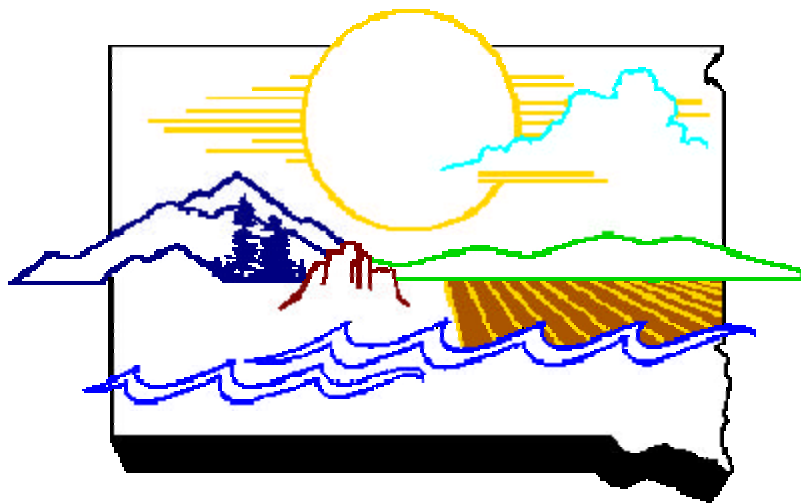


**SUMMARY OF
THE MINING INDUSTRY IN SOUTH DAKOTA**

2000



Protecting South Dakota's Tomorrow ... Today

**PREPARED BY
THE MINERALS AND MINING PROGRAM
SD DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
MAY 2001**

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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, 2000. The information in this report is based on annual reports and other information submitted by mining operations permitted under Chapter 45-6B.

2000 Summary

There were two major mining stories in 2000. First, Homestake announced that it was closing the historic Homestake Mine in Lead at the end of 2001. Homestake took measures in 1998 to extend the life of the mine, but low gold prices, low ore grades, and high production costs helped spell the end for the mine. The company has made a commitment to reclaim areas it disturbed during its 125-year history. The state is confident that Homestake will meet its reclamation commitments and return the mined areas to a beneficial use. One exciting possibility is that a portion of the underground mine may be converted into a national underground science laboratory to study neutrinos and other subatomic particles.

The second major story was the Environmental Protection Agency's (EPA) take over of the Gilt Edge Mine (Brohm Mine) closure and the listing of the mine as a Superfund site. Operation and maintenance of the site was transferred from the state to EPA and the Bureau of Reclamation on August 1, 2000. On December 1, 2000, the site was listed on the Superfund National Priorities List, which makes it eligible for federal funding. EPA retained the US Bureau of Reclamation (BOR) to manage the site and to develop closure plans. The Bureau has hired contractors to continue water treatment and begin closure earthwork.

Gold production declined in 2000 for the fifth consecutive year. Large scale gold mines produced 265,012 ounces of gold in 2000, a decrease of 47,275 ounces from 1999. Production from the Homestake mine decreased slightly from 181,515 in 1999 to 170,906 ounces in 2000. Almost all of the production came from the underground portion of the mine, as Homestake completed mining in the Open Cut in September 1998. Wharf and LAC Minerals were the only other companies to report gold production in 2000. Wharf reported gold production of 93,813 ounces in 2000, a decrease from the 107,222 ounces reported in 1999. LAC Minerals recovered 292 ounces from pond sediments.

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Steven M. Pirner
Secretary

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

2000



Photo 1.1 – Reclaimed Spruce Gulch and Pit Impoundment (background) area at the Richmond Hill Mine.

MAJOR EVENTS IN 2000

Homestake Announces Mine Closure

On September 11, 2000, Homestake Mining Company announced that it was closing its flagship Homestake Mine in Lead at the end of 2001. The mine has been in operation for 125 years and was once the largest gold mine in the Western Hemisphere. It produced about 40 million ounces of gold during its long history. Homestake restructured its operations in 1998 in an attempt to keep the mine operating, but the company could not overcome low gold prices, high production costs, and lower than expected ore grades.



Photo 1.2 – Homestake Open Cut

Homestake has made a commitment to reclaim areas it disturbed during mining. It is estimated that the reclamation project will take eight years to complete at a cost of around \$66 million. The company is currently developing closure plans for the mine and will begin implementing these plans during 2001. The National Science Foundation has expressed interest in using the underground mine as a laboratory for studying neutrinos and other subatomic particles. In early March, the National Laboratory Committee recommended the mine as the site of the National Underground Science Laboratory.

EPA Takes Over Gilt Edge Mine

On August 1, 2000, EPA and the Bureau of Reclamation took over acid water treatment operations and management of the Gilt Edge Mine (Brohm Mine) from the state of South Dakota. The Gilt Edge Mine is an abandoned 258-acre open pit, cyanide heap leach gold mine. Before EPA took over, the state had funded water treatment and site maintenance beginning in July 1999 when Brohm Mining Corporation's parent, Dakota Mining Inc., declared bankruptcy.

On December 1, 2000, EPA listed the mine on the Superfund National Priorities List, which makes it eligible for remedial Superfund money to reclaim the mine. EPA is completing Records of Decision for interim water treatment and for capping the waste rock dump. The agency is also preparing feasibility studies for final closure of the site.

Acid Mine Drainage Mitigation Update at Richmond Hill Mine

The Richmond Hill Mine continues to show improvement since major reclamation activities were completed in the mid-1990's. The performance of the pit impoundment, backfilled with acid-generating rock and covered with a low permeability capping system, surpassed expectations again in 2000. Monitoring data shows 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 routine surveys of the pit impoundment by the department and LAC contractors. A dense, self-sustaining vegetative cover has become established on the pit impoundment and most of the waste dump area.

The capped leach pads are also performing well. No signs of settling or slumping were found on the leach pads and 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. Passive treatment systems allow naturally occurring biological processes to treat acid drainage in a controlled environment, such as an artificial wetland. A full-scale passive treatment facility was constructed in 2000 after pilot plant results showed that passive treatment would be feasible.

Photo 1.2 – Full scale passive treatment facility.

Ground and surface water quality around the mine site is closely monitored. Ground water impacted by acid rock drainage prior to mine reclamation is steadily improving. Monitoring wells generally show decreasing trends in sulfate and metal concentrations and increasing pH. Biological assessments of Squaw Creek below the mine show that the stream is healthy and supports a viable cold water fishery. Water treatment at the mine site is now only required on a seasonal basis.

New Permits

There were no new mine permits issued to large scale gold and silver mining operations in 2000.

Permit Amendments

There were no permit amendments issued to large scale gold and silver mining operations in 2000.

Update on Abandoned Mine Reclamation

The department continued working with the US Forest Service, the Bureau of Land Management (BLM), and EPA to reclaim two historic 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.

The US Forest Service will reclaim the Minnesota Ridge Mine in the summer of 2001. This mine is located about 14 miles south of Lead in Lawrence County. In the fall of 2000, buildings at the site were demolished in preparation for reclamation activities. Reclamation plans include removing acid-generating rock from a drainage and placing it in a capped facility on a nearby ridge. The drainage will then be reconstructed. It is anticipated that reclamation activities will be completed this fall.

The BLM completed reclamation of the Belle Eldridge Mine located in Spruce Gulch about 1.5 miles southeast of Deadwood in Lawrence County. The mine tailings that were stockpiled last year were hauled to a nearby repository and capped. The entire area, including the capped repository, was then hydroseeded. The only activities to be completed this year are the burning of slash from the repository area and construction of a flume to measure flows from the mine area. The BLM plans to monitor the site over the next several years to assess the success of the reclamation project.

The department is also involved in a partnership with the Western Governors Association and the US Forest Service to obtain additional funding to reclaim the King of the West and Yellow Bird Mines through the Abandoned Mined Land Initiative. The initiative is a partnership created in 1997 between the Western Governors Association and the National Mining Association to address obstacles to abandoned mine reclamation. These mines are located about 3 miles southwest of Rochford in Pennington County. Hazards at the sites include acid-generating tailings, open shafts, collapsed buildings, and other structures. The US Forest Service is currently developing a plan to reclaim the site with reclamation scheduled to start later in 2001 or 2002.



Photo 1.3 – King of the West Mine.

Notices of Violation

The department issued one Notice of Violation to large scale gold and silver mines in 2000. On May 31, 2000, a Notice of Violation was issued to Wharf Resources for violating certain effluent limits of its surface water discharge permit. In settlement of the Notice of Violation, Wharf paid a \$9,120 fine to the department and agreed to make changes to its water management and treatment processes to prevent future violations.

Technical Revisions Approved by the Department in 2000

March 29	LAC Minerals – Move the mine office from the mine site to Deadwood and discontinue air quality monitoring at the site.
April 13	Wharf Resources – Renovate the office, shop, and lab septic system and leach field.
April 17	Golden Reward – Modify the water quality sampling requirements at the mine.
May 2	Wharf Resources – Relocate a portion of the access road across the Tree Island Waste Rock Facility.
May 8	Wharf Resources – Use spent ore on the portion of the relocated Richmond Hill access road within Wharf's mine permit boundary.
July 10	Wharf Resources – Revise the aquatic monitoring plan.
July 12	Wharf Resources – Use about 1,000 tons of upper Bald Mountain Tails as bedding material in utility line trenches.
July 28	LAC Minerals – Construct a full-scale passive treatment pond to treat leach pad effluent.
August 9	Wharf Resources - Modify the configuration of the Trojan Waste Rock Facility.
September 5	Wharf Resources – Reduce submittal frequency of nitrate treatment reports.
September 25	Golden Reward – Modify raptor/game bird monitoring during temporary cessation period.

September 25	Homestake Mining – Discontinue wildlife mortality monitoring for Permit No. 456 due to cessation of mining in the Open Cut.
September 26	Wharf Resources – Add four carbon columns to the process circuit.
November 3	Wharf Resources – Discontinue bi-monthly nitrate report and include as part of annual nitrate report.
November 21	Homestake Mining – Modify reclamation in the western portion of the East Waste Rock Disposal Facility and vegetation requirements for the Open Cut pit floor.
December 20	Golden Reward – Reduce monitoring frequency for the Leakage Response Action Plan during the period of temporary cessation.

Special or Unique Land Determinations

The department did not receive any requests for the determination of Special, Exceptional, Critical, or Unique Lands for potential large scale gold mines in 2000.

ACREAGE AND PRODUCTION TABLES

The following tables were developed by compiling information from operator annual reports, supplemental information submitted to the department by the large scale gold mines, inspection reports, and other available information.

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 2000. The pie chart on the same page shows total reclaimed acres versus total unreclaimed acres for the large scale gold mine industry in 2000.



Photo 1.4 – Reclaimed buckwalls at Wharf's Reliance Waste Rock Disposal Facility

TABLE 1.1 – AFFECTED MINED LAND ACREAGE

Permit Number	Operator	Permitted Affected Acres	Acres Affected Year 2000	Total Acres Affected as of Dec. 31, 2000
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), LLC	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 (USA), Inc.	983.42	48.76	739.70
TOTALS		3341.37	48.76	2286.24

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.

Acres Affected Year 2000 - Previously unaffected acres disturbed from January 1 to December 31, 2000. This acreage is also included in "Total Acres Affected as of Dec. 31, 2000."

Total Acres Affected as of Dec. 31, 2000 - All land currently affected by the large scale gold and silver operations under permit as of December 31, 2000. This includes all lands described above in "Permitted Affected Acres."

TABLE 1.2 – SURFACE MINING DISTURBED LAND ACREAGE			
Permit Number	Operator	Surface Mining Disturbed Acres Year 2000	Total Surface Mining Disturbed Acres as of Dec. 31, 2000
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), LLC	0.00	192.90
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources (USA), Inc.	48.76	613.28
TOTALS		48.76	1803.32

Definitions:

Surface Mining Disturbed Acres Year 2000 - Previously unaffected surface mining land disturbed from January 1 to December 31, 2000. This acreage is also included in "Total Surface Mining Disturbed Acres as of Dec. 31, 2000."

Total Surface Mining Disturbed Acres as of Dec. 31, 2000 - 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	Interim Reclaimed Acres Year 2000	Total Interim Reclaimed Acres as of Dec. 31, 2000
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	7.23
332 & 456	Homestake Mining Company	0.00	0.00
445	LAC Minerals (USA), LLC	0.00	31.00
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources (USA), Inc.	1.36	25.12
TOTALS		1.36	64.30

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.

Interim Reclaimed Acres Year 2000 - Acres under interim reclamation from January 1 to December 31, 2000. These acres are also included in "Total Interim Reclaimed Acres."

Total Interim Reclaimed Acres as of Dec. 31, 2000 - The total number of acres under interim reclamation as of December 31, 2000. Acres redisturbed or now considered as final reclamation are not included in these totals.

TABLE 1.4 – FINAL RECLAIMED ACREAGE FOR YEAR 2000			
Permit Number	Operator	Final Reclaimed Acres Year 2000 that Meet Post-Mine Land Use¹	Final Reclaimed Acres Year 2000 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.	36.43	0.00
332 & 456	Homestake Mining Company	90.93	0.00
445	LAC Minerals (USA), LLC	35.10	0.00
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources (USA), Inc.	57.09	18.17
TOTALS		219.55	18.17

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 Year 2000 That Meet Post-Mine Land Use – Affected land reclaimed prior to 2000, previously considered as not meeting the post-mine land use, that met the post-mine land use in 2000. 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 Year 2000 That Do Not Meet Post-Mine Land Use - Affected land reclaimed between January 1 and December 31, 2000, 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, 2000**

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.	112.48	71.64
332 & 456	Homestake Mining Company	339.38	56.15
445	LAC Minerals (USA), LLC	180.70	37.10
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources (USA), Inc.	116.33	97.19
TOTALS		748.89	295.68

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, 2000, 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, 2000, 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, 2000**

Permit Number	Operator	Surface Mined Acres Reclaimed (SDCL 45-6B-86)	Total Affected Acres Reclaimed that Apply as Reclamation Credit per 1992 Mining Initiative (SDCL 45-6B-97)
439 & 462	Brohm Mining Corp.	3.00	11.20
208	Dakota Placers, Inc.	15.90	16.10
450	Golden Reward Mining Co., L.P.	168.41	184.12
332 & 456	Homestake Mining Company	387.56	395.53
445	LAC Minerals (USA), LLC	157.70	217.80
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources (USA), Inc.	204.25	213.52
TOTALS		936.82	1038.27

Definitions:

Surface Mined Acres Reclaimed - Total amount of surface mining disturbed acres under final reclamation as of December 31, 2000. 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 per 1992 Mining Initiative - Affected land under final reclamation as of December 31, 2000, 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
January 1 to December 31, 2000

Permit Number	Operator	Tons of Ore Mined Year 2000	Tons of Ore Processed Year 2000	Tons of Waste Rock and Overburden Mined Year 2000
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	1,000.00	0.00
445	LAC Minerals (USA), LLC	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 (USA), Inc.	4,107,904.00	4,160,940.00	6,917,482.00
SUBTOTAL		4,107,904.00	4,161,940.00	6,917,482.00
N.A.	Homestake Underground	835,694.00	837,563.00	213,842.00
TOTALS		4,943,598.00	4,999,503.00	7,131,324.00

TABLE 1.8 – GOLD AND SILVER PRODUCTION
January 1 to December 31, 2000

Permit Number	Operator	Ounces of Gold Produced Year 2000	Ounces of Silver Produced Year 2000
439 & 462	Brohm Mining Corp.	0	0
208	Dakota Placers, Inc.	0	0
450	Golden Reward Mining Co., L.P.	0	0
332 & 456	Homestake Mining Company ¹	0	0
445	LAC Minerals (USA), LLC	292 ²	467 ²
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0	0
356, 434, 435, & 462	Wharf Resources (USA), Inc.	93,814	44,134
SUBTOTAL		94,106	44,601
N.A.	Homestake Underground	170,906	35,241
TOTALS		265,012	79,842
ESTIMATED VALUE³		\$73,967,499	\$395,218

¹ According to Homestake, the 1,000 tons processed from the Open Cut in 2000 had no gold value. All gold production was from the underground operation which is listed below

² Recovered from pond sediments

³ Based on 2000 average gold price of \$279.11 and 2000 average silver price of \$4.95

TABLE 1.9 – WATER AND CYANIDE USE
January 1 to December 31, 2000

Permit Number	Operator	Gallons Ground Water Withdrawn Year 2000	Gallons Surface Water Withdrawn Year 2000	Pounds of Cyanide Used Year 2000
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.	11,347,660.00 ²	8,428,060.00	0.00
332 & 456	Homestake Mining Company ¹	0.00	0.00	0.00
445	LAC Minerals (USA), LLC	313,615.00	185,559.00	0.00
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00	0.00
356, 434, 435, & 462	Wharf Resources (USA), Inc.	61,514,667.00	52,164,000.00	658,817.00
TOTALS		73,175,942.00	60,777,619.00	658,817.00

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

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

TABLE 1.10 – BOND AMOUNTS FOR LARGE SCALE GOLD MINES				
Permit Number	Operator	Reclamation Bond	Postclosure Bond¹	Cyanide Spill Bond²
439 & 462	Brohm Mining Corp.	\$6,596,903 ³	\$0	\$0
208	Dakota Placers, Inc.	\$4,000 ⁴	\$0	\$0
450	Golden Reward Mining Co., L.P.	\$1,549,000 ⁵	\$132,000	\$0
332 & 456	Homestake Mining (Open Cut)	\$1,737,000	\$0	\$0
445	LAC Minerals (USA), LLC	\$10,700,000	\$0	\$0
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	\$661,800 ⁶	\$0	\$0
356, 434, 435, & 464	Wharf Resources (USA), Inc.	\$12,000,000 ⁷	\$550,000 ⁷	\$383,000

¹ Postclosure bonds are not generally required to be submitted until the reclamation bond is released. However, by condition to Mine Permit No. 464, Wharf was required to submit a postclosure bond prior to closure. Golden Reward submitted a postclosure bond as per agreement for drainage control work in the West Liberty Pit.

² Financial assurance, or “cyanide spill bonds” are required under SDCL 45-6B-20.1. This financial assurance covers the cost of remediating accidental releases of cyanide or other leaching agents to the environment if a mine fails to do so. Wharf is the only mine where cyanide heap leaching is being done at this time. Wharf’s cyanide bond was updated in April 2001.

³ 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. The bond amount shown is current as of November 7, 2000.

⁴ Dakota Placer’s reclamation bond was reduced from \$27,000 to \$4,000 on March 16, 2000.

⁵ The department will recalculate Golden Reward’s reclamation bond in 2001.

⁶ Naneco Minerals is required to submit a reclamation bond in the amount of \$661,800 before the commencement of mining

⁷ The department recalculated the reclamation bond at the end of 2000. The Board of Minerals and Environment approved the \$12 million reclamation bond on March 15, 2001. Wharf also submitted a \$550,000 postclosure bond which is not part of the reclamation bond. The postclosure bond will be recalculated in 2001.

OPERATIONAL PLANS FOR 2001

Brohm Mining Corp.

EPA plans to continue water treatment and closure activities at the Gilt Edge Mine in 2001. Grading and diversion ditch construction at the Ruby Waste Rock Facility are expected to be completed by the end of the year, with capping of the facility tentatively scheduled for late 2001 or 2002. The agency also plans to upgrade the existing water treatment plant in 2001 to increase treatment capacity. EPA tentatively plans to build an additional treatment facility at the site in the future.

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. A final inspection is planned for the summer of 2001.

Golden Reward Mining Company, L.P.

Golden Reward plans to remain under temporary cessation in 2001. No mining or ore processing is expected. However, Golden Reward plans to continue environmental monitoring, asset protection, water balance control, and potential exploration and evaluation on its properties.

Homestake Mining Company

Homestake will close its Lead mining operations at the end of 2001. Final closure plans for various facilities are currently being developed.

LAC Minerals (USA), LLC/Richmond Hill Mine

LAC Minerals may make minor changes to the reclamation plan, including changes to roads and final pond configurations. Monitoring and seasonal water treatment will continue in 2001.

Naneco Minerals, Inc.

Naneco Minerals plans to complete property acquisition in the Johnson Gulch area. Other activities may be conducted dependent on the price of gold.

Wharf Resources (USA), Inc.

Wharf Resources plans to continue mining the Portland and Foley Pits and develop the Trojan Pit. About 4.3 million tons of ore and 10.1 million tons of waste rock will be mined. Wharf plans to submit a technical revision to the department to mine the American Eagle area just to the west of the Trojan Pit.

Reclamation activities in 2001 will consist of reclaiming about 15 acres of disturbed land in the Maria Pit backfill and ramp areas and 16 acres of the Trojan Waste Rock Facility.



Photo 1.5 – Reclaimed Hannibal Pit at Golden Reward.

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

2000



Photo 2.1 – Cold Spring Granite quarry operation near Milbank.

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, 2000. This does not include acreages for mining operations regulated under SDCL Chapter 45-6 (489 active licensed mine operators, 2,052 active licensed sites), mineral exploration regulated under SDCL Chapter 45-6C (12 operators, 112 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.

Board Releases American Colloid's Successful Reclaimed Areas

In January 2000, the Board of Minerals and Environment approved release of liability for 78.9 acres reclaimed by American Colloid. This is the largest block of reclamation released by the board since it released 162.5 acres of land reclaimed by American Colloid in 1995. The released areas included 10.3 acres reclaimed under Small Scale Mine Permit No. 458, 11.7 acres reclaimed under Small Scale Mine Permit No. 459, and 56.9 acres reclaimed under Large Scale Mine Permit No. 6. These areas are located 2.5 to 5 miles northwest of Belle Fourche, South Dakota. The department commends American Colloid for continued excellence in reclamation.



Photo 2.2 – Reclaimed area released by board.

New Permits

No new permits were issued to small or large scale mining operations in 2000. However, Dakota Granite submitted a large scale mine permit application in November 2000 to combine permit boundaries for Mine Permit Numbers 15 and 27 into one permit boundary. The application would also allow Dakota Granite to construct a new waste rock disposal facility and expand its Whetstone Quarry and other waste rock disposal facilities. The department issued the uncontested permit on April 6, 2001.

Permit Amendments

No permit amendments were issued to small or large scale mining operations in 2000.

State Sells Dacotah Cement Plant

In December 2000, Governor William J. Janklow announced plans to sell the Dacotah Cement Plant near Rapid City to Grupo Cementos de Chihuahua of Mexico. The legislature approved the sale in late December. Final closure of the sale was completed in March 2001. In April 2001, voters decided to place proceeds from the sale in a trust fund to be used for educational purposes.

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	17	20	12	49
Permitted Affected Acres	732	3,006	3,341	7,079
Total Affected Acres	64	1,600	2,286	3,950
Surface Mining Disturbed Land Acres	58	1,342	1,803	3,203

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	35	1,026	1,038	2,099
Reclaimed Surface Mining Disturbed Acres	27	919	937	1,883
Releasable Reclaimed Acres	4	130	749	883
Released Reclaimed Acres in 2000	22	57	0	79

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 2000. 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

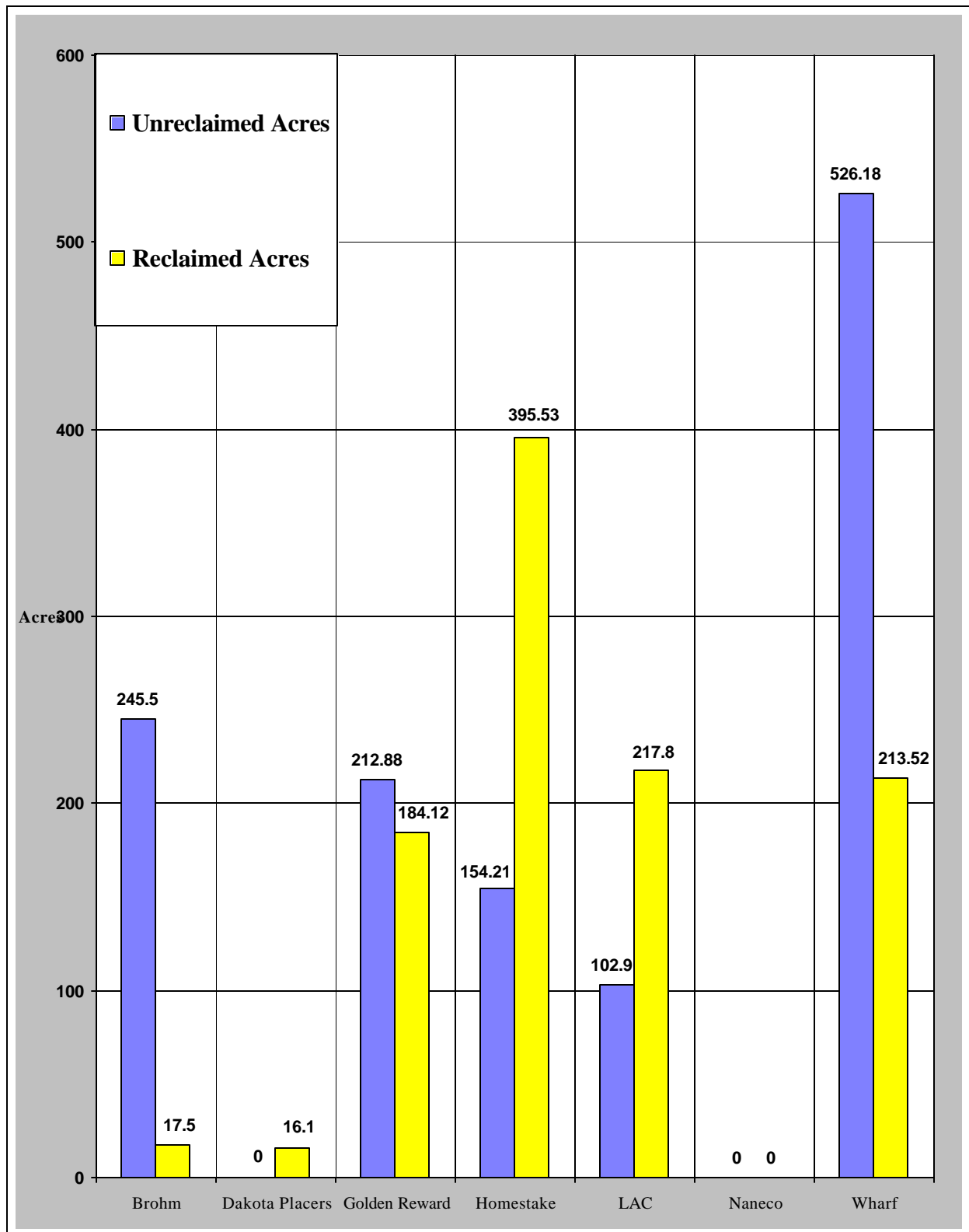


Figure 1A – Unreclaimed vs. Reclaimed Acreage at Large Scale Surface Gold Mines as of December 31, 2000.

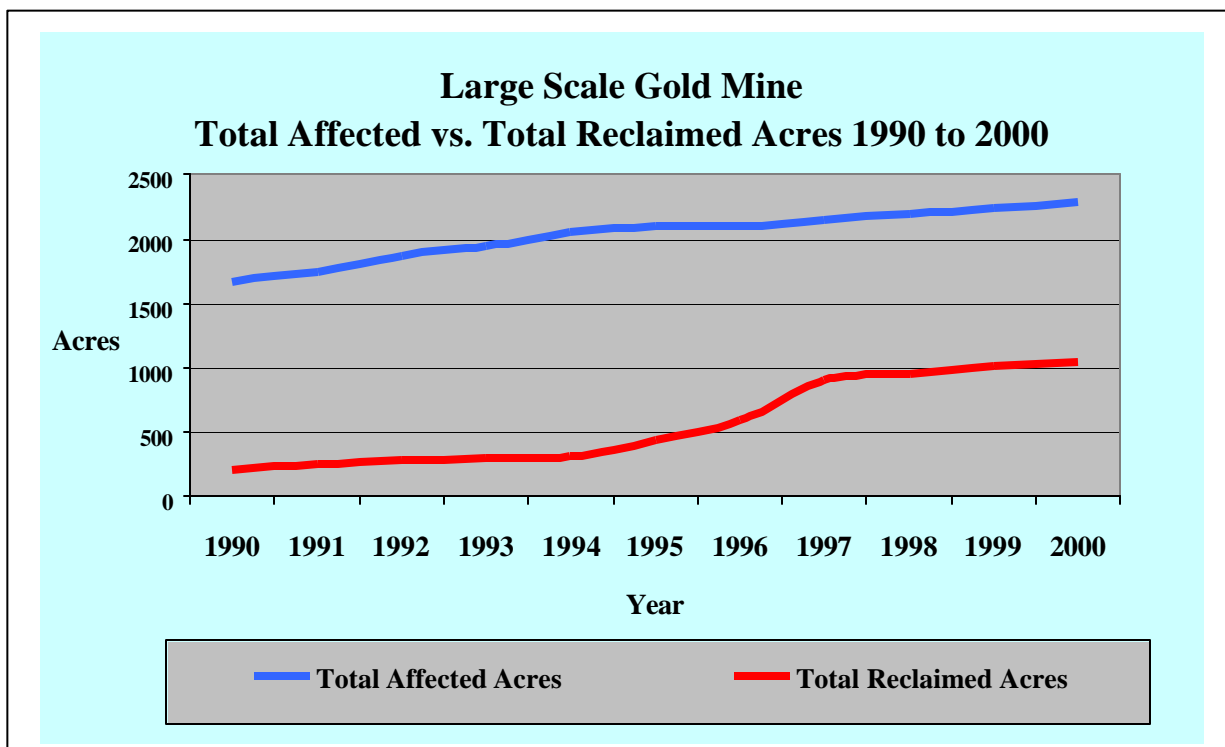


Figure 2A – Total affected vs. total Reclaimed Acreage at Large Scale Surface Gold Mines from 1990 to 2000.

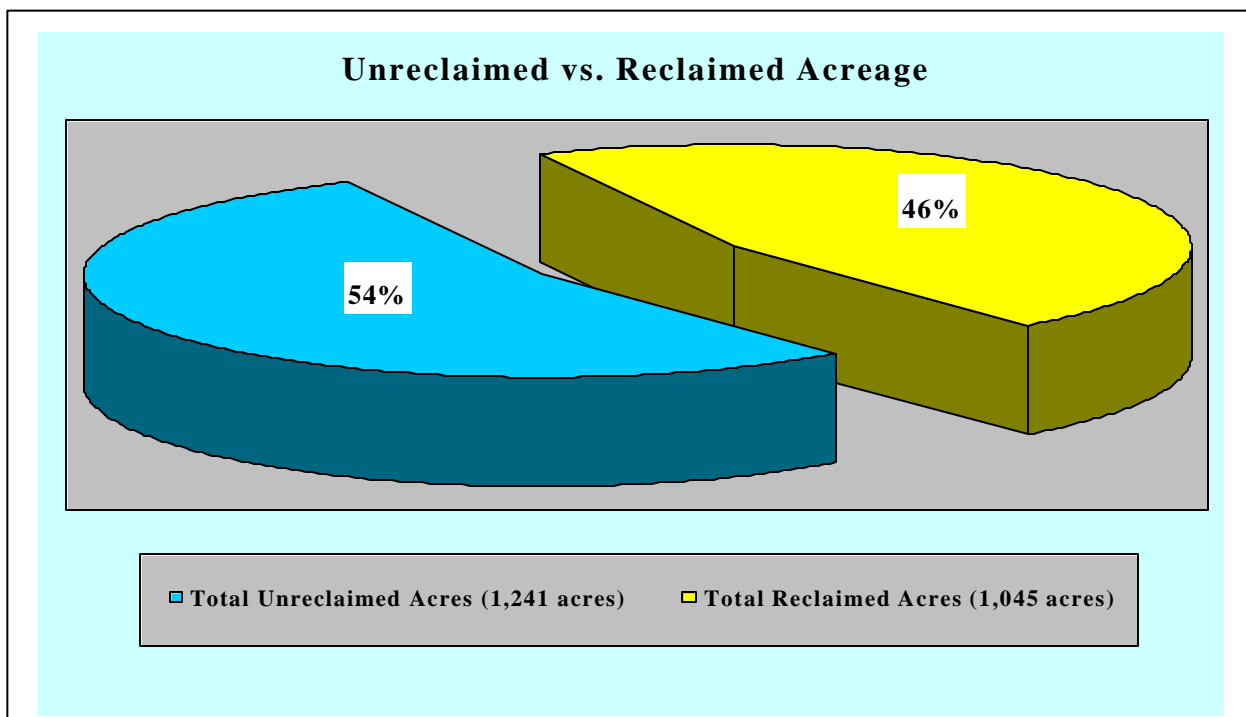


Figure 3A- Comparison of Unreclaimed vs. Reclaimed Acreage at Large Scale Surface Gold Mines in 2000.