

# **Guide to the Mine Engineer Files 5001**

**Finding aid prepared by Jessica Michak**

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Describing Archives: A Content Standard

HARCC\_Archivist

1-10-2014

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## Summary Information

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|-------------------------|--|
| <b>Repository</b>       | HARCC_Archivist  |
| <b>Creator</b>          | Homestake Mining Company   |
| <b>Title</b>            | Homestake Mine Engineer Files  |
| <b>Date [bulk]</b>      | Bulk, 1970-1998  |
| <b>Date [inclusive]</b> | 1900s  |
| <b>Extent</b>           | 52.5 Linear feet - 42 regular boxes  |
| <b>Language</b>         | English  |
| <b>Abstract</b>         | <p>The Mine Engineer Files consist of records created by the engineering department at the Homestake Mine. The mine operated from 1877 through 2001. During that time, the Engineering Department was responsible for determining the areas and levels of material extraction. In order to make such determinations, the engineers created a series of records that include maps, diagrams, correspondence, charts, and other related materials. They are organized according to the system imposed by the mine, which includes separation by divisions and major categories, including: Underground Production, Engineering Miscellaneous, and Bulk Mining-Cable Bolting.</p> |

## Biographical/Historical

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The Homestake Mining Claim was founded on April 9, 1876 by Fred and Moses Manuel and Hank Harney. They soon sold their interests to a group of men, led by George Hearst. Under Hearst's direction, the Homestake Mining Company was incorporated in November 1877 and grew into the major economic driving force of the Black Hills area.

The mine's Engineering Department was responsible for monitoring the extraction of materials from the mine. The majority of records from this collection were created in the 1970s, 80s, and 90s; however, there are varying records that date to the early 1900s. They include maps and diagrams at a variety of levels and sections of the mine. The collection includes related materials including mining contests and community relationships in regards to its operations.

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## Scope and Contents

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The materials in this collection consist of 42 regular boxes and approximately four oversized maps. The materials are a collection of maps, diagrams, charts, budgets, development schedules, and other documents pertaining to the physical operation of the mine. The Engineering Department was responsible for determining the extent of mining operations in each section of the mine.

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## Arrangement

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The materials in this collection remain in the original order taken from the Homestake Mine in 2005. They were originally housed in several filing cabinets and were removed and boxed directly from them. The original filing system is as follows:

**BOX 1: Series I: Underground Production Areas**

- Division 4: Miscellaneous
- Division 4: Stope Maps
- Division 4: Budget
- Division 4: Miscellaneous

**BOX 2: Series I: Underground Production Areas**

- Division 4: Miscellaneous
- Division 4: Stope Maps
- Division 4: Mining Plans
- Division 4: Culvert Information
- Division 4: 4 Winze Deepening
- Division 4: 4 Winze Skip Pocket

**BOXES 3 and 4: Series I: Underground Production Areas**

- Division 3: Miscellaneous
- Division 3: Stope Folders
- Division 3: Service Holes
- Division 3: Sand Holes
- Division 3: Drain Holes
- Division 3: Life of Mine Study
- Division 3: Budget

**BOX 5: Series I: Underground Production Areas**

- Division 3: Miscellaneous

**BOXES 6 and 7: Series I: Underground Production Areas**

- Division 5: Engineering Plans
- Division 5: Equipment
- Division 5: Life of Mine Study

**BOXES 8 and 9: Series I: Underground Production Areas**

- Division 5: Stope Plans
- Division 5: Life of Mine Study, 1990-1993
- Division 5: Budgets, 1989-1994
- Division 5: Development
- Division 5: Shaft Sumps
- Division 5: 8000 Sump

**BOXES 10 and 11: Series I: Underground Production Areas**

-Division 5 (LMU 26, 36): 6950-8000 Level

-Division 4: 5300-5750, East Ledges

**BOXES 12 and 13: Series I: Underground Production Areas**

-Division 2: 1550-4250 Level

-Shutdown Areas

**BOXES 14 and 15: Series I: Underground Production Areas**

-Division 5 (LMU 26, 36): 6950-8000 Level

-Division 4: Shutdown Areas

-Contract Closes 1995

**BOXES 16 and 17: Series II: Engineering Miscellaneous**

-Division 2 Archive: Beat 21: 50 Scale, Maps/Production Maps, Long Sections

-Division 2 Archive: Beat 22: 50 Scale, Maps/Production Maps, Long Sections

-Division 2 Archive: 1985 Budget, 1983-1984 Forecast

-Division 2 Archive: 1983-1984 Reconciliation Reports

-Division 2 Archive: Borehole Cutouts

-Division 2 Archive: Power Cable Holes

-Division 2 Archive: Sand Study

-Division 2 Archive: Yates Ore Pass System, 1550-2300 Levels

-Division 2 Archive: Geology Notes

-Division 2: Engineer Plan Maps

-Geology Plan Maps (Originals)

**BOXES 18 and 19: Series II: Engineering Miscellaneous**

-4th of July Information

-IRAD Cage

-Geokon

-USBM Overcore Project

-Rock Mechanics

-7100 Extensometers

-Extensometer Readout

-Grizzlies

-Terrametrics

-Intake Spring Capture Report

-Hangy Diamond Drill RE

-Perimeter Blasting

-Timberline Study

-Cable Bolts:

-Division 3: 5450-5750 Level

-Division 1: 6050-6500 Level

-Division 2: 2150-4250 Level

**BOX 20:** Series II: Engineering Miscellaneous

-Beat 23: 50 Scale Maps

-Beat 23: Production Maps

**BOXES 21, 22, and 23:** Series III: Bulk Mining-Cable Bolting

-Division 1: 6200-6800 Level

-Division 1: 1850-2600 Level

**BOXES 24 and 25:** Series III: Bulk Mining-Cable Bolting

-Division 5 (LMU 26, 36): 7250-8000 Level

**BOXES 26, 27, and 28:** Series III: Bulk Mining-Cable Bolting

-Division 2 (LMU 38, 28, 18): 1400-4400 Level

-Division 3: 4400-5900 Level

-Ross Shaft Survey

**BOXES 29 and 30:** Series III: Bulk Mining-Cable Bolting

-Division 3: 4400-5900 Level

-Ross Shaft Survey

-Division 4 (LMU 24): 6050-7700 Level 15 Ledge

-Division 4 (LMU 34): 7400 Level, Main Ledge

**BOXES 31, 32, and 33:** Series III: Bulk Mining-Cable Bolting

-Division 5 (LMU 26): 6840-7100 Level

-Division 5 (LMU 26, 36): 6950-7400 Level

**BOXES 34, 35, and 36:** Series III: Bulk Mining-Cable Bolting

-Division 1: 6050-6800 Level

**BOXES 37 and 38:** Series III: Bulk Mining-Cable Bolting

-Division 2: 1700-4250 Level

**BOXES 39, 40, and 41:** Series III: Bulk Mining-Cable Bolting

-Division 3: 4100-5900 Level

-Division 4: 5000-6800 Level, East Ledges

**BOX 42:** Series III: Bulk Mining-Cable Bolting

-Division 4: 5000-6800 Level, East Ledges

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## Administrative Information

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### Publication Information

HARCC\_Archivist 1-10-2014

### Access

This collection is housed at the Homestake Adams Research and Cultural Center with no restrictions to access. The collection may be utilized during normal operating hours, 10-4 M-F, or by appointment.

### Acquisition

These materials were transferred as one donation from the Homestake Mining Company on May 26, 2005.

### Processing

The bulk of materials in this collection were processed in 2005 by Carolyn Weber and Virginia James. Processing was completed in December 2013/January 2014 by Jessica Michak.



## Underground Production Areas

## Collection Inventory

| <b>Series I: Underground Production Areas</b>        |            |               |
|--|------------|---------------|
|  | <b>Box</b> | <b>Folder</b> |
| PR- 123 Holes, 300.3 1984-1987                       | 1          | 1             |
| 41-42 PA, 11L, 5000 1984                             | 1          | 2             |
| 45 SDF, 11L, 5000 5/13/1983                          | 1          | 3             |
| 46-47 SDF, 11L, 5150 1984                            | 1          | 4             |
| 43-44 SC, 11L, 5450 9/14/1984                        | 1          | 5             |
| 46-47 SEA (Inactive), 11L; 46-47 SWA, 5450 1983-1984 | 1          | 6             |
| 88-89 PW, ML, 5750 8/27/1984                         | 1          | 7             |
| Ring Drill and Cable Bolting, 300.5 1984             | 1          | 8             |
| 40 SF, 11L, 5000 1983-1984                           | 1          | 9             |
| 89 SW, ML, 5750                                      | 1          | 10            |
| 67-68 SB, 11L, 6500 1981-1983                        | 1          | 11            |

## Underground Production Areas

|  |   |    |
|--|---|----|
| 36-38 SF, 9L, 5000 N/A                                     | 1 | 12 |
| 70-72 PD, 9L, 6050 Bottom Cut, 202.3 1984-1985             | 1 | 13 |
| 83-84 SH, 9L, 6500 Crown Est. Bottom Cut, 202.4 10/29/1985 | 1 | 14 |
| 60-61 CP, 13L, 6500, 200.4 1985-1986                       | 1 | 15 |
| 56-57 SEB, 13L, 6350 1983-1985                             | 1 | 16 |
| Division 4, Stope Elevations 1966-1977                     | 1 | 17 |
| Division 4, Stope Elevations (Continued) 1972-1977         | 1 | 18 |
| 49-53 SC, 11L, 5450, 200.2 1983-1986                       | 1 | 19 |
| Division 4, General 1985-1987                              | 1 | 20 |
| 1980 Programming & Budget, 1987 1985-1987                  | 1 | 21 |
| Programming Notes, 100.1 1985-1988                         | 1 | 22 |
| Division 4 Reg, 100.4 1987                                 | 1 | 23 |
| Budgeting Notes & Manpower, 100.2 1984-1985                | 1 | 24 |
| Memos General Div. 4, 100.6 1979-1987                      | 1 | 25 |

## Underground Production Areas

|   |   |    |
|---|---|----|
| Lead Cost System (L.C.S.), 100.7 1983-1988                        | 1 | 26 |
| Division 4, Mining Costs, Monthly & Y.T.D., 100.9 1983-1988       | 1 | 27 |
| Mine Wide Manpower, 100.10 1986                                   | 1 | 28 |
| Small Block Layouts less than 50,000 Tons, 201.6 1986             | 1 | 29 |
| OCF Guidelines and (Stopes to Start & Sill Cuts), 202.1 1984-1985 | 1 | 30 |
| Level & Subsill Development, 300.4 1983-1986                      | 1 | 31 |
| 5600 Level- 39 PC- 13L 1978, 1987                                 | 1 | 32 |
| Drifting Subsill (Development) 1984-1986                          | 1 | 33 |
| Winze 4, Deepening & General Maint., 400.2 1981-1986              | 1 | 34 |
| Division 4 Projects, (400: Projects) Suggestions, 400.1 1985-1987 | 1 | 35 |
| Foster Miller, Mini Mucker, 400.3 1984-1985                       | 1 | 36 |
| Drainage and Sumps, 400.5 10/12/1984                              | 1 | 37 |
| Bulk Backfill, Sandlings & Walls, 400.6 1986-1987                 | 1 | 38 |
| New Mining Method 1985-1986                                       | 1 | 39 |

## Underground Production Areas

|   |   |    |
|---|---|----|
| Computer Program: M.T.U. N/A                            | 1 | 40 |
| Product Info & Articles 1983                            | 1 | 41 |
| Requirements: Production Tons vs. Ventilation 1983-1984 | 1 | 42 |
| Mock Emergency Drills, 500.7 1987                       | 1 | 43 |
| Bulk Mining Samples 1982                                | 1 | 44 |
| In-Mine Exploration 1982                                | 1 | 45 |
| Stope Section Finish Comparison 1983-1988               | 1 | 46 |
| Stope Section Finish Comparison (Continued) 1982-1985   | 1 | 47 |
| Grants Equipment Transfer 1985                          | 1 | 48 |
| #4 Winze Deepening Ventilation 4/13/1989                | 1 | 49 |
| 4 Winze Redesign Work 1987-1989                         | 1 | 50 |
| 4 Winze Deepening, 6800/7550 1986-1988                  | 2 | 1  |
| Homestake Memos on 4W 1981-1984                         | 2 | 2  |
| Contract- GIB System 1988                               | 2 | 3  |

## Underground Production Areas

|  |   |    |
|--|---|----|
| 1990 Budget 1989-1990                          | 2 | 4  |
| VCR Schedule 1990-1991                         | 2 | 5  |
| 1991 1st Quarter Forecast 1990-1991            | 2 | 6  |
| Abandoned Levels 5/2/1991                      | 2 | 7  |
| Contingency Stopes N/A                         | 2 | 8  |
| Stope Scheduling 1991                          | 2 | 9  |
| 1991 Budget Figures 1990-1991                  | 2 | 10 |
| Forecasts/Contingency 1991                     | 2 | 11 |
| ML Ramp System, 200.6 1985-1986                | 2 | 12 |
| 11L Ramp System, 200.7 1985-1986               | 2 | 13 |
| 83-84H- 9L- 6500 (Top Sill- South End) 1983    | 2 | 14 |
| 82-84 SH, 9L, 6500, 201.5 1982-1986            | 2 | 15 |
| (Includes 57-58 sc) 56-57 SC, 13L, 6200, 201.4 | 2 | 16 |
| 60-61 SF 11L, 6050 1981                        | 2 | 17 |

## Underground Production Areas

|   |   |    |
|---|---|----|
| 47 SD, 13 L, 6050 1983-1984                   | 2 | 18 |
| 58 PF, 11L, 5600 1983                         | 2 | 19 |
| 57 PE, 13L, 6200 1983-1984                    | 2 | 20 |
| Stope Section Finish Comparison 1982-1990     | 2 | 21 |
| 3rd Quart. 1991 Forecasts 1990-1991           | 2 | 22 |
| 93-95 and 97-99 PE, ML, 6800, 200.3 1979-1986 | 2 | 23 |
| 13 Ramp System, 200.5 1981-1986               | 2 | 24 |
| Geologist's Notes, 100.8 1987-1990            | 2 | 25 |
| Miscellaneous 1987-1989                       | 2 | 26 |
| Life of Mine Study 1988                       | 2 | 27 |
| Sections X 1989                               | 2 | 28 |
| Notes from Geology 1987                       | 2 | 29 |
| 6650- 4 Winze- Dump Changes 1987-1989         | 2 | 30 |
| Division 4 Contingency, 1985 1985             | 2 | 31 |

## Underground Production Areas

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|--|---|----|
| Mine Emergency Procedures                    | 2 | 32 |
| Back Samples N/A                             | 2 | 33 |
| 4850 Level, CO's & Switchers etc. 1989-1990  | 2 | 34 |
| 4850 Yates Vent. Drift 1988                  | 2 | 35 |
| 1989 Div. 4 L.O.M. 1989-1990                 | 2 | 36 |
| Extra Crew Plan Maps 1989-1990               | 2 | 37 |
| 432 Reports 1989-1990                        | 2 | 38 |
| LOM- 1990 Originals 1990-1996                | 2 | 39 |
| Memos- Notes- Communications 1966, 1980-1990 | 2 | 40 |
| 9 ft. Culvert 1976-1980                      | 2 | 41 |
| HMC Culvert Drawings 1983-1988               | 2 | 42 |
| 12 ft. - 15 ft. Culvert 1980                 | 2 | 43 |
| Culvert Product Literature 1984              | 2 | 44 |
| 5 ft., 6 ft., 7 ft. Culvert 1973-1979        | 2 | 45 |

## Underground Production Areas

|   |   |    |
|---|---|----|
| 5000 BH, 17L, North Drift, 5000-5300 1989-1990  | 2 | 46 |
| 40 stp Rock Pick, 5600/5450 Ramp 1986           | 2 | 47 |
| Vibra King, Inc. Information 1989-1991          | 2 | 48 |
| Miscellaneous Product Information 1990          | 2 | 49 |
| 5750, 29-30 Con. Raise 1990                     | 2 | 50 |
| Crew Performance 1989                           | 2 | 51 |
| Incline Bypass, Cable Bolting, 38-41, 4700 1990 | 2 | 52 |
| 32-34 D (Top sill), Cable Bolting, 5600 N/A     | 2 | 53 |
| 4700 Incline, 38-41 P4 Access 10/17/1990        | 2 | 54 |
| Service Holes 1989-1991                         | 3 | 1  |
| Drain Holes- 17L, Power, Holes 1985-1987        | 3 | 2  |
| Sand Holes 1989                                 | 3 | 3  |
| Holes- 17L- 4100 1986-1987                      | 3 | 4  |
| Holes- 17L- 4250 1986, 1989                     | 3 | 5  |



## Underground Production Areas

|   |   |    |
|---|---|----|
| Sand Holes, 17L 5000/5300 1983-1987                       | 3 | 6  |
| 5300 1986-1987  | 3 | 7  |
| Drain Holes, 17L, 5600 to 5750 & 5450 & Decline 1985-1986 | 3 | 8  |
| 40 ext. rse, 17L 5900, Drainhole, etc. 1985               | 3 | 9  |
| Borehole 7' 5300/5600/5900 17 Ledge 1985-1986             | 3 | 10 |
| Geology Mine Notes, Div. 3 1989                           | 3 | 11 |
| 32pD 5150, 19L 3/22/1989                                  | 3 | 12 |
| SAO Memos 3/1989  | 3 | 13 |
| Up Date, On The Level, & 5.1B 1989                        | 3 | 14 |
| Visine Reports 1989                                       | 3 | 15 |
| 1990 Budget, 1st Draft 1990                               | 3 | 16 |
| Miscellaneous Survey 1976-1989                            | 3 | 17 |
| Miscellaneous Survey (Continued) 1976-1989                | 3 | 18 |
| May Safety Talk, Belt Applications 1984-1989              | 3 | 19 |

## Underground Production Areas

|   |   |    |
|---|---|----|
| Various Devt. Schedules 1989              | 3 | 20 |
| S.O.P. for ACAD N/A                       | 3 | 21 |
| Forecast vs. Budget vs. Actual N/A        | 3 | 22 |
| Devt. VCR Act. Vs. Budget 1989            | 3 | 23 |
| Budget Work for Original 1988 Budget 1988 | 3 | 24 |
| Div. 3 Level Drifts 1988-1989             | 3 | 25 |
| VCR, D.D., & B.H. Schedules 1989          | 3 | 26 |
| Glenn Johnson 6/20/1988                   | 3 | 27 |
| Contingency Budget Info. 1988             | 3 | 28 |
| Budget Info. 1988-1989                    | 3 | 29 |
| 4100- 17L- Air Doors 1979-1986            | 3 | 30 |
| 46-52 SC 17L, 4100 1987                   | 3 | 31 |
| 4100/4200 D.D. Cutouts, Ramp 1988         | 3 | 32 |
| Old Stopes, 17, 19-21 1972-1977           | 3 | 33 |

## Underground Production Areas

|  |   |    |
|--|---|----|
| Geology 1987-1989                                    | 3 | 34 |
| 4250 26-29 F VCR, 9L 1979                            | 3 | 35 |
| 27-29F 9L, 4400, Stope Study 1983                    | 3 | 36 |
| 39-40 SB 17L 2/11/1985                               | 3 | 37 |
| 38-39 SB 17L, 4400 N/A                               | 3 | 38 |
| 4400 Level, 9 Ledge, 27-29 SF 1967-1979              | 3 | 39 |
| 42-44 pB, 17L, 4400 1988-1989                        | 3 | 40 |
| 4400/4700 Borehole & Breuk Raise & Drift 1986        | 3 | 41 |
| 4400 17 Ledge 4/10/1989                              | 3 | 42 |
| 4400, 17L, D.D. Schedules, Drain Holes 1986          | 3 | 43 |
| 41-43 sB, 17L, 4550 1987-1988                        | 3 | 44 |
| 4550- 15L- IME 12/1986                               | 3 | 45 |
| 4550 17L, Drain Holes 1985                           | 3 | 46 |
| Ventilation rse, 17L, 4100/4550, 7' Diam. 1979, 1984 | 3 | 47 |

## Underground Production Areas

|  |   |    |
|--|---|----|
| 40-41 pB, 17L, 4550 VCR 1987-1988        | 3 | 48 |
| 40-41 sB, 17L, 4700 1984-1985            | 3 | 49 |
| 43 sA 17L, 4700 5/9/1988                 | 3 | 50 |
| 39-40 sB 17L, 4700 N/A                   | 3 | 51 |
| 40 SWB, 17L, 4700 1983-1987              | 3 | 52 |
| 4700-4550 Incline, 42-43B 4700 1982-1984 | 3 | 53 |
| Rock Pick, 17L, 4700 1986                | 3 | 54 |
| 38-41 sBC, 4700 10/25/1988               | 3 | 55 |
| 46 PAB-47 pB, 17L, 4700 1988             | 3 | 56 |
| 4850 Service Cutouts 2/1988              | 3 | 57 |
| 4850 1981-1982                           | 3 | 58 |
| 4850 Level, 19 Ledge, 28-29 S D N/A      | 3 | 59 |
| 4850 Level, 19 Ledge, 34 S D N/A         | 3 | 60 |
| 29-41 pBD, 17L, 4850 1987-1988           | 3 | 61 |

## Underground Production Areas

|   |   |    |
|---|---|----|
| 39-41 PA, 11L 1987                              | 3 | 62 |
| 17L, Waste 1988                                 | 3 | 63 |
| 38-39B, 17L, 4850 1984                          | 3 | 64 |
| Pit Drawing- Standard & Drain System 1981, 1986 | 3 | 65 |
| 4850 Layouts- North Drift, 17L 1987             | 3 | 66 |
| 38-39B 17L, 4850 N/A                            | 3 | 67 |
| 39-40 SB, 17L, 4850, VCR 1986-1987              | 3 | 68 |
| 40-44SCD, 9L, 4850 MCF 1987-1988                | 3 | 69 |
| 4850, 9 Ledge, 42 S D N/A                       | 3 | 70 |
| 43 Borehole, 17L, 4850 1984                     | 3 | 71 |
| Motor Barn, 17L, 4850 1984-1986                 | 3 | 72 |
| 28 SD, 17L, 5000 1984-1985                      | 3 | 73 |
| 5000 Level, 19 Ledge, 28 S D 1966-1967          | 3 | 74 |
| 38-39 SA- 5030 est. vs. Act. 1983-1984          | 3 | 75 |

## Underground Production Areas

|  |   |    |
|--|---|----|
| 5000 Ross Sump 4/21/1986                       | 3 | 76 |
| 38 Pillar, Waste Raise 4700/5000 5/12/1986     | 3 | 77 |
| 37 SWB- 17L- 5000 VCR 1986                     | 3 | 78 |
| 38 PB, 17L, Block #4, 5000-5030 1986           | 3 | 79 |
| 39 pB, 17L, 5000 1987-1989                     | 3 | 80 |
| 38-39B, 17L, 5000 1980-1981                    | 3 | 81 |
| 37-38B, 17L, 5150 N/A                          | 3 | 82 |
| 37-39 SB, 17L, 5150 VCR 1984-1986              | 3 | 83 |
| 36 SBC, 17L, 5150 1985-1988                    | 3 | 84 |
| 5150 Level Development, Holes, etc. 1985, 1989 | 3 | 85 |
| 5300 Level, 19 Ledge, 26 S F 1974              | 3 | 86 |
| 35-39 SB, 17L, 5300 VCR 1983, 1985             | 3 | 87 |
| 5300 17, 19, 21 Ledge 10/8/1990                | 3 | 88 |
| 35 SB, 17L, 5450 1984-1988                     | 4 | 1  |

## Underground Production Areas

|  |   |    |
|--|---|----|
| 40-42 A 5450 1981                              | 4 | 2  |
| 51 pC, 17L, 5450 Sill 1987-1988                | 4 | 3  |
| 46-52 C 5450 1989                              | 4 | 4  |
| 5450 17, 19, 21 Ledge 4/4/1989                 | 4 | 5  |
| 5450, 40-42 VCR 1986, 1990                     | 4 | 7  |
| 46-52, 17L, MCF, 5450 1985-1988                | 4 | 6  |
| 40-42 SC, 17L, 5450 1987-1988                  | 4 | 8  |
| 32-34 S D, 17L, 5600 Bottom Sill Cut 1985-1988 | 4 | 9  |
| 29 S F, 19L, 5600 OCF 1984-1985                | 4 | 10 |
| 38-42 S A, 17L, 5600 1980-1981                 | 4 | 11 |
| 38-42 A, 17L, 5600 "Ore Estimate" N/A          | 4 | 12 |
| 38-42 C, 17L, 5600 "Ore Estimate" 1981-1982    | 4 | 13 |
| 5000 Level, 11 Ledge, 38-43 F 1979-1980        | 4 | 14 |
| 38-42 C, 17L, 5600 VCR Drill Reports 1983-1984 | 4 | 15 |

## Underground Production Areas

|  |   |    |
|--|---|----|
| 38-42 SC, 17L, 5600 VCR, N & S. Block 1984           | 4 | 16 |
| 5750 Level, 19 Ledge, 39-40 S C N/A                  | 4 | 17 |
| 39-41 S C, 17L, 5750 1986                            | 4 | 18 |
| 54-55 S B, 21L, 5750, Incline Decline 1983           | 4 | 19 |
| 52 SA, 17L, 5750 6/18/1987                           | 4 | 20 |
| 32 sD, 17L, 5750 1988                                | 4 | 21 |
| 5750, 54-56B, 17L 1991-1996                          | 4 | 22 |
| 37-39 SD, 17L, 5900 OCF 1984-1985                    | 4 | 23 |
| 46 rse, 19L, 5750/5900 2/11/1986                     | 4 | 24 |
| 17L Decline Ramp System, 5450 to 5900 1984-1988      | 4 | 25 |
| 5900 Level Devt. 1988                                | 4 | 26 |
| 36-37 SC, 17L, 5900 VCR 1986-1987                    | 4 | 27 |
| 54-56 PC, 19L, 5900 VCR- Sill out, Topsill 1986-1988 | 4 | 28 |
| 26-29 SF, 9L, 4250 BH 1983-1984                      | 4 | 29 |



## Underground Production Areas

|   |   |    |
|---|---|----|
| 26-27 SF, 11L, 4400 1983-1986                       | 4 | 30 |
| 64 PW, ML, 4400 1984-1985                           | 4 | 31 |
| 32 SC, 9L, 4400 1984-1985                           | 4 | 32 |
| 28-29 SB, 11L, 4400 1983-1984                       | 4 | 33 |
| 24 SF, 11L, 4400, OCF Permanently Stopped 1983-1984 | 4 | 34 |
| 64 PW, ML, 4550, OCF Finished 1984                  | 4 | 35 |
| 35-36 SC, 11L, 4700, Small VCR 1985                 | 4 | 36 |
| 39 PB, 9L, 4700, Cable Bolts 1/7/1986               | 4 | 37 |
| 42 SA, 9L, 4700 1985                                | 4 | 38 |
| 33 SH, 9L, 4700 1983-1984                           | 4 | 39 |
| 35 EB, 9L, 4700 1/28/1985                           | 4 | 40 |
| 42-44 SD, 9L, 4550, Blast Hole 1984-1985            | 4 | 41 |
| 35 SC, 11L, 4550 3/1986                             | 4 | 42 |
| 41-42 SB, 9L, 4700 1984                             | 4 | 43 |

## Underground Production Areas

|                                    |   |    |
|------------------------------------|---|----|
| 42-43 SD, 9L, 4700 1983-1984       | 4 | 44 |
| 41 PD, 9L, 4700 Sill Cut 1985      | 4 | 45 |
| 37 SC, 11L, 4700 1984-1985         | 4 | 46 |
| 68-69 SC, ML, 4700 1984-1985       | 4 | 47 |
| 34 SG, 9L, 4850 1984-1985          | 4 | 48 |
| 35 SH, 9L, 4850 1984-1985          | 4 | 49 |
| 41 SB, 9L, 4850 1984-1985          | 4 | 50 |
| 36-37 SBC, 9L, 4250 1984           | 4 | 51 |
| 21 PD, 11L, 4250 1986              | 4 | 52 |
| 28-29 SB, 11L, 4250 OCF 1984-1986  | 4 | 53 |
| 61-62 SW, ML, 4250 OCF 1984        | 4 | 54 |
| 30 SF, 9L, 4550 OCF 1984           | 4 | 55 |
| 30-31 SDF, 11L, 4550 OCF 1983-1984 | 4 | 56 |
| 35 SD, 9L, 4550 OCF Finished 1984  | 4 | 57 |

## Underground Production Areas

|  |   |       |
|--|---|-------|
| 37 DWF, 9L, 4550 1984-1985   | 4 | 58    |
| Misc. Culvert Drawings 1969-1981                                     | 5 | 1     |
| 1996 Life of Mine, Beat 12 & 31, Beat 13 1995-1996                   | 5 | 2     |
| Division 3 Life of Mine Study Booklet 4/6/1990                       | 5 | Loose |
| CIM Operator's Conference 1991                                       | 5 | Loose |
| CIM 10th Underground Operators Conference, Val'd'or Quebec 2/24/1991 | 5 | Loose |
| Division 3 Files, Miscellaneous 1985-1987                            | 5 | 3     |
| Division 3 Files, Miscellaneous 6/12/1905                            | 5 | 4     |
| Division 3 Files, Miscellaneous 1985-1987                            | 5 | 5     |
| Division 3 Files, Miscellaneous 1985-1987                            | 5 | 6     |
| Division 3 Files, Miscellaneous 1985-1987                            | 5 | 7     |
| Division 3 Files, Miscellaneous 1985-1987                            | 5 | 8     |
| Division 3 Files, Miscellaneous 1985-1987                            | 5 | 9     |
| Division 3 Files, Miscellaneous 1987-1988                            | 5 | 10    |

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|--|---|----|
| Division 3 Files, Miscellaneous 1985-1987                                | 5 | 11 |
| Division 3 Files, Miscellaneous 1986-1987                                | 5 | 12 |
| Division 3 Files, Miscellaneous 1985-1987                                | 5 | 13 |
| Division 3 Files, Miscellaneous 1983-1987                                | 5 | 14 |
| Division 3 Files, Miscellaneous 1983-1988                                | 5 | 15 |
| Division 3 Files, Miscellaneous 1985-1987                                | 5 | 16 |
| Division 3 Files, Miscellaneous 1985-1988                                | 5 | 17 |
| 45-47 AB, 21L, 7100 and 48-51 SAB, 21L, 7100, Mined Out, 300.7 1981-1985 | 6 | 1  |
| 40-42 SC, 7100, 21L, Mined Out, 300.6 1985-1987                          | 6 | 2  |
| 26-27 SA, 21L, 6950, Mined Out 1985-1987                                 | 6 | 3  |
| 41-42 SD, 17L, 6950, Mined Out, 300.2 1985                               | 6 | 4  |
| 33-34 PD, 17L, 7400 (VCR) (MCF Below to Porphyry), Mined Out 1985-1987   | 6 | 5  |
| 34-36 SD, 21L, 7250, Mined 1989 1988                                     | 6 | 6  |

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|--|---|----|
| Sump Designs 1965, 1986-1987   | 6 | 7  |
| #4 Winze, 6950 Boreholes etc., 500.4 1988                                | 6 | 8  |
| Survey Ties, 500.5 1988  | 6 | 9  |
| Waste Dumps, 500.6 1/1986  | 6 | 10 |
| 8000 Grizzly/Rock Pick, 500.7 1975-1986                                  | 6 | 11 |
| Electric Power Upgrade, 500.8 1986-1987                                  | 6 | 12 |
| Bore Hole Layouts, 501.1 1968-1969                                       | 6 | 13 |
| Rock Picks & Grizzlys, 501.2, Includes Slanted Grizzly 1981-1988         | 6 | 14 |
| Motor Barn/Fuel Stor. , 501.3, Includes 7400 Horse Barn 1986-1988        | 6 | 15 |
| Misc: Div 1-Div 5, Bulk Mining, For Quarterly Staff Mtg. 1983-1988       | 6 | 16 |
| Semi Annual Programming, Beat Updates, 100.4 6/10/1987                   | 6 | 17 |
| Changes to Stope Files, Miscellaneous 1989                               | 6 | 18 |
| Programming Long Sections, 100.5 1989                                    | 6 | 19 |
| Div. 5 Budget, Haulage, etc. Also: Forms, plans, figures, etc. 1985-1989 | 6 | 20 |

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|  |   |    |
|--|---|----|
| Programming Input Sheets, 600.2 1984-1988              | 6 | 21 |
| Production Estimate Sheets (Previous), 600.3 1983-1987 | 6 | 22 |
| Misc. Proj. 1980-1983                                  | 6 | 23 |
| Div. 5, L.O.M., 100.9 1987-1988                        | 6 | 24 |
| Division 5, Work Summaries, 1987 1/1987                | 6 | 25 |
| Division, 5, Work Summaries, Pre 1987 1985-1986        | 6 | 26 |
| Division, 5, Work Summaries, Pre 1987 (Continued) 1986 | 6 | 27 |
| Division 5, 1988 Budget Background & Summary 1985-1988 | 6 | 28 |
| Purchase Orders, Work Orders, etc. 1984-1988           | 6 | 29 |
| Annual Budget 1980-1982                                | 6 | 30 |
| Special Orders (HMCo. Home Made) 1984-1986             | 7 | 1  |
| Suggestion/Evaluation Completed File 1986-1988         | 7 | 2  |
| 6950 Vent.- Upgrade 1985-1988                          | 7 | 3  |
| Deep Level Ventilation Upgrade 1985                    | 7 | 4  |

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|  |   |    |
|--|---|----|
| Div. 5 Geologist Notes, 100.1 1987-1988  | 7 | 5  |
| Chutes, Dump, Camel Back, etc. Drawings 1966, 1977, 1986                             | 7 | 6  |
| Drift & Raise Reports, 100.8 1981-1985   | 7 | 7  |
| Equipment File, Bolters, etc., 101.1 1984-1987                                       | 7 | 8  |
| Bolt Tests: Mechanical, Swellex, Split Set, Testing Equip., etc.,<br>101.2 1982-1987 | 7 | 9  |
| Steel Power Chute Details 1980-1986  | 7 | 10 |
| Division 5 Costs 1986-1987   | 7 | 11 |
| 30 Gage Camel Back 1977-1980   | 7 | 12 |
| Memorandums 1985-1987  | 7 | 13 |
| Cable Bolting, Cables, Info.- Tensile Tests 1980-1984                                | 7 | 14 |
| Cable Bolting, Stopes, Layouts 1984  | 7 | 15 |
| Chutes/Timberlines 1956-1969   | 7 | 16 |
| 43 Incline/Decline 6050-7100, 7100-7250 1985-1987                                    | 7 | 17 |

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|  |   |    |
|--|---|----|
| Bobcat N/A   | 7 | 18 |
| Tamrock 1985   | 7 | 19 |
| Pipe Cleaning Tools, Lined Pipe 1984-1985                    | 7 | 20 |
| Geoweb, 34-35SD, 5750 17L, MCF 2/20/1985                     | 7 | 21 |
| Nonel- Ensign- Bickford Co., Non-electrical Blasting N/A     | 7 | 22 |
| Explosives 1983  | 7 | 23 |
| Pipe & Cable Hangers, Anchors, Cables, Bolts, etc. 5/21/1984 | 7 | 24 |
| Cable Bolt Grouting 1981-1984                                | 7 | 25 |
| Over-Coring Project, U.S. Bureau of Mines 4/27/1984          | 7 | 26 |
| Atlas Copco N/A  | 7 | 27 |
| 3 yd. LHD Fuel Storage Door 1982-1983                        | 7 | 28 |
| 30 Gage Air Doors 1968, 1978, 1985                           | 7 | 29 |
| Fan Bulkheads, Air Doors, etc. 6950 Vent Upgrade 1980-1988   | 7 | 30 |
| 93-99 SC, 6800, ML 12/1987                                   | 7 | 31 |



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|                                   |   |    |
|-----------------------------------|---|----|
| Invoices, Parking Slips 1984      | 7 | 32 |
| Misc. Drawings 1980-1981          | 7 | 33 |
| Misc. Drawings 1962-1983          | 7 | 34 |
| Low Gold Contingency 1988-1991    | 8 | 1  |
| Blanks 1990                       | 8 | 2  |
| 1989, 1991 Budget 1988-1991       | 8 | 3  |
| LOM 1990-1991 1990-1991           | 8 | 4  |
| '93 LOM 1993                      | 8 | 5  |
| 1992 Budget 1991-1992             | 8 | 6  |
| 6950 Level Development 1985-1993  | 8 | 7  |
| 1993 Budget 1992-1993             | 8 | 8  |
| 1994 Budget 1993-1994             | 8 | 9  |
| 37-43 sB, MCF, 7400 21L 1984-1993 | 8 | 10 |
| 40-43 AB, MCF, 6950 21L 1990-1993 | 8 | 11 |

## Underground Production Areas

|  |   |    |
|--|---|----|
| 34-36 sA, 21L 7250 1977-1980   | 8 | 12 |
| 34-36 sA, 7250, 35 c also 1985-1987                                    | 8 | 13 |
| 32-34 sA, 21L, 7250 1980-1984  | 8 | 14 |
| 37 sC, Mined, 38-39 sC, 21L, 7250 Golden Horseshoe 1984                | 8 | 15 |
| 34-36 sC, 21L, 7250, 33-34 sC, 32-33 sC, Golden Horseshoe 1956-1969    | 8 | 16 |
| 35 sC, 21L, 7250, Golden Horseshoe, Top Cut 1985-1987                  | 8 | 17 |
| 39-42 aB, MCF, 7100, 21L N/A   | 8 | 18 |
| 38-40 sC, MCF, 7100 21L 1985   | 8 | 19 |
| 40B, 6950 MCF 1984-1985  | 8 | 20 |
| 35 WB & 34C, 21L, MCF, 8000 & 7850 2/20/1985                           | 8 | 21 |
| 28A & 25A 6950, 27A, 7100, VCRs N/A                                    | 8 | 22 |
| 39-40 sC, 21L, 7250, Golden Horseshoe, Development 34-36A, 33-34E 1983 | 8 | 23 |
| 22AM, 7100, 19L 5/21/1984  | 8 | 24 |

## Underground Production Areas

|   |   |    |
|---|---|----|
| N 38B, VCR, 7550 1981-1984  | 8 | 25 |
| 36 sC, 21L, 7250, Golden Horseshoe 4/27/1984                                | 8 | 26 |
| 39B, VCR, 7850 N/A  | 8 | 27 |
| 41-42, 7700, Can VCR West Ore Pillar, East Ore 1982-1983                    | 8 | 28 |
| 31-32 sA, 21L, 7850; 33 c, 21L, 7850; 36-37 21L, 7850, VCR 1968, 1978, 1985 | 8 | 29 |
| 36A & 36C, 7100, MCF 1980-1988  | 8 | 30 |
| 6950 21L, 42-44 Cable Bolt Layout 12/1987                                   | 8 | 31 |
| 20-23A, 26-27 sEB, 17L, 7700 VCR 1984                                       | 9 | 1  |
| 33-35 pDE, 17L, 7400 (T)- 30, 7250, BIM- Scrams or 33-34D, 7400 1980-1981   | 9 | 2  |
| 26A and 22A, 7700, VCRs 1962-1983   | 9 | 3  |
| 45-47 sB, 47-48 sB VCR 7250, 48-50 sB                                       | 9 | 4  |
| 25A and 26A, 19L, MCF & VCR 7400 1991-1992                                  | 9 | 5  |
| 45-47, 48-50 7250 VCR 1992  | 9 | 6  |

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|   |   |    |
|---|---|----|
| 45-48 sBC, MCF, 7400 21L 1987-1992  | 9 | 7  |
| 45-47 sB VCR, 21L, 7700-7400 1990-1993  | 9 | 8  |
| 33-34 sE, 17L, 7250, East Access, Golden Horseshoe, Middle Sill +50<br>7250, Top Sill (Cut) 1987-1992 | 9 | 9  |
| 6950 35D VCR, 7100 35D VCR 1992-1993  | 9 | 10 |
| 7100 Level Dev. 1987-1992   | 9 | 11 |
| 7250 Level Dev. 1985-1989   | 9 | 12 |
| 7400 Level Dev. 1987-1991   | 9 | 13 |
| 7400 to 7250 New Incline 1991   | 9 | 14 |
| 7550 Level Dev. 1988-1990   | 9 | 15 |
| 7700 Level Dev. 1986-1993   | 9 | 16 |
| 35-38 sB MCF, 7700 21L 1986-1992  | 9 | 17 |
| 7850 Level Dev. 1986-1993   | 9 | 18 |
| 8000 Level Dev. 1985-1993   | 9 | 19 |

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|   |   |    |
|---|---|----|
| Old 52 Ext. to 8000 1991-1994                     | 9 | 20 |
| Stope Section, Finish Comparison 1989             | 9 | 21 |
| 43 Extraction 1985-1986                           | 9 | 22 |
| New 52 Extraction Gravity Feed to 8000 1988-1990  | 9 | 23 |
| Miscellaneous 1992                                | 9 | 24 |
| Remote Locomotives- RE 10/1993                    | 9 | 25 |
| Suggestions 1991                                  | 9 | 26 |
| Trip to Thompson Canada 1991                      | 9 | 27 |
| Deep Level Ventilation Experiments 1991           | 9 | 28 |
| Task Training 11/1991                             | 9 | 29 |
| Vacuum Conveyor 1991-1992                         | 9 | 30 |
| Forecast Beat 51 1993                             | 9 | 31 |
| Cominco Engineering Services Ltd. Information N/A | 9 | 32 |
| Shaft Sumps 1990-1994                             | 9 | 33 |

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|  |    |    |
|--|----|----|
| 37-39 SA, 21L, 7400, MCF Stope 1982-1983   | 9  | 34 |
| Division 5 Overlay, Levels 6800, 6950,<br>7100,7250,7400,7550,7700,7850,8000 N/A | 9  | 35 |
| 8000 Sump 1980-1982  | 9  | 36 |
| Div. 5 1983-1988   | 9  | 37 |
| Miscellaneous 1983-1985  | 9  | 38 |
| 6950 Drift to #4 Winze 1982  | 9  | 39 |
| 14 B 6950 1997   | 10 | 1  |
| 6950' Level, 28A, VCR 19L Bottom 1992-1995                                       | 10 | 2  |
| 28A, 6950 1995-1997  | 10 | 3  |
| 6950' Level, 35D, VCR, Top Sill, 19L 2/5/1992                                    | 10 | 4  |
| 6950' Level, Refrig. Plant 1987  | 10 | 5  |
| 6950' Level, 35D VCR Midsill, 19L 1992   | 10 | 6  |
| 6950 35D, 19L 1995-1997  | 10 | 7  |

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|   |    |    |
|---|----|----|
| 6950 36A, Panel 36, 21L 1993                          | 10 | 8  |
| 6950' Level, 37-39 VCR & 40 VCR, 21L 1986-1996        | 10 | 9  |
| 6950 36BC, 21L 1993-1997                              | 10 | 10 |
| 6950 40B, Panel 40, 21L 1993-1995                     | 10 | 11 |
| 6950 40C, VCR, 21L, 6840 Topsill 1990-1991            | 10 | 12 |
| 6950 N 41WB 1990-1997                                 | 10 | 13 |
| 6950 40D, P40D, 21L 1993-1995                         | 10 | 14 |
| 6950 41-42 VCR, 21L, c/o Solid 14' above 6950 1985    | 10 | 15 |
| 6950 40-43 (41C), 21L, 6950/40-43/MCF Panel 1989-1995 | 10 | 16 |
| 6950 43EA, 19L, View Mining 1995-1996                 | 10 | 17 |
| 6950 45D, 19L #1591 1996                              | 10 | 18 |
| 44B, ID#1622, 6950 1997                               | 10 | 19 |
| 6950, 44C 1994-1997                                   | 10 | 20 |
| 7100' Level 38-40, 21L 1990-1993                      | 10 | 21 |

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|   |    |    |
|---|----|----|
| 6950' Level 45-46 Midsill 1992                          | 10 | 22 |
| 6950' Level 45-47 C, 19L 1982                           | 10 | 23 |
| 6950 43-45 A, 21L, 45-46 SC (North End) 1985-1989       | 10 | 24 |
| 6950 42-48, North End 1988-1992                         | 10 | 25 |
| 6950 42-48 MCF, 21L, South End 1987-1992                | 10 | 26 |
| 6950, 48-50A, 21L, VCR Bottom Sill 1989-1990            | 10 | 27 |
| 6950 48-51 A&B, 21L, Panel #6 & #7, North End 1982-1986 | 10 | 28 |
| N50C, 6950 1992-1997                                    | 10 | 29 |
| 6950 49-51A( VCR) 21L 1990-1991                         | 10 | 30 |
| 6950' Level, 49-51 WB, VCR Bottom 1990-1992             | 10 | 31 |
| 6950, 49-51 VCR, Top Sill 1992                          | 10 | 32 |
| 6950 50-52 Bt. Access, 21L 1994-1995                    | 10 | 33 |
| 50-52 Top Sill, 6950 1/23/1995                          | 10 | 34 |
| 6950 50A, 21L 1993                                      | 10 | 35 |



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|   |    |    |
|---|----|----|
| 6950 52 Dump B.H.C.O. 21L 12/30/1997                                    | 10 | 36 |
| 13B 7100 N/A  | 10 | 37 |
| 7100 20 AN, P 20 AN, 21L 1994-1997                                      | 10 | 38 |
| 7100 20AS, 19L 1992   | 10 | 39 |
| 7100 22AM, MCF, Panel 22AM, 21 L, 6950 1993-1996                        | 10 | 40 |
| 7100' Level 27A, VCR, Bottom 1992                                       | 10 | 41 |
| 7100 N27E, 21L, Panel N27E 1993-1996                                    | 10 | 42 |
| 7100 33-34E, VCR Sill 1988  | 10 | 43 |
| 7100 34-36D, 21L, VCR Top Sill 1988-1992                                | 10 | 44 |
| 7100 34-36 VCR, 21L, 7250 Stope 7100/34-36/VCR & 32-33<br>VCR 1988-1989 | 10 | 45 |
| 7100 32-35 VCR, 21L 1988  | 10 | 46 |
| 7100 35-C, 21L VCR Below 7100 1988-1990                                 | 10 | 47 |
| 36 BC, 7100 1997  | 10 | 48 |

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|   |    |    |
|---|----|----|
| 7100 38-39/VCR, 21L 1990-1991                 | 10 | 49 |
| 7100 38-40 BC, 21L 1988-1989                  | 10 | 50 |
| 7100, 40D, VCR Btm 1991                       | 10 | 51 |
| 7100 ft. level, 40-42C, 19L 1985-1987         | 10 | 52 |
| 7100 42-44 MCF, 21L 1992-1993                 | 10 | 53 |
| 7100' Level, 44-45C, VCR Bottom 1990          | 10 | 54 |
| 7100 to 7400, 52 Ore Dump, East One 1979-1985 | 10 | 55 |
| 34-36, 7250 N/A                               | 10 | 56 |
| 37-43, P2 on 7100 Sill 1997                   | 10 | 57 |
| 7100' Level, N38B, 17L 1992-1994              | 10 | 58 |
| 7250' Level 37-43 Pan 2 1992-1998             | 10 | 59 |
| 37-43 Panel 3, 7250 & Up 1990-1997            | 10 | 60 |
| N22B 7250 1996-1997                           | 10 | 61 |
| 7250 32-34 Access Stope 1994-1996             | 10 | 62 |

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|  |    |    |
|--|----|----|
| 37-43 (Pan 1) 7250 Up 1993-1995            | 10 | 63 |
| N22WA 7250 1996                            | 10 | 64 |
| 24A 7250 1996-1997                         | 10 | 65 |
| 25A/24A 7250 1995-1998                     | 10 | 66 |
| N25A 7250 1995-1997                        | 10 | 67 |
| 26AN 7250 1996-1997                        | 10 | 68 |
| 7250' Level 33-34D, 21L, VCR Top Sill 1987 | 10 | 69 |
| 7250 34-36/VCR 21L 1989-1997               | 10 | 70 |
| 7250' Level 33-34 VCR Top Sill 21L 1992    | 10 | 71 |
| 7250 33-34 VCR 21L, Bottom Sill 1988-1989  | 10 | 72 |
| 7250 35C 19L 1994                          | 10 | 73 |
| 7250 47A/47A 21L 1993-1994                 | 10 | 74 |
| 7250 45-48 Panel VCR 21L 1993-1994         | 10 | 75 |
| 7250 45-47 Panel 45-47 21L 1992-1994       | 10 | 76 |

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|   |    |    |
|---|----|----|
| 7400 (45-48) (South End) 46-47 WB 1988-1992                   | 10 | 77 |
| 7250 34-36D VCR Btm Sill, 21L 1988-1997                       | 10 | 78 |
| 7250 Stope 38-39 VCR, Bottom Sill, 7175-7100 Decline 21L 1989 | 10 | 79 |
| 38-40 VCR, 7250 4/1989  | 10 | 80 |
| 7250' Level 45-47B, VCR Top Sill 1990                         | 10 | 81 |
| 7400 26A, Bottom VCR 1993-1995                                | 10 | 82 |
| N26A, 7400 1995-1997  | 10 | 83 |
| 7400/2526 MCF Williams-Huber 1991-1992                        | 10 | 84 |
| 33E/33B 7400 1997   | 10 | 85 |
| 7400 T26A, Top Sill, Panel T26A 1993                          | 10 | 86 |
| 7400 27A, 21L, Panel 27A 1993-1995                            | 10 | 87 |
| 26A 7550 1995-1996  | 10 | 88 |
| 6950 25A 1992-1996  | 10 | 89 |
| 6950 26OD/26 OD 19L, Rock Pick Stabbing 6/25/1996             | 10 | 90 |

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|   |    |    |
|---|----|----|
| 6950, 26B, 19L #16 OL 1996                          | 10 | 91 |
| 26-27 A, 6950 1986                                  | 11 | 1  |
| 7400 33-34 VCR Btm 21L 1990                         | 11 | 2  |
| 7400 33-34E, 21L 1986-1987                          | 11 | 3  |
| N35A, 7400 1997                                     | 11 | 4  |
| 26AS, 7400 1996                                     | 11 | 5  |
| 7400 26A, Panel 26AS (25-26 MCF) 1993-1995          | 11 | 6  |
| A Team Drift Crew, Stuft 1994-1995                  | 11 | 7  |
| 14B 6950 1997                                       | 11 | 8  |
| 20A 6950 1997-1998                                  | 11 | 9  |
| 6950 22x Cut 4/24/1989                              | 11 | 10 |
| 7400 34 PD VCR, 21L 1991                            | 11 | 11 |
| 7400 37-43 B 21L, Panel #3 1985                     | 11 | 12 |
| 37-43 B, 21L, 7400, See also panel #1,2,3 1982-1985 | 11 | 13 |

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|   |    |    |
|---|----|----|
| 7400 37-43B 21L, Panel #1 & #2 1985-1998      | 11 | 14 |
| 7400 38-39C 21L, Decline Below 7250 1987      | 11 | 15 |
| 7400 Loader Barn 42 Stope 1987-1988           | 11 | 16 |
| 7400 45-48B 21L 1987-1989                     | 11 | 17 |
| 38B 7550 1995-1997                            | 11 | 18 |
| 39E 7550 1997                                 | 11 | 19 |
| 41B 7550 1996-1997                            | 11 | 20 |
| 45-46B (above) 7550 1995-1997                 | 11 | 21 |
| 33D 7700 1997                                 | 11 | 22 |
| 33EC 7700 1997                                | 11 | 23 |
| 7700 35-38 MCF 21L, Ties and Cubics 1986-1993 | 11 | 24 |
| 7700 (Below 7550) 45-46 21L 1993-1995         | 11 | 25 |
| 40B 7700 1995-1997                            | 11 | 26 |
| 43AB 7700 1995-1997                           | 11 | 27 |

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|                                |    |    |
|--------------------------------|----|----|
| 7850 32E/VCR Btm 21L 1990-1991 | 11 | 28 |
| 34B 7850 1996-1997             | 11 | 29 |
| 34C 7850 1996-1997             | 11 | 30 |
| 35-36 Bot. 7850 1995-1996      | 11 | 31 |
| 35-36 Top Sill 7850 1996       | 11 | 32 |
| 36B 7850 1997                  | 11 | 33 |
| 39B Top (38B) 7850 1996-1997   | 11 | 34 |
| 39B Bottom 7850 1996           | 11 | 35 |
| 41WB (40B) 7850 1997           | 11 | 36 |
| N31B 8000 1995-1997            | 11 | 37 |
| 8000/S32C 1995-1997            | 11 | 38 |
| 8000' Level 34C 1994-1995      | 11 | 39 |
| 8000 N32C/N35A 1995-1997       | 11 | 40 |
| 33A 8150 1996-1997             | 11 | 41 |

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|   |    |    |
|---|----|----|
| 7400 35DE/VCR 21L 1993                  | 11 | 42 |
| 7250' Level 49B VCR Top 21L 1992        | 11 | 43 |
| 7400 32-34A VCR Botom Sill 1990         | 11 | 44 |
| 7550 39T VCR 21L 1993-1994              | 11 | 45 |
| 7550 46 48B? VCR 21L 1990-1991          | 11 | 46 |
| 7550 35-40 VCR 21L, Top Sill 1990       | 11 | 47 |
| 7550' Level 35-38 21L 1992              | 11 | 48 |
| 7550 37 VCR, 42 Dec 21L 1/25/1990       | 11 | 49 |
| 7550' Level 45-46B VCR Bottom 1992      | 11 | 50 |
| 7700 33B, 21L, Poanel VCR Top Sill 1989 | 11 | 51 |
| 7850 32-33/Panel 1 21L 1991-1993        | 11 | 52 |
| 7700 32-33 E, VCR Top Sill 1991         | 11 | 53 |
| 7700 45-46 VCR Btm 1991-1994            | 11 | 54 |
| 7850 39B 21L VCR 1993-1995              | 11 | 55 |



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|  |    |    |
|--|----|----|
| 8000 5 Stp. D.D. Chamber 21L 1989-1990           | 11 | 56 |
| 7100, 7400, 7700, 8000 52 Ore Pass 21L 1991-1992 | 11 | 57 |
| 26AN 7550 2/1/1996                               | 11 | 58 |
| 7550 35D 21L 5/1993                              | 11 | 59 |
| 39B 21L 7700' Level 1989-1993                    | 11 | 60 |
| 7850 35-38B 21L VCR Top Sill 12/9/1988           | 11 | 61 |
| 7850 33C & 33D VCR Btms 1990                     | 11 | 62 |
| 7700 36-37 VCR 21 10/1993                        | 11 | 63 |
| X-Sections Below 7700 35-38 1990                 | 11 | 64 |
| 7700 34D 21L Panel 34 2/1993                     | 11 | 65 |
| 7550 46-48 Panel, VCR 21L 1993                   | 11 | 66 |
| 7850 36-37E VCR 21L Bottom Sill 1991             | 11 | 67 |
| 7700' Level 32E VCR Top Sill 1992                | 11 | 68 |
| 7700 Top Sill 21L, 36-37E VCR 1991               | 11 | 69 |

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|   |    |    |
|---|----|----|
| 5750 88-89W ML 1983-1985                | 11 | 70 |
| 5300 19L 32-34D 1969-1977               | 11 | 71 |
| 5300 35B-39B 17L, 19L 1983-1985         | 11 | 72 |
| 5300 11L 41-43C 1969-1972               | 11 | 73 |
| 5300 47F 11L 1976-1980                  | 11 | 74 |
| 5300 49D 11L 1975-1980                  | 11 | 75 |
| 5300 11L 44-45C 1968-1973               | 11 | 76 |
| 5300 11L 44C 1972-1973                  | 11 | 77 |
| 5300 41-43C 11L, East Section 1972-1973 | 11 | 78 |
| 5300 44B 11L 8/1/1975                   | 11 | 79 |
| 5150 45B Pillar 11L 1976-1981           | 11 | 80 |
| 5300 48D 11L 10/8/1976                  | 11 | 81 |
| 5300 49F 11L 1979-1982                  | 11 | 82 |
| 5300 49-51F 11L 1976-1979               | 11 | 83 |

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|                                    |    |    |
|------------------------------------|----|----|
| 5300 53-54B 9L 1974-1975           | 11 | 84 |
| 5300 57B 9L 2/14/1973              | 11 | 85 |
| 5150 58B 9L 1976                   | 11 | 86 |
| 5300 61A 9L 1975                   | 11 | 87 |
| 5300 ML 82E 1969-1972              | 11 | 88 |
| 5300 84s W ML 2/24/1972            | 11 | 89 |
| 5300 85W ML 12/7/1973              | 11 | 90 |
| 5450 19L 32D 11/19/1971            | 11 | 91 |
| 5450 19L 32-34D 1972-1975          | 11 | 92 |
| 5450 28 F 19L 1968-1972            | 11 | 93 |
| 5450 25-26F 19L 1/8/1975           | 11 | 94 |
| 5450 35D 17L 6/6/1905              | 11 | 95 |
| 5450 S ML VCR 39-42C 19L 1980-1986 | 11 | 96 |
| 5450 44s B 11L 1974-1975           | 11 | 97 |

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|                                  |    |     |
|----------------------------------|----|-----|
| 5450 11L 46-47C 1969-1971        | 11 | 98  |
| 5450 47A 11L 6/2/1981            | 11 | 99  |
| 5450 Ft. Level 49C 11L 6/22/1981 | 11 | 100 |
| 5450 54B 11L 1976-1977           | 11 | 101 |
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| N32 34A 21L 7250 Ring Drills 1993                              | 24 | 11 |
| N33, 34E 17L 7250 VCR 1994-1995                                | 24 | 12 |
| 36C 21L 7290 Elev 2000 Uphole ID #1710 1998                    | 24 | 13 |
| N37-43 21L 7250 Uphole to 7100 #1713 1997                      | 24 | 14 |
| 7100 19L N20AN #1597 Cables also N20 AS 2/23/1996              | 24 | 15 |
| N37-43B 21L 7250 Uphole Panal 1, Estimate 1713 elev. 1902 1999 | 24 | 16 |
| N45-48B 21L 7250 Uphole Est. 1749 Elev. 1876 2000-2001         | 24 | 17 |
| 45-47B 21L 7250 Uphole #1718 North Panel elev. 1914 5/1999     | 24 | 18 |
| N45-47B 21L 7250 Uphole East Panel #1718 Elev 1912 1999        | 24 | 19 |
| N45-47B 21L 7250 Uphole ID #1749 Elevation 19101 2000-2001     | 24 | 20 |
| N37-43B Uphole #1713 1/1996                                    | 24 | 21 |
| Panel 3 Uphole 37-43 21L 7250 1993-1995                        | 24 | 22 |
| 40E Uphole 7250 1995   | 24 | 23 |

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|   |    |    |
|---|----|----|
| N36C 21L 7250 Uphole #1710 On Sill 2/1999                         | 24 | 24 |
| N42-43C 21L 7100 Panel "2" Uphole Est. #1662 Elev. 1763 2000-2001 | 24 | 25 |
| 7250 Sill Cables Ramp to Ramp 1996                                | 24 | 26 |
| N45-48B 21L 7200 #1749 Uphole Elev. 1918 2000                     | 24 | 27 |
| N14B 19L 7400 Uphole Panels 1 & 2 ID #2133 Elev. 2133 10/2000     | 24 | 28 |
| N26A 19L 7400 Bench (Top) #1760 1995                              | 24 | 29 |
| Est. #1739 N26AS 21L 7400 Uphole 1996                             | 24 | 30 |
| N26AN 19L 7400 Uphole #2360 11/1998                               | 24 | 31 |
| N26A 19L 7400 Midsill Bench 6 1/2" Holes 1995                     | 24 | 32 |
| N27B 7400 1995  | 24 | 33 |
| N35DE #1732 7400 17L Uphole 1996                                  | 24 | 34 |
| N35DE 17L 7400 11/29/1993   | 24 | 35 |
| N39E 17L 7400 Uphole Est. #1735 Elev 2044.099 2/2000              | 24 | 36 |
| N22AB 19L 7550 North South Panels ID 4073 Elev 2202.5 2000-2001   | 24 | 37 |



## Bulk Mining-Cable Bolting

|  |    |    |
|--|----|----|
| N22A 19L 7550 Uphole Est. #4037 Elev. 2322 2000-2001 | 24 | 38 |
| N26AN 21L 7550 Bottom Sill Uphole #2463 1997         | 24 | 39 |
| N26AN 21L 7550 Uphole #2462 1996                     | 24 | 40 |
| N33E 17L 7550 Uphole #1728 1998                      | 24 | 41 |
| N34D 17L 7550 Uphole #1754 4/1999                    | 24 | 42 |
| N34D 17L 7550 Uphole #1754 1998                      | 24 | 43 |
| N41B #1770 Topsill Cables 7550 1998                  | 24 | 44 |
| N38B 17L 7550 Bench #2361 1998                       | 24 | 45 |
| N35C 21L 7550 Uphole Elev 2171 ID #1765 1999-2000    | 24 | 46 |
| 36 BC 21L 7850 I.D. 2635 Elev 2495 back 1/29/1999    | 24 | 47 |
| 38B 21L 7550 P3 & P4 Uphole 1995                     | 24 | 48 |
| N41B 21L 7550 #1770 Uphole 1995-1997                 | 25 | 1  |
| 41WB 21L 7550 Uphole #2836 Elev 2191 1998            | 25 | 2  |
| 41B 17L 7550 #1770 2156 Elev. Top Sill 1998          | 25 | 3  |

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|   |    |    |
|---|----|----|
| 39B 21L 7550 VCR (Panel 1) 1993-1994                    | 25 | 4  |
| 38B 21L 7550 S. Panel VCR 1993                          | 25 | 5  |
| N40E 17L Uphole ID #1758 Elev. 2236 2000-2001           | 25 | 6  |
| N42-43B 21L 7250 Uphole Est. #1663 Elev. 1846 2000-2001 | 25 | 7  |
| N45-46B 19L 7550 Uphole 6/21/1995                       | 25 | 8  |
| 45-46WB 21L 7550 Uphole #2367 1/1999                    | 25 | 9  |
| 45-46WB 21L 7550 Bench Est. #2366 1996                  | 25 | 10 |
| 45-46WB 21L 7550 North Bench #2366 1997                 | 25 | 11 |
| N43AB 21L 7700 Uphole Estimate #1803 1997               | 25 | 12 |
| 46-48B 21L 7550 Uphole 1993-1994                        | 25 | 13 |
| 7700 36-37E 17L VCR 1991-1993                           | 25 | 14 |
| N40B 21L 7700 Uphole #1800 1997                         | 25 | 15 |
| N40C 21L 7700 Uphole #1801 1997                         | 25 | 16 |
| N45-46WB 21L 7700 Uphole 1995                           | 25 | 17 |

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|   |    |    |
|---|----|----|
| 45-46B 21L 7700 VCR 1992-1993                                   | 25 | 18 |
| 38 Xcut 7700 Cable Bolts 5/1999                                 | 25 | 19 |
| N25B 19L 7850 Panel 2 Uphole ID #2810 Elev 2458 2000            | 25 | 20 |
| 34C 21L 7850 ID 1841 1/1999                                     | 25 | 21 |
| N25A 19L 7850 Uphole Estimate #2859 Elev 2595 2000-2001         | 25 | 22 |
| N25B 19L 7850 Uphole Panels 1 & 2 Est. #1810 Elev. 2524 10/1999 | 25 | 23 |
| N32C 21L 8000 Uphole #1838 6/1997                               | 25 | 24 |
| N31A 19L 7850 Uphole #2831 Elev. 2500 5/11/2000                 | 25 | 25 |
| N31A 19L 7850 ID #2831 Elev. 2516 3/2000                        | 25 | 26 |
| Uphole Also N31B #1836 ITH #11 1996-1997                        | 25 | 27 |
| 32-33E 17L 7850 1991-1997                                       | 25 | 28 |
| 35A 21L 7850 Uphole Stope #2634 Elev. 2525 4/23/1999            | 25 | 29 |
| N35 BC 21L 7850 Uphole ID #2256 Elev. 2492 12/14/1998           | 25 | 30 |
| N35-36EB 19L 785D Bench 1996                                    | 25 | 31 |

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|  |    |    |
|--|----|----|
| N36B 21L 7850 Bench #2635 1997-1998                        | 25 | 32 |
| N35A 21L 8000 Uphole & Cables #2634 1996-1997              | 25 | 33 |
| N34C 21L 8000 Uphole 4/1995                                | 25 | 34 |
| 38B 21L 7850 Center Panal Uphole #2636 Elev. 2457 3/8/1999 | 25 | 35 |
| N38B 21L 7850 ID #2636 11/1998                             | 25 | 36 |
| 39B 21L 7850 1996  | 25 | 37 |
| 39B 21L 7850 VCR 1994-1995                                 | 25 | 38 |
| N39B 21L 7850 Uphole Salvage Est. 6032 Elev. 2450 2/4/2000 | 25 | 39 |
| 38B P2 #2361 7550' L 21L 11/1997                           | 25 | 40 |
| 64-65 Bulk #2464 1996-1997                                 | 26 | 1  |
| N 111-115B 7L 1400 Cable Bolts ID #2814 Elev. 3866 5/2000  | 26 | 2  |
| 36-41 Bulk Stope 1995                                      | 26 | 3  |
| 36-41 Bulk Stope (Continued) 1994-1995                     | 26 | 4  |
| 1700' Level 43A Uphole 1995                                | 26 | 5  |

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|   |    |    |
|---|----|----|
| 56A 1550 Uphole 1996  | 26 | 6  |
| 60B 7L 1550 VCR 1994-1997   | 26 | 7  |
| 48-49 ID 282 1700 7L 1994   | 26 | 8  |
| N55B (UPH Section) #227 1440 7L 2/1995                              | 26 | 9  |
| Bulk Mining-Cable Bolting Miscellaneous Files 1996-1997             | 26 | 10 |
| Bulk Mining-Cable Bolting Miscellaneous Files (Continued) 1996-1997 | 26 | 11 |
| 55B 7L 1440 4/1/1987  | 26 | 12 |
| 1550 N59C 1996-1997   | 26 | 13 |
| 53C 1700 Cable Bolting Plan 9/13/1996                               | 26 | 14 |
| 1700' L/ 44A Uphole (#279) 1995                                     | 26 | 15 |
| #2464 N64-65 Bulk 1996-1997   | 26 | 16 |
| 64SA 7L 1700 1989-1990  | 26 | 17 |
| 64B 7L 1550 Est #831 1989-1995                                      | 26 | 18 |
| 1850/2000 54PA VCR 9L 1992-1994                                     | 26 | 19 |

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|   |    |    |
|---|----|----|
| 1700/1550 47A VCR 7L 1993-1994  | 26 | 20 |
| 2000 N51A #2679 7L Uphole 1997  | 26 | 21 |
| 36-41 Bulk Stope (VCR) 2000' L 9L #2447 1995                              | 27 | 1  |
| 77F 9L 2150 1997  | 27 | 2  |
| 2150/2300 N 19 AC 7L VCR (21A) 1992-1997                                  | 27 | 3  |
| 21A 7L 2150' Level Uphole 1995-1997                                       | 27 | 4  |
| ID #0368 N97-98A 7L 2000 Level 2000-2001                                  | 27 | 5  |
| N123-124B 7L 1400 Panel 4 Top Est. #2697 Elev. 3980 2000-2001             | 27 | 6  |
| N123-124B 7L 1400 Panel "2" Uphole ID #5852 2000-2001                     | 27 | 7  |
| N123-124B 7L 1400 Uphole Panel "3" I.D. #5851 Elev. 3982 2000-2001        | 27 | 8  |
| N123-124 7L 1400 Panel 6 Est. #2697 Back = 3891' 2001                     | 27 | 9  |
| N86-89B 7L 2300 Mid Uphole #0397 Elev. 3039 2000-2001                     | 27 | 10 |
| N86-89 Bottom "East" Panel 7L 2300 Uphole Est. #0397 Elev. 2986 2000-2001 | 27 | 11 |

## Bulk Mining-Cable Bolting

|   |    |    |
|---|----|----|
| N86-89B Bottom "West Panel" 7L 2300 Uphole ID #0397 Elev.<br>2986 2000-2001 | 27 | 12 |
| NOA #2371 1996  | 27 | 13 |
| Beat 23 Bullk Rock 1996-1997  | 27 | 14 |
| 23F 9L 4250 Uphole 1997-1998  | 27 | 15 |
| 23-24 CD 9L 4400 Panel 3 #2749 1999   | 27 | 16 |
| 23-24CD 9L 4400 East & West Panels #2749 Elev. 942 1999                     | 27 | 17 |
| N42C 11L 4100 Uphole Estimate #5945 Elev. 1136 2000                         | 27 | 18 |
| N43B 11L 3950 L Uphole Est. #5843 12/1999                                   | 27 | 19 |
| N111-115B 7L 1400 Uphole Estimate #2814 Elev. 3869 2000                     | 27 | 20 |
| N54WC 11L 3800 (SO2R) Uphole #5905 Elev. 1450 1998, 2000                    | 27 | 21 |
| N48-52AB Top Est. #2717 3650 11L 7/2001                                     | 27 | 22 |
| ID #0713 N40-41F 11L 3950 @ 1328 2000                                       | 27 | 23 |
| N21A 1995-1996  | 27 | 24 |

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|  |    |    |
|--|----|----|
| Bulk Mining-Cable Bolting Miscellaneous Files 1994-1997                | 27 | 25 |
| N40-41F 11L 3950 Midsill UPH #713 2000                                 | 27 | 26 |
| 3800 SO2R 11L #702 10/30/1997  | 28 | 1  |
| NOH +84' to +107' 9L 3800 1997   | 28 | 2  |
| N43F 11L 3800 Uphole North Estimate #5029 Elev 1468 3/2001             | 28 | 3  |
| N43F 11L 3800 South Panels 1 & 2 Uphole Estimate #5029 Elev 1468 2001  | 28 | 4  |
| N40 41F 11L 3950 "Top" Uphole Est. #0713 Elev. 1410 2001               | 28 | 5  |
| No Pan N86-89B 7L 2150 ID #0397 Elev 3087' 2000                        | 28 | 6  |
| N48-52AB Midsill Est #2717 3650 11L 2001                               | 28 | 7  |
| N39AB 11L 3800 UPH ID #6034 Elev. 1302 2000                            | 28 | 8  |
| 111-115 7L 1400 Bench M. Ne Panel Row 2 South to Row 42N ID #2814 2000 | 28 | 9  |
| 111-115 7L 1400 Bottom Lifting 6/14/2000                               | 28 | 10 |
| ID #2814 (#6066) So UPH Pan N111-115B 7L 1400 Elev. 3869 2/15/2000     | 28 | 11 |



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|  |    |    |
|--|----|----|
| N99A (54A) 7L 1850 Uphole Elev. 3397 ID #0067 2000                         | 28 | 12 |
| N123-124B 7L 1400 Pan 1 Estimate #5853 Elev. 3984 6/2001                   | 28 | 13 |
| N123-124B Panel 4 BTM Est. #2697 1400 7L 8/2001                            | 28 | 14 |
| 2337 Uphole Layout SF Limb Cables +35' Back 6/1995                         | 28 | 15 |
| N53H 9L 3500 Ross "Center" Pillar VCR Bench Est. #2338 Top Elev. 1744 2001 | 28 | 16 |
| N52A Top Sill Cable Bolt Pass 1997-1998                                    | 28 | 17 |
| N53H +18 9L 3500 Ross Pillar Uphole #2338 7/2001                           | 28 | 18 |
| 3500 NORF +18' #2340 9L 1992, 1997   | 28 | 19 |
| NORF 9L +40' to +90' 3650 1997   | 28 | 20 |
| NORG 9L +40' to +90' 3650 7/1997   | 28 | 21 |
| North Wing Pillar 9L 3650 Uphole to North "D" Limb 1997                    | 28 | 22 |
| Wing Pillar Uphole Stope 1994  | 28 | 23 |
| N41F UPH Est #5036 3800 11L 2001   | 28 | 24 |

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|   |    |    |
|---|----|----|
| 8/2001  | 28 | 25 |
| 26-27F 11L 4400 1986-1987                               | 28 | 26 |
| N39A 17L 4400 1992                                      | 28 | 27 |
| 39-40B 17L 4400 VCR 1990                                | 28 | 28 |
| 47PB 17L 4400 VCR 1991                                  | 28 | 29 |
| 46-52 Allard-Fisher 1990-1991                           | 28 | 30 |
| 40-41SB 17L 4550 1988-1989                              | 28 | 31 |
| 43SA 17L 4550/4700 1989-1990                            | 28 | 32 |
| Cable Bolting 39B 4700 1991                             | 28 | 33 |
| 39-40SB 17L 4850 1988                                   | 28 | 34 |
| 4850 42A UPH 17L 1996                                   | 28 | 35 |
| 38-39SB 17L 4850 1984                                   | 28 | 36 |
| Bulk Mining-Cable Bolting Miscellaneous Files 1998-2000 | 28 | 37 |
| #6 Shaft Bypass Raise 1982-1983                         | 29 | 1  |

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|  |    |    |
|--|----|----|
| 37SB 17 Ledge 5000 1986-1987                                 | 29 | 2  |
| 38PB 17 Ledge 5000 1986-1990                                 | 29 | 3  |
| 38-39B 17L 5000 "West Wedge" 7/1984                          | 29 | 4  |
| 38-39B 17 5000 Panel #3 1981-1982                            | 29 | 5  |
| 38-39SB 17L 5000 VCR 13,000@ 4 50 Block #2 33SOS 8 1984-1985 | 29 | 6  |
| 38-39SB 17L 5000 1981-1982                                   | 29 | 7  |
| 38-39SB 17L 5000 1986-1987                                   | 29 | 8  |
| 39 PB 17L 5000 1989  | 29 | 9  |
| 38-39B 17L 5000 VCR Stope 1981, 1984                         | 29 | 10 |
| 41D 17L 5000 1990-1991                                       | 29 | 11 |
| 5000 45B 17L Uphole 10/22/1996                               | 29 | 12 |
| Cable Bolting 5000 to 5065 Levels 2/6/1991                   | 29 | 13 |
| 36BC 17L 5150 1988-1989                                      | 29 | 14 |
| 38PB 17L 5150 1990-1991                                      | 29 | 15 |

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|  |    |    |
|--|----|----|
| 38-39A 17L 5030 (Bulk Mining) VCR Layouts 1983 | 29 | 16 |
| 5150 49C 17L Uphole 1/19/1995                  | 29 | 17 |
| 26F 19L 5300 5/1991                            | 29 | 18 |
| Cable Bolts 40-42C 17L 5300 N/A                | 29 | 19 |
| N49C 5300 17L 4/1992                           | 29 | 20 |
| 34SD 17L 5450 74,300 @ 6 90 1987               | 29 | 21 |
| 32-34D 17L 5450 Cable Bolting 12/12/1990       | 29 | 22 |
| 34D 17L 5450 1987                              | 29 | 23 |
| 35B 17L 5450 VCR Layouts 1984                  | 29 | 24 |
| 35SB 17L 5450 1987-1988                        | 29 | 25 |
| 35B 17L 5450 12/1989                           | 29 | 26 |
| 42SC 17L 5450 1990                             | 29 | 27 |
| 42C 17L 5400 Upper Panel 1986-1991             | 29 | 28 |
| 52C 17L 5300/5450 1991                         | 29 | 29 |

## Bulk Mining-Cable Bolting

|   |    |    |
|---|----|----|
| 49SC 17L 5450 1990                          | 29 | 30 |
| 52C 17L 5450 30' Crown 4/1991               | 29 | 31 |
| 5450 56A 19L VCR 2/9/1996                   | 29 | 32 |
| 29-30F 17L 5600 1991                        | 29 | 33 |
| Cable Bolts for 32D 17L 5600 1/30/1989      | 29 | 34 |
| 5600 36C 17L Uphole 1996                    | 29 | 35 |
| 38-40 17L 5600 30,450 @ 5 90 1986-1987      | 29 | 36 |
| 51PC 17L 5600 1990                          | 29 | 37 |
| 56B 17L 5600 1991-1992                      | 29 | 38 |
| N30F 5750 19L #2153 1993                    | 29 | 39 |
| 32B 17L 5750 1989                           | 29 | 40 |
| 34-35SD 17L 5750 MCF 44,921@ 3 30 1984-1987 | 29 | 41 |
| 34-35SA 17L 5750 1986-1987                  | 29 | 42 |
| 39-41SC 17L 5750 1989                       | 29 | 43 |

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|  |    |    |
|--|----|----|
| 5600/5750 39-41C 17L 1992                              | 29 | 44 |
| 43C 17L 5600/5750 1991                                 | 29 | 45 |
| Bulk Mining-Cable Bolting Miscellaneous Files 6/3/1981 | 29 | 46 |
| 52-53A 21L 3750 North End (Additional) 1983            | 30 | 1  |
| 5750 N55B Cable Bolts 3/19/1992                        | 30 | 2  |
| 32CD 17L 5900 VCR 29,000 @ 4 10 1985                   | 30 | 3  |
| 36-37SC 17L 5900 1988                                  | 30 | 4  |
| 54-56B 17L 5900 1989                                   | 30 | 5  |
| 55A 5900 19L 1984, 1990                                | 30 | 6  |
| N56A 5600 Off 5450 Sill 2/9/1996                       | 30 | 7  |
| Cage NE 7700 1990                                      | 30 | 8  |
| SW Cage 7850 1987-1990                                 | 30 | 9  |
| Cage SE 7100 1989-1990                                 | 30 | 10 |
| N Skip NE Cor. 7250 1987-1990                          | 30 | 11 |

## Bulk Mining-Cable Bolting

|  |    |    |
|--|----|----|
| N11B ML 7400 East & West Panel Upholes Top #5947 Elev. 2040 to 2037 2000 | 30 | 12 |
| N11B ML 7400 "West" Panel ID 5946 Elev. 2095 2000                        | 30 | 13 |
| N11B ML Bottom "East" Panel 7400 Est. #5947 Elev. 2095 2000              | 30 | 14 |
| N4B 15L 7700 Uphole Est. #2864 Elev. 2436 2/2000                         | 30 | 15 |
| N8A 15L (Uphole) #2432 2085 Elev. 1/1999                                 | 30 | 16 |
| N8B 15L 7550 Panel 3 Uphole ID #2428 Elev. 2333 5/9/2000                 | 30 | 17 |
| N17B 15L 6050 Est. 2453 South Panel Uphole 7/1999                        | 30 | 18 |
| N17B 15L 6050 Upper Panel Uphole #2453 688 Elevation 10/1999             | 30 | 19 |
| 13A P2 TS 15L 6200 1/1997  | 30 | 20 |
| 14A 1401 15L 6200 11/13/1997   | 30 | 21 |
| 14A BTM 6200 15L 1996-1997   | 30 | 22 |
| 16A 15L 6200 1996-1997   | 30 | 23 |
| 6200 15L 17B 45 1997   | 30 | 24 |

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|                                 |    |    |
|---------------------------------|----|----|
| 17B 6200 15L 6/1997             | 30 | 25 |
| 17B Bench 6200 15L 6/24/1997    | 30 | 26 |
| 17B 15L 6200 1997               | 30 | 27 |
| 19A VCR 6200 15L 1997-1998      | 30 | 28 |
| 14A 13AP1 13AP2 6350 9/1995     | 30 | 29 |
| 13A P1 15L 6350 11/1997         | 30 | 30 |
| 13A P2 6350 15L 10/1997         | 30 | 31 |
| 14A Uphole 15L 6350 9/1997      | 30 | 32 |
| 14A P3 15L 6350 8/1996          | 30 | 33 |
| 10A 15L 6500 12/11/1997         | 30 | 34 |
| 8A 15L 7400 3/25/1997           | 30 | 35 |
| 10A 15L 7400 1996               | 30 | 36 |
| 12 AP1 Bench 15L 7400 1997      | 30 | 37 |
| 12A P1 (2 Stopes) 15L 7400 1997 | 30 | 38 |



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|  |    |    |
|--|----|----|
| 12B 15L 7400 45* & Bottom 1997                             | 30 | 39 |
| 15A P1 15L 7400 Beat 42 VCR 6" Holes 8/26/1997             | 30 | 40 |
| 15A P2 Bench 7400 Beat 42 15L 6" Holes 8/1997              | 30 | 41 |
| 8A Take up BTM 7550 11/1997                                | 30 | 42 |
| 8A Bench 15L 7550 1997-1998                                | 30 | 43 |
| 12A P2 B1S 15L 7550 1996-1997                              | 30 | 44 |
| 12A P2 TS 15L 7550 1996-1997                               | 30 | 45 |
| N15A 15L 7250 South Panel ID #4002 Elev. 1880 8/18/2000    | 31 | 1  |
| N15A 15L 7250 North Panel ID 4002 Elev. 1855 2000          | 31 | 2  |
| N15A 15L 7250 Subsill 3 "UPH" ID 4002 Elev. 1752 11/2000   | 31 | 3  |
| N15A 15L 7250 Sub 2 Uphole ID #4002 Elev. 1823 12/4/2000   | 31 | 4  |
| N12A 15L 7400 Uphole Est. #2467 1/2000                     | 31 | 5  |
| 15A 7400 15L (Estimate #2452) Cable Bolt Pattern 8/23/1995 | 31 | 6  |
| 6A Bench 15 Ledge 7700 Level 10/1997                       | 31 | 7  |

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|   |    |    |
|---|----|----|
| 7AA Bench 2 1/2" Holes 7700 15 L 1997                                     | 31 | 8  |
| 45-46AB 21L 6840 Ringdrills & Slot (Subsill) 1985-1987                    | 31 | 9  |
| 45-46AB 21L 6800 VCR Panel 2 1983-1996                                    | 31 | 10 |
| 45-46AB Panel 2 Ringdrills 6800 Level 4/1984                              | 31 | 11 |
| 6840 Cables 44S Setions #2382 12/29/1997                                  | 31 | 12 |
| #199 N45-46B 6840 21L 5/3/1995  | 31 | 13 |
| 6840 Panel 0 #2382 N45-46B 21L 6950 7/1998                                | 31 | 14 |
| 6840 Panel 2W 21L ID 2382 1/25/1999                                       | 31 | 15 |
| Panel 2E 21L 6840 Uphole Stope #2382 Elev. 1545 8/1999                    | 31 | 16 |
| 6840 Panel 3W 21L Est. 2382 9/1999  | 31 | 17 |
| Pan 4W N44-46C 21L 6840 ID #2382 Uphole Elev. 1568 2000                   | 31 | 18 |
| Panel 7W South End 6840 N44-46C 21L 6840 Est. #2382 Elev. 1537.83 11/2000 | 31 | 19 |
| N44-46C 21L 6840 Pan 7 West North #2382 Elev. 1560 2000-2001              | 31 | 20 |

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|   |    |    |
|---|----|----|
| 49-51 WB 6950 Cable Bolts 5/8/1992  | 31 | 21 |
| N14B 19L 6800 Uphole Elev. 1490 #0165 1/2000                              | 31 | 22 |
| N14B 19L 6950 Uphole ID #1594 Elev. 1620 3/22/2000                        | 31 | 23 |
| N35E L 6800 Uphole Est. #0514 Elev. 1515 2000-2001                        | 31 | 24 |
| N25A 21L 6950 Uphole 1992-1994  | 31 | 25 |
| N25WA 19L 6950 Uphole ID #4502 1588 Elev. 10/27/2000                      | 31 | 26 |
| N25AN 19L 7100 Sill (North Panel) Uphole Est. #2359 Elev. 1809 10/11/2000 | 31 | 27 |
| N26B 19L 6950 Bench #1601 1996-1997                                       | 31 | 28 |
| N26B 19L 6950 Uphole ID #1601 1996  | 31 | 29 |
| N25A 19L 6950 Uphole ID #1600 6/14/1996                                   | 31 | 30 |
| 6950 N27EA #1603 8/15/1996  | 31 | 31 |
| 6950 19L N28A Cables 1996   | 31 | 32 |
| N28A 19L 6950 Uphole #1604 1997   | 31 | 33 |

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|   |    |    |
|---|----|----|
| 6950 N28A #1604 S. Uphole 1996  | 31 | 34 |
| N28WA 19L 6950 Uphole #1604 Elev. 1632 1996-1998                                | 31 | 35 |
| N34A 17L 7100 Uphole Est. #6075 Elev. 1731 2000-2001                            | 31 | 36 |
| N34E 17L 6950 Uphole ID #1579 Elev. 1620 2000-2001                              | 31 | 37 |
| N34E 17L 6950 Uphole #1579 Elev. 1570 11/1999                                   | 31 | 38 |
| N35E 17L 6950 Uphole Estimate #1579 1997, 2000                                  | 31 | 39 |
| 35D 17L 6950 Uphole (Panel 4) #1580 Elev. 1580 12/1998                          | 31 | 40 |
| 35D 17L 6950 Panel 3 Uphole #1523 Elev. #1580 8/1998                            | 31 | 41 |
| N35D 17L 6950 "Panel 2" Uphole #1580 1998                                       | 31 | 42 |
| N35D 17L 6950 Panel 1 Uphole Est .#1580 1/12/1998                               | 31 | 43 |
| N35D 21L 6950 Bench from 6950 Sill to Midsill Cables and Uphole #1580 1996-1997 | 31 | 44 |
| N35D 17L 7100 Bottom Uphole North Estimate #1631 1709 Elev. 2000                | 31 | 45 |
| N35D 17L 6950 Uphole "Top" Estimate #1631 Elev. 1623 2000-2001                  | 31 | 46 |

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|   |    |    |
|---|----|----|
| N42-43B 21L 6950 North Panel 7 Shaft "Y" Elev. 1660 ID #4390 2000                   | 31 | 47 |
| N35D 17L 7100 Bottom South Panel Estimate #1631 1709<br>Elev. 2000-2001             | 32 | 1  |
| Bench from 6950 Sill- So. Of 35XC to Mid Sill, #1580 N35D 17L 6950<br>Uphole 7/1996 | 32 | 2  |
| N35D 17L 6950 Bench from Upper Sill to 6800 Sill Uphole #1580 1995,<br>1998         | 32 | 3  |
| N40D 17L 6950 Uphole 1995-1996  | 32 | 4  |
| N41B Cables (6950) 1995   | 32 | 5  |
| NE Pan 2 41B-21L 6950 Uphole Est. #1615 Elev. 1582 10/18/1999                       | 32 | 6  |
| N41B 21L 6950 NW Panel 1 & 2 ID #1615 Elev. 1550 2000                               | 32 | 7  |
| NE 41B 21L 6950 #1615 1591 Elev. 2/16/1999  | 32 | 8  |
| N41B 19L 6950 NW Panels # & 4 ID #1615 Elev. 1569 2000-2001                         | 32 | 9  |
| N40B 17L 6950 Uphole 1994-1995  | 32 | 10 |
| N41B 21L 6950 Bench ID #1615 1/1996   | 32 | 11 |
| 6950 N44B West Panel #1622 1/1998   | 32 | 12 |

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|   |    |    |
|---|----|----|
| 6950 43EA #1621 1996                                | 32 | 13 |
| N44C 21L 6950 South Uphole Panel #1623 1994, 1997   | 32 | 14 |
| N44B 21L 6950 Uphole #ID 1622 8/1997                | 32 | 15 |
| N45D 17L 6950 Bench #1591 1996-1997                 | 32 | 16 |
| N45TD 17L 6950 Uphole 1619 Elev. Est. 1591 1997     | 32 | 17 |
| N45TD 17L 6950 Uphole ID #1591 6/10/1997            | 32 | 18 |
| N44C 21L 6950 Uphole North Panel ID #1623 1994-1998 | 32 | 19 |
| N48-49B 21L 6950 1995                               | 32 | 20 |
| N50-52B 21L 6950 1995                               | 32 | 21 |
| N50A 21L 6950 #1629 Uphole 7/1997                   | 32 | 22 |
| 50SA 21L 6950 VCR 1993-1994                         | 32 | 23 |
| 50-52B 21L 6950 So. Panel ID 1630 1998              | 32 | 24 |
| N50-52B 21L 6950 Uphole Estimate #1630 1995-1998    | 32 | 25 |
| 6950 N35XCut Cables 7/3/1996                        | 32 | 26 |

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|  |    |    |
|--|----|----|
| N20AN #1597 7100 19L Bench 1997                              | 32 | 27 |
| 22AM Uphole BK 1600 to 1560 6950 1996                        | 32 | 28 |
| N25AN 21L 7100 Uphole ID #2359 Elev. 1788 2000-2001          | 32 | 29 |
| N27A 19L 7100 VCR 12/1992                                    | 32 | 30 |
| N27A 19L 7100 Uphole ID 1650 1996                            | 32 | 31 |
| N28A 19L 7100 Panel Bench 10/1995                            | 32 | 32 |
| 28A 19L 7100 P2 #1604 9/1995                                 | 32 | 33 |
| N28A 19L 7100 Panel 1 Bench 5/1995                           | 32 | 34 |
| N35DE 17L 7100 Uphole #1632 12/12/1997                       | 32 | 35 |
| N35E 17L 7100 Uphole ID #1632 Elev. 1710' 5/2000             | 32 | 36 |
| N35E 17L 7100 Bench Est. #1632 Elevation 1756 8/1999         | 33 | 1  |
| N36BC 21L 7100 Bottom Uphole Est. #1652 Elev. 1771 2000-2001 | 33 | 2  |
| N36BC 21L 7100 Bench #1656 6/20/1997                         | 33 | 3  |
| N36BC #1656 7100 21L Uphole 12/1996                          | 33 | 4  |

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|   |    |    |
|---|----|----|
| N36BC 21L 7100 UPH "Top Panel & Cables" Elev. 1725 ID<br>#1652 5/2000 | 33 | 5  |
| 35D (Midsill) 17L 7100 VCR 1993                                       | 33 | 6  |
| 38-39B 21L 7100 VCR 1993  | 33 | 7  |
| 40D 21L 7100 Uphole 2/24/1994   | 33 | 8  |
| N42-43C 21L 7100 Panels 4 & 5 Est. #1662 Elev. 1818 2000-2001         | 33 | 9  |
| N42-43 "C" 21L 7250 Uphole Est. #4388 Elev. 1884 2000-2001            | 33 | 10 |
| N42-43C 21L 7250 "Panel 3" Uphole Est. #4388 Elev. 1966 2000-2001     | 33 | 11 |
| 7100 Storage Area Cable Bolts 1/16/1998                               | 33 | 12 |
| 6950-7100 Ramp Cables 3/25/1997                                       | 33 | 13 |
| 7100 35D VCR Topsill on 6950 Sill 1992                                | 33 | 14 |
| N49-51 WB 21L 6950 Panel 1 1992                                       | 33 | 15 |
| 44-45 SC 21L 7100 6/1991  | 33 | 16 |
| 40SC 21L 6950 1991  | 33 | 17 |



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|  |    |    |
|--|----|----|
| 41-42D 17L 6950 1985                                   | 33 | 18 |
| 48-50S AB 21L 6950 1990                                | 33 | 19 |
| 49-51SWB 21L 6950 VCR Panel 1 1990                     | 33 | 20 |
| 26-27SA 19L 6950 VCR 1986                              | 33 | 21 |
| 40-42SC 21L 6950 Level Cable Bolts 1985-1987           | 33 | 22 |
| 37-38SC and 38-39C 21L 7100 Level Cable Bolts 7/7/1986 | 33 | 23 |
| 38-40SC 21L 7100 VCR 5/1/1989                          | 33 | 24 |
| 45-47AB 21 Ledge 7100 Cable Bolting Panel #1 & 2 1982  | 33 | 25 |
| 45-47AB 21 Ledge 7100 VCR Holes Panel #1 1980-1983     | 33 | 26 |
| 45-47AB 21L 7100 Rings & Slot Drilling 1981-1982       | 33 | 27 |
| 45-47AB 21L 7100 Panel 2 1985                          | 33 | 28 |
| 7100 21L 45-47AB Cable Bolts- Sill Pillar 1/18/1982    | 33 | 29 |
| 48-51AB 21L 7100 Panel 4 VCR 1982-1986                 | 33 | 30 |
| 48-51AB 21L 7100 VCR Panel 2 4/8/1986                  | 33 | 31 |

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|  |    |    |
|--|----|----|
| 48-51AB 7100 1983                                      | 33 | 32 |
| 48-51AB 21 Ledge 7100 VCR 1983                         | 33 | 33 |
| Break-Raise 48-51AB Panel #1 1984                      | 33 | 34 |
| 48-51AB 21L 7100 Panel #3 1984                         | 33 | 35 |
| 48-51AB 21L 7100 Panel #3 1982                         | 33 | 36 |
| 48-51AB 21L 7100 Panel 2, Rings & Cables 1986          | 33 | 37 |
| 48-51AB 21L 7100 Cable Bolt 1983                       | 33 | 38 |
| 48-51AB 21L 7100 Panel 4, Cable Bolts 10/3/1985        | 33 | 39 |
| 37-38SC 21L 7250 (Panel 3) 1987                        | 34 | 1  |
| 48-51AB 21 Ledge 7100 Panel #1 Ring Drilling 1980-1982 | 34 | 2  |
| 40-42SC 21L 7100 Panel 1 1986                          | 34 | 3  |
| 40-42SC 21L 7100 Panel 2 VCR 3/17/1987                 | 34 | 4  |
| 48-51AB 21L 7100 Cable Bolts Panel 2 2/10/1986         | 34 | 5  |
| 40-42SC 21L 7100 Panel 3 Ring Drills 2/19/1985         | 34 | 6  |

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|  |    |    |
|--|----|----|
| 40-42C 21L 7100 Panel 3 VCR 8/26/1985                  | 34 | 7  |
| Cross Sections of Back Height 1984                     | 34 | 8  |
| 37SC 21L 7250 4/1/1987                                 | 34 | 9  |
| 39-40SC 21L 7250 VCR 1989-1990                         | 34 | 10 |
| 32-33C 21L 7250 VCR 1991-1992                          | 34 | 11 |
| 33-34C 21L 7250 VCR 7/21/1989                          | 34 | 12 |
| 33-34D 17L 7250 Cable Bolts 7/1/1987                   | 34 | 13 |
| 34-36D 17L 7250 VCR 1988-1989                          | 34 | 14 |
| 35SC 21L 7250 1990                                     | 34 | 15 |
| 7250/7400 N 33-34E 17L Topsill 50' Above the 7250 1992 | 34 | 16 |
| 38-39SC 21L 7275 Cable Bolts 3/12/1987                 | 34 | 17 |
| 33-34D 21L 7400 VCR Holes 1987                         | 34 | 18 |
| 7700 32-33E VCR Cable Bolts 1991-1992                  | 34 | 19 |
| 7700/7850 32E VCR 21L 1992                             | 34 | 20 |

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|  |    |    |
|--|----|----|
| 33C 21L 7700 VCR 1990-1991                       | 34 | 21 |
| 52 Bypass 7700 5/1986                            | 34 | 22 |
| 33-37 17L 6500 1980, 1985                        | 34 | 23 |
| N16A S19L 6350 Uphole Est. #2317 Elev. 1052 1999 | 34 | 24 |
| N47B 17L 6350 VCR 1993                           | 34 | 25 |
| N35DD 17L 6200 VCR N/A                           | 34 | 26 |
| 23-26 19L 6050 7/1992                            | 34 | 27 |
| N43-44D 17L 6350 1993                            | 34 | 28 |
| 34-36D 17L 6050 1992                             | 34 | 29 |
| N27F 19L 6200 1997                               | 34 | 30 |
| 48-51AB 21L 7100 VCR Panel 2 4/8/1986            | 34 | 31 |
| 48-51AB 7100 1983                                | 34 | 32 |
| 48-51AB 21 Ledge 7100 VCR 1983                   | 34 | 33 |
| Break-Raise 48-51AB Panel #1 1984                | 34 | 34 |

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|   |    |    |
|---|----|----|
| 48-51AB 21L 7100 Panel #3 1984                  | 34 | 35 |
| 48-51AB 21L 7100 Panel #3 1982                  | 34 | 36 |
| 48-51AB 21L 7100 Panel 2, Rings & Cables 1986   | 34 | 37 |
| 48-51AB 21L 7100 Cable Bolt 1983                | 34 | 38 |
| 48-51AB 21L 7100 Panel 4, Cable Bolts 10/3/1985 | 34 | 39 |
| 50-53B 21L 6050 North Panel 1984                | 35 | 1  |
| 39-43SB 17L 6050 Panel 1 1985                   | 35 | 2  |
| 27-28F 19L 6050 1990                            | 35 | 3  |
| 50-53B 21L 6050 Panels 1 and 2 1986             | 35 | 4  |
| 6050 Level 19 Ledge 34-35SB N/A                 | 35 | 5  |
| 34-36D 19L 6050 VCR Panel 1 1989                | 35 | 6  |
| 41-43B 17L 6350 VCR Holes Panel 2 1986-1987     | 35 | 7  |
| N47A UPH 6050 #31 1995-1996                     | 35 | 8  |
| 29-30SF 19L 6050 Ring Drills 1984-1985          | 35 | 9  |

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|   |    |    |
|---|----|----|
| 23-25SF 19L 6200 6/8/1987                               | 35 | 10 |
| 29-30F 19L 6050 VCR Panel 3 1988                        | 35 | 11 |
| 29-30F 19L 6050 Panel 1 VCR 1989                        | 35 | 12 |
| 23-25F 19L 3200 1987                                    | 35 | 13 |
| Cable Bolting Layout 6200 to 6350 27F 19 Ledge 4/3/1980 | 35 | 14 |
| 39-43SB 6050 17L VCR 164,550@ 5 65 1985                 | 35 | 15 |
| 39-43B 17L 6050 Panels 4 & 5 VCR 2/25/1984              | 35 | 16 |
| 39-43B 17L 6050 Panel 3 2/13/1986                       | 35 | 17 |
| 39-43B 17L 6050 Panel 3 4/16/1986                       | 35 | 18 |
| VCR 39-43B 17L 6050 Panel 2 1983                        | 35 | 19 |
| 41-42B 19L 6050 Panel 1 1980                            | 35 | 20 |
| 34-35SA 19L 6200 10/12/1979                             | 35 | 21 |
| 34-35A 19L 6200 1980                                    | 35 | 22 |
| N52B 21L 6200 Uphole (on 6200) #0045 3/1999             | 35 | 23 |

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|  |    |    |
|--|----|----|
| 52SA 21L 6350 4/1993                                   | 35 | 24 |
| N52A 21L 6350 Bench Down Elev. 914 #0076 11/1998       | 35 | 25 |
| 6350 43-44D 19L Uphole 1994-1995                       | 35 | 26 |
| N43-45B 17 6350 Uphole Elev. 1001 ID #0043 8/2000      | 35 | 27 |
| N52 21L 6200 #0076 Elev. 914 6/23/1999                 | 35 | 28 |
| 27F 19L 6200 VCR Stp 1980                              | 35 | 29 |
| 28-29F 19L 6350 Panel 1 1985                           | 35 | 30 |
| 28-29F 19L 6350 1984                                   | 35 | 31 |
| 28-29F 19L 6350 VCR Panel 2 9/3/1985                   | 35 | 32 |
| 28-29SF 6350 19L VCR 72,000@ 4 00 1985                 | 35 | 33 |
| 28-29F 19L 6350 Panel 2 Cable Bolts 1985               | 35 | 34 |
| 27F 19L 6350 VCR Stp Blasting & Drilling Diagrams 1980 | 35 | 35 |
| 41-43B 17L 6200 Level Cable Bolts 4/16/1987            | 35 | 36 |
| 6350 47A Uphole 19L 1996                               | 35 | 37 |

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|   |    |    |
|---|----|----|
| 49-51 6350 19L Cable Bolt Layout 1980                         | 35 | 38 |
| 29-30SF 19L 6050 Panel 2 10/18/1985                           | 35 | 39 |
| 33-37D 17L 6350 Panel 1 2/9/1986                              | 35 | 40 |
| 33-37D 17L 6250 Panel 2 1988                                  | 35 | 41 |
| 33-37D 17L 6350 Panel 3 1990                                  | 35 | 42 |
| N30B 19L 6350 Upper Sill Uphole ID #0066 Elev. 1029 2000-2001 | 35 | 43 |
| Bulk Mining-Cable Bolting Miscellaneous 1985, 1993            | 35 | 44 |
| 41-43B 17L 6350 6/14/1990                                     | 36 | 1  |
| 14B 19L 6350 #2312 Cable Bolts Elev. 1146 8/4/1998            | 36 | 2  |
| N14B 21L 6350 Uphole ID #5951 Elev. 1040 11/1999              | 36 | 3  |
| 33-37D 17L 6350 Panel 4 1988                                  | 36 | 4  |
| 33-37D 17L 6350 Panel 5 12/1988                               | 36 | 5  |
| 33-37D 17L 6350 Panel 6 1991-1992                             | 36 | 6  |
| 33-37D 17L 6350 VCR Panel 7 1989                              | 36 | 7  |



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|   |    |    |
|---|----|----|
| 33-35C 19L 6500 Cable Bolt Diagrams 1980-1983             | 36 | 8  |
| 41-43B 17L 6350 Level Cable Bolts 1984                    | 36 | 9  |
| Cable Bolting 33-37D 17L 6350 1985                        | 36 | 10 |
| 43-44D 17L 6350 3/1995                                    | 36 | 11 |
| 6500 Motor Barn 1994                                      | 36 | 12 |
| 49-51B 21L 6500 Panel 3 Ring Drill 1982-1983              | 36 | 13 |
| N50-51WB 6350 21L #2670 1998                              | 36 | 14 |
| 51B Cable Bolting 6650 1981                               | 36 | 15 |
| 41B 17L 6500 Cable Bolting Layout N/A                     | 36 | 16 |
| N14B 19L 6500 Panels EWM Est. 2312 Uphole Elev. 1108 2000 | 36 | 17 |
| 49-51AB 21L 6500 Panel 4 Ring Drills 1986                 | 36 | 18 |
| 53WB 19L 6500 Cable Bolts 7/27/1984                       | 36 | 19 |
| 47-48SA 21L 6500 Panel 2 4/1992                           | 36 | 20 |
| 39A 6650 Uphole Stope 1993-1994                           | 36 | 21 |

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|  |    |    |
|--|----|----|
| 41-42A 21L 6800 10/1/1993  | 36 | 22 |
| 49-51SB 21L 6500 Cable Bolts 1986-1992                               | 36 | 23 |
| 49-51AB 21L 6500 Panel 4 1986  | 36 | 24 |
| 49-51B 21L 6500 Panel 3 VCR 1981-1982                                | 36 | 25 |
| 49-51B 6350 (6500) 19L Ring Drill 50' Sill Layouts Panel 1 1980-1981 | 36 | 26 |
| 6500 53A Cable Bolt Layout 2/1994                                    | 36 | 27 |
| 49-51B 21L 6500 VCR 1981-1982  | 36 | 28 |
| 49-51AB 21L 6500 Panel 2, Ring Drills & VCR Drilling 1988            | 36 | 29 |
| 6500 Motor Barn Cables 8/17/1994                                     | 36 | 30 |
| 45A 21L 6650 Cables 8/31/1994  | 36 | 31 |
| 47-48SA 21L 6500 Panel 1 1990  | 36 | 32 |
| 48-53AB 21L 6050 Cable Bolting 1987-1989                             | 36 | 33 |
| 38-39EA & WA Cables 1993   | 36 | 34 |
| N14B 19L 6650 Cable Bolts & Uphole #0122 1999-2000                   | 36 | 35 |

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|   |    |    |
|---|----|----|
| N34-35D 17L 6650 Uphole #5668 Elev. 1327 3/2000   | 36 | 36 |
| 6650 3637 UPH 19L 7/1996                          | 36 | 37 |
| N28A Cable Bolts 6800 19L 1995                    | 36 | 38 |
| 34-37C 17L 6800 VCR Panel 1 1989                  | 36 | 39 |
| 40-41A 17L 6800 Cable Bolts 1994                  | 36 | 40 |
| 31 Exhaust 6800 Level Cable Bolts 11/5/1986       | 36 | 41 |
| 42PD 17L 6800 VCR 1989-1990                       | 36 | 42 |
| Chicago Pneumatic Tool Co. 1/30/1990              | 36 | 43 |
| 44B 21L 6800 1991                                 | 36 | 44 |
| 48SB 21L 6800 VCR 4/1991                          | 36 | 45 |
| 26-27SA 17L 6800 Cable Bolts 3/1986               | 36 | 46 |
| N27EA 19L 6800 VCR 1992                           | 36 | 47 |
| Bulk Mining-Cable Bolting Miscellaneous 1990-1991 | 36 | 48 |
| 53-55F 9L 2150 Rows 30-49 VCR 1/1980              | 37 | 1  |

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|  |    |    |
|--|----|----|
| 53-55SF 9L 1850 Cable Bolting 2/1981                 | 37 | 2  |
| 49-51 2000 1979                                      | 37 | 3  |
| 27 PA 9L 2450 VCR 1981-1983                          | 37 | 4  |
| 1925 Level 9 Ledge 50-51 SH 1979                     | 37 | 5  |
| 51-53SF 9L 1775 Subsill Ring Drill Patterns 1982     | 37 | 6  |
| 49 X Cut Pillar 2150 11/3/1981                       | 37 | 7  |
| 45-47SGH 9L 2300 Ring Drills for Bottom & VCR 1983   | 37 | 8  |
| 28 and 29D 9L 410 VCR Patterns 1980-1981             | 37 | 9  |
| 28-29 Pillar A-C 9L VCR Hole Patterns 4100 1981-1983 | 37 | 10 |
| 51-53SF 9L 2000 Cable Bolting 11/1980                | 37 | 11 |
| 10-15WA 2600 Memos & Blasting Reports 12/1980        | 37 | 12 |
| 18 Pillar "D" 9L 2450 1980                           | 37 | 13 |
| 12-15SEA 9L 2600 VCR Hole Patterns 1981              | 37 | 14 |
| 51-54C 7L 1850 Ring Drills for Bottom 1983           | 37 | 15 |

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|---|----|----|
| N54A 7L 1850 1992, 1998                     | 37 | 16 |
| 53-55F 9L 1850 VCR 12/1983                  | 37 | 17 |
| 53-55SF 9L 1850 1981                        | 37 | 18 |
| 79PF 9L 2000 VCR Stope 1987                 | 37 | 19 |
| N13 Pillar EA 9L 2750 1980                  | 37 | 20 |
| 28-29PAC 9L 4100 Cable Bolting 3950 2/1981  | 37 | 21 |
| 2150 :Level 9 Ledge 54-57D 1979-1981        | 37 | 22 |
| 75F 9L 2150 1991                            | 37 | 23 |
| 80-81D 9L 1700 VCR 1991                     | 37 | 24 |
| 80D 9L 1550 VCR 5/4/1992                    | 37 | 25 |
| 82D 9L 1700 VCR 1/13/1992                   | 37 | 26 |
| 79PD 9L 1850 1990-1991                      | 37 | 27 |
| 35-38D 9L 4250 VCR Drill Patterns 1982-1983 | 37 | 28 |
| 52-54PB 7L 1700 VCR 58,850 @ 6 75 1986-1987 | 37 | 29 |

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|---|----|----|
| 35-38D 9L 4250 VCR Stp 1980-1981                  | 37 | 30 |
| Bulk Mining-Cable Bolting Miscellaneous 3/1992    | 37 | 31 |
| 35-36D 9L 4100 VCR Stope 1984                     | 38 | 1  |
| 43-44PH 9L 2300 1982-1983                         | 38 | 2  |
| 52-55PB 7L 1550 1989                              | 38 | 3  |
| 56-59SD Decline 2150 to 2181 Cable Bolting 4/1980 | 38 | 4  |
| 56-59SD 9 Ledge 2182 Decline 2/1980               | 38 | 5  |
| 17-18SD VCR 11L 4100 1986-1987                    | 38 | 6  |
| 3950 13AB VCR 11L 1992-1993                       | 38 | 7  |
| 19-21AC 11L 4100 Bench Layouts 1987-1990          | 38 | 8  |
| 51-54C 7L 1850 1983-1984                          | 38 | 9  |
| 53-54AB 7L 1850 1985-1986                         | 38 | 10 |
| 53-54PAB 7L 1850 VCR 1985-1986                    | 38 | 11 |
| 12-15 SEA 9L 2450 Blasthole Stope 1985-1986       | 38 | 12 |

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|   |    |    |
|---|----|----|
| 47-49SA 7L 1850 SS 1982                               | 38 | 13 |
| 47-49SA 7L 1850 VCR for Top 1982-1983                 | 38 | 14 |
| 46-47A 7L 1850 1985                                   | 38 | 15 |
| 51-53 SF 9L 2000 & 1925 Subsill Ring Drilling 10/1980 | 38 | 16 |
| 51-53SF 9L 1850SS 1982                                | 38 | 17 |
| 1850 Level N 58 C Uphole 1996                         | 38 | 18 |
| 52 Pil F & G 2150 Ft. Level 1980                      | 38 | 19 |
| 52P F & G 9L 2150 Blasting Memos 1981                 | 38 | 20 |
| 39-42SA VCR 7L 54,320@ 5 10 2000 1986                 | 38 | 21 |
| 55-56B 7L 1700 5/1986                                 | 38 | 22 |
| 47-49A 7L 1700 Drop Raise 10/30/1986                  | 38 | 23 |
| 57CD 9L 2300 Blast Footages 1985                      | 38 | 24 |
| 57SCD 9L 2300 7/20/1985                               | 38 | 25 |
| 58-61B 7L 1700 1987-1988                              | 38 | 26 |

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|  |    |    |
|--|----|----|
| 58-61B 7L 1700 Top Section Above 1550 1988 | 38 | 27 |
| 51-54C 7L 1850 VCR 1983-1984               | 38 | 28 |
| 58-59C 7L 1550 1988-1989                   | 38 | 29 |
| 57-58B 7L 1850 1989                        | 38 | 30 |
| 54-55F 9L 1700 1992                        | 38 | 31 |
| 43-46SC 7L 2000 1984-1985                  | 38 | 32 |
| 21 SA 9L 2600 1988                         | 39 | 1  |
| NORH 1992-1997                             | 39 | 2  |
| SO2R Lower #702 3950'L/11L NV 1996-1997    | 39 | 3  |
| 3950 S11B 11L #256 Uphole 1997             | 39 | 4  |
| 14PD VCR 4100 11 Ledge 1989-1991           | 39 | 5  |
| 21PD 11L 4250 1986-1990                    | 39 | 6  |
| 23WD 11L 4250 1990                         | 39 | 7  |
| S24TL (#776) 4250' L 11 Ledge 1995-1996    | 39 | 8  |



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|   |    |    |
|---|----|----|
| 56-57C ML 4100 1986                                 | 39 | 9  |
| 56SB 7L 1850 1990                                   | 39 | 10 |
| 14PD 11L 4100 1991                                  | 39 | 11 |
| 28 & 29 SD 4100 Cable Bolting 1980                  | 39 | 12 |
| 4100 43B Top Uphole 17L 1996                        | 39 | 13 |
| 4100 47-49C VCR 17L 1993-1994                       | 39 | 14 |
| 26-29F 9L 4250 Ring Drills on 4190 1984             | 39 | 15 |
| 4250 43B 17L Uphole Both Sill 1993, 1996            | 39 | 16 |
| 4250 47B 17L Uphole #784 1996                       | 39 | 17 |
| 43 Drop Raise 4400 1986-1987                        | 39 | 18 |
| N38B 4400 17L 4/3/1992                              | 39 | 19 |
| 28 Stp 9L 4430 Ft. Subsill Cable Bolt Layout 8/1980 | 39 | 20 |
| 43B 17L 4250 1991-1992                              | 39 | 21 |
| Drill 16-17, 26,000 tons @3 00 1989-1991            | 39 | 22 |

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|---|----|----|
| 35SC 11L 4550 1986                          | 39 | 23 |
| 41-42SB 17L 4550 1987-1988                  | 39 | 24 |
| N56 WC #2483 5450 Dec 1997                  | 39 | 25 |
| N50C 4100 Lvl 17 Ldg 1997                   | 39 | 26 |
| N38B 4250 Lvl #823 3/24/1997                | 39 | 27 |
| 40 WB Drop Raise 1986                       | 39 | 28 |
| 42-44D 9L 4550 Blast Hole 1984-1989         | 39 | 29 |
| 43-44SB 17L 4550 1987                       | 39 | 30 |
| 41-42PB 17L 4550 N/A                        | 39 | 31 |
| 64 PW ML 4550, 4400 Sill Cable Bolting 1981 | 39 | 32 |
| 42B 9L 4550 Cable Bolt Layouts 9/8/1981     | 39 | 33 |
| 45PB 17L 4550 1988                          | 39 | 34 |
| 47PB 17L 4700 1/17/1990                     | 39 | 35 |
| 46PB 17L 4700 1989-1990                     | 39 | 36 |

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|---|----|----|
| Bulk Mining-Cable Bolting Miscellaneous 1985-1997             | 39 | 37 |
| Bulk Mining-Cable Bolting Miscellaneous (Continued) 1996-1997 | 39 | 38 |
| 42-43B 17 Ledge 1985-1987                                     | 40 | 1  |
| 42SA 9L 4700 Small Block VCR 1985                             | 40 | 2  |
| 35-36C 11L 4700 (East Side) "No Sand" 1985-1986               | 40 | 3  |
| 35-36C 11L 4700 VCR Stope 1985                                | 40 | 4  |
| 40PA 11L 4700 6/1988  | 40 | 5  |
| 42C 4700 5/1997   | 40 | 6  |
| 43SA 17L 4700 1988-1989                                       | 40 | 7  |
| 40-41 SB 17L 4700 1985-1986                                   | 40 | 8  |
| 39-40SB 17L 4700 1985-1986                                    | 40 | 9  |
| 39-41PA 11 Ledge 4850 1987-1988                               | 40 | 10 |
| 43SB 17L 4700 1985-1986                                       | 40 | 11 |
| 28 SD 17 Ledge 5000 1984-1985                                 | 40 | 12 |

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|   |    |    |
|---|----|----|
| 5000 47B 17L VCR 1995                           | 40 | 13 |
| 5000-5150 52D VCR 1994                          | 40 | 14 |
| 37-38 SB 17L 5150 1984                          | 40 | 15 |
| 5150 46C 17L Uphole 6/16/1993                   | 40 | 16 |
| 38-39B 17L 5000 VCR 1980                        | 40 | 17 |
| 5300 30F 17L Uphole 1995                        | 40 | 18 |
| 35-39B 17L 5300 VCR Panel #1 (North End) 1983   | 40 | 19 |
| 35-39B 17L 5300 South Panel 1984-1985           | 40 | 20 |
| 35-39B 17L 5300 VCR Middle Panel, Stp 1983-1984 | 40 | 21 |
| 5300/5150 52 VCR 17L 1993                       | 40 | 22 |
| 5450 37C 17L Uphole 1992-1995                   | 40 | 23 |
| 5450 37C 17L VCR 1994-1995                      | 40 | 24 |
| 40-42C 17L 5450 1984-1987                       | 40 | 25 |
| 47SC 17L 5450 1990                              | 40 | 26 |

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| N40-42C 5300 Panel 2 1992                        | 40 | 29 |
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| 67-68D 9L 5750 Blast Hole 1979-1980  | 41 | 33 |
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| 6800 Level 11 Ledge 73 PB 4/1978      | 42 | 10 |
| 54 PE 13L 6200 1979-1981              | 42 | 11 |
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