed that acid mine drainage (AMD) was being generated from the sulfide rock at the site. Testing by Richmond Hill showed that the sulfide rock would definitely generate acid. In July, Richmond Hill submitted a preliminary AMD mitigation plan to the Department. At the same time, Richmond Hill was ordered to stop dumping sulfide waste rock into the waste dump. Richmond Hill then took steps to treat acid mine drainage from the waste dump by metering in a soda ash solution to the discharge from the dump.

Later in July, a report from Richmond Hill's consultant indicated that the oxide rock at the mine also has potential to generate acid. As a result, Richmond Hill was ordered to stop all dumping in the waste dump and cease mining. Richmond Hill submitted a short term remediation plan in early October to address preventing AMD during spring '93 runoff. A long term acid mine drainage mitigation plan was submitted to the Department in the form of a permit amendment on December 31, 1992.

Richmond Hill, Inc. was issued two notices of violation on December 15, 1992 for permit and water quality violations resulting from acid mine drainage at the Richmond Hill Mine.

TABLE 1 - AFFECTED AND SURFACE MINING DISTURBED ACREAGE JANUARY 1 TO DECEMBER 31, 1992 *

PERMIT NUMBER	OPERATOR	PERMITTED AFFECTED ACRES	TOTAL AFFECTED ACRES	ADDITIONAL ACRES AFFECTED PAST YEAR	TOTAL SURFACE MINING ACRES AFFECTED	ADDITIONAL SURFACE MINING ACRES AFFECTED PAST YEAR
439	BROHM MINING CORPORATION	406.00	184.90	2.90	161.83	2.90
208	DAKOTA PLACERS, INC.	81.00	12.00	0.00	4.05	0.00
450	GOLDEN REWARD MINING CO., L.P.	470.70	387.00	36.00	205.00	36.00
332	HOMESTAKE MINING COMPANY	468.00	412.90	2.80	389.70	2.80
456	HOMESTAKE MINING COMPANY	183.40	26.50	26.50	26.50	26.50
416	MINERVA EXPLORATIONS, INC.	122.00	0.00	0.00	0.00	0.00
445	RICHMOND HILL, INC.	396.00	297.30	6.00	188.00	6.00
356, 434, & 435	WHARF RESOURCES	685.70	553.00	11.00	435.00	8.00
TOTALS		2,812.80	1,873.60	85.20	1,410.08	82.20

* Since the annual reports for these operations were required to be submitted to the Department by January 1, 1993, some of the information in those reports was either estimated for the month of December or included information up through mid-December only. This information has since been updated, and this updated information is included in this table.

TABLE 2 - RECLAIMED ACREAGE
JANUARY 1 TO DECEMBER 31, 1992 *

PERMIT NUMBER	OPERATOR	TOTAL INTERIM RECLAIMED ACRES	INTERIM RECLAIMED ACRES PAST YEAR	TOTAL FINAL RECLAIMED ACRES THAT MEET THE REQUIRED POST MINE LAND USE	FINAL RECLAIMED ACRES PAST YEAR THAT MEET REQUIRED POST MINE LAND USE	TOTAL FINAL RECLAIMED ACRES THAT DO NOT MEET REQUIRED POST MINING LAND USE	FINAL RECLAIMED ACRES PAST YEAR THAT DO NOT MEET REQUIRED POST MINE LAND USE
439	BROHM MINING CORPORATION	0.55	0.00	0.00	0.00	5.29	0.00
208	DAKOTA PLACERS, INC.	0.00	0.00	0.00	0.00	0.00	0.00
450	GOLDEN REWARD MINING CO., L.P.	2.27	0.00	0.00	0.00	25.80	6.48
332	HOMESTAKE MINING COMPANY	61.40	1.50	8.50	0.00	104.30	4.60
456	HOMESTAKE MINING COMPANY	0.00	0.00	0.00	0.00	13.60	13.60
416	MINERVA EXPLORATIONS, INC.	0.00	0.00	0.00	0.00	0.00	0.00
445	RICHMOND HILL, INC.	24.30	0.00	10.00	0.00	31.40	4.50
356, 434, & 435	WHARF RESOURCES	43.00	2.00	30.00	0.00	48.00	13.00
TOTALS		131.52	3.50	48.50	0.00	228.39	42.18

* Since the annual reports for these operations were required to be submitted to the Department by January 1, 1993, some of the information in those reports was either estimated for the month of December or included information up through mid-December only. This information has since been updated, and this updated information is included in this table.

TABLE 3 - PRODUCTION FIGURES
JANUARY 1 TO DECEMBER 31, 1992 *

PERMIT NUMBER	OPERATOR	TONS OF ORE MINED PAST YEAR	TONS OF ORE PROCESSED PAST YEAR	TONS OF WASTE ROCK AND OVERBURDEN MINED PAST YEAR	OUNCES OF GOLD PRODUCED PAST YEAR	OUNCES OF SILVER PRODUCED PAST YEAR
439	BROHM MINING CORPORATION	693,031.00	776,691.00	1,854,187.00	27,105.00	44,013.00
208	DAKOTA PLACERS, INC.	0.00	4,074.00	0.00	0.00	0.00
450	GOLDEN REWARD MINING CO., L.P.	2,153,687.00	2,127,355.00	6,110,025.00	54,091.00	66,302.00
332	HOMESTAKE MINING COMPANY	1,032,544.00	1,032,544.00	4,957,104.00	121,940.00	38,112.00
456	HOMESTAKE MINING COMPANY	100,996.00	44,456.00	4,561,007.00	2,660.00	1,588.00
416	MINERVA EXPLORATIONS, INC.	0.00	0.00	0.00	0.00	0.00
445	RICHMOND HILL, INC.	1,124,000.00	1,124,000.00	691,000.00	30,561.00	32,000.00
356, 434, & 435	WHARF RESOURCES	3,420,070.00	3,545,336.00	7,156,546.00	95,092.00	19,500.00
TOTALS		8,524,328.00	8,654,456.00	25,329,869.00	331,449.00	201,515.00

* Since the annual reports for these operations were required to be submitted to the Department by January 1, 1993, some of the information in those reports was either estimated for the month of December or included information up through mid-December only. This information has since been updated, and this updated information is included in this table.

NOTE: The Homestake underground mine produced 268,952 ounces of gold and 100,035 ounces of silver in 1992. These figures are not included in this table.

TABLE 4 - WATER AND CYANIDE USE
JANUARY 1 TO DECEMBER 31, 1992 *

PERMIT NUMBER	OPERATOR	GALLONS GROUND WATER WITHDRAWN PAST YEAR	GALLONS SURFACE WATER WITHDRAWN PAST YEAR	POUNDS OF CYANIDE USED PAST YEAR
439	BROHM MINING CORPORATION	5,704,600.00	0.00	429,000.00
208	DAKOTA PLACERS, INC.	1,411,200.00	0.00	0.00
450	GOLDEN REWARD MINING CO., L.P.	27,800,000.00	0.00	635,300.00
332	HOMESTAKE MINING COMPANY	0.00	500,000.00	765,120.00
456	HOMESTAKE MINING COMPANY	0.00	500,000.00	31,880.00
416	MINERVA EXPLORATIONS, INC.	0.00	0.00	0.00
445	RICHMOND HILL, INC.	4,700,000.00	0.00	250,000.00
356, 434, & 435	WHARF RESOURCES	56,960,000.00	250,000.00	1,050,000.00
TOTALS		96,575,800.00	1,250,000.00	3,161,300.00

* Since the annual reports for these operations were required to be submitted to the Department by January 1, 1993, some of the information in those reports was either estimated for the month of December or included information up through mid-December only. This information has since been updated, and this updated information is included in this table.

NOTE: Water and cyanide use by Homestake's underground mine is not included in this table.

LARGE SCALE GOLD AND SILVER OPERATIONAL PLANS FOR 1993

BROHM MINING CORPORATION

Brohm Mining plans to temporarily cease mining operations in January. However, leaching and neutralization of crushed ore will continue throughout the year. Revisions to Mine Permit No. 439 may be necessary to achieve compliance with NPDES permit requirements.

Brohm may proceed with plans to obtain a mine permit for the Anchor Hill oxide deposit. Also, Brohm intends to continue work in obtaining a mine permit for the sulfide ore reserve which is contingent on satisfactory results from the sulfide heap leach test currently being conducted. However, it is uncertain at this time whether a permit application for the sulfide ore reserve will be submitted in 1993.

DAKOTA PLACERS, INC.

Dakota Placers will complete mining operations in Block Number 1 of their placer mining operation this year. Approximately 450,000 tons of ore will be mined and processed. Also, approximately 18 acres will be reclaimed in this block this year and will be conducted in compliance with the approved reclamation plan for Mine permit No. 208.

GOLDEN REWARD MINING COMPANY, L.P.

Golden Reward will continue mining in the current pit areas and will begin mining the Harmony Pit. The projected production for 1993 is 2.37 million tons of ore and 6.36 million tons of waste rock. Also, the Pet Hill Pit will be backfilled and will be ready for reclamation.

HOMESTAKE MINING COMPANY

Homestake Mining plans to continue development of the Open Cut Expansion Project which was permitted in March, 1992. Mining activities will continue on the west side of the Open Cut, and mining will begin on the south side of the Cut. Approximately one million tons of ore will be mined and approximately 125,000 ounces of gold will be produced from the Open Cut in 1993.

Construction activities associated with the Open Cut expansion will include the placement of the arch tunnels over Highway 14-A and Deadwood Creek and placement of fill material over these arches, and construction of the haul road over the fill material to the Sawpit

Wasterock Disposal Facility. A technical revision will be submitted to the Department to construct a sediment control pond associated with the haul road. Other sediment control facilities will also be constructed to prevent sedimentation of Deadwood Creek during the construction of the haul road. Homestake will also begins clearing, grubbing, and stripping topsoil in Sawpit Gulch and will begin construction of the under drain for the Sawpit Wasterock Disposal Facility. Approximately 60 acres will be affected by this activity.

Reclamation plans include continued reclamation of the East Wasterock Disposal Area. Approximately 20 to 25 acres of additional reclamation will also be conducted in this area. Homestake also plans to reclaim approximately 10 acres of disturbance associated with the Sawpit Haul road construction.

MINERVA EXPLORATIONS, INC.

Minerva Exploration's plans for this operation are on hold. No activity is planned for this year.

RICHMOND HILL, INC.

Richmond Hill plans to continue acid mine mitigation activities at the waste dump and pit areas. An amendment to Mine Permit 445, which was submitted to the Department in December, 1992, proposed a long term plan to treat acid mine drainage at the mine. The Department is currently reviewing the amendment application for completeness, and a hearing on the amendment application is tentatively scheduled for spring, 1993.

In the amendment application, Richmond Hill also is proposing to mine the south portion of the Richmond Hill Pit as part of the long term acid mine drainage mitigation plan. The Department is also evaluating this proposal at the present time.

WHARF RESOURCES

Wharf Resources plans to submit a permit application in 1993 to mine the Clinton Expansion Project which is immediately northeast of the current Wharf Mine. Various technical revisions will be submitted when required to meet regulatory requirements.

The majority of the reclamation work in 1993 will be conducted at the Ross Valley Spent Ore Depository. A second buckwall will be constructed to complete the horseshoe-shaped slope of the depository. Approximately 10 to 12 acres of final reclamation will be conducted once the second buckwall is completed. It should be noted that portions of the Ross Valley Spent Ore Depository are presently under final reclamation.

Miscellaneous interim reclamation to reduce sedimentation will occur throughout the mine, especially in the Juno Cut area north of the original Annie Creek Pit. Also, the backfilling of the Annie Creek Pit has been rescheduled due to mining activity in the Whiteside Cut Expansion area south of the original Annie Creek Pit.

APPENDIX I

DEFINITIONS

DEFINITIONS

FINAL RECLAMATION MEETING POST-MINING LAND USE - Land that has undergone final reclamation which has a permanent, self-sustaining vegetative cover that meets the requirements of the approved reclamation plan and meets the reclamation requirements of SDCL 45-6B and ARSD 74:29. These acres can be considered for bond release.

FINAL RECLAMATION NOT MEETING POST-MINING LAND USE - Land that has undergone final reclamation that does not meet the requirements of the approved reclamation plan and the reclamation requirements of SDCL 45-6B and ARSD 74:29. These acres also include areas that have been graded and seeded that may or may not have a vegetative cover.

INTERIM RECLAMATION - As defined in ARSD 74:29:01:01(17), interim reclamation is reclamation performed during a mining operation or between mining phases to stabilize affected land by regrading and revegetating to control erosion, improve aesthetics, and minimize hazards. It can be construed to be temporary reclamation or soil stabilization for affected land that will be disturbed again.

PERMITTED AFFECTED ACRES - As defined in SDCL 45-6B-3(1), permitted affected land involves all lands permitted to be affected by a mining operation, including land from which overburden is to be or has been removed and land upon which overburden, waste rock, mine spoil, or mill tailings is to be or has been deposited, land which is disturbed by the building of access roads, railroad loops, warehouses, storage areas or other support facilities for the purpose of mining, and land affected by surface subsidence, unstable slopes, and other surface effects caused by underground mine workings.

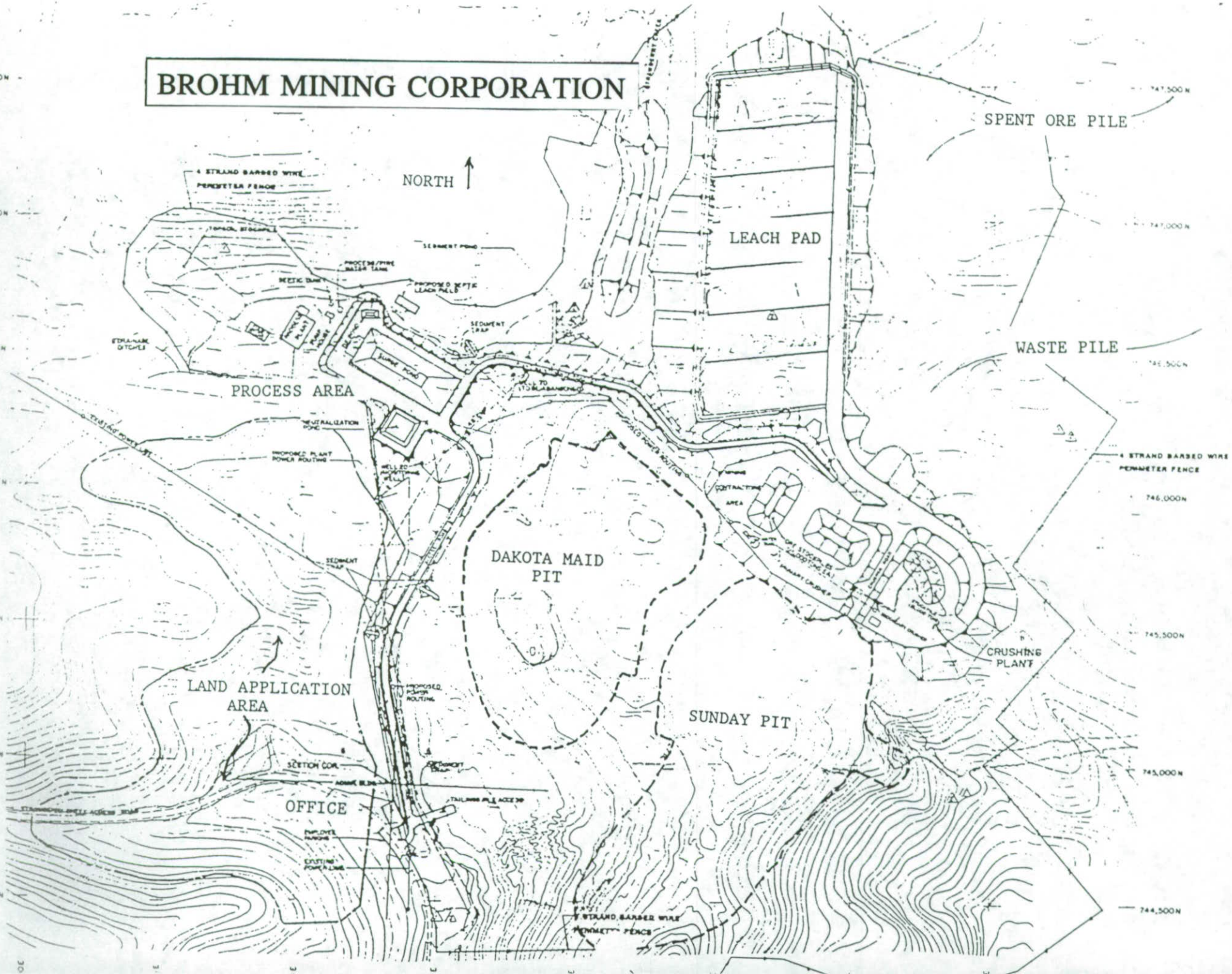
TOTAL AFFECTED ACRES - All land currently affected by the large scale gold and silver operations under permit. This would include all lands described above in "Permitted Affected Acres".

TOTAL SURFACE MINING DISTURBED ACRES - As defined in SDCL 45-6B-3(15), surface mining disturbed land is land from which overburden has been removed, land upon which overburden, waste rock, mine spoil, or mill tailings have been deposited, land mined which has no overburden, heap leach pads, and process ponds. Surface Mining Disturbed Lands include overburden and waste rock dumps, spent ore dumps, tailings impoundments, heap leach pads, open pits, process ponds; and haul roads in pit areas or constructed largely of waste rock, spent ore, or overburden.

Surface Mining Disturbed Lands **do not** include access roads, haul roads constructed from normal cut and fill methods, railroad loops, utility corridors, buildings including process plants, land application areas, topsoil stockpiles, ore stockpiles, crusher areas, storage areas, sediment and erosion control structures, and land affected by surface subsidence, unstable slopes, and other surface effects caused by underground mine workings.

APPENDIX II

MAPS OF CURRENT LARGE SCALE GOLD MINES


BROHM MINING CORPORATION
NORTH
SPENT ORE PILE
LEACH PAD
WASTE PILE
PROCESS AREA
DAKOTA MAID PIT
SUNDAY PIT
CRUSHING PLANT
LAND APPLICATION AREA
OFFICE
4 STRAND BARBED WIRE PERIMETER FENCE
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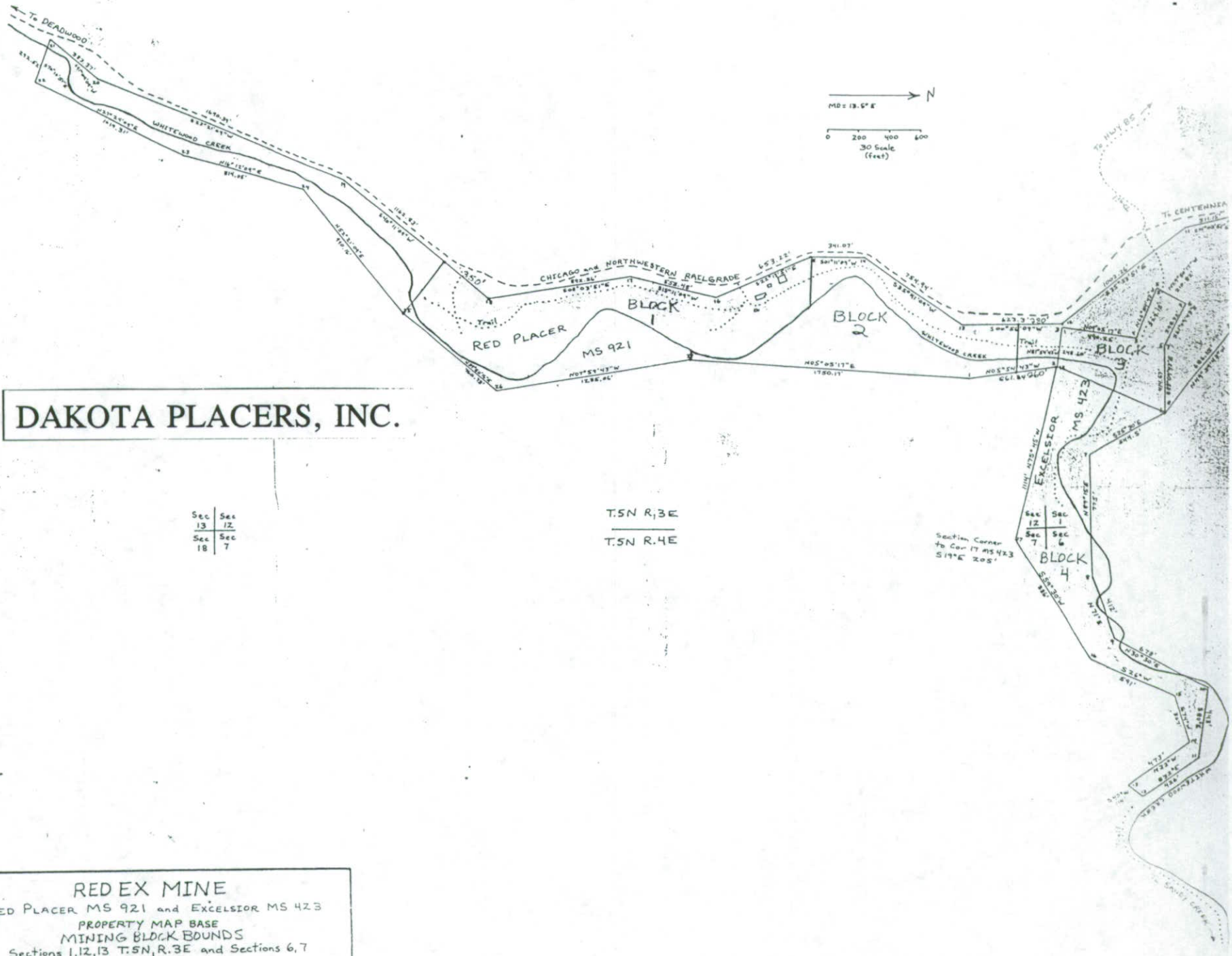
747,000N
746,500N
746,000N
745,500N
745,000N
744,500N



DAKOTA PLACERS, INC.

RED EX MINE

RED PLACER MS 921 and EXCELSIOR MS 423

PROPERTY MAP BASE

MINING BLOCK BOUNDS

Sections 1, 12, 13 T.5N, R.3E and Sections 6, 7 T.5N, R.4E BHPM

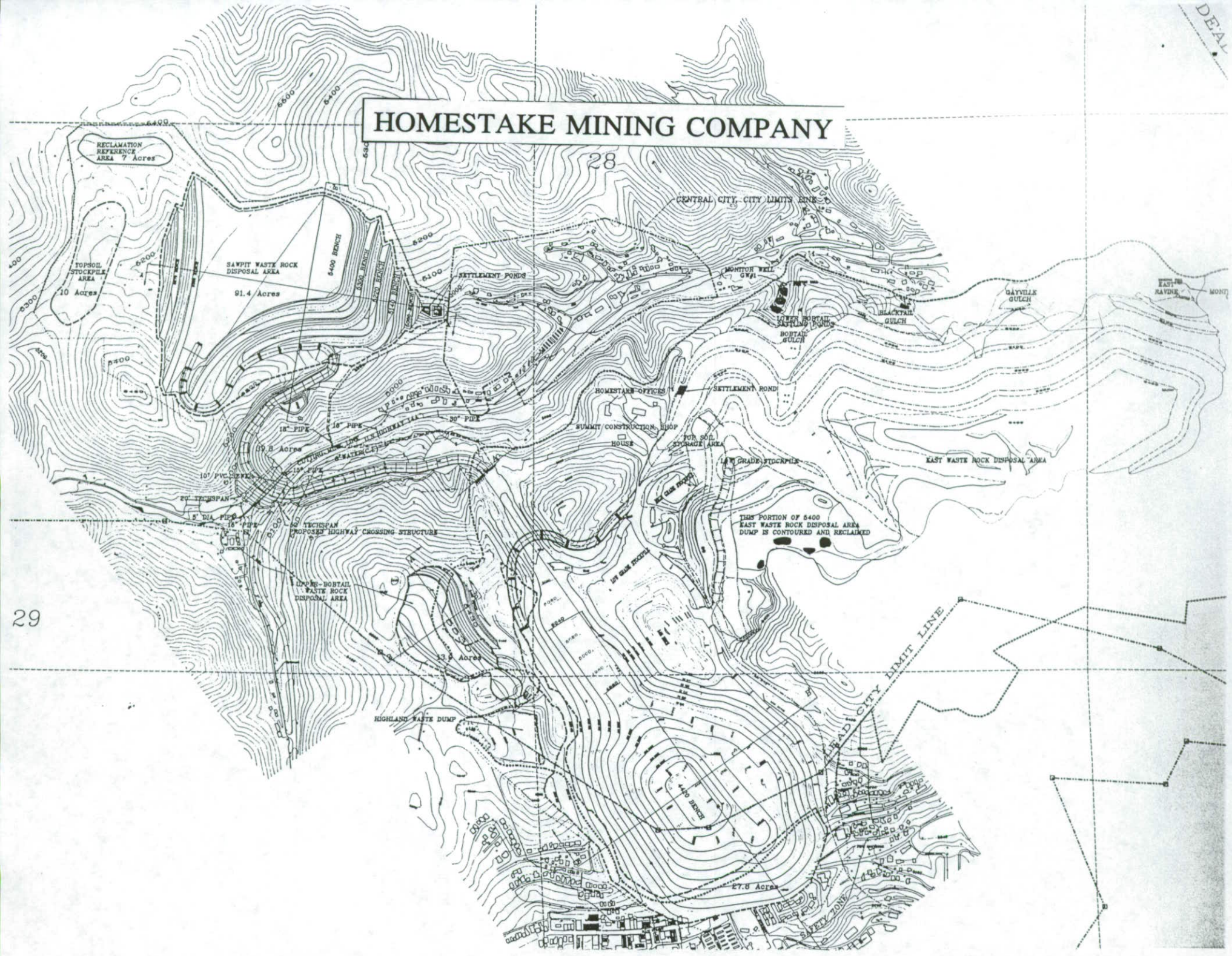
Lawrence County, South Dakota

DAKOTA PLACERS INC.

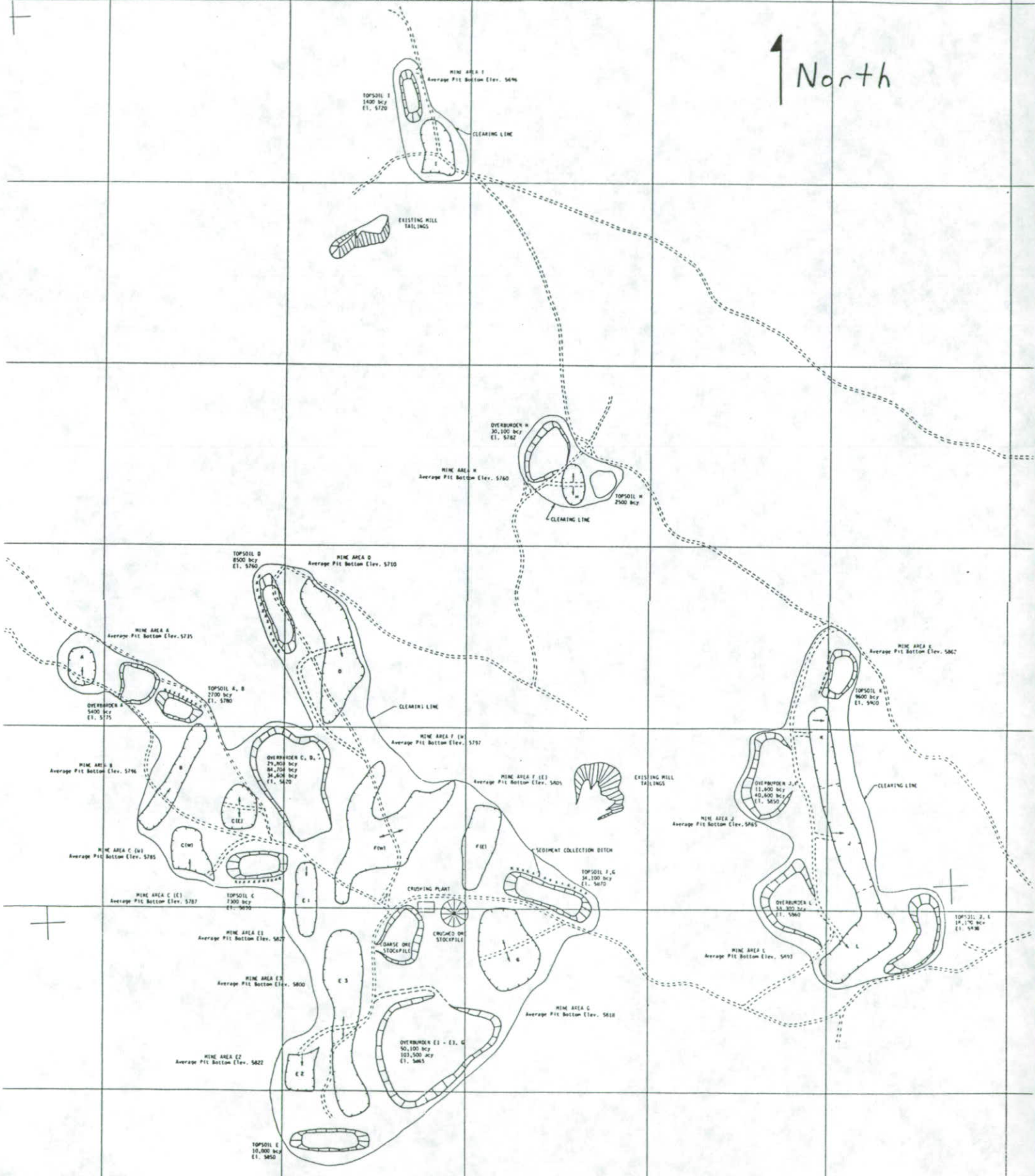
RECEIVED

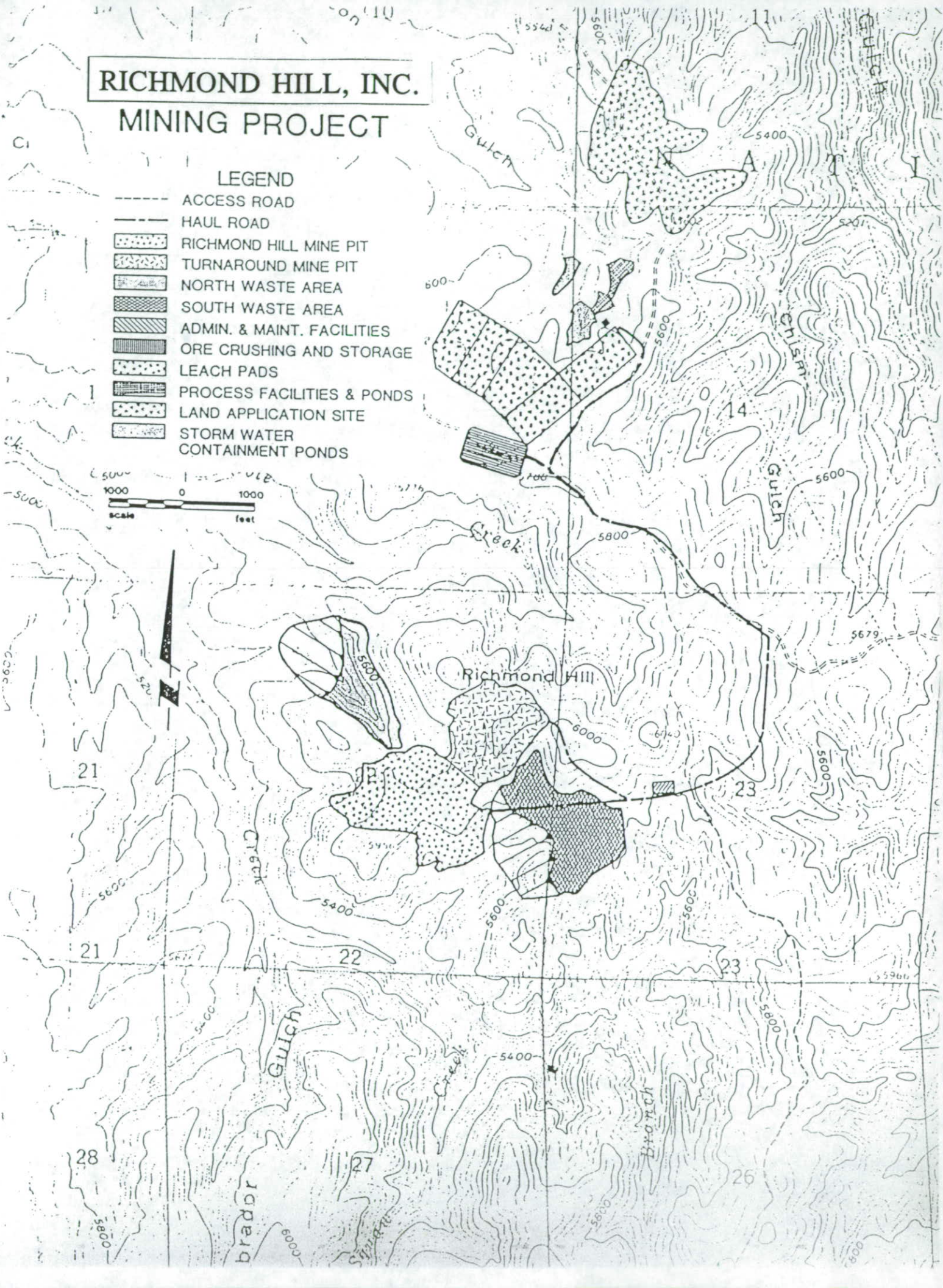
GOLDEN REWARD MINING CO., L.P.

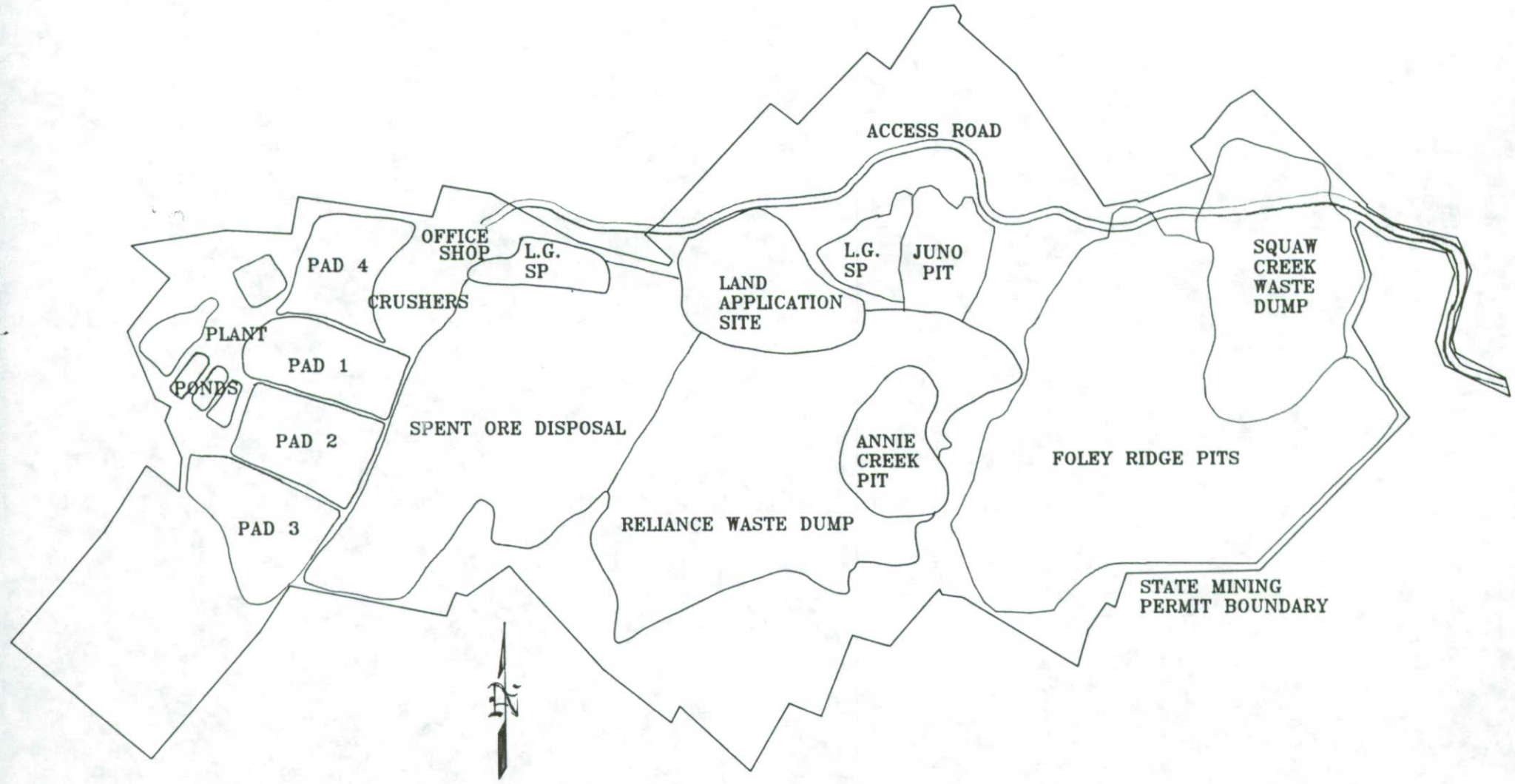
The
GOLDEN REWARD
MINING COMPANY


HOMESTAKE MINING COMPANY
28
29
RECLAMATION REFERENCE AREA 7 Acres
TOPSOIL STOCKPILE AREA
10 Acres
SAWPIT WASTE ROCK DISPOSAL AREA
91.4 Acres
5400 BENCH
5300 BENCH
5200 BENCH
5100 BENCH
SETTLEMENT PONDS
CENTRAL CITY - CITY LIMITS LINE
MONITOR WELL GW-1
LOWER BOBTAIL SETTLING POND
BOBTAIL GULCH
BLACKTAIL GULCH
GAYVILLE GULCH
EAST RAVINE
HOMESTAKE OFFICES
SETTLEMENT POND
SUMMIT CONSTRUCTION SHOP
HOUSE
TOP SOIL STORAGE AREA
LAND GRADE STOCKPILE
EAST WASTE ROCK DISPOSAL AREA
THIS PORTION OF 5400 EAST WASTE ROCK DISPOSAL AREA DUMP IS CONTOURED AND RECLAIMED
18" PIPE
30" PIPE
39.8 Acres
CULVERT
6" WATER LINE
10" PVC SEWER
13" PIPE
20' TECHSPAN
5' DIA. PIPE
60' TECHSPAN PROPOSED HIGHWAY CROSSING STRUCTURE
UPPER BOBTAIL WASTE ROCK DISPOSAL AREA
13.6 Acres
HIGHLAND WASTE DUMP
LEAD CITY LIMIT LINE
4400 BENCH
27.8 Acres
SAFETY ZONE
DEAL

MINERVA EXPLORATIONS, INC.



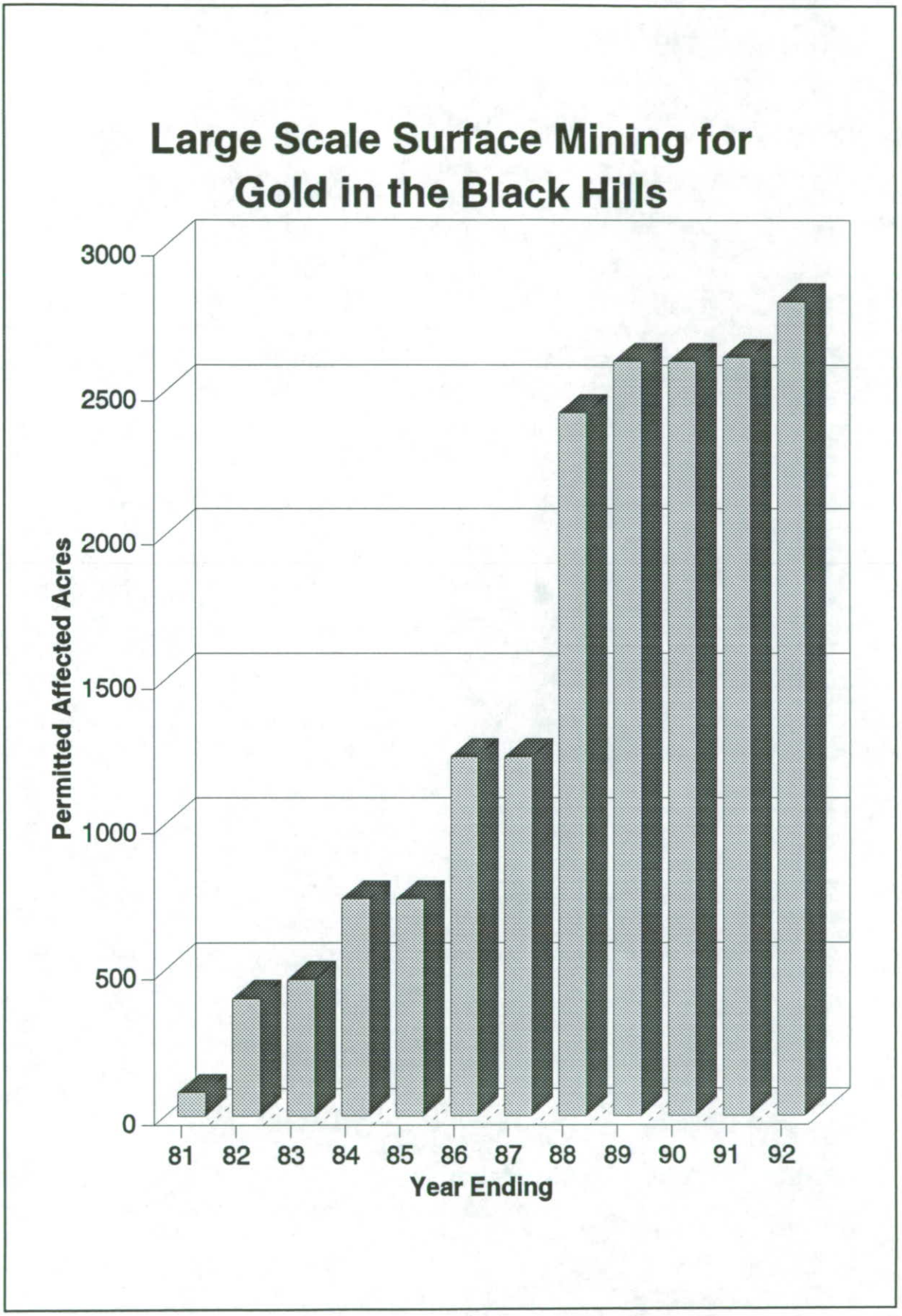

RICHMOND HILL, INC.
MINING PROJECT
LEGEND
ACCESS ROAD
HAUL ROAD
RICHMOND HILL MINE PIT
TURNAROUND MINE PIT
NORTH WASTE AREA
SOUTH WASTE AREA
ADMIN. & MAINT. FACILITIES
ORE CRUSHING AND STORAGE
LEACH PADS
PROCESS FACILITIES & PONDS
LAND APPLICATION SITE
STORM WATER CONTAINMENT PONDS
1000 0 1000
scale feet
Richmond Hill
Gulch
Creek
Branch
5400
5600
5800
6000
11
14
21
22
23
26
27
28



WHARF RESOURCES PROPERTY SCHEMATIC

APPENDIX III

PERMITTED AFFECTED ACREAGE GRAPH
(1981 - 1992)


Large Scale Surface Mining for Gold in the Black Hills
Permitted Affected Acres
3000
2500
2000
1500
1000
500
0
81
82
83
84
85
86
87
88
89
90
91
92
Year Ending