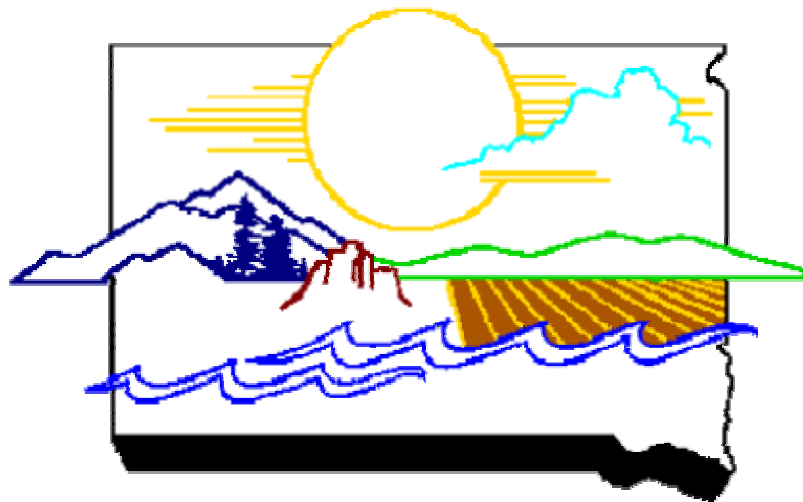


**SUMMARY OF
THE MINING INDUSTRY IN SOUTH DAKOTA**

1999



Protecting South Dakota's Tomorrow ... Today

**PREPARED BY
THE MINERALS AND MINING PROGRAM
SD DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
MARCH 2000**

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INTRODUCTION

The Department of Environment and Natural Resources is required by state law to prepare a "Summary of the Large Scale Gold Surface Mining Industry in the Black Hills" and a "Publication of Surface Mined Disturbed Land and Reclamation Acreages under Chapter 45-6B." These two reports have been combined into a single report entitled "Status of the Mining Industry in South Dakota." This report covers mining activities from January 1 to December 31, 1999. The information in this report is based on annual reports and other information submitted by mining operations permitted under Chapter 45-6B.

1999 Summary

The major mining story for 1999 was the bankruptcy of Brohm Mining Corp. parent, Dakota Mining Corporation, and state intervention at the Gilt Edge Mine. Because of delays in obtaining Forest Service permission to mine Phase 2 of the Anchor Hill project, no cash flow, low gold prices, and creditors no longer willing to pay for environmental compliance work, Dakota Mining declared bankruptcy. The state took immediate action to prevent acid water from leaving the mine site. Governor William J. Janklow authorized the department to begin paying for water treatment from the Regulated Substance Response Fund, a state fund created to respond to environmental emergencies. Steps were also taken to transfer the \$6 million reclamation bond into a state account so that funds would be available for reclamation work at the mine site. The state is currently reviewing several closure options for the mine site, and reclamation work should start during the summer of 2000. Meanwhile, water treatment will continue throughout the year to reduce the volume of acid water stored at the mine site.

Gold production declined again in 1999. Large scale gold mines produced 312,287 ounces of gold in 1999, a decrease of 77,588 ounces from 1998. Production from the Homestake Open Cut decreased from 159,956 ounces in 1998 to 23,185 ounces in 1999. The reason for the decrease is that Homestake completed mining in the Open Cut in September 1998, and the only production in 1999 came from stockpiled ore. Meanwhile, production increased in the underground mine from 117,446 ounces in 1998 to 181,515 ounces in 1999. This was due to Homestake instituting its new underground mining plan.

Wharf and Brohm were the only other companies to report gold production in 1999. Wharf reported gold production of 107,222 ounces in 1999, a slight decrease from the 110,176 ounces reported in 1998. Brohm produced only 365 ounces in 1999, which were recovered from residual gold in process solutions early in the year before Dakota Mining's bankruptcy.

\s/

Nettie H. Myers
Secretary

SUMMARY OF THE LARGE SCALE GOLD MINING INDUSTRY IN THE BLACK HILLS

1999



Photo 1.1 – Reclaimed Isadora Pit at the Golden Reward Mine, with reclaimed Hannibal Pit in background. A seasonal water source for wildlife has been created in the former pit.

MAJOR EVENTS IN 1999

Dakota Mining Declares Bankruptcy, State Intervenes

In the early part of the year, Dakota Mining Corporation (Brohm's parent corporation) was hopeful that it could still mine Phase 2 of the Anchor Hill Pit sometime in 1999. They were in the process of settling a lawsuit with Earthlaw and were working with the US Forest Service to submit an operating plan. However, because of the continual drop in gold prices and delays in obtaining Forest Service approval for Phase 2, the creditors would not continue to finance the mining operation. As a result, Dakota Mining filed for bankruptcy in Canada on July 8, 1999. The bankruptcy was filed just days before the settlement agreement was reached on the Earthlaw lawsuit.

After Dakota Mining declared bankruptcy, the state intervened. The first action taken was to prevent a discharge of acid water from the mine site. After consulting with officials from Homestake Mining Company and Wharf Resources, Governor Janklow authorized the department to pay for water treatment from the Regulated Substance Response Fund. By doing this, the state did not need to use the reclamation bond to pay for water treatment, thus preserving it to do actual reclamation work. The water treatment plant was brought back into operation on July 27, 1999 and continued operating through the end of 1999. Since July, Brohm Mining personnel have been working with the department to successfully treat acid water at the site. The volume of acid water has been reduced from about 150 million gallons in July to 129 million gallons by the end of the year. There is now enough room at the site to collect and store acid drainage from a 100-year storm event. At the same time, the department reduced operational costs at the mine site by one-third through operational and staffing efficiencies.

Besides water treatment, the department also took possession of Brohm's cash reclamation bond. All of the certificates of deposit are now in a state account, and over \$6 million is available to pay reclamation costs.

A closure plan is required before site reclamation begins. The US Bureau of Reclamation, through an interagency agreement with EPA, has presented the state with site closure options. In general, the preferred reclamation option is to:

1. Partially remove the Ruby waste rock dump as pit backfill;
2. Cap and revegetate the remainder of the Ruby waste rock dump in place;
3. Seal historic underground mine workings;
4. Partially backfill the mine pits;
5. Cap the mine pits, as necessary; and
6. Remove spent ore from the leach pad for pit backfill and cap construction.

Estimated costs by the U.S. Bureau of Reclamation to complete this reclamation range from \$23 to \$27 million, which includes a 30-percent contingency.

Acid Mine Drainage Mitigation Update at Richmond Hill Mine

The pit impoundment, backfilled with acid generating rock and covered with a low permeability capping system, continued to exceed expectations in 1999. Four seasons of monitoring data show that only minimum amounts of oxygen and water are being detected in the impoundment. This indicates the cap is effective in limiting oxygen and water infiltration and is preventing acid generation. No signs of settling or slumping were found during several inspections of the pit impoundment by the department and LAC contractors. Only minor erosion was noted on a few portions of the impoundment. A dense, self-sustaining vegetative cover is becoming established on the pit impoundment and waste dump area.



Photo 1.2 – Passive treatment pilot plant.

The capped leach pads are also performing well. No signs of settling or slumping were found on the leach pads. Only minor erosion was noted in several areas. A good vegetative cover is becoming established. Monitoring data shows that the capping systems are effective in reducing water infiltration into the spent ore. Because of the low metal concentrations in the pad effluent, LAC believes that passive treatment may be feasible for long-term water treatment. A pilot plant has been constructed to test passive treatment, and test results are so far encouraging.

Ground and surface water quality around the mine site continues to improve. Biological assessments of Squaw Creek below the mine show that the stream is healthy. At the end of 1999, LAC discontinued water treatment for the winter since the volume of water requiring treatment had been reduced to almost zero. Only seasonal water treatment will be conducted, starting in the summer of 2000. Because of decreased water treatment and reclamation requirements at the site, LAC reduced its workforce to three employees at the end of the year.

New Permits

There were no new mine permits issued to large scale gold and silver mining operations in 1999.

Permit Amendments

There were no permit amendments issued to large scale gold and silver mining operations in 1999.

Update on Abandoned Mine Reclamation

The department continued working with the US Forest Service, the Bureau of Land Management (BLM), and EPA in the process of reclaiming two abandoned mine sites in the northern Black Hills. Both of these mines have open adits and shafts, acid mine drainage, eroding streamside tailings, and small sulfide waste rock piles.

An engineering evaluation/cost analysis has been completed by the US Forest Service to evaluate and select remedial alternatives for the Minnesota Ridge Mine located about four miles northeast of Rochford. The Forest Service, EPA, and the department are currently reviewing the various remedial alternatives and costs in the document. It is uncertain at this time if EPA funding will be available for the private portions of the mine site. The US Forest Service may begin reclamation on the public land portions as early as next summer.



Photo 1.3 - Regraded Waste Rock Pile in foreground.

BLM has started reclamation of the Belle Eldridge Mine located about 1.5 miles southeast of Deadwood. Last fall, the BLM contractor regraded the waste rock pile and removed about 10,000 to 12,000 cubic yards of tailings and placed them in a temporary storage area. This summer, the tailings will be placed in a capped repository near the mine site. A wetland may be constructed to passively treat acid water discharging from the mine opening and an acid seep.

Notices of Violation

The department issued no Notices of Violation to large scale gold and silver mines in 1999.

Technical Revisions Approved by the Department

February 22	Golden Reward – Abandon two lysimeters, eliminate annual and triennial surveys of monitor well casings, and modify leakage response action plan during period of temporary cessation.
April 28	LAC Minerals – Construct pilot plant to investigate using passive treatment for long-term management of leach pad effluent.
May 3	Wharf Resources – Remove crownvetch from and add three forb and two grass species to approved seed mix.

May 14	Golden Reward – Modify water quality monitoring program for diversion of runoff from the neutralized leach pad.
June 24	Wharf Resources – Relocate baseline air sampler to Golden Reward.
June 29	Golden Reward – Improve drainage control in northern portion of the West Liberty Pit.
July 27	Wharf Resources – Expand waste rock depository in Portland Pit area.
August 3	Wharf Resources – Construct topsoil stockpile south of Portland Pit.
September 9	Wharf Resources – Relocate petroleum storage facilities.
September 22	Wharf Resources – Expand process area denitrification plant.
October 6	Golden Reward – Modify composition of the permitted final, nurse, interim, and drill trail seed mixes.
October 27	Wharf Resources – Expand process area denitrification plant.
November 10	Golden Reward – Modify water quality monitoring for the diversion of pad runoff.
December 20	Wharf Resources – Relocate haul road from the Trojan Pit to the Trojan Waste Rock Depository.

Note: This list includes all technical revisions for large scale gold and silver operations issued in 1999.

Special or Unique Land Determinations

The department did not receive any requests for determination of Special, Exceptional, Critical, or Unique Lands for potential large scale gold mines in 1999.

ACREAGE AND PRODUCTION TABLES

The following tables were developed by compiling information from annual reports and supplemental information submitted to the department by the large scale gold mines. The department also used inspection reports and other records in completing these tables.

Various charts and graphs comparing total affected and reclaimed acreage can be found in Appendix 1. The bar chart on page A-2 compares affected acreage versus reclaimed acreage for each company. The graph on page A-3 shows the trend of total affected acres and total reclaimed acres for the large scale gold industry from 1990 to 1999. As can be seen in the graph, the gap between total affected and total reclaimed acres continues to narrow. The pie chart on the same page shows total reclaimed acres versus total unreclaimed acres for the large scale gold mine industry in 1999.



Photo 1.4 – Reclaimed Homestake Bobtail Waste Rock Depository.

TABLE 1.1 – AFFECTED MINED LAND ACREAGE

Permit Number	Operator	Permitted Affected Acres	Additional Acres Affected Past Year	Total Acres Affected as of Dec. 31, 1999
439 & 462	Brohm Mining Corp.	564.00	0.00	263.00
208	Dakota Placers, Inc.	81.00	0.00	16.10
450	Golden Reward Mining Co., L.P.	493.62	0.00	397.00
332 & 456	Homestake Mining Company	658.23	0.00	549.74
445	LAC Minerals (USA), Inc.	439.10	0.00	320.70
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	122.00	0.00	0.00
356, 434, 435, & 464	Wharf Resources	983.42	35.50	690.94
TOTALS		3341.37	35.50	2237.48

Definitions:

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. This includes land from which overburden is to be or has been removed; land upon which overburden, waste rock, mine spoil, or mill tailings are to be or have been deposited; land 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.

Additional Acres Affected Past Year - Previously unaffected acres disturbed from January 1 to December 31, 1999. This acreage is also included in "Total Acres Affected as of Dec. 31, 1999."

Total Acres Affected as of Dec. 31, 1999 - All land currently affected by the large scale gold and silver operations under permit as of December 31, 1999. This includes all lands described above in "Permitted Affected Acres."

TABLE 1.2 – SURFACE MINING DISTURBED LAND ACREAGE			
Permit Number	Operator	Additional Surface Mining Acres Disturbed Past Year	Total Surface Mining Disturbed Acres as of Dec. 31, 1999
439 & 462	Brohm Mining Corp.	0.00	202.10
208	Dakota Placers, Inc.	0.00	15.90
450	Golden Reward Mining Co., L.P.	0.00	258.50
332 & 456	Homestake Mining Company	0.00	520.64
445	LAC Minerals (USA), Inc.	0.00	192.90
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources	34.50	564.52
TOTALS		34.50	1754.56

Definitions:

Additional Surface Mining Acres Disturbed Past Year - Previously unaffected surface mining land disturbed from January 1 to December 31, 1999. This acreage is also included in "Total Surface Mining Disturbed Acres as of Dec. 31, 1999."

Total Surface Mining Disturbed Acres as of Dec. 31, 1999 - 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, haul roads in pit areas, or haul roads 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.

TABLE 1.3 – INTERIM RECLAIMED ACREAGE

Permit Number	Operator	Additional Interim Reclaimed Acres Past Year	Total Interim Reclaimed Acres as of Dec. 31, 1999
439 & 462	Brohm Mining Corp.	0.00	0.95
208	Dakota Placers, Inc.	0.00	0.00
450	Golden Reward Mining Co., L.P.	0.00	7.21
332 & 456	Homestake Mining Company	0.00	0.00
445	LAC Minerals (USA), Inc.	0.00	31.00
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources	10.11	28.99
TOTALS		10.11	68.15

Definitions:

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.

Additional Interim Reclaimed Acres Past Year - Acres under interim reclamation from January 1 to December 31, 1999. These acres are also included in "Total Interim Reclaimed Acres."

Total Interim Reclaimed Acres as of Dec. 31, 1999 - The total number of acres under interim reclamation as of December 31, 1999. Acres redisturbed or now considered as final reclamation are not included in these totals.

TABLE 1.4 - FINAL RECLAIMED ACREAGE FOR PAST YEAR			
Permit Number	Operator	Final Reclaimed Acres Past Year that Meet Post-Mine Land Use¹	Final Reclaimed Acres Past Year that Do Not Meet Post-Mine Land Use
439 & 462	Brohm Mining Corp.	0.00	0.00
208	Dakota Placers, Inc.	0.00	0.00
450	Golden Reward Mining Co., L.P.	18.67	11.50
332 & 456	Homestake Mining Company	12.40	9.58
445	LAC Minerals (USA), Inc.	75.70	0.20
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources	20.61	39.70
TOTALS		127.38	60.98

¹The final reclaimed acres during the past year that meet the post-mining land use in this table are industry figures. The department may not necessarily agree with the reported acreage and will need to confirm in the field that these acres do meet the post-mine land use criteria.

Definitions:

Final Reclaimed Acres Past Year That Meet Post-Mine Land Use – Affected land reclaimed prior to 1999, previously considered as not meeting the post-mine land use, that met the post-mine land use in 1999. These acres meet the requirements of the reclamation plan, SDCL 45-6B, and ARSD 74:29, and can be considered for bond release.

Final Reclaimed Acres Past Year That Do Not Meet Post-Mine Land Use - Affected land reclaimed between January 1 and December 31, 1999, that does not meet the requirements of the approved reclamation plan and the reclamation requirements of SDCL 45-6B and ARSD 74:29. Final grading, topsoil placement, erosion and drainage control, and seeding and planting have been conducted on these acres. However, these acres cannot be considered for bond release since they have not met the post-mining land use criteria.

TABLE 1.5 – TOTAL FINAL RECLAIMED ACREAGE
As of December 31, 1999

Permit Number	Operator	Final Reclaimed Acres that Meet Post-Mine Land Use¹	Final Reclaimed Acres that Do Not Meet Post-Mine Land Use
439 & 462	Brohm Mining Corp.	0.00	17.50
208	Dakota Placers, Inc.	0.00	16.10
450	Golden Reward Mining Co., L.P.	75.32	105.80
332 & 456	Homestake Mining Company	256.97	140.20
445	LAC Minerals (USA), Inc.	145.40	72.20
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources	59.24	116.29
TOTALS		536.93	468.09

¹The final reclaimed acres that meet the post-mining land use in this table are industry figures. The department may not necessarily agree with the reported acreage and will need to confirm in the field that these acres do meet the post-mine land use criteria.

Definitions:

Final Reclaimed Acres That Meet Post-Mine Land Use - Affected land reclaimed as of December 31, 1999, that has a permanent, self-sustaining vegetative cover which 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 Reclaimed Acres That Do Not Meet Post-Mine Land Use - Affected land reclaimed as of December 31, 1999, that does not meet the requirements of the approved reclamation plan and the reclamation requirements of SDCL 45-6B and ARSD 74:29. Final grading, topsoil placement, erosion and drainage control, and seeding and planting have been conducted on these acres. However, these acres cannot be considered for bond release since they have not met the post-mining land use criteria.

**TABLE 1.6 – SURFACE MINED RECLAMATION ACREAGE AND
RECLAMATION CREDITS
As of December 31, 1999**

Permit Number	Operator	Surface Mined Acres Reclaimed (SDCL 45-6B-86)	Total Affected Acres Reclaimed that Apply as Reclamation Credit in 1992 Mining Initiative (SDCL 45-6B-97)
439 & 462	Brohm Mining Corp.	3.00	11.20
208	Dakota Placers, Inc.	16.10	16.10
450	Golden Reward Mining Co., L.P.	142.02	157.84
332 & 456	Homestake Mining Company	387.56	397.17
445	LAC Minerals (USA), Inc.	157.70	217.60
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources	173.06	175.53
TOTALS		824.65	975.44

Definitions:

Surface Mined Acres Reclaimed - Total amount of surface mining disturbed acres under final reclamation as of December 31, 1999. The department is required to report these acres under SDCL 45-6B-86. Final grading, topsoil replacement, erosion and drainage control, and seeding and planting have been conducted on these acres.

Total Affected Acres Reclaimed That Apply as Reclamation Credit in 1992 Mining Initiative - Affected land under final reclamation as of December 31, 1999, that can be considered for reclaimed acreage credit as provided under SDCL 45-6B-97. Pursuant to SDCL 45-6B-97, reclamation is performed when the operator completes required grading, topsoil placement, erosion and drainage control, and seeding and planting.

TABLE 1.7 - ORE AND WASTE ROCK PRODUCTION FIGURES
January 1 to December 31, 1999

Permit Number	Operator	Tons of Ore Mined Past Year	Tons of Ore Processed Past Year	Tons of Waste Rock and Overburden Mined Past Year
439 & 462	Brohm Mining Corp.	0.00	0.00	0.00
208	Dakota Placers, Inc.	0.00	0.00	0.00
450	Golden Reward Mining Co., L.P.	0.00	0.00	0.00
332 & 456	Homestake Mining Company (Open Cut)	0.00	400,026.00	0.00
445	LAC Minerals (USA), Inc.	0.00	0.00	0.00
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00	0.00
356, 434, 435, & 462	Wharf Resources	4,070,000.00	4,144,000.00	7,644,000.00
SUBTOTAL		4,070,000.00	4,544,026.00	7,644,000.00
N.A.	Homestake Underground	821,141.00	809,049.00	227,115.00
TOTALS		4,891,141.00	5,353,075.00	7,871,115.00

TABLE 1.8 – GOLD AND SILVER PRODUCTION January 1 to December 31, 1999			
Permit Number	Operator	Ounces of Gold Produced Past Year	Ounces of Silver Produced Past Year
439 & 462	Brohm Mining Corp.	365	353
208	Dakota Placers, Inc.	0	0
450	Golden Reward Mining Co., L.P.	0	0
332 & 456	Homestake Mining Company ¹	25,413	5,132
445	LAC Minerals (USA), Inc.	0	0
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0	0
356, 434, 435, & 462	Wharf Resources	107,222	19,132
SUBTOTAL		133,000	24,617
N.A.	Homestake Underground	187,287	41,142
TOTALS		320,287	65,759
ESTIMATED VALUE²		\$89,353,667	\$343,262

¹ Reflects production from the Open Cut only and does not include production from underground operation which is listed below

² Based on 1999 average gold price of \$278.98 and 1999 average silver price of \$5.22

TABLE 1.9 – WATER AND CYANIDE USE
January 1 to December 31, 1999

Permit Number	Operator	Gallons Ground Water Withdrawn Past Year	Gallons Surface Water Withdrawn Past Year	Pounds of Cyanide Used Past Year
439 & 462	Brohm Mining Corp.	750,000.00	0.00	0.00
208	Dakota Placers, Inc.	0.00	0.00	0.00
450	Golden Reward Mining Co., L.P.	441,788.00 ²	25,831,150.00	0.00
332 & 456	Homestake Mining Company ¹	0.00	180,000.00	2,811,000.00
445	LAC Minerals (USA), Inc.	1,646,535.00	15,986,686.00	0.00
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00	0.00
356, 434, 435, & 462	Wharf Resources	42,922,600.00	62,208,000.00	421,620.00
TOTALS		45,760,923.00	104,205,836.00	3,232,620.00

¹ Water and cyanide use by Homestake's underground mine is not included in this table.

² Golden Reward dewatered its Bonanza well and discharged the water. None of the water was used at the mine.

TABLE 1.10 – RECLAMATION BOND AMOUNTS FOR LARGE SCALE GOLD MINES

Permit Number	Operator	Original Bond Amount	Current Bond Amount	Type of Bond
439 & 462	Brohm Mining Corp.	\$672,376	\$6,435,091 ¹	See Note 1
208	Dakota Placers, Inc.	\$32,715	\$27,000	Certificate of Deposit
450	Golden Reward Mining Co., L.P.	\$954,384	\$1,549,000	Certificates of Deposit
332 & 456	Homestake Mining (Open Cut)	\$928,790	\$1,737,000	Surety Bond
445	LAC Minerals (USA), Inc.	\$656,000	\$10,700,000	Irrevocable Letter of Credit
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	\$661,800	\$0 ²	See Note 2
356, 434, 435, & 464	Wharf Resources	\$732,800	\$3,094,642 ³	Surety Bond, Certificates of Deposit (See Note 3)

¹ Because of the Dakota Mining bankruptcy, Brohm's reclamation bond has been placed in a state account for use in reclamation of the Gilt Edge Mine. Interest from the bond is compounded and applied to the bond.

² Naneco Minerals is required to submit a reclamation bond in the amount of \$661,800 before the commencement of mining

³ Under permit conditions, Wharf is allowed to submit the reclamation bond in phases. The \$3,094,642 bond covers the current Foley Ridge Mine and the first two phases of the mine expansion. Additional bonding will be submitted as additional phases are affected. Wharf also submitted a \$500,000 post closure bond which is not part of the reclamation bond.

OPERATIONAL PLANS FOR 2000

Brohm Mining Corp.

The state plans to commence reclamation activities and continue water treatment at the Gilt Edge Mine in 2000. The reclamation bond, which has been placed in a State treasury account, will be used to pay for reclamation costs. Reclamation activities include regrading and capping the Ruby Waste Rock Depository and backfilling and capping the Dakota Maid Pit. The final design for these components will be completed in spring 2000.

Dakota Placers, Inc.

Homestake Mining Company, in cooperation with Brightwater Inc., an affiliate of the Dunbar Resort, reclaimed the Red Placer Claim previously mined by Dakota Placers under Mine Permit No. 208. Once a self-sustaining vegetative cover is established, reclamation will be deemed complete and the permit will be closed.

Golden Reward Mining Company, L.P.

Golden Reward plans to remain under temporary cessation in 2000. No mining or ore processing is expected to be conducted. However, Golden Reward plans to continue environmental monitoring, asset protection, water balance control, reclamation, and potential exploration and evaluation on its properties.

Homestake Mining Company

Homestake plans to continue reclamation of the Open Cut Mine this year. No mining of the Open Cut is anticipated. However, Homestake will re-examine the establishment of a portal and decline from the east wall of the Open Cut to the underground mine.

LAC Minerals (USA), Inc./Richmond Hill Mine

LAC Minerals may make minor changes to the reclamation plan, including changes to roads and final pond configurations. Proposals on final water treatment plans, including passive treatment, may be submitted to the department. They plan to continue monitoring and seasonal water treatment in 2000.

Naneco Minerals, Inc.

Naneco Minerals plans to continue to find and develop a feasible processing site and find a responsible joint venture partner for the Ragged Top project in 2000. They also plan to complete the purchase of the University of Minnesota/Stevens Brothers Trust Land. Naneco is working with the Spearfish Canyon Foundation to have the Foundation purchase a portion of the trust land within the established Spearfish Canyon scenic and unique corridor. The property is primarily a cliff face, which will not impact the proposed mining operation.

Wharf Resources (USA), Inc.

Wharf Resources plans to mine the Vulcan, Maria, and Portland Pits in 2000. Mining in the Maria Pit will be completed this year. About 4.1 million tons of ore and 7.4 million tons of waste rock will be mined.

Reclamation activities in 2000 will consist of reclaiming about 12 acres of disturbed land in the Maria Pit backfill and ramp areas.



Photo 1.5 – Reclaimed Whiteside Pit backfill at Wharf.

**SUMMARY OF SURFACE MINE DISTURBED AND RECLAMATION
ACRES UNDER SDCL 45-6B-86**

1999



Photo 2.1 – Former Denverine bentonite mining area reclaimed by American Colloid

SUMMARY OF ALL MINE PERMITS

In accordance with SDCL 45-6B-86, the Department of Environment and Natural Resources has compiled information regarding the number of acres of surface mining disturbed land and the amount of such land that has undergone reclamation as defined in Chapter 45-6B and in section 45-6B-83.1 for the period January 1 to December 31, 1999. This does not include acreages for mining operations regulated under SDCL Chapter 45-6 (461 active licensed mine operators, 2,054 active licensed sites), mineral exploration regulated under SDCL Chapter 45-6C (14 operators, 113 permits, excluding oil and gas), or uranium exploration regulated under SDCL Chapter 45-6D (no current operators or permits.) Sources for these statistics are permit applications, operating and reclamation plans, annual reports, department inspections, and operator information.

New Permits

American Colloid submitted a large scale permit application for a new bentonite mine. The new mine is located about nine miles northwest of Belle Fourche. The application was determined complete on October 15, 1999, and the department issued the uncontested permit on November 30, 1999.



Photo 2.2 – Future Dobesh Mine area.

American Colloid will mine a total of five small pits using conventional cut and fill mining methods. About 11.2 acres will be mined and about 40 acres will be affected during the five-year life of the operation. The mining phase will be completed in approximately two years. Final reclamation is to be completed by November 2004.

Permit Amendments

James Dean submitted permit amendment applications for Small Scale Mine Permit Numbers 453 and 455. These permitted sites are located near Hill City. The amendment applications were determined complete on January 5, 1999, and the department conditionally approved the uncontested applications on March 10, 1999. The permit amendments allow Mr. Dean to increase the permitted affected acreage under each permit from 0.5 acres to 2 acres.

Hills Materials Issued Notice of Violation

Hills Materials was issued a Notice of Violation and Order for damage caused by flyrock (airborne rock fragments generated from a blast) to a nearby home and vehicles during a September 28, 1999 blast at its Rapid City Quarry. The quarry is covered under Large Scale Mine Permit No. 14. The damage caused by the blast is a violation of state mining law. Under state mining law, mine operators are required to prevent damage to areas outside the mining area.

The Order requires Hills Materials to take the following actions:

1. Seek improved ways to conduct its blasting operations;
2. Reduce the potential for flyrock and damage outside the mine site;
3. Discontinue blasting during high wind air quality alerts;
4. Monitor and record air pressure and ground vibration from each blast; and
5. Submit a monthly summary of blasting complaints to the department.

The department also ordered Hills Materials to pay a \$1,000 penalty for the violation. Hills Materials paid the fine January 25, 2000.

Table 2.1 – Number of Mine Permits and Permitted Affected, Affected, and Surface Mined Disturbed Acreage				
	All Small Scale Permits	All Non-Gold Large Scale Permits	Large Scale Gold Permits¹	All Mine Permits
Number of Permits	20	20	12	52
Permitted Affected Acres	770	3,020	3,341	7,131
Total Affected Acres	68	1,573	2,238	3,879
Surface Mining Disturbed Land Acres	62	1,331	1,755	3,148

¹ The acreage figures for large scale gold mines are separated for clarification purposes. The large scale gold mine statistics are not included in the figures for all non-gold large scale permits.

Definitions:

Small Scale Mining Permit - Permit for operations that extract less than 25,000 tons of ore or overburden per calendar year and disturb less than 10 acres of land.

Large Scale Mining Permit - Permit for operations that extract more than 25,000 tons of ore or overburden per calendar year and disturb more than 10 acres.

Permitted Affected Acres - Pursuant to SDCL 45-6B-3(1), this involves all lands permitted to be disturbed 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 - This includes all the land currently affected by the mining operations under permit. The total affected acres statistics are included in the figures for permitted affected acres.

Surface Mining Disturbed Land Acres - Pursuant to SDCL 45-6B-3(15), this includes all the 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. The surface mining disturbed land statistics are included in the figures for total affected acres.

Table 2.2 - Reclaimed and Released Reclaimed Acres				
	All Small Scale Permits	All Non-Gold Large Scale Permits	Large Scale Gold Permits¹	All Mine Permits
Total Reclaimed Acres	38	965	975	1,978
Reclaimed Surface Mining Disturbed Acres	31	873	879	1,783
Releasable Reclaimed Acres	28	126	537	691
Released Reclaimed Acres in 1998	3.85	0	0	3.85

¹ The acreage figures for large scale gold mines are separated for clarification purposes. The large scale gold mine statistics are not included in the figures for all non-gold large scale permits.

Definitions:

Total Reclaimed Acres - This includes all the land for which the operator completes required grading, topsoil replacement, erosion and drainage control and any required planting and seeding that the department finds has resulted or will later result in final reclamation. For large scale gold mines, these acres can be applied toward reclamation acreage credit as provided under SDCL 45-6B-97.

Reclaimed Surface Mining Disturbed Acres - Pursuant to SDCL 45-6B-86, this includes all surface mining disturbed lands for which the operator has completed required grading, topsoil replacement, erosion and drainage control and any required planting and seeding that the department finds will later result in final reclamation.

Releasable Reclaimed Acres - This includes all the reclaimed land for which reclamation surety and liability can be released as determined by the department. Such land must meet the minimum reclamation standards pursuant to ARSD 74:29:07. These figures do not include any acreage for which release of surety or liability has been granted by the Board of Minerals and Environment. The releasable reclaimed acres statistics are included in the figures for total reclaimed acres.

Released Reclaimed Acres - This includes all the reclaimed land for which reclamation surety and liability has been released by the Board of Minerals and Environment in 1998. This land has met the minimum reclamation standards pursuant to ARSD 74:29:07. The released reclaimed acres statistics are included in the figures for total reclaimed acres.

APPENDIX 1

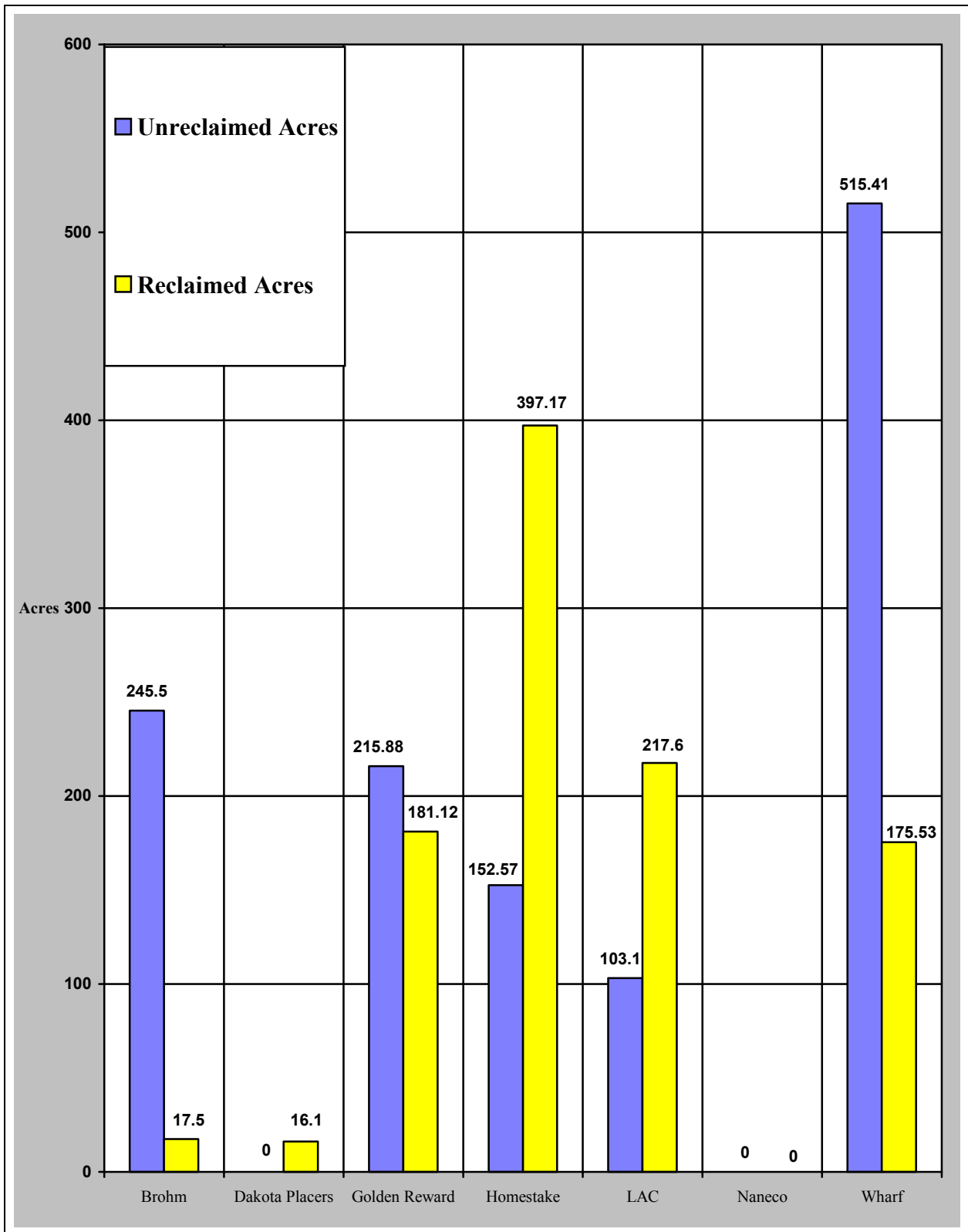


Figure 1A – Unreclaimed vs. Reclaimed Acreage at Large Scale Surface Gold Mines as of December 31, 1999.

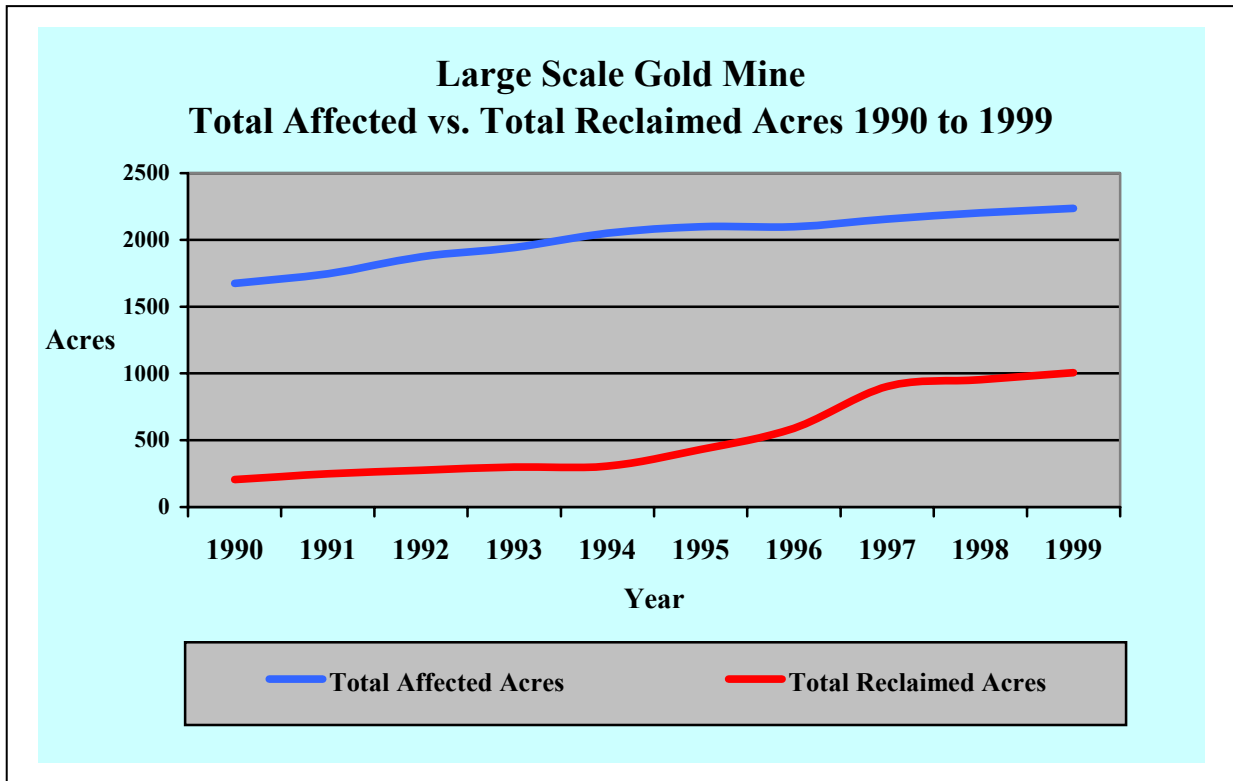


Figure 2A – Total Affected vs. Total Reclaimed Acreage at Large Scale Surface Gold Mines from 1990 to 1999.

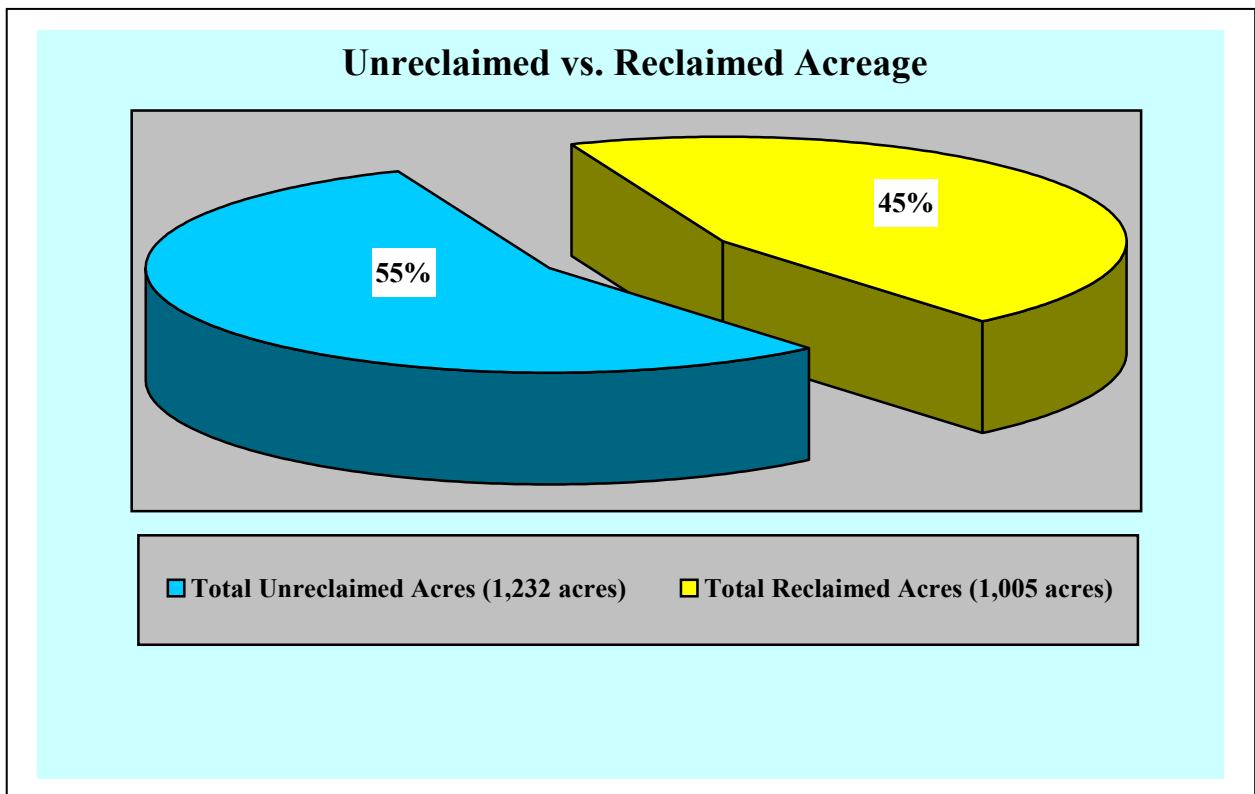


Figure 3A – Comparison of Unreclaimed vs. Reclaimed Acreage at Large Scale Surface Gold Mines in 1999.