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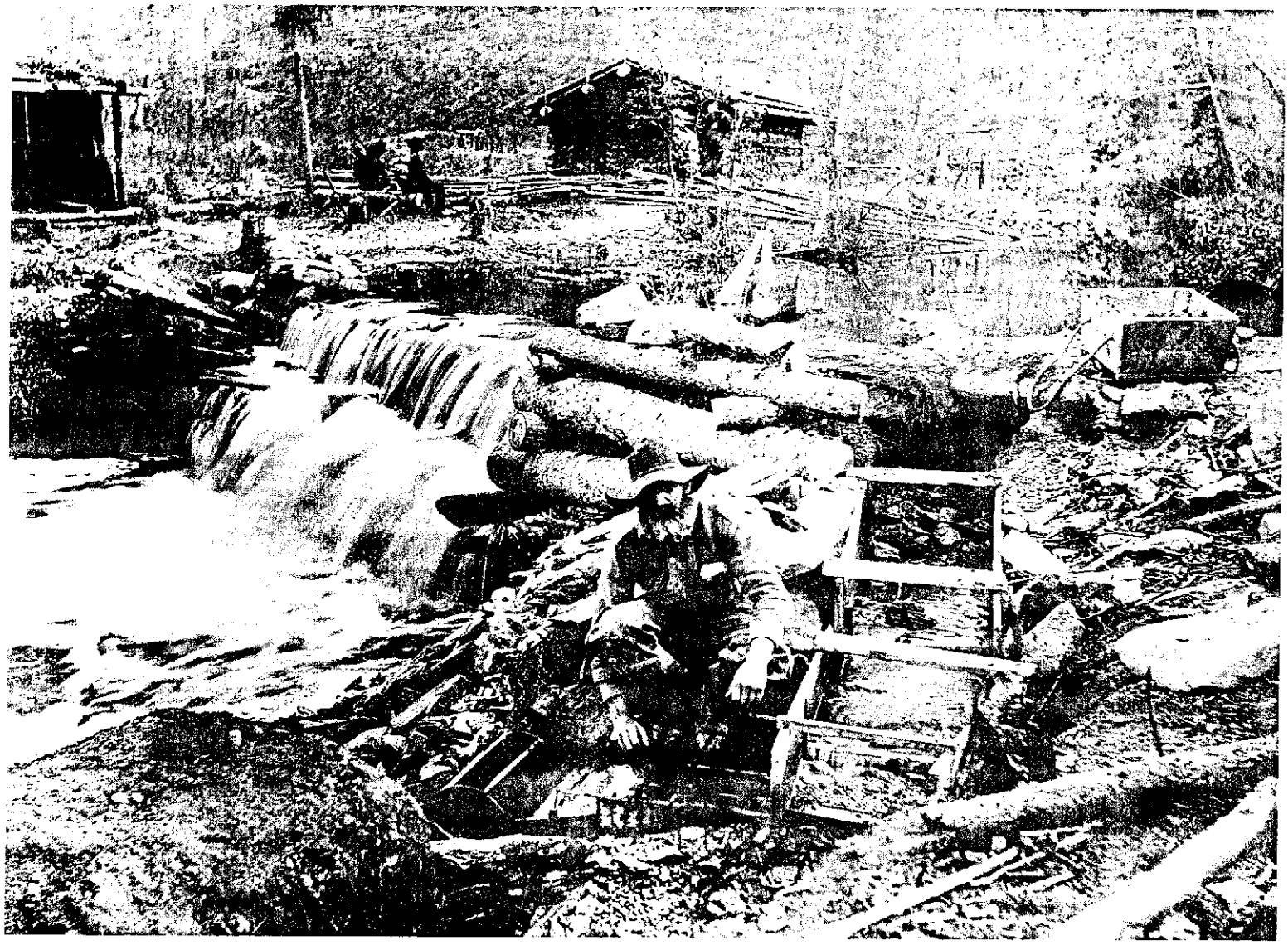
MINING INSPECTION DIVISION, YUKON REGION

YUKON PLACER MINING INDUSTRY 1995, '96, '97



Canada

KLONDIKE GOLD RUSH CENTENNIAL

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Mining Inspection Division, Yukon Region, invites readers to write and inform us of any inaccuracies or new information with respect to Yukon Placer Mining Industry Reports.

Mining Inspection Division
Northern Affairs Program
345-300 Main Street
Whitehorse, Yukon Canada
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YUKON
PLACER MINING
INDUSTRY 1995, 1996, 1997

Mining Inspection Division
Mineral Resources Directorate
Northern Affairs Program
Yukon Region
Indian and Northern Affairs Canada

PRÉFACE

Ce numéro spécial marque le centenaire de la découverte d'or dans le ruisseau Rabbit, découverte qui a mené à la plus célèbre ruée vers l'or au monde, celle du Klondike en 1898. Il fait partie de la série courante de publications sur l'industrie de l'exploitation des placers au Yukon et contient une description détaillée de l'activité d'exploitation des placers en 1995, 1996 et 1997. Cette publication n'aurait pu être produite sans la coopération des mineurs et des compagnies d'exploitation de placers du Yukon. Nous remercions sincèrement les nombreuses personnes qui, malgré leur horaire chargé, ont pris le temps de décrire leurs mines et leurs méthodes d'exploitation minière aux inspecteurs de la Division de l'inspection minière. Nous espérons que l'information contenue dans cette publication sera utile et utilisée par le secteur minier et les autres lecteurs qui souhaiteront peut-être explorer et exploiter des placers au Yukon et par ceux qui s'intéressent aux ouvrages sur le patrimoine aurifère de ce territoire.

Nous remercions également les auteurs pour leurs articles intéressants qui représentent une partie importante de ce numéro. Nous remercions tout particulièrement les inspecteurs miniers Lorraine Millar et Ann Doyle pour leur travail de révision, Leo Van Kalsbeek pour la compilation statistique et son assistance générale, et Steve Colp pour le balayage des photographies.

Nous invitons les lecteurs du présent rapport à nous faire part de leurs commentaires sur le contenu de ce numéro et à nous proposer, pour les publications subséquentes de cette série, des articles susceptibles d'intéresser l'industrie de l'exploitation des placers du Yukon à laquelle cette publication s'adresse tout particulièrement, et de lui être utiles.

David A. Latoski
Gestionnaire régional
Inspecteur minier en chef
Division de l'inspection minière
Direction des ressources minérales
Programme des Affaires du Nord
Région du Yukon

PREFACE

This special edition marking the centennial of the discovery of gold on Rabbit Creek which led to the great world famous Klondike Gold Rush of 1898 is part of the ongoing series documenting the Yukon's Placer Mining Industry. Placer mining activity during the years 1995, 1996 and 1997 are described in detail. This publication could not have been produced without the cooperation of the Yukon's placer miners and placer mining companies. We sincerely thank the many individuals who donated time from their busy schedules to describe their mines and their mining methodology to the inspectors of the Mining Inspection Division. We hope that the information contained within will be helpful and of use to the mining community and to other readers who may wish to explore and develop placer properties in the Yukon Territory as well as those who are interested in reading about Yukon's golden heritage.

Thank you also to the authors for contributing articles of interest. They are an important part of this edition. Special thanks to mining inspectors Lorraine Millar and Ann Doyle for their editing, Leo van Kalsbeek for the statistical compilation and his general assistance, and Steve Colp for the scanning of the photographs.

We invite comments from the readers of this report on the material presented in this edition and also any suggestions for inclusion of any other material in future publication in this series that may be of use and interest to the Yukon's placer mining industry to whom is the publication is specifically directed.

David A. Latoski
Regional Manager
Chief Mining Inspector
Mining Inspection Division
Mineral Resources Directorate
Northern Affairs Program
Yukon Region

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On August 16, 1896 gold was discovered on Rabbit Creek
in the Klondike district
and the Discovery claim was staked.
This issue commemorates this historic event.

MINERAL RESOURCES DIRECTORATE

R. Holmes (Director), D. McLeod (Executive Assistant)

The Mineral Resources Directorate administers the mineral resources of the Yukon Territory through issuing mineral titles, developing and implementing regulations governing mining and exploration activities, screening and approving proposed developments, inspecting and ensuring compliance with a variety of Acts and Regulations, reviewing work filed for assessment credit, documenting and interpreting the geology and mineral resources of the Yukon and carrying out the basic functions of a provincial geological survey in partnership with the Government of Yukon. The Mineral Resources Directorate manages mineral resources in the Yukon through its Regional office which has five operating divisions as follows:

Mining Inspection Division

The Inspection Division performs inspections required by the *Yukon Quartz* and *Placer Mining Acts*, and the *Yukon Waters Act*. Through a Memorandum of Understanding with the Department of Fisheries and Oceans and the Department of the Environment, the mining inspectors are also designated as habitat inspectors under the federal *Fisheries Act*.
The inspection division is responsible for ensuring the Yukon's placer mining industry complies with all of the relevant legislation, through education, encouragement and enforcement. The inspectors also provide technical assistance to the Yukon Territory Water Board, which issues water licences for placer mining in Yukon.
In addition to inspecting operating placer mines, the inspection division also ensures compliance with the staking and yearly assessment requirements of the two Yukon Mining acts.

Present staff includes: D. A. Latoski (Regional Manager/Chief Inspector), A . L. Millar (Mining Inspector, Dawson), L. P. van Kalsbeek (Mining Inspector, Whitehorse), S. J. Howes (Mining Inspector, Whitehorse), R. F. Thomson (Mining Inspector, Whitehorse), A. E. Rothwell (Mining Inspector, Dawson), J. B. Leary (Mining Inspector, Dawson), R. E. Leckie (Mining Inspector, Mayo), S. E. Colp (Mining Inspector, Whitehorse), A. L. Doyle (Mining Inspector, Mayo),
J. St. Amand (Office Manager, Whitehorse), V. Roberts (Administrative Assistant, Dawson)

Mineral Rights Division

D. Wiebe (Regional Manager), J. Oberg (A/Mining Recorder, Whitehorse), K. Perry (Mining Recorder, Dawson), P. McLeod (Mining Recorder, Watson Lake), C. Santo (Mining Recorder, Mayo). There are currently 14 support staff.

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M. Dejean (Chief/Mining Land Use), K. Pelletier (Environmental Geologist), J. Szucs (Mining Land Use Officer), P. Reynolds (Office Manager).

Mining Development Division

A. Waroway (Regional Manager), A. Carlick (First Nations Liaison Officer), E. Wain (Policy Analyst), H. Copeland (Engineer of Mines), D. Emond (Environmental Geologist), J. Nordmann (Office Manager).

Exploration & Geological Services

G. Abbott (A/Regional Manager/Minerals Geologist), B. Lebarge (Staff Geologist), M. Burke (Staff Geologist), R. Deklerk (Minfile Geologist), J. Hunt (Mineral Deposits Geologist), A. Wagner (Office Manager).

INTRODUCTION

Le présent rapport documente l'activité de l'industrie de l'exploitation des placers auYukon, au cours des saisons minières 1995, 1996 et 1997. Il est divisé en trois principales sections.

La première section donne un aperçu général de l'activité de jalonnement et de la production d'or placérien, deux indicateurs de la situation de l'industrie. Elle contient également une ventilation de la production d'or placérien à partir des ruisseaux du Yukon.

La deuxième partie renferme une série d'articles d'intérêt général, dont un exposé historique sur la découverte de l'or, une entrevue avec un mineur de notre époque au Klondike et une description des défis que doit relever l'industrie des placers en Russie.

La dernière section, qui constitue la majeure partie du rapport, comprend des descriptions détaillées des exploitations de placers visitées par le personnel de la Division de l'inspection minière, Direction des ressources minérales, Programmes des affaires du Nord, région du Yukon.

Plusieurs des exploitations de placers qui étaient en activité de 1995 à 1997 peuvent avoir été visitées seulement une ou deux fois; il y a aussi des exploitations qui n'ont pas été documentées du tout pendant cette période. Il se peut que quelques mineurs ne retrouvent pas leur exploitation particulière dans le présent rapport en raison de données incomplètes ou manquantes. Nous invitons les intéressés à fournir l'information pertinente qui sera incluse dans les rapports subséquents sur l'activité de l'industrie. Les descriptions circonstanciées ont été rédigées par les inspecteurs de placers et n'ont été pas été révisées par les mineurs.

Les rapports descriptifs contenus dans ce volume sont structurés par bassin de drainage. Les cours d'eau de chaque bassin sont classés en ordre alphabétique. Les exploitations situées dans un ruisseau sont décrites dans l'ordre, d'aval en amont.

Les rapports d'inspection minière indiquent le nom du ruisseau, l'exploitant, le numéro de permis d'exploitation hydraulique (si existant) et l'année de l'inspection. Le numéro de site que l'on trouve dans l'en-tête descriptif de chaque rapport correspond à un endroit situé sur l'une des cartes de zone d'exploitation de placers, qui figure également dans l'en-tête. Les coordonnées de chaque exploitation sont données en latitude et en longitude et l'on indique également la division de la carte du SNRC à une échelle de 1 : 50 000.

Comme la plupart des mineurs des exploitations de placers n'utilisent pas couramment le système métrique, nous avons utilisé les unités de mesure britanniques. Une table de conversion est fournie dans l'annexe.

INTRODUCTION

This report documents the Placer Mining Industry in the Yukon Territory for the 1995, 1996 and 1997 mining seasons. The report is presented in three main sections.

The first section provides an overall view of the staking activity and the placer gold production, both indicators of the state of the industry. It also provides a breakdown of the placer gold produced from creeks in the Yukon.

The second part is a collection of general interest articles, including an historical perspective on the discovery of gold, an interview with a present day miner in the Klondike, and the challenges of placer mining in Russia.

The final section, which comprises the majority of this volume, consists of detailed descriptions of placer operations visited by the staff of the Mining Inspection Division of the Mineral Resources Directorate, Northern Affairs Program, Yukon Region.

Many of the placer mining operations which were active during the period of 1995 to 1997 may have been visited only once or twice; there are also operations which were not documented at all during this time. Some miners may find their particular operation has not been included this is due to incomplete or missing data. Submission of relevant information is invited for inclusion in subsequent industry activity reports. The narrative descriptions were written by the placer mining inspectors and were not edited by the miners.

The descriptive reports in this volume have been arranged by drainage basin. Streams within each basin are organized alphabetically. The properties on a creek are described in consecutive order from mouth to headwaters.

The mining inspection reports include the creek name, the operator, the water licence number (when available), and the year of the inspection. A "Site No." found in the descriptive heading of each report corresponds to a location on one of the Placer Mining Area Maps, which is also identified in the heading. The location of each operation is given in latitude and longitude, as well as by the 1:50,000 scale NTS map division.

Since most placer miners do not commonly use the metric system British units of measure have been used. A conversion table is provided in the appendix.

YUKON PLACER MINING INDUSTRY 1995, 1996, 1997

An Overview of Activity and Production

The period 1995 to 1997 saw a number of different factors affecting placer mining activity. Technology, gold price and weather were some of the major forces during these years.

The development and use of new technology had a positive effect on the industry. Over the years there has been an increase in the use of scientific exploration tools. Seismic surveys were used to outline the gravel/bedrock contact and drilling was used to better define the pay gravels. Better gold recovery systems, utilizing an improved sluicebox riffle design, and the use of more efficient sluice plants, such as New Zealand floating plants, contributed to boost the gold production.

This period saw the acquisition of the largest bulldozer in the territory for placer mining. A D475A Komatsu was used for mining on Dominion Creek. This bulldozer has an operating weight of 95 tonnes as compared to a D10N Caterpillar which has an operating weight of 60 tonnes. The Komatsu D475A also has 50 percent more flywheel power than the D10N and is capable of pushing 33 to 45 cubic yards.

While the lower gold price during 1997 did not lead to lower gold production the lower price did have a negative impact on the amount of activity in the industry. This is often cited as the reason for the significant reduction in large operations in the Dawson area.

The weather also played a very key role in the placer mining industry as witnessed during the 1996 and 1997 seasons. A late spring, a cool and dry summer, and an early frost all contributed to the significant decrease in gold production during 1996. An early spring with an abundance of water was one of the factors contributing to the higher gold production during 1997.

Staking Activity

The period 1995 to 1997 saw a moderate decrease in the number of placer claims staked (**Figure 1**). Although the decrease in staking activity was not as dramatic as the decline in gold price it was nevertheless affected by it.

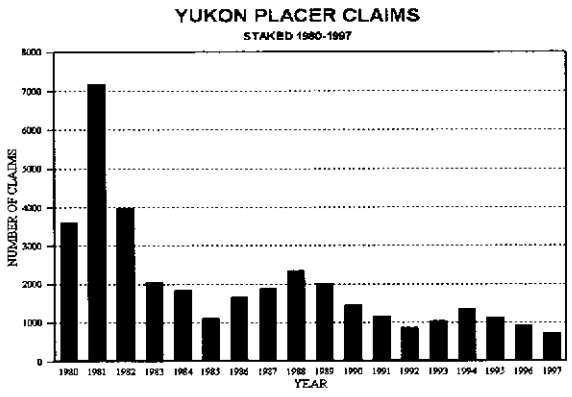


Figure 1

During this same period the number of placer leases staked dropped substantially in 1996 to the lowest level in the past ten years and then rebounded in 1997 as shown in **Figure 2.**
Although placer claim staking and placer lease

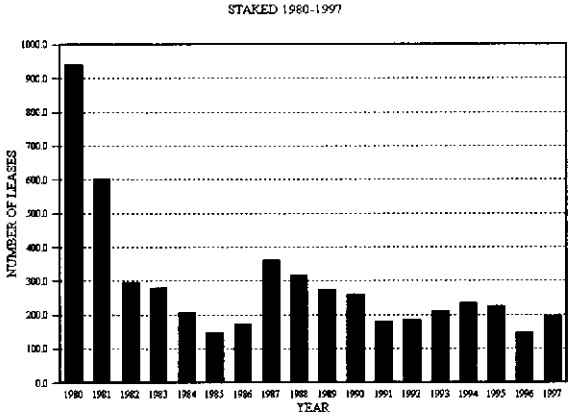


Figure 2

staking is a good indicator of the state of the industry in that it can reflect growth in the industry perhaps a better indicator is the placer claims and leases held in good standing. This shows the relative stability of the placer mining industry. The years 1995, 1996 and 1997 saw a moderate decline in the number of placer claims held in good standing (**Figure 3**).

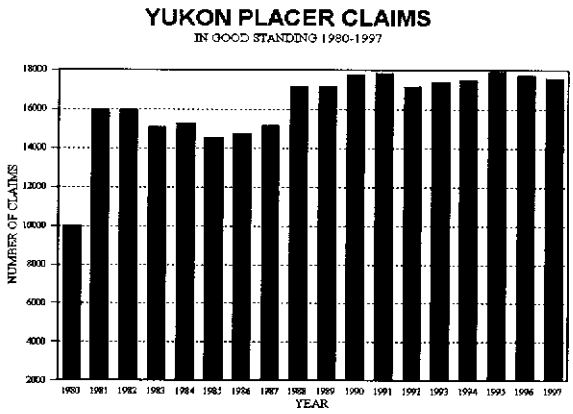


Figure 3

The number of claims held in good standing during this three year period is roughly the same as for the last ten year period. This indicates a fairly stable industry.

The number of placer leases held in good standing has remained virtually the same over the 1995 to 1997 period, also indicating stability (**Figure 4**).

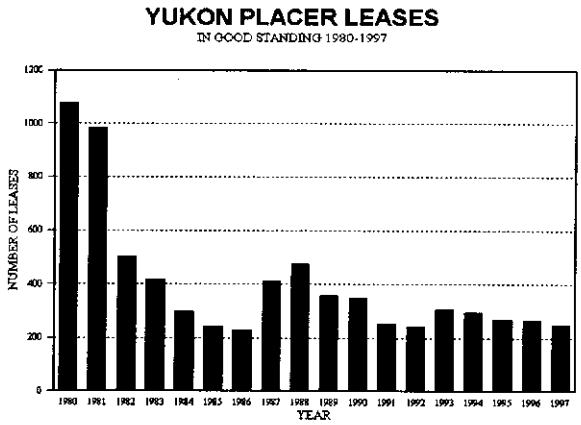


Figure 4

The total number of miles of Yukon placer held is shown in **Figure 5.** Also shown on this figure is the average yearly gold price for this same period of time. The price of gold has a direct influence on the amount of placer ground held.

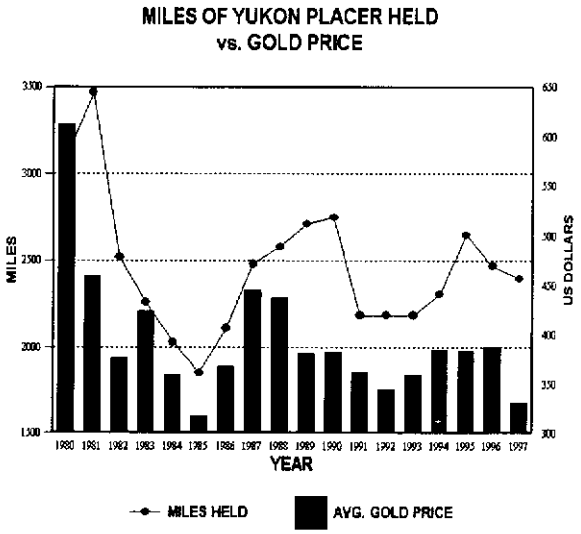


Figure 5

Active Water Licences

The 1995 season saw 206 placer mining operations either stripping or sluicing. This decreased 17 percent the following year to 171 active operations. The number of active operations remained stable at 171 for the 1997 season.

The total number of Water Use Licences issued for placer mining by the Yukon Territory Water Board decreased from 350 in 1995 to a low of 292 in 1996. In 1997 the number of licences increased to 334, an increase of 13 percent.

Yukon Placer Gold Production

Placer gold production continues to make a significant contribution to the Yukon's resource-based economy. In 1995 the industry produced 127,335 crude ounces (**Figure 6**). Based on an average grade of 800 fine this is the equivalent of 101,868 fine ounces of gold valued at 52.69 million dollars Canadian.

YUKON PLACER GOLD PRODUCTION

CRUDE OUNCES 1980-1997

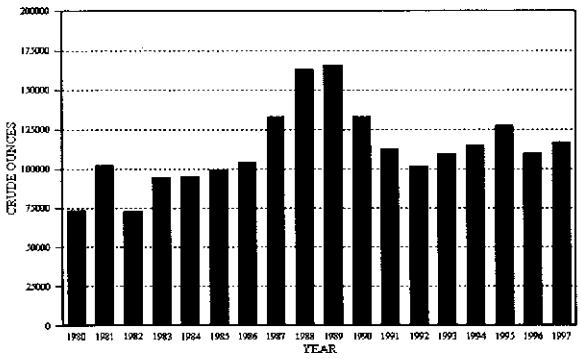


Figure 6

A total of 109,478 crude ounces of gold was produced during 1996. This equates to 87,582 fine ounces at a value of 45.98 million dollars Canadian. This is a decrease over the previous year.

Gold production during 1997 rose to 116,383 crude ounces or 93,106 fine ounces. Due to the low gold price the total value of the gold extracted decreased to 42.22 million in Canadian dollars.

The higher gold production during 1997 can possibly be attributed to the need to extract and sell more gold in order to maintain a certain level of income. Another factor that may have contributed to the lower production in 1996 and the higher production in 1997 is the early frost in the fall of 1996. Ground that was prepared in 1996 was not sluiced due to the weather. This meant that cuts were available for mining early in 1997 whereas in other years stripping would be occurring at this time.

The following tables show the 25 most productive creeks for 1995, 1996 and 1997.

MOST PRODUCTIVE CREEKS 1995

1. Indian River	18,303
2. Dominion	15,984
3. Gold Run	13,551
4. Sixty Mile	12,967
5. Hunker	9,889
6. Quartz	5,546
7. Matson	3,867
8. Thistle	3,601
9. Clear	3,522
10. Gladstone	3,438
11. Black Hills	3,365
12. Bonanza	2,902
13. Sulphur	2,673
14. Duncan	2,308
15. Nansen	2,204
16. Last Chance	2,138
17. Haggart	2,114
18. Highet	1,767
19. Ballarat	1,561
20. Sparkling	1,528
21. Klondike	1,282
22. Swamp	1,198
23. Gold Bottom	1,198
24. Glacier	1,097
25. Allgold	893

MOST PRODUCTIVE CREEKS 1996

1. Dominion	18,506
2. Gold Run	10,963
3. Indian R.	10,636
4. Hunker	10,356
5. Sixty Mile	9,974
6. Black Hills	5,882
7. Sulphur	4,039
8. Bonanza	3,938
9. Quartz	2,838
10. Last Chance	2,750
11. Thistle	2,575
12. Clear	2,292
13. Nansen	2,268
14. Gladstone	2,129
15. Ballarat	2,034
16. Henderson	2,023
17. Matson	1,974
18. Gold Bottom	1,787
19. Allgold	1,516
20. Kate	843
21. Eureka	811
22. Scroggie/Mariposa	788
23. Duncan	768
24. Canadian	751
25. Revenue	715

MOST PRODUCTIVE CREEKS 1997

1. Gold Run	20,108
2. Dominion	13,885
3. Sixty Mile	10,185
4. Indian R.	8,858
5. Hunker	7,733
6. Black Hills	7,106
7. Duncan	4,398
8. Quartz	3,431
9. Bonanza	3,318
10. Canadian	3,219
11. Sulphur	3,087
12. Haggart	3,003
13. Highet	2,875
14. Nansen	2,815
15. Last Chance	2,012
16. Thistle	1,934
17. Henderson	1,862
18. Ballarat	1,663
19. Clear	1,607
20. Gladstone	1,454
21. Ledge	1,259
22. Scroggie/Mariposa	1,104
23. Eureka	1,102
24. Kate	1,095
25. Kirkman	1,020

Gold Price

Gold prices remained fairly constant throughout 1995 and the early part of 1996. (**Figure 7**) The price of gold peaked at $404.77 US ($556.60 Cdn) in February of 1996. Following this, gold began a moderate decline and in the latter part of 1996 began a dramatic decline to a low of $289.85 US ($414.95 Cdn) in December of 1997.

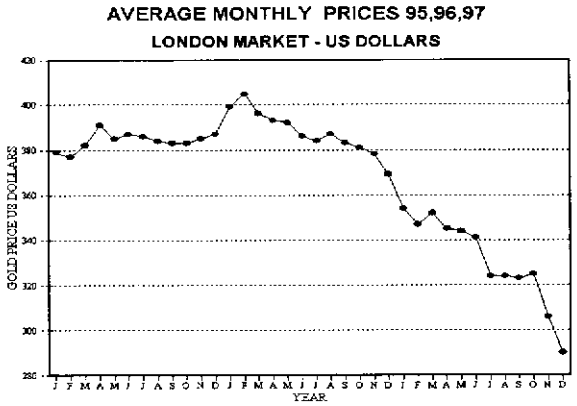
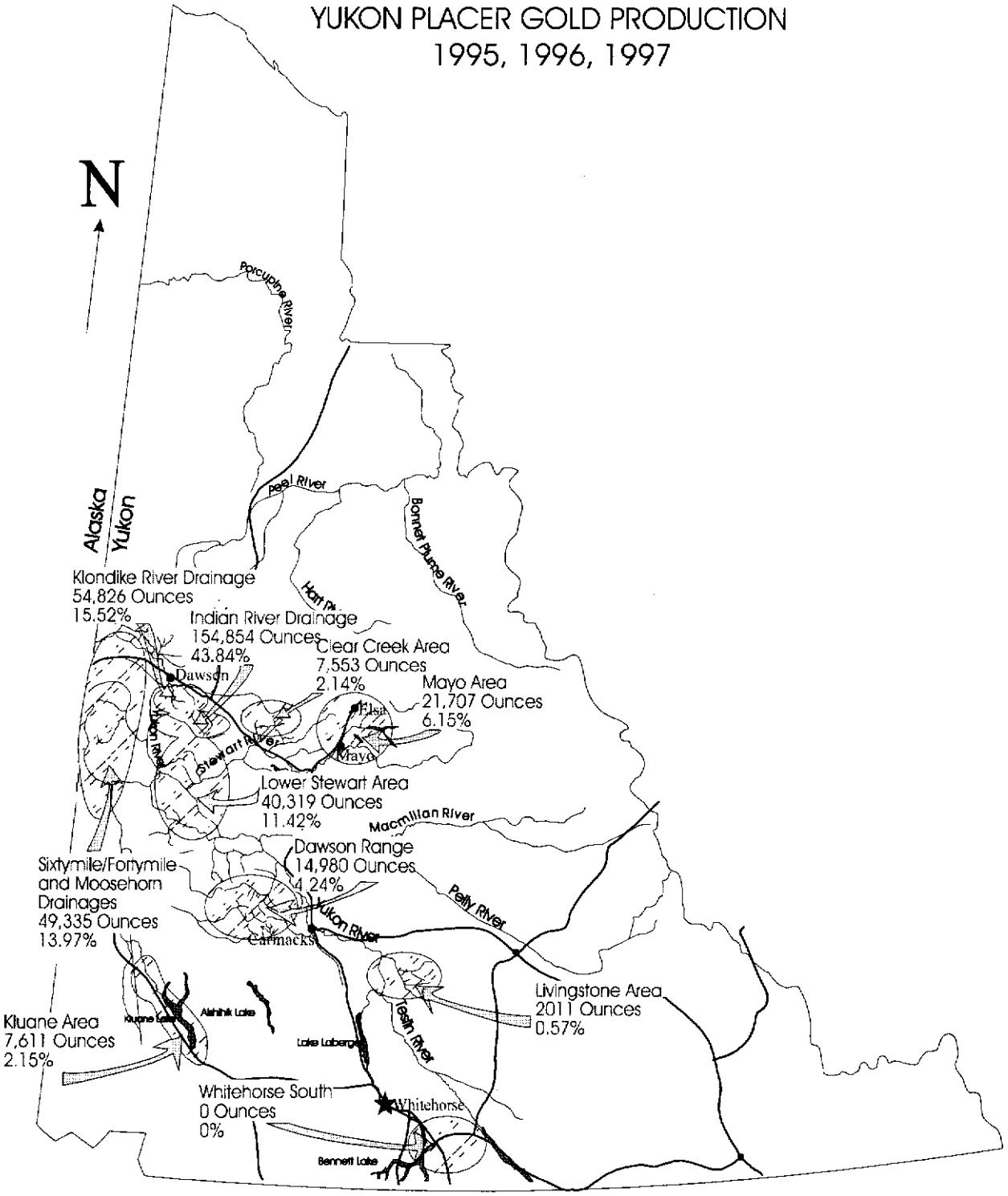


Figure 7

YUKON PLACER GOLD PRODUCTION
1995, 1996, 1997



PLACER GOLD PRODUCED FROM YUKON CREEKS, 1990-1997 (compiled by L.P. van Kalsbeek)
Crude Ounces

CREEK or RIVER	Tributary to	90	91	92	93	94	95	96	97	90-97
Dawson Mining District										
Allgold	Klondike	1,495	719	0	0	280	893	1,516	139	5,042
Ballarat	Yukon	1,025	308	1,214	1,122	1,371	1,561	2,034	1,663	10,298
Barker	Stewart	38	158	0	96	0	0	0	0	292
Barlow	Clear	118	27	40	204	43	28	9	71	540
Bear	Klondike	594	954	683	606	151	91	177	51	3,307
Bedrock	Sixtymile	1,149	0	0	0	0	0	0	0	1,149
Big Gold	Sixtymile	0	0	0	0	0	0	0	0	0
Black Hills	Stewart	2,695	1,853	2,113	1,587	228	3,365	5,882	7,106	24,829
Bonanza	Klondike	2,827	5,400	2,592	2,896	3,433	2,902	3,938	3,318	27,306
Clear	Stewart	9,372	6,930	3,227	2,536	3,005	3,522	2,292	1,607	32,491
Dominion	Indian	19,017	19,387	18,652	12,044	16,700	15,984	18,506	13,885	134,175
Eldorado	Bonanza	429	713	483	902	63	746	158	179	3,673
Eureka	Indian	901	709	200	525	640	509	811	1,102	5,397
Fortymile	Yukon	273	83	259	83	60	30	154	94	1,036
Glacier	Sixtymile	2,226	2,395	731	0	545	1,097	4	121	7,119
Gold Bottom	Hunker	987	858	16	685	594	1,198	1,787	823	6,948
Gold Run	Dominion	10,172	7,891	9,655	11,182	8,669	13,551	10,963	20,108	92,191
Henderson	Stewart	1,768	1,867	3,858	3,476	510	65	2,023	1,862	15,429
Hobo	Klondike	0	0	0	0	0	0	0	0	0
Hunker	Klondike	11,311	12,084	11,089	10,019	12,392	9,889	10,356	7,733	84,873
Indian	Yukon	19,086	12,196	12,894	16,545	19,841	18,303	10,636	8,858	118,359
Kirkman	Yukon	310	498	87	411	212	255	416	1,020	3,209
Klondike	Yukon	2,525	1,145	2,573	3,709	1,553	1,282	387	51	13,225
Last Chance	Hunker	0	0	2,044	2,956	4,095	2,138	2,750	2,012	15,995
Little Gold	Sixtymile	0	0	0	0	0	1	0	0	1
Maisy May	Stewart	543	1,175	789	143	0	0	0	1	2,651
Matson	Sixtymile	31	0	193	2,596	2,821	3,867	1,974	871	12,353
Miller	Sixtymile	2,790	2,718	1,323	1,147	0	291	534	180	8,983
Moose	Fortymile	0	544	0	8	300	0	0	546	1,398
Poker	Fortymile	0	0	0	0	0	5	7	9	21
Quartz	Indian	6,366	3,627	2,912	4,530	3,359	5,546	2,838	3,431	32,609
Scroggie/Mariposa	Stewart	6,121	5,718	3,658	472	533	770	788	1,104	19,164
Sestak	Yukon	399	70	0	0	0	0	0	0	469
Sheep	Firth	0	0	0	0	0	0	0	0	0
Sixtymile	Yukon	6,003	4,516	5,560	10,093	13,003	12,967	9,974	10,185	72,301
Sparkling	Yukon	0	0	0	0	498	1,528	357	342	2,725
Sulphur	Dominion	2,481	1,469	2,031	1,563	2,535	2,673	4,039	3,087	19,878
Tenmile	Sixtymile	0	0	119	0	727	838	350	221	2,255
Thistle	Yukon	2,840	797	767	1,720	379	3,601	2,575	1,934	14,613
Upper Bonanza	Bonanza	256	0	0	20	71	168	48	74	637
Various Dawson Creeks		1,310	355	407	264	185	103	57	60	2,741
Total Dawson		117,458	97,184	90,169	94140	98,798	109,767	98340	93,848	799,682

CREEK ro RIVER	Tributary to	90	91	92	93	94	95	96	97	90-97
Mayo Mining District										
Anderson	Mayo Lake	0	0	44	34	43	2	9	0	132
Bear	Moose/Stewart	209	123	11	164	59	45	0	0	611
Carlson	Minto	0	0	0	0	0	0	0	0	0
Davidson	Mayo River	112	392	0	0	1	0	67	184	756
Dawn	Mayo Lake	0	0	0	0	0	0	0	0	0
Dublin Gulch	Haggart	1,454	2,480	779	1,448	17	27	0	0	6,205
Duncan	Mayo River	2,148	2,318	1,370	1,955	1,430	2,308	768	4,398	16,695
Empire	No Gold	0	0	11	0	20	0	0	0	31
Gem	Sprague	0	0	0	0	0	0	0	0	0
Haggart	McQuesten	124	462	560	1,327	3,007	2,114	61	3,003	10,658
Highet	Minto	3,498	2,506	4,466	2,787	1,927	1,767	636	2,875	20,462
Johnson	McQuesten	782	648	0	161	0	0	0	0	1,591
Ledge	Mayo Lake	219	154	372	340	958	463	367	1,259	4,132
Lightning	Duncan	641	0	0	0	0	0	0	0	641
McQuesten	Stewart	0	0	0	0	0	0	6	0	6
Minto	Mayo River	0	0	0	0	190	135	136	8	469
Morrison	Seattle	0	0	0	0	0	0	0	0	0
Russell	Macmillan	0	0	0	0	10	0	0	0	10
Seattle	McQuesten	0	0	0	0	0	275	0	10	285
Steep	Mayo Lake	0	0	0	0	104	0	0	0	104
Stewart	Yukon	0	0	0	0	258	190	106	92	646
Swede	Haggart	0	0	0	0	85	0	0	0	85
Thunder	Lightning	0	841	376	547	307	371	0	0	2,442
Vancouver	McQuesten	0	0	0	0	0	0	0	2	2
Various Mayo Creeks		0	1	0	0	13	0	0	0	14

Total Mayo District		9,187	9,925	7989	8,763	8429	7,697	2156	11,831	65,977
CREEK or RIVER	**Tributary to**	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**90-97**
Whitehorse Mining District										
Arch	Donjek	0	0	0	0	0	0	0	0	0
Back	Victoria	54	188	9	83	0	0	0	0	334
Boldin	Big	0	0	0	0	49	0	0	31	80
Burwash	Kluane	28	17	27	222	35	26	66	94	515
Canadian	Britannia	0	0	0	0	0	0	751	3,219	3,970
Casino	Dip	0	0	0	0	0	0	0	0	0
Cottoneva	South Big Salmon	0	407	0	75	519	343	141	0	1,485
Discovery	Nansen	0	0	0	158	275	383	411	359	1,586
Dollis	Tatshenshini	0	0	0	0	0	51	0	94	145
Fourth of July	Jarvis	4	0	0	0	0	0	0	64	68
Gladstone	Kluane Lake	0	168	578	1,051	2,137	3,438	2,129	1,454	10,955
Great Bear	Lesaux	0	0	0	87	0	0	0	0	87
Guder	Seymour	0	0	0	0	0	0	0	19	19
Happy	Big	0	0	0	0	0	0	51	13	64
Hayes tributaries	Selwyn	34	0	0	0	0	0	0	0	34
Kate	Ladue	522	662	276	362	595	763	843	1,095	5,118
Kenyon	Scottie	0	0	0	0	0	0	0	0	0
Kimberly	Jarvis	53	81	0	21	124	16	33	0	328
Klaza tributaries	Nisling	210	489	63	0	0	0	0	0	762
Lake	South Big Salmon	14	0	0	0	9	0	206	331	560
Little Violet	South Big Salmon	34	156	0	31	17	174	0	67	479
Livingstone	South Big Salmon	195	0	57	488	160	576	108	65	1,649
Martin	South Big Salmon	0	0	0	0	0	0	0	0	0
Mechanic	Big	0	22	79	0	0	0	0	0	101
Mendocina	South Big Salmon	12	0	0	0	0	0	0	0	12
Moose Brooke	Lubbock/Atlin	0	0	0	475	0	0	0	0	475
Nansen	Nisling	0	664	35	459	1,374	2,204	2,268	2,815	9,819
Porcupine	Donjek	0	0	0	0	0	0	0	0	0
Printers	Cultus	0	0	0	0	0	0	0	0	0
Quill	Kluane	0	0	0	0	0	0	122	0	122
Unnamed	South Big Salmon	0	14	0	0	10	0	0	0	24
Reed	Donjek	20	0	0	0	0	0	0	0	20
Revenue	Big	273	0	0	154	210	281	715	721	2,354
Rude	Dip	1,259	831	42	0	0	0	0	0	2,132
Seymour	Big	43	0	54	142	132	337	21	66	795
South Big Salmon	Big Salmon	0	0	0	0	0	0	0	0	0
Soya	Swamp	0	0	0	2,134	0	0	0	0	2,134
Squirrel	Duke	21	0	0	0	0	0	0	0	21
Summit	South Big Salmon	0	0	0	43	0	0	0	0	43
Swamp	Scottie	3,054	1,160	1,670	0	1,473	1,198	1,076	15	9,646
Swede Johnson	Kluane	0	0	0	0	0	0	0	0	0
Tatshenshini R.	Alsek	0	19	14	36	16	0	0	0	85
Victoria	Nisling	0	0	0	0	0	68	41	182	291
Wheaton	Lake Bennett	0	0	0	0	0	0	0	0	0
Various Whitehorse Creeks		160	2	0	26	119	13	0	0	320
Total Whitehorse		**5,990**	**4,880**	**2904**	**6,047**	**7,254**	**9,871**	**8982**	**10,704**	**56632**
CREEK or RIVER	**Tributary to**	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**90-97**
Watson Lake Mining District										
Liard River		0	0	0	0	0	0	0	0	0
Various Watson Lake Creeks		23	0	0	0	0	0	0	0	23
Total Watson Lake		**23**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**23**

Summary of Placer Gold Production	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**90-97**
Dawson Mining District	117,458	97,164	90,169	94,140	98,796	109,767	98,340	93,848	799,,682
Mayo Mining District	9,187	9,925	7,989	8,763	7,254	7,697	2,156	11,831	65,977
Whitehorse Mining District	5,990	4,880	2,904	6,047	8,429	9,871	8,982	10,704	56,632
Watson Lake Mining District	23	0	0	0	0	0	0	0	36
Total	**132,658**	**111,969**	**101062**	**108,950**	**114,479**	**127,335**	**109,478**	**116,383**	**922,327**

FINENESS OF YUKON PLACER GOLD

DAWSON DISTRICT	FINENESS
Adams Gulch	615-746
Allgold Creek	858-860
American Gulch	864
Anderson Creek (Fortymile area)	720-728
Ballarat Creek	852-860
Barker Creek	793-900
Barlow Creek	853
Bear Creek	644-746
Bedrock Creek	820
Big Gold Creek	847-854
Black Hills Creek	730-855
Blueberry Creek	880
Bonanza Creek Benches	
↗American Hill	864
↗Cheechako Hill	750-785
↗King Solomon Hill	785-800
↗Trail Hill	800-805
Bonanza Creek - Upper	809-827
- Middle	781
- Lower	739-798
Brewer Creek	
Brimstone Gulch	830
Browns Creek	800
Bruin Creek	800
Caribou Creek	816-840
Childs Gulch	750
Claffey Pup	750
Clear Creek	820-860
(Left Fork Clear Creek)	730
(Right Fork Clear Creek)	720-740
Discovery Pup	700
Dominion Creek - Upper	805-832
- Middle	817-849
- Lower	790-840
Eighty Pup	797
Eldorado Creek	733-803
Eldorado Creek Benches	
↗Gold Hill	768
Empire Creek	910
Eureka Creek	677-745
Fortymile River	814-845
Fortynine Pup	
French Gulch	631-750
Friday Gulch	790-804
Gauvin Gulch	664

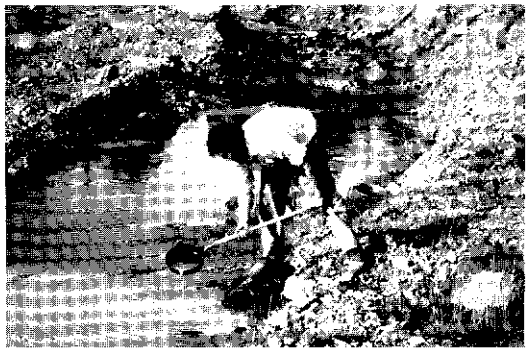
DAWSON DISTRICT	FINENESS
Gay Gulch	780-790
Glacier Creek	830-860
Gold Bottom Creek	780-800
Gold Run Creek	830-878
Goring Creek	738
Henderson Creek	720-760
Henry Gulch	605-650
Hester Creek	850
Homestake Gulch	660-750
Hunker Creek Benches	
↗Australian Hill	850-860
↗Dago Hill	798-859
↗Paradise Hill	735-802
Hunker Creek - Upper	798-859
- Middle	725-820
- Lower	701-726
Independence Creek	780-794
Indian River	780-843
Irish Gulch	624-742
Jackson Gulch	829-842
Kirkman Creek	860-896
Klondike River Benches	
↗Dawson Hill	790-825
↗Groetschier Bench	790-825
↗Jackson Hill	835
Klondike City	780-790
Last Chance Creek	683-832
Little Gold Creek	
Little Blanche Creek	650-710
Log Cabin Creek	850-895
Lombard Pup	860
Lovett Gulch	860
Maisy May Creek	780-782
Mariposa Creek	895-900
Matson Creek	776-893
Miller Creek	827-857
Mint Gulch	820-851
Montana Creek	770
Monte Cristo Gulch	784-796
Moose Creek (Fortymile Area)	855
Oro Grande Gulch	775
Quartz Creek	732-800
Ready Bullion Creek	710-717
Rosebute Creek	800-810
Scroggie Creek	895-905

DAWSON DISTRICT	FINENESS
Sestak Creek	810-815
Seven Pup	
Sixty Mile River	810-840
Sparkling Creek	880
Stewart River	837-850
Sulphur Creek	790-832
Ten Mile Creek	830-845
Thistle Creek	848-895
Victoria Gulch	807-820
15 Pup (Last Chance Creek)	700
27 Pup (Hunker Creek)	845
27 Gulch (Eldorado Creek)	750
65 Pup	960

MAYO DISTRICT	FINENESS
Anderson Creek (Mayo Lake Area)	870
Bear Creek	
Bennett Creek	
Boulder Creek	800
Canyon Creek	825
Davidson Creek	840
Dublin Gulch	860-923
Duncan Creek	792-802
Eagle Pup	
Fifteen Pup	876
Fisher Gulch	900
Gem Gulch	895
Gill Gulch	870
Haggart Creek	885-895
Johnson Creek	760-820
Ledge Creek	805-825
Lightning Creek	830
McQuesten River	870
Minto Creek	827-835
Russell Creek	850
Steep Creek	931-946
Swede Creek	895
Thunder Gulch	790-825

WHITEHORSE DISTRICT	FINENESS
Arch Creek	870
Back Creek	760-836
Boliden Creek	890
Bullion Creek	871
Burwash Creek	860-876
Canadian Creek	864-883
Cottoneva Creek	830
Discovery Creek	820-850
Eva Creek	790
Forth of July Creek	810
Gladstone Creek	820
Guder Creek	838
Hayes Creek	860-880
Highet Creek	820-845
Kate Creek	820
Kenyon Creek	750
Kimberley Creek	850-860
Klaza River (Unnamed tribs)	760-830
Lake Creek	895
Little Violet Creek	866
Livingstone Creek	880
Martin Creek	870
May Creek	892
Mechanic Creek	880-910
Moose Brooks Creek	820-837
Moosehorn Range	820
Murphy's Pup	
Nansen Creek	800
Quill Creek	878
Reed Creek	889-896
Revenue Creek	860-880
Rude Creek	840-850
Rusk Creek	830
Seymour Creek	860
Slate Creek	800
Squaw (Dollis) Creek	834
Swamp Creek	800
Tatshenshini River	850-866
Victoria Creek	720-730
Wade Creek	900-930

ARTICLES AND INTERVIEWS



Norm Ross
A long way from the Halfway

Leo P. van Kalsbeek
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Whenever you talk about Placer Mining in the Yukon, the conversation eventually comes around to the name Norm Ross. A name synonymous with Placer Mining, his larger than life reputation has been hard won from the boardrooms of Bay Street to the boardwalks of Dawson.

The early years for Norm Ross's parents were a struggle, with six kids growing up on a primitive ranch two days horse ride from Fort St. John. At the age of ten Norm's family moved into Fort St. John where Norm finished high school and headed off to the University of British Columbia. In 1958 Norm followed his older brother Lorne to the Yukon on the promise of work at his brother's placer mine on Kirkman Creek. As Norm puts it, *"I came up as a green kid looking for adventure in the Yukon and I found it!"* Norm remained there for eight years, before returning to his studies at the British Columbia Institute of Technology. After acquiring his degree in mining technology he landed on the doorstep of the Colorado School of Mines, where he obtained his degree in mining engineering.

"I came up as a green kid looking for adventure in the Yukon and I found it!"

Graduating top of his class afforded many attractive offers from prestigious mining companies. Deciding on Newmont Mining Corporation, Norm went to New York to train as an internal troubleshooter for the company. His original destination for Newmont was Latin America, but as fate would have it Norm came back to British Columbia to help start up the Similkameen Mine at Princeton. He remained for three years, but feeling his career was moving too slowly, and with an offer for employment in El Paso Texas, Norm started working in the field of coal gasification. Three years later he acquired a position with the Bank of Montreal in Toronto. The bank, looking to expand their horizons in world mining projects, put Norm at the helm, as their world-wide Mining Manager. Norm describes being an international mining consultant, giving expert advice and real numbers to the bank on half billion dollar deals as *"a very challenging, demanding, highly stressful job"*. Globetrotting on a continuous basis may seem to many like a dream job, but it was very hard on Norm's family life and led to the eventual break up of his first marriage.

Being at the beck and call of banking people all over the world was very demanding, and Norm wanted to get out on his own. While assessing his aim of becoming a freelance international mining consultant, he received a phone call from Lorne, the brother that brought him to the Yukon.

Norm had to choose between returning to the Yukon and mining on Dominion Creek, or accepting an offer to become the first ever Vice-President of the Bank of Montreal who was not a banker.

"You will never get more abuse or more satisfaction than to work for yourself."

LvK: Naturally my first question is, "Any regrets?"

NR: No, no. I wouldn't say that I felt that my decision was correct all of the time. There were many bumps in the road along the way. There were times when I was out there laying in the mud helping to change a roller on a D9 and I thought about my mahogany desk and my air-conditioned office in Toronto, and all of the wonderful services I had, and my title, and the facilities that I had at my fingertips, but I have an adage that I've lived with for many years and that is to say that you will never get more abuse or more satisfaction than to work for yourself and you get a very big dose of both. No, I don't regret it.

LvK: Do you find the Yukon to be one of the better places to placer mine in the world today?

NR: Yes, I think it is. I think it still has a lot of potential. I've been trying to either teach or else preach my own gospel which may not apply, whichever way you want to look at it, that the Yukon placer industry is going to go through a dramatic change.

LvK: How so?

NR: Well, if we remain at these prices, of course, it's going to be dictated to us very rapidly. We've had a hundred years of placer mining which is pretty fantastic, but what is happening is that we have used up the small pockets, we've used up the higher grade, easier to get at reserves, and we're getting to that stage, where you are going to require a significant capital investment to be able to move large quantities of material at a cheap, per cubic yard rate. If you can't do that, I don't think you can remain competitive or economically viable in the placer industry.

LvK: Knowing the price of gold, equipment, fuel, ground, personal comfort, if you had to go placer mining today, would you?

NR: No, I don't think I would. I don't think I'd want to be starting today and, in fact, at today's gold price, absolutely not. I would not start a placer gold mine in the Yukon at today's prices. The costs are just too high, and the risks are too high. The environment that I'm familiar with, Dawson, is in the permafrost zone, which adds a considerable element to it. At today's prices, it's not an economic industry.

LvK: Norm, were you in the right place at the right time, history-wise?

NR: I think so. I think the timing had to be right for me. Remember my timing was rather unique. While I was still employed with the bank, I came up here in the summer of 1979 to negotiate the property payments and stuff with my brother and make arrangements with equipment suppliers, that sort of thing, and if you would recall history, gold was at $300 an ounce in the summer of 1979 and it peaked on January 20th 1980, at $850 US an ounce and was on its way back down by the time I got here to start my operation. Mind you, the first summer that I was in operation, the average price of gold - which I'll never forget because it's the same number as the

airplane and because I probably won't achieve it again in my lifetime - was $747 Canadian. I'd love to do that again.

LvK: Do you think we'll ever see gold go that high again?

NR: Not in my placer mining career. But I hope certainly in my son's or my son-in-law's or my employees'; I hope they see it. I think the potential is there. I hope it doesn't occur for the same reason. It occurred at that time, in my opinion, because of rampant inflation around the world, and, unfortunately, a rapid rise like that doesn't do anyone any good. It ends up creating a tremendous amount of promotion which does a lot of damage to the industry. There was a lot of damage done in the '80s, the early '80s, what they called the "second gold rush". There was a lot of damage done, business-wise. People rushing in to take advantage. Promoters promoting moose pasture. That doesn't establish credibility. The shake-out that followed left some very credible operators that operated very well, for 10-15 years following that, until we were into this semi-crash of '97.

LvK: With countries the world over dumping tons of gold on the market, what is the impact to our economy?

NR: It definitely hurts the gold industry. It casts a very long shadow on the industry, and the formation of the European Economic Unit, if you like, and whether they will sell so many hundred or thousand, or 500 tons of gold into the market, and over what period of time. This left a lot of uncertainty out there and money doesn't like uncertainty. So it has caused a lot of problems for the gold price and therefore the gold producers. I don't know that I can look at this objectively, and maybe I'm out of phase, or I'm out of style, if you like, in terms of gold as a support for the central banks and therefore currencies, and therefore the economy. But it doesn't matter to me whether it is so many tons of peanuts, or so many ingots of lead, or fortunately there's been gold in the past, but I believe strongly that every economy and society requires a basic discipline. I'm not convinced that many politicians who write the laws of our country have a sound economic understanding, and I think that every system requires a discipline. What I'm getting at in a rather long-winded fashion is to say that I believe that gold provides a stability to our currencies, to our economy, because it doesn't allow you to do certain things because of the laws that you have. If you state that you must have so many ounces of gold per so many dollars of currency, that's a discipline, and it therefore doesn't allow you to go out and print twice as much currency, which could create rapid inflation. Somebody says, "So what's the value of gold?" "So why is gold so special?" I can't answer that except to say that it has a history. It has an intrinsic value and it has, therefore, formed for thousands of years a history as the only true international currency. Without a very stern discipline or restriction, I think we're going to pay the price.

LvK: Should we go back to a gold standard?

NR: I believe they should have some base of gold standard, yes, in their currency. What that number should be, whether they've had too much in the past or not, I don't have a good handle of that. But yes, I think it forms a discipline to society. But we'll pay the price, again probably not in my mining career, but I think we're going to pay that price for the currencies and whether we're seeing it sooner than I expected, whether we're seeing it in Asia today, I don't know. I left the bank in 1980, because I thought of my privileged position of being in a world banking organization with access to information from all over the world, and I felt very strongly that the South African gold mining industry was going to decline and therefore, from that, I deduced that the price of gold was going to rise. Remember that the price of gold was $850.00 an ounce, but that was a spike. I wasn't thinking of that in that terminology. That in fact has happened. The only difference is I expected it to happen within 5 to 10 years, and it took 25 years. So perhaps my estimation of the currencies being in trouble and requiring some foundation such as a gold-backed standard, is right, but I might be 25 years too soon.

"There was a lot of damage done in the '80s, the early '80s, what they called the "second gold rush". There was a lot of damage done, business-wise. People rushing in to take advantage. Promoters promoting moose pasture, That doesn't establish credibility."

LvK: What made you want to become president of the *KPMA (Klondike Placer Mining Association)*?

NR: I don't know if I did want to become president of the *KPMA*. I was almost pushed into it. I came back to placer mining in the Yukon in

1980, and in 1981, my brother told me that the *KPMA* wanted me to go to the fall meeting, whereupon I was elected vice-president of the association. I've got a leader insight in me, that's my nature partly, but I didn't go out and actively seek the presidency, I was asked to participate. From my personal side, I wanted to make a contribution to the placer industry.

"I've got a leader insight in me."

LvK: When you went to the *KPMA* meetings, you obviously saw the problems in the industry; what was going on. What did you hope to accomplish when you became the president?

NR: Well, I hoped to accomplish something that was not necessarily accomplished just during my presidency, but that I played a significant long term role in helping to accomplish: and that is a regulatory system for the industry that would give the industry some legal certainty. I'm using buzz-words to try and describe what I thought was badly missing. What was wrong before, in my eyes and in the eyes of many in the industry, was that there was a fragmented regulatory system where one department could give me a licence to operate and another department could come on to my property and shut me down for a totally different reason. And I use the example of what had happened in Alaska where they wrote very stringent environmental regulations for the industry without any cooperation or coordination with the industry itself. Written purely by government. When they tried to implement it, it was discovered that this regulation was far too strict and that the industry couldn't meet the standards, even with a very strong effort. So they decided not to apply the regulations, which created the entrance of the Sierra Club, which then sued the government and said, "You're not enforcing your regulations". And they said, "We know, they can't meet them", and they said, "Too bad. That's the law, that's the law." That had just happened prior to my presidency and I didn't want that for Canada and I didn't want it for the Yukon placer industry, and so I took on the initiative to go and ring the bell in Ottawa to say, "This isn't necessary". We can do better, and I think we did do better. And I think the Federal Government right to the Ottawa level recognized that what the *KPMA* did in cooperation with senior government departments, *DIAND (Dept. of Indian and Northern Development)* and *DFO (Dept. Of Fisheries and Oceans)* principally, was a first, and was held out as an example more than once for cooperative resource development.

LvK: On the things that you accomplished within the *KPMA:* is there anything that you didn't get to finish or that you would like to have implemented?

NR: Well, there is always something from this industry because it plays such a significant role in the Yukon economy and therefore in the Yukon society. There will always be things to do, so it's a job that can't be finished. My biggest regret is that I feel in some ways we've gone backwards. My biggest success or accomplishment, or greatest joy, was that in fact we did accomplish the *YPA (Yukon Placer Authorization)* regulations, and I felt I brought credibility to my industry and I went to Ottawa and beat on the doors until they

let me in, per se, and came home with the prize. And that I hold very dear, but I didn't do it alone. I did bring to the industry something that the industry doesn't have a lot of, and that is I brought an education, an engineering background. I brought a business career that I had prior to coming back to the industry. I brought the contacts I had with business and government across Canada to help me to achieve those goals that I wanted to achieve for the industry, and to leave a mark with the industry.

LvK: What's different about when you were president to what the current president has to deal with?

NR: Unfortunately, not a great deal, and I'm disappointed to say that. Because of what has happened, what is happening, or what is looming out there as potential difficulties in the regulatory side of it, I feel disappointed that we've almost slipped back to where we were when I took over the presidency. There was a very high level of energy; emotional reaction; good-guy-bad-guy relationship. If you were with the government and I was a placer miner, you were automatically a bad guy. Unfortunately, we've seen the other way around, too. And a lot of those walls we beat down, and I'm proud to say that I think some of that came about by the industry going to government saying we need a solution to this problem, and I think we did some very credible work. And I think there were quite a few years where this became a lot more intelligent approach to the regulatory process.

LvK: Is Ottawa is still listening to the *KPMA*?

NR: No, I think that Ottawa has taken a different turn. We are fortunate today, at least, that I have one man in Ottawa that knows that the Yukon is here, that there is a placer industry here in the Yukon. I'm being a bit facetious because I watched the Prime Minister last year and I shook his hand when he came to the Yukon and he reflected on the days when he was the Minister of Northern Affairs under the Trudeau government and that sort of thing, and I say to myself, I don't understand, sir, why you don't really get a better handle on what's going on today, because I felt we were totally ignored through the first term of the new government. David Anderson, who has now been appointed Minister of Fisheries, was the Fisheries representative from British Columbia who sat on the Christensen commission in 1983, which I was an active part of. He knows something about our industry, he knows of its importance here, he may or may not truly understand what its real impact is, because I don't think he ever got that deeply

involved, but at least he has some personal recognition, some personal working relationship, and I think the Yukon needs that. The Yukon needs to have people because we're so far away, we're the last appendage if you like. We need to have people that recognize that we have something going on here that is of significance, not only to our society but to Canada.

LvK: What are we doing wrong in the mining industry ?

NR: We're not necessarily doing anything wrong, it's just such a high risk industry. It has the deterrent of an unproven reserve body. I have a very large claim block but to say to a banker, to a financier or to an investor, that I can define 200,000 ounces of gold, 400,000 ounces of gold, whatever number, is not a true statement from a professional engineer's standpoint, because I don't believe that all the drilling, the history of mining, necessarily defines a proven reserve. It can in hardrock mining, but I don't believe it can in placer mining.

LvK: Why is that?

NR: It's too erratic. The deposits are highly erratic or highly variable because the mineral is not fixed in the rock formation, therefore its concentrations fluctuate widely as opposed to hardrock gold or hardrock copper, where the magma has injected that mineralization into the surrounding host formations. These somewhat confined deposits can be mapped and followed, subject to faulting of course, and all the other geological terms. Placer mining is just extremely variable.

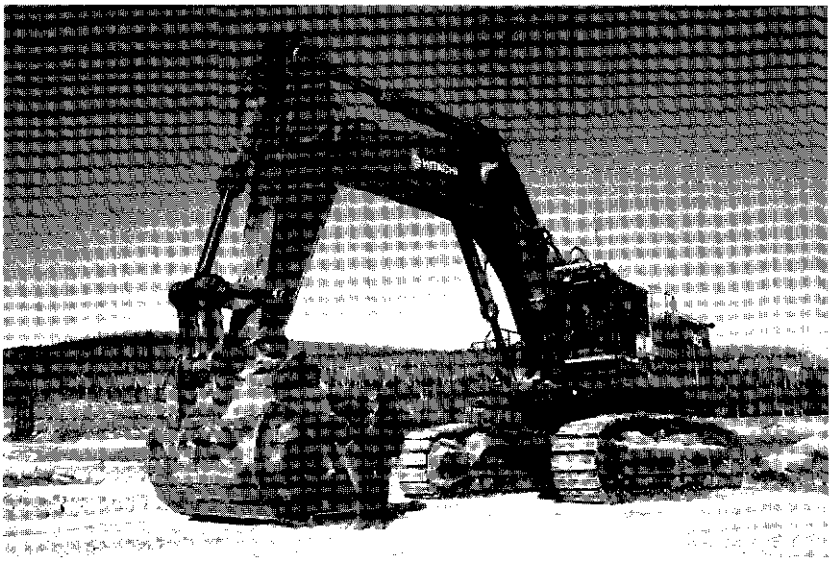
LvK: What are the challenges of the mining industry?

NR: What I think they should focus on first of all is learning to be more disciplined in terms of

"My biggest regret is that I feel in some ways we've gone backwards. My biggest success or accomplishment, or greatest joy, was that in fact we did accomplish the *YPA (Yukon Placer Authorization)* regulations, and I felt I brought credibility to my industry and I went to Ottawa and beat on the doors until they let me in, per se, and came home with the prize."

planning. I mean that from preparation, advance preparation of reserves, and from advance exploration of reserves. While I said you can't define a proven reserve, you can certainly outline probable reserves by auger drilling for example, and I think that's necessary.And I use it as a planning tool all the time. I use it to delimit the reserves, that is, establish the outer boundaries of my reserves as opposed to establishing a reserve grade. I think this is necessary in the future of the placer industry. Just going out and saying, "I think I'm going to dig here", I don't think we can risk that any more. The probability of achieving your goals are not nearly as high as they could have been before, when you were working within the

"We often think of technology as being a better sluice box, a better mousetrap. That's not true."



confines of the more traditional streams, traditional pay streaks. So I think the challenges to the industry will always be long-term planning, preparation, and being able to obtain the capital to achieve those two goals. It's a catch-22. If you don't have a healthy, profitable industry, they in fact can't invest in the future, and as I said earlier, they can't reinvest in themselves. I think that's a big challenge. Technology will remain a challenge. We often think only of technology as being a better sluice box, a better mousetrap. That's not true. The technology that has allowed the industry to continue certainly in the last 10-15 years in the face of declining gold prices, is the higher productivity of the excavating equipment. The technology has advanced tremendously. It didn't get advanced for the placer industry. We're fortunate it got advanced for the construction industry, and we benefitted from that. By the same token, we have to continue to improve the processing side. I have a catch phrase that I told people for years: there is a big difference between fine gold recovery and economic fine gold recovery. The word is economic, of course. Sometimes you have to trade off actual recovery with throughput. We're talking about a finite, short season. We have to be able to move volumes of material. Let's say that we had a recovery process of 95% and we were able to put 80 yards an hour through our plant. If we reduce that recovery to possibly 90% and put 160 yards an hour through our plant, we in fact would generate a higher resource for a very minimal loss in gold through our plant. These are the type of economic considerations that you have to study carefully. It's not necessarily looked at very scientifically. The industry, by working with Randy Clarkson, has done a fairly good job in trying to do that, but there will always be a need for processing technology advances.

LvK: What do you see as significant developments or changes in the placer mining industry since you started mining, ie: regulatory regime, and the good or bad things about it?

NR: I've devoted over ten years of my career and my life to establishing what I felt were reasonable, responsible regulations for the placer industry. Coordinating that through the one window approach to the Yukon Territory Water Board in terms of filing applications, having the Water Board as an agent and dispersing that to the various interested parties and then coming back to writing water licences which gave us some legal certainty to operate. When I got involved in 1981, I think the regulatory system was highly fragmented in terms of two principle departments with authority over the placer industry, and that is *DIAND* responsible for waters, and Fisheries responsible for fish and fish habitat, and never the twain shall meet. We devoted a tremendous

amount of energy to helping change this, and we could not have brought it about without the cooperation of those two departments plus others. It was to my knowledge one of the first times that Fisheries, *DIAND*, the Department of the Environment, the Territorial Government and the placer industry got together to present a unified single approach to the regulation of the industry. They gave us a known working document where all sides had input to the regulations and no one side was dictating, if you like, that it must be this way or it must be that way regardless. It brought some understanding to the table. I feel that agreement is in jeopardy because of what I spoke about earlier in terms of various other overlapping agencies.

LvK: It's been said that the Yukon is just getting up to speed with environmental regulations with the rest of the country. What do you think?

NR: I think that's bunk in that Yukon society does not have the interaction with the tremendous number of people, doesn't have the pressure of the people on it, and therefore development going on in the Yukon does not have the same impact as development on the outskirts of Vancouver or in any of the more populated provinces or any of the more populated places in Canada. I'm not saying devastate the wilderness of the Yukon. That's a total misconception. I am saying that if you build a new home in the centre of Whitehorse, the difficulty of building that home due to the traffic, the crowding, the population and the surrounding industries is one tenth of what it would be to build a new home in the same centre core of, say, Vancouver. The impact of developing a placer mine on Dominion Creek where I'm at has a very minimal impact on the society of the Yukon as compared to the development of a placer mine on the Fraser River in the Fraser Valley. So to say that we're just getting up to speed because we don't have as many regulatory agencies as they have in British Columbia doesn't make sense. We still must maintain proper environmental and responsible control of our resources. I have no problem with that whatsoever.

LvK: Do you think that our industries are more fragile than those in the south? With regards to population, and isolation from the rest of the country?

NR: I believe that all of the industries of the Yukon are far more fragile than the industries of what we like to call "the Outside", only because they have less opportunity, they have higher infrastructure costs, and they have higher costs for development in general. They must import the technology, the equipment, quite often even labour because of the shortage of labour.

LvK: Aside from the gold price, what does the mining industry have to do to turn itself around in the Yukon? Or can it?

NR: I don't think that below $350 US that there's anything they can do to turn themselves around. I think we will deteriorate rather rapidly and I think we'll lose a large number of jobs, and again, I emphasize that most of the small operations are going to be extremely vulnerable. Some of the large producers will also be vulnerable. There will be job losses because they'll cut back, try and run just as lean and mean as they possibly can. We have, of course, lost one of the major producers but that was just due to reserves and corporate planning. This of course is Teck Corp., but all of the operations, including my own, will be cut back at these lower prices. What can the Yukon do, though, to assist placer mining? I think we have to continue to do something that was started in the '80s and that is, we have to look to more efficient technology, more efficient uses of equipment. And there's something looming very large out there now that may be a sore point but is one that I think that everyone should concentrate on, and that is there are a lot of new regulatory agencies being established as we establish multiple layers of government. I refer of course to the Territorial Government, the Federal Government and of course the new land claims settlement creates another level of government. I see a lot of overlapping of these governments and creation of new regulatory systems independent of each other. And when they are independent of each other, they are going to be restrictive to development.

LvK: What would you say to the person that wants to go placer mining?

NR: Like any other industry or any other young person looking to get up that ladder, it's not easy. It's often said that if it was easy, of course,

"The impact of developing a placer mine on Dominion Creek where I'm at has a very minimal impact on the society of the Yukon as compared to the development of a placer mine on the Fraser River in the Fraser Valley. So to say that we're just getting up to speed because we don't have as many regulatory agencies as they have in British Columbia doesn't make sense. We still must maintain proper environmental and responsible control of our resources. I have no problem with that whatsoever."

everybody would do it. I was very fortunate in many ways in that I got the right breaks at the right time. I put a tremendous amount of work and effort into it to grow, and made some good business decisions at the right time. The starting part is difficult, certainly, and it's not that it can't be done. It certainly can be done. They can start with a small plant and two or three machines and two or three people perhaps, and build it up. Remember I said that I felt that the small industry is certainly far more vulnerable and for that reason, therefore, the banks don't look favourably on it.

LvK: Because of the lack of proven reserves?

"So I think the challenges to the industry will always be long-term planning, preparation, and being able to obtain the capital to achieve those two goals."

NR: Lack of proven reserves and the lack of success, historic success, of these small operations. We are now one of the largest producers in the Yukon and we started very modestly, and for us it's taken over 17 years, it didn't happen in one year. That's part of it. And the other part of it is that the banks are going to have a very difficult time, I feel, this year with the placer industry in general. There's going to be large losses in the industry and the banks tend to look at trends. And so now the trend is going to be down and not up, so it's going to be less favourable towards small entrepreneurs, so they have to start from an equity base some other way. There are ways of doing it, and one of the ways that we did it was that we found an equipment company that was willing to lease equipment to us with the option to buy that lease out at the end. And that's how we climbed the ladder, we didn't leapfrog, we climbed it slowly step by step, to build the equipment base we have today. That's a form of financing. That's one way. But more than the banks I think is finding that equity investment to get yourself started and then finding ways of financing your equipment that you need. You've got to work with other people, equity investors primarily to support you and get started, and to help you make those first steps. And then you have to work extremely hard to meet your commitments and make sure that you prove yourself, because if you don't prove yourself, they're going to be very nervous about expanding that in any way. I refer to equipment people who may lease you equipment for a year but come the end of the year you say, "Look, I'm sorry, I can only pay half of my payments". They're very reluctant to give you that opportunity again. So it's difficult for them to do it and the price of gold right now is making it extremely difficult, because there are very few rich plots of ground. There are an awful lot of people in the placer industry that in fact are not making a fortune, they're not making an adequate return on investment. They're doing it for lifestyle, they're doing it for the independence, and they're probably making average wages. I was quite surprised when the most credible study that's been done in the industry to date came up with the fact that there was probably an average return on investment of 8% in the industry, and many, many of the operations were below marginal because of the size of the operations. And I think those were quite good numbers and it surprised me that it was that low because as you know, in an industry with that high level of risk, you wouldn't get a major company looking at a return of anything less than, say, 15%. So it sort of brought home the risk element of the industry and the mom and pops, the small operators, there's lots of them doing it for lifestyle, which is fine. But if you take a serious look at it, that's why it has catch-22 the I was talking about, being able to lever yourself up. Because if you take those numbers and present them to your banker he says, "Well, that's nice. Last year you got 4.3% return on your investment and you could have done that well in a savings account, or better. What incentive do we have to lend you money for your industry?"

LVK: Which scenario is best? The bigger operation, with greater costs? Or the smaller operator, smaller costs, and not so much overhead?

NR: A very well run small operation where there is adequate ground to provide the cash flow, can do a more efficient job of mining let's say. The reason for that is, bigger isn't necessarily better. Bigger is only better if it maintains a high level of productivity and a high level of efficiency in processing, and that requires very careful management.

LvK: What do you think of the New Zealand type of trommel sluice plant?

NR: I think they're a very effective plant and I think that they are quite efficient. A trommel is, in my opinion, less productive in terms of yardage through put than the screen decks which are also widely used at this time. I think that's the restriction of a trommel. The advantage to the trommel is that if you're in an area with a very high clay count, then they're a very good scrubbing tool and the screen deck is less efficient on the scrubbing side, so it depends again on your material.

LvK: Now that Teck Corp. is finished mining in the Yukon tell me, who was bigger?

NR: I don't know what you'd measure it by. In terms of the number of people,Teck was certainly larger than we were. In terms of cubic yards moved per year, we were probably equivalent. In terms of ounces produced, I always figured Teck did better than I did and I was jealous (laughter), but that's OK.

LvK: In the last two or three decades, how has access to mining areas and the road network changed since you were there in 1958?

NR: There's still not a road to Kirkman, but there are two or three airstrips that weren't there when I was there, but the highways have improved considerably. I'm fortunate that the Granville loop, which was put in by *YCGC (Yukon Consolidated Gold Corp.)* to service their dredges is a government road and is maintained by the government. I have several routes that I can go around the loop and into town, say four different combinations, so I can usually always get to town. They were pretty narrow, rough trails when they were maintained by *YCGC,* and of course after *YCGC* shut down in 1966, they became really rugged trails because they weren't maintained by anybody. I recall Teck and I going out onto the road in 1981 and rebuilding a section of it so we could get our supplies such as fuel tankers and that sort of thing through to our camps. Today you can drive in there with your car and not usually be in any jeopardy, subject to weather conditions of course. Roads are looked after very well. I buy my fuel in tanker lots of up to 10,000 gallons and they can come directly from the refineries in Fairbanks to my property, and there's very minimal risk of road hazards. So the roads have greatly improved and they've helped to improve the efficiency of our operation. We've brought in extremely large equipment such as the backhoe which I bought in Kentucky and, while it was leased to Anvil for a period of time, it moved on to my property. That's a huge piece of equipment, 250,000 tonnes altogether and several truck loads, but that size of equipment can be brought in, and in 1958 or the early '80s, that wouldn't have been possible.

LvK: I've been to your camp on Gold Run Creek several times and it's very grandiose. You obviously give the impression that you like taking care of the people who work for you.

NR: Yes, I tried to establish a philosophy because in my young working career I worked on the oil rigs, I've worked in construction camps, I've worked in remote areas, and I've worked for major companies of course, but one of the things that I felt very strongly about when I was in a position to do something about it: firstly that the people who work for me are an extension of my family, and I don't mean that in a silly way by any means. I mean I have some very dear friends who work for me and they're very good employees and, of course, I have other people that will never be dear friends that work for me but they're very good employees also. But I felt strongly that Ross Mining was not a place where you came to work and you received a payroll number and you were basically the payroll number, which happens in large corporations, which happens on many construction sites because of the quick changes and movement of people in and out and the lack of longevity. I wanted some place where people could come to work, but also they could come to live and to raise their families and that's why we have family homes. And you complimented me on our camp and that sort of thing, and I've got to be really quick here and make sure that I pay a compliment to the person who deserves that and that goes to my wife Sandy, who is an absolutely excellent designer, coordinator, interior decorator, and Sandy has played the role of making the camp what it is. I have always been on the mining side of it. I established the philosophy, and we agree on the philosophy, and she deserves credit for the

"A very well run small operation where there is adequate ground to provide the cash flow, can do a more efficient job of mining let's say. The reason for that is, bigger isn't necessarily better. Bigger is only better if it maintains ahigh level of productivity and a high evel of efficiency in processing, and that requires very careful management."

"I started on a family ranch growing up with my family, where the family was the unit that drove the entity if you like, and placer mining is very much the same way."

style that's there. She brought class to our operation.

LvK: Your life has almost gone full circle. The isolated life you had when you were a child growing up in the outskirts of Fort St. John, pulling a sled with your sisters in it to school, and then watching your grandchildren play at camp.

NR: In many ways, I have. I started on a family ranch growing up with my family, where the family was the unit that drove the entity if you like, and placer mining is very much the same way. It's a pleasure to be that way. Mind you, the log cabin that I was raised in for the first few years of my life on the Halfway River is a long ways from the home that I built on Dominion Creek, and I have a pet expression: that it's a long ways from the Halfway. But there are similarities, yes. Perhaps we go back to our roots. Perhaps we go full circle and the family life side of it is certainly highly rewarding for anyone in the industry, that's for sure. That's the way I started; that's the way I grew up.

Acknowledgements

I would like to thank Norm for his frank, insightful and interesting thoughts on issues of the day, with intimate reflections on his personal life.

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A Short History of The Finding of Gold in the Klondike

David Neufeld
Yukon and western Arctic Historian, Parks Canada

Introduction

Gold was first reported in the Yukon region by fur traders and missionaries in the mid 1800s. Robert Campbell, the adventurous Hudson's Bay Company fur trader, noted the presence of gold near the site of Fort Selkirk in the early 1850s.

Neither missionaries nor fur traders were interested in gold. The church was in the region to convert the natives to Christianity while the certainty of sustainable and lucrative fur trade made scrambling about in the mud and icy waters of northern rivers looking for gold an alternative of limited appeal. In fact, both Church and Company viewed gold, and the certain disruption of their work by miners from outside, as a threat.

Even though gold might be present, mining it seemed very challenging and offered only a hard life. Dr. Willis E. Everette, reporting on a trip down the Yukon River in 1884, wrote:

It would not be a very paying investment for any band of able-bodied men to leave fair daily wages and come up to prospect these frozen regions. Certainly, they might make $10 or $20 per day to the man during this working season, and then again, they might not make 10 cents. But in the meantime, during the working season, first, they would have to be without half of the common necessaries of life; second, constantly in danger from the Tanana Indians, who would be very jealous of them, and in all likelihood cause them much trouble; third, they could only work for three months out of twelve, and the remaining nine months be compelled to do something else for a living; fourth, and something else in this bleak interior for a miner would mean nothing else; fifth, the profit thus made during the short working season would be more than swallowed up during the the long non-working season; sixth, and lastly, the very great difficulty in getting self, tools and provisions into the country, and their extreme high cost, makes this Alaskan interior a very unfortunate mining country.[2]

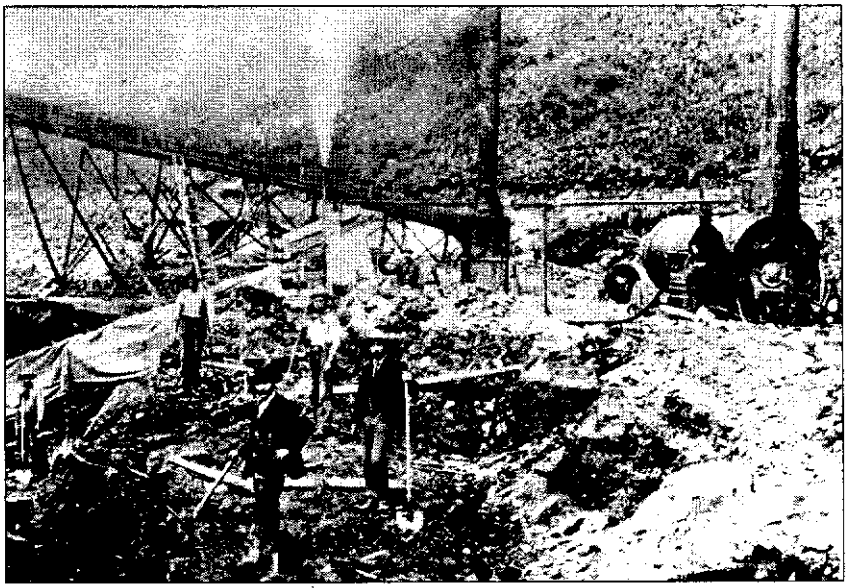
Nevertheless miners did drift into the region. The western mountains of North America had long attracted gold prospectors and miners. Gold strikes through the nineteenth century (California in 1848, the Fraser River in British Columbia in 1858, the Boise strike in Idaho and the Cariboo in 1862) all drew interested men north. Another factor encouraging prospectors northward was economic depression. During the late 1880s and 1890s Europe, Canada and the United States experienced a depression worse than that of the 1930s. Bishop Bompas, the Anglican missionary near Forty Mile commented in 1894: *There appears to be at present such a lamentable lack of employment for working men in the United States that they are glad to come here in hopes of making a living.*[3]

In the late 1850s, Rev. McDonald described a creek, probably Birch Creek near present Circle, Alaska, where there was "so much gold... he could have gathered it with a spoon."[1]

Discovering Gold

Travelling the old and labourious Hudson's Bay Company overland route from the Mackenzie River and gradually creeping up the Yukon from the old Russian settlements, a few dozen miners found promising traces on the rivers and creeks draining into the Yukon River. Miners on the Alaskan coast pressed the Tlingit for direct access to the Yukon through their trading passes. In 1880, the first party of miners was finally allowed to travel through one of the less important Tlingit trade routes, the Chilkoot Trail.[4]

Over the next fifteen years, prospectors fanned out over the Yukon, spending the summers panning the sand bars of the rivers and looking for the big strike. At first, few stayed year round in the interior, but as promising ground was found, more men stayed the winter to hold their good spots. The miners quickly found that the best way to survive a



James "Skookum" Jim Mason (hand on hip) on his claim, No. 1 above discovery, Bonanza Creek in 1899.
JA Johnson Coll., Yukon Archives

Yukon winter was to partner up with a First Nation woman. Her abilities to butcher and cook moose, snare rabbits, prepare and repair skin clothing and her extended family relations were invaluable assets over and above the importance and comforts of a marital relationship. One such relationship spawned the gold rush that brought the Klondike to the attention of the world.[5]

Shaaw Tláa was a Carcross-Tagish woman of the Dakl'aweidi clan in the southern Yukon in the early 1890s. Already once widowed herself, she married her dead sister's husband, an American prospector and trader named George Washington Carmacks. Carmacks ran a small trading post down river, at the confluence of the Nordenskiold and Yukon Rivers, and the couple headed north. After an absence of several years, Shaaw Tláa's mother, Gus'dutéen, began to worry about her daughter and asked her son Keish to go down river to get news of his sister and brother-in-law.

Keish was also known as "Skookum (strong) Jim" for his feats of packing goods on the mountain trails to and from the coast. Keish, like many First Nations individuals, had a spirit helper which gave him luck and reminded him of his community and family obligations. Some time previous to his mother's request, Keish had several dreams where his spirit helper, a frog, appeared. Once, in the form of Wealth Woman, his spirit helper promised to guide Keish to great wealth. In the spring of 1896, Keish and two of his nephews, Káa Goox (Dawson Charlie) and Koolseen (Patsy Henderson) started down river to find Shaaw Tláa (Kate) and her husband George.

The group of men met George and Shaaw Tláa far down the Yukon River during the salmon run. They settled on a good fish camp and began cutting a timber raft to sell at the Forty Mile mining camp. On the advice of a passing Nova Scotia prospector, Robert Henderson, they did some prospecting on a nearby creek. In mid-August, 1896, Skookum Jim found gold and the group quickly staked several claims and travelled to Forty Mile to register them at the North-West Mounted Police post.

The Klondike Gold Rush

The news of a gold strike travelled quickly through the Yukon River country. Hundreds of prospectors rushed to what became known as the Klondike. The miners eagerly staked claims and spent the winter digging into the frozen soil in pursuit of the paystreak. However, the winter also closed the doors of the Yukon before more than rumours of the strike trickled Outside.

What finally set off "Klondike Fever" was the arrival of two gold-laden ships on the American west coast the following summer. On July 15, 1897, almost a year after the original discovery, the *Excelsior* steamed into San Francisco. The ship carried a score of Yukon miners and hundreds of kilograms of raw gold worth some 3/4 million dollars. Two days later, Seattle's waterfront was the scene of an even more dramatic arrival as the *Portland* docked. Newspapers trumpeted the arrival of "more than a ton of solid gold." The phrase, "a ton of gold," was soon on everyone's lips. Reality surpassed rumour: the *Portland* actually carried more than two tons of gold.[6] For the next two years, tens of thousands stampeded to the north in search of their fortunes.

While the promise of wealth drew many people, there was another reason for the mad rush to the Klondike - a dream of a better life beyond the frontier. The frontier offered a promise of free land and free gold, a fresh start for people crushed by a deep economic depression and confined by the growing congestion of industrializing cities. Esther

Lyons, a young woman crossing the Chilkoot Pass in the spring of 1897, paused at the summit and wrote: "What pen can describe that hour on the summit of the Chilkoot? Behind us civilization; before us vastness, silence, grandeur. What a place to think, to dream!"[7] The appeal of the frontier, especially in nineteenth century North America, was powerful. And it drew a tide of Stampeders.

This desire to make a fresh start and the whole idea of wilderness presumed empty land, free for the taking. Would-be miners claimed vast areas of land, sawyers cut whole forests for lumber and businessmen laid out townsites and began selling lots to people building stores and houses. The old relationships between the early prospectors and First Nations, tenuous at best, were now gone, lost in the rush to "civilize" the wilderness of the Yukon.

At Dawson City, the boom was a three-year binge of construction and frenetic boosting. The existing Han fish camp at the mouth of the Klondike River was taken over by the newcomers. Soon a brewery, market gardens and eventually even a railway yard were spread over the site. Across the Klondike, the main townsite included an extensive Government Reserve with a court house, large administration office and even a palatial Commissioner's Residence for the leading Federal Government official. A major commercial area developed along the Yukon River. As many as a dozen sternwheel steamers at one time tied up to the docks along the waterfront delivering freight and passengers from Outside. Stores and hotels lined Front Street. Behind the stores, in the swampy back lots safe from fire, were the warehouses filled with the supplies need to carry the population through the long northern winters. And beyond the swamp and climbing up the hillsides were the houses, hundreds of houses, some small log cabins like the one which later housed Robert Service, others large ornate Victorian houses decorated with imported wooden filigree and broad verandas like Judge Dugas' home. The town was an imported wonder, in many respects looking like a transplanted southern city.

The Han First Nation people were pushed aside. The Anglican missionary, Bompas, lobbied for a separate reserve for them. The Commissioner during the rush, William Ogilive, also warned Ottawa about possible conflicts between the Han and miners, as the latter expanded their search for gold. However, the Dominion Government cautioned

Early mining in the Klondike was very labour intensive with most of the work done by hand. Anita Johns Coll. Parks Canada

Ogilvie about making any treaties, "the Indians were not to be recognized in any way which would lead them to believe the Govt would do anything for them as Indians." There was a belief that the gold rush would pass quickly and the miners would move on, leaving the Government with unnecessary, and expensive, commitments to the First Nations.

Even so, the pressures in Dawson demanded action. In spring of 1897, the Han people were removed to Moosehide, a reserve, only finally surveyed in 1900, five kilometres down river from Dawson. And while contacts between newcomers and the Han continued, they were limited. Two cultural solitudes were in place - the whites looking after their affairs through the local government, the First Nations now legal charges of the Federal Department of Indian Affairs.

The Klondike Gold Rush of 1897-98 was one part of a continuing expansion of western society into the far corners of the world. The lure of expanded trade, untapped natural resources and the promise of wealth were the attractions, and the richness of the Klondike gold deposits attracted thousands. While the excitement and romance of the rush has drawn historical attention, the principal aim of the newcomers involved was the profitable extraction of the gold. The history of Klondike mining reflects the development of increasingly effective means of mining gold, from the back-breaking labour of individual miners to the technical efficiency

A popular song of the period describes the excitement of the rush.
"Oh, Come to the place where they struck it rich,
Come where the treasure lies hid,
Where your hat full of mud is a five pound note,
and a clod on your heel is a quid."

of huge dredges.

Despite the rampant optimism of the general public, and the 30,000 stampeders who struggled into Dawson, the placer gold was not so easily recovered. While the gold rush enthusiasm soon spent itself, the huge Klondike placer gold deposit was not so quickly exhausted.

During the creation of the Klondike placers, the gold had been worn into small particles and deposited along the stream and riverbeds in highly variable concentrations. The water courses changed considerably over time and large amounts of non-gold bearing material gradually filled up the old valleys. Even with the location of the gold, large portions of the deposit were covered with per-manently frozen overburden tens or even hundreds of feet thick. The early miners laboured and trusted to luck and the richness of the deposit for their success.

The early mining history of the Klondike can be broken into two distinct periods. An initial per-iod from 1896 to about 1902 witnessed a massive influx of people and money geared towards the high grading of the rich placer deposit. After this initial burst of interest followed a period of continued interest and infrastructure development but limited capital. After 1906 corporate capital investment entered the Yukon and directed future development of the industry.

Labour Intensive Mining 1896-1902

The newcomer population in the Klondike region in the last decade of the 19th century consisted largely of individual prospectors, stampeders chasing the gold rush and small-scale entrepreneurs following the stream of humanity

Grand Forks, at the junction of Upper Bonanza and Eldorado Creeks, had a population of 3000 in 1903. It was the centre of a rich mining district. Anita Johns Coll., Parks Canada

north. The regulation of Yukon exploration and mining activities before the entry of the North West Mounted Police in 1894 was very limited. The mining laws governing activity in the Northwest, actually prepared a decade earlier for the British Columbia railway belt, were simply extended to cover this new activity. While the usefulness of these regulations was limited by the inapplicability of many of the terms to Yukon conditions, the most important aspect of the laws remained unhampered. The legislation was based upon the property rights of the individual. To prevent speculation the legislation specifically limited the size of claims to that which could be worked by one man. The number that could be staked by a single individual was controlled for the same reason. Thus, following the example of prairie agricultural development, the individual became the primary developer.

Transportation into the area, limited to a long steamboat trip or a rugged mountain climb, was difficult and seasonal. These conditions made movement into the region both time-consuming and expensive, particularly for bulk goods, effectively limiting mining activity to labour-intensive methods of the individual miner.

The character of the early mining activity was shaped by these constraints. The Klondike placer deposits, however, were exceedingly rich and a good proportion of the gold was concentrated in locations relatively easy to mine. Mining methods were based on lucky strikes in each claim and miners high-graded the easily accessible paystreaks of placer gold. Thousands of people moved into the gold fields to mine their claims or to work for others.

Life on the creek claims was one of hard work in unhealthy and unsafe conditions. The permafrost just below the surface of the ground had to be thawed and a cycle of building fires and shovelling out wet, thawed gravel began. The hand miner generally sank a shaft through ten to 35 feet of frozen muck and gravel overburden to reach the paystreak. Once into the paystreak a miner could hope to thaw and winch out of his mine about 4 1/2 yards of pay-dirt every day. Deposited in a dump nearby, the pay-dirt was sluiced to wash out the gold in the spring when water was available. In addition to digging and sluicing the miner had to cut cordwood, build and maintain dams, flumes, sluice boxes and a winch to support mining, and erect a cabin for himself.

To provide for this large and dynamic society of miners, vibrant communities grew up on the creeks at Grand Forks, Gold Bottom, Caribou City and Granville. Poor transport within the gold fields and the dispersed mining population created an opportunity for independent merchants and tradesmen, though many Dawson businesses also operated branches at these centres. Police, doctors and post offices were located in the communities and churches, schools and libraries were established there as well.

Dawson, however, was and remained the focal point of the Klondike in the years of hand mining. Located on the Yukon River, this city of 10,000 to 20,000 was the regional entry point. Equipped with extensive docks, the largest stores and hotels and a wide range of miner's services, Dawson also had the huge warehouses needed to carry the gold mining population through the winters when connection to the "Outside" was, for all practical purposes, closed. The financial and administrative centre of the Klondike, Dawson had the banks, gold buyers and the offices of the Yukon Commissioner, Mining Recorder and the Territorial Court.

With high gold production and an apparently long future ahead for the Klondike, the Canadian government made a commitment to develop a full range of government services. A complete territorial administrative system was created and in place at Dawson by 1900. This administration was designed to service a large and growing population, reflecting the Dominion Government's continued pursuit of an individualistic property development strategy in the Klondike.

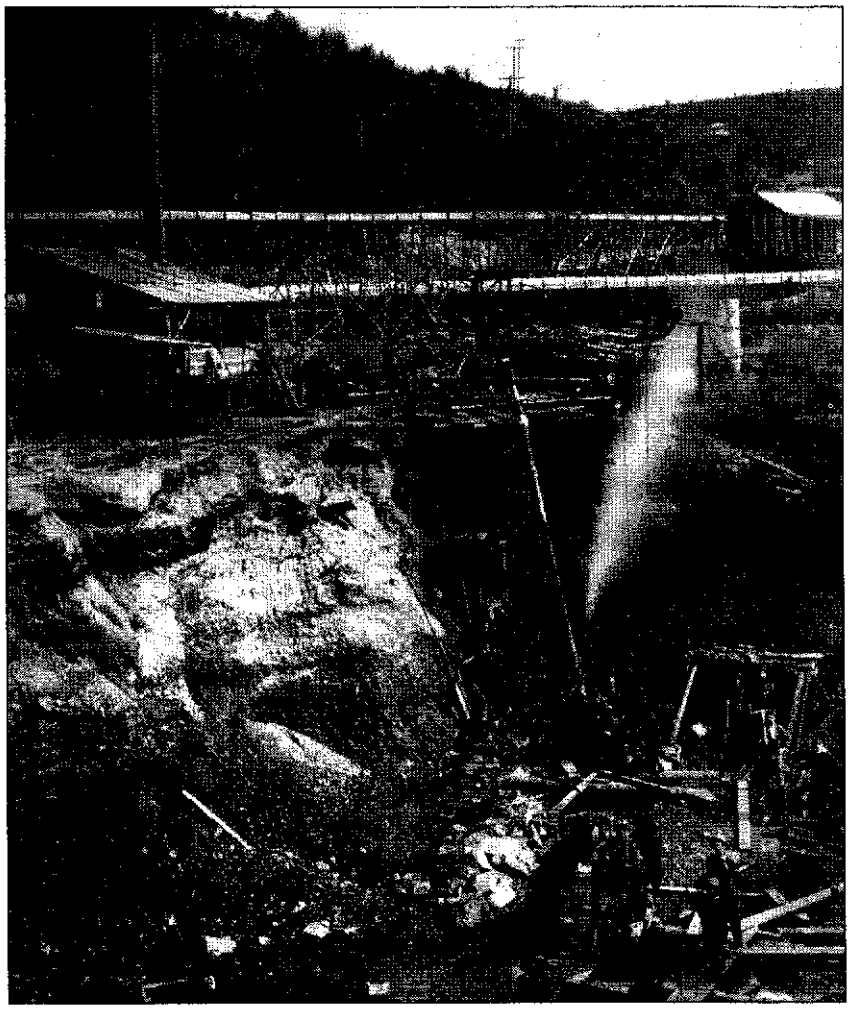
The growth of mining interest in the Klondike was supported by an expansion of commercial supply services. Once the rush was underway the demand for supplies increased dramatically and Outside commercial entrepreneurs took great interest. The Canadian government's reservation of administrative powers and the dispatch of the Mounties into the Klondike fulfilled all the conditions for secure commercial capital investment. The importance of this commercial market can be gauged by estimates of 40,000 stampeders entering the north, with 30,000 actually reaching Dawson. With the "ton of goods" outfit required by the NWMP costing between $100 and $1,000, the value of supplies purchased by stampeders reached between $25 million and $100 million, a significant

amount compared to the peak annual Klondike gold production of $22 million in 1900.

The increased flow of commercial capital into the Klondike led to significant improvements in the transportation system supporting the region. The high volume of traffic in and out of the Klondike attracted considerable interest. A railway through the White Pass, fleets of steamboats on the Yukon River, and the creation of a rail and road network through the Gold Fields were all premised upon the continued expansion of entrepreneurial mining activity in the Yukon. All of these investments were made in light of the labour-intensive, individualistic structure of the period.

In spite of this considerable commercial investment, by 1902 gold production in the Klondike had started to slide. The easily worked surface placers were gone. On the benches the bedrock was buried under unmanageable depths of overburden, unstable slopes on the steep valley sides endangered the creek claims and all miners suffered from stale air in abnormally deep shafts, collapsing drifts, elusive pay streaks and low pay at the end of the search. The days of the hand miner were strictly numbered. Despite the great wealth taken out by a few and the steady wages gained by others, the great volume of the widely dispersed gold deposit remained untouched, and to the valiant if limited efforts of the pick and shovel, would remain untouchable.

Below: Big Alex McDonald's pumping plant on Hunker Creek in 1904. Anita Johns Coll., Parks Canada



Attempts to Mechanize Individualistic Mining 1899-1906

The richness of the Klondike placers continued to attract attention into the 20th century. In the earlier period the Klondike had proved to be a major capital exporting region. Once the stampede faded and the easy placers had been high graded, more economically efficient mining methods were needed if the Klondike was to remain a viable field.

In an effort to reduce their mining costs some miners dabbled in the possibility of importing oriental labour (an idea that was quickly quashed by local opinion) while others introduced profit-sharing or 'lays' to reduce their capital requirements. However, to most it was clear that machine mining offered the real solution to the Klondike dilemma.

The basics of successful placer mining remained the same: locating the paystreak, removing the overburden and separating the gold from the carrier deposit, essentially an exercise in the bulk handling of material. An incredible range of mining equipment was imported or developed locally to address the need for more efficient mining. However, all these efforts can be divided into two basic types: those that continued to be based upon the individual claims or groups of claims, and those premised upon corporate capital investment.

Attempts to mechanize individual claims occurred as early as 1899. Steam thawing of permafrost gravel, widespread by 1900, supported year-round mining and increased the output of the miners that used it. Once steam boilers were

dispersed for thawing work it was not long before they were also powering the locally invented and built "Dawson self dumping carrier", which allowed considerable efficiency in the movement of paydirt from mineface to sluice box and operated overburden scrapers and water pumps for hydraulic work. By 1905 there were even several steam shovels operating on different claims on Eldorado Creek.

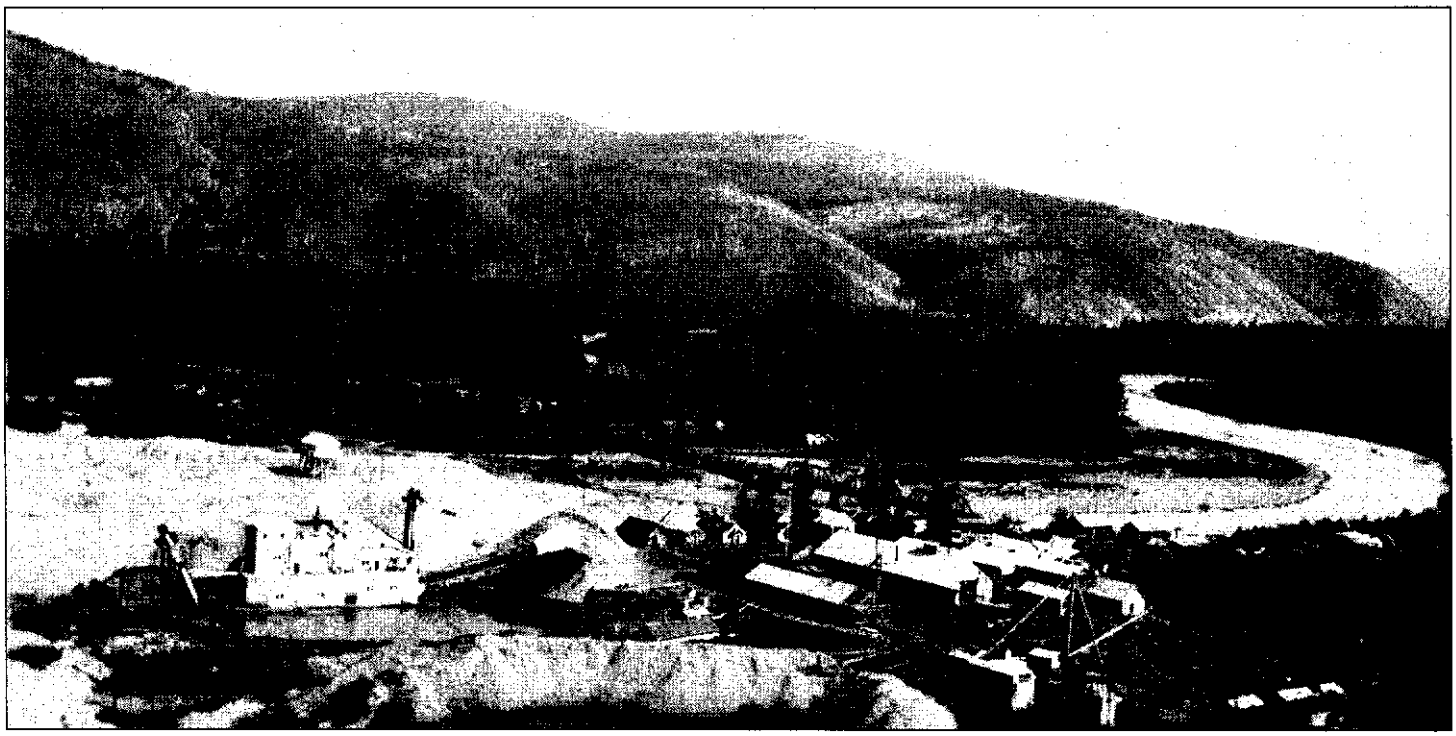
In spite of these developments poor engineering or inadequate support often meant that promising equipment failed to live up to the hopes of its operators. In many cases extra labour had to be hired to compensate for the disappointing performance of equipment. A second difficulty was the increasing price of fuel. By 1905 the immense amounts of fuel required to heat buildings and fire steam boilers had pushed the price of wood and coal to uneconomic levels. An alternative energy source was required. The unreliable supply of water in the Klondike also became an important factor limiting miners' ability to sluice gold. By 1905 a large proportion of mining litigation focused on the allocation of the limited water available.

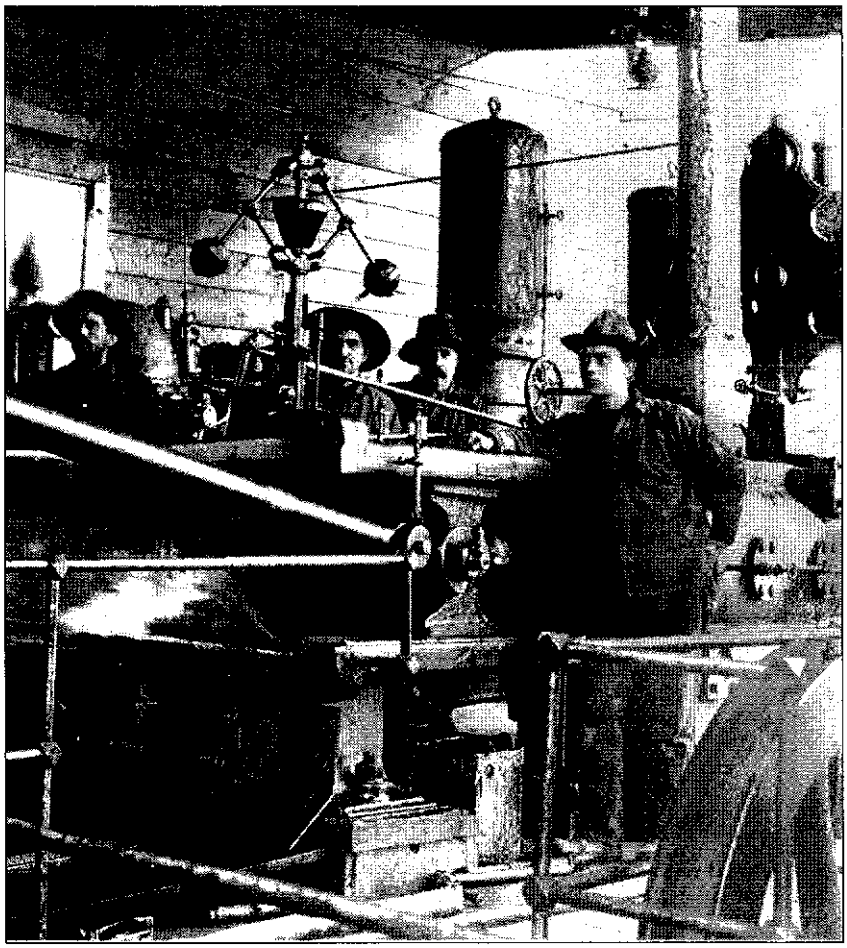
The major limiting factor appears, however, to have been the individualistic claim structure that had shaped early Klondike placer mining. With a single claim, or even in a group of claims, mechanization had to be carefully scaled to the extent and richness of the limited ore body held by the claim. Most steam-powered equipment was simply not able to mine such small areas economically. Even when a miner was successful in applying mechanical equipment to his holding the storage of tailings and the space needed for operations meant that very little of the claim was left for actual mining. This situation was considerably more complicated for mines using hydraulic monitors.

All of these difficulties stemmed from the fragmented approach to exploiting what was essentially a homogeneous resource. Without some comprehensive knowledge about the character of the resource, the major development strategy was one founded on luck. The most effective and efficient mining of the gold fields demanded an integrated scientific approach utilizing the most appropriate tools of modern technology. A radical change in resource development of the Klondike was in the making.

R.G. McConnell, GSC, reported in 1906 "Mining is in a transition stage. The claim-owner is being replaced by companies owning groups of claims and working them with expensive plants. The fabulously rich placers which made Eldorado, Hunker and Bonanza creeks famous have been mostly drifted out and the gravels which remain are too lean, as a rule, to be worked with much profit by the early pick and shovel method."

Dredge working at Bear Creek camp, May, 1919. Lewis Coll., Parks Canada





Steam power plant at a Klondike claim. Anita Johns Coll. PC

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Platinum-Gold Placer Deposits of the Central Ural Mountains, Russia

A brief glimpse into post-Soviet placer mining

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Introduction

The Ural mountain province of Russia (Figure 1) is one of the richest and mineralogically diverse regions in the world, with world-class deposits of platinum and PGE (platinum group elements), gold, copper, emeralds, rubies and malachite. The central Ural mountains are well-known for some of the largest and richest placer platinum and gold deposits in the world, and are the location for the largest gold nugget ever found in Russia (79.5 pounds) and the largest platinum nugget ever found in the world (13 pounds).

This paper documents a short visit by the author to the Ural Mountains and describes some of the placer deposits north of the city of Ekaterinburg in central Russia.

Figure 1. Commonwealth of Independent States

Background

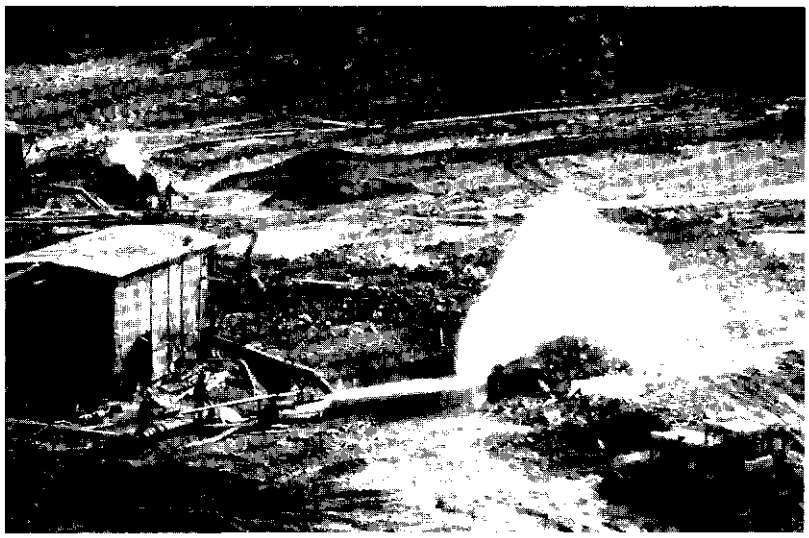
Since the end of the Soviet period the Russian mining industry has undergone drastic fundamental changes, reflecting the difficult transition from state-run mining organizations to a capitalist system of private mining companies, consortiums and joint ventures. In many cases the relationship (at least from a foreigners point of view) between the government and the "private" mining companies is unclear; in many cases the same managers and executives remain in control of the newly formed private companies as had been under the old system. The main change, of course, is the financial accountability of the companies, which now have to use mining profits to pay for things like electricity, equipment and labour previously supplied by the state. This has resulted in mine managers exploring options for greater profit, including joint ventures with foreign companies from such countries as Canada, France, Britain and the USA. It has also changed the way deposits are mined. Several Russian operations are testing and mining "technogenic" placer deposits, which are either deposits which were abandoned after only the highest grade materials were mined out or tailings which were the result of poor processing or mining practices.

Regulatory and legislative changes have also occurred under the new system. Mining companies in Russia are now in many cases subject to environmental standards similar to those found in the West, however reclamation of past-mined areas is not currently being addressed, probably due to economic reasons. One practice which has remained from the old system is the accountability of reserves – a mine must estimate its ore reserves and submit this information to Moscow, which does its own calculations and agrees on a figure with the mine management. The mine must then produce within a small margin the amount of metal that was previously

estimated. A discrepancy on the low side results in questions of hoarding or black market selling of concentrates. A discrepancy on the high side is usually a good thing, however in the past would have required the mine to produce the same higher amount the next year. Stories abound on innovative methods used to avoid this problem, including putting particularly high grade material directly into tailings so the mine did not overproduce, which may have resulted in the creation of many of the "technogenic" deposits.

History of Discoveries of Gold and Platinum in the Urals

The Urals are known as the homeland of the Russian gold and platinum industry. Lode gold was originally discovered in the Beryozovsk area in 1745, and placer gold was discovered at the mouth of the Beryozovsk River in 1814. Gold mining rapidly expanded to the North, Middle and South Urals and by the mid-19th century the Urals produced 39% of the worlds gold.



Hydraulic monitors are extensively used to wash, move and classify material. This operation recovered 10 ounces of gold per day from clay-rich gravel grading US$1.20/yd.

In 1819 a white metal which proved to be osmiridium was noticed in concentrates from the gold placers of Nevyansk, Verkh-Isetsk and Bilimbaevsk. Placer platinum mining began in earnest in 1824 along the Orulikha River followed by the Martyan and Is rivers. Primary platinum deposits were not discovered until 1892-1897, in ultramafic rocks (dunites) of several massifs including Nizhny Tagil, Avrorinskoye and Gosshakhta.

By the beginning of the 20th century the placers of the Urals were producing 96% of the world's platinum. This dropped to 40% of world production by the 1940s. In the presence of diminishing reserves in the 1940s Soviet research began which resulted in the characterization of the Ural placer and primary platinum deposits and the identification of new placer areas. Continued research and geological mapping of primary and surficial deposits by the Institute of Geology and Geochemistry of the Urals Branch of the Soviet (now Russian) Academy of Sciences into the 1980s and 1990s resulted in the discovery of new types of platinum-metal mineralization and new reserves.

Although the focus of Russian gold and platinum placer mining has shifted to the far eastern Siberian provinces, mining continues into the present day in the Urals albeit at reduced levels. In many cases deposits in historic mining areas are being re-mined for remnants or tailings which were not originally processed efficiently, and grades are generally much lower than historic values. The historic total placer platinum production in the Urals is estimated to be 330 tons.

General Geological Setting of Ural Placer Deposits

The central Urals are unglaciated and have a long weathering history. In addition to this influence, placer deposit formation is also controlled by a number of other factors including the location of the primary PGE-bearing zoned mafic-ultramafic complexes. These intrusive complexes consist of dunites, clinopyroxenites and gabbroids that intrude Paleozoic volcanic, clastic and carbonate rocks. The location of Mesozoic erosional-structural depressions is also important, especially where these depressions were occupied by early Miocene river valleys. Several episodes of placer deposit formation have been noted, including late Mesozoic, early Miocene, middle-late Miocene and Pliocene-Quaternary. Each of these placer-forming events reworked and reconcentrated pre-existing deposits as well as eroding and redepositing material from the primary PGE deposits, this had the effect of forming a

complex system of interfingering alluvial deposits of different ages and morphologies. In some cases the richest gold and platinum placer deposits are found in the abandoned river valleys of early Miocene age, or those more recent drainage systems which re-occupied the early Miocene valleys along the Mesozoic erosional-structural zones.

Typical Characteristics of Central Ural Placer deposits

Visim Placer Area

Classified as Old (Pre-Quaternary) placers, the West Alexandrovsk and Novy Log placer deposits consist of deeply-weathered alluvial, proluvial and terrace deposits of early Miocene to Quaternary age. As these placers are derived from nearby primary PGE ultramafic deposits, their platinum metallogeny is identical.

Bedrock in both deposits consists of karsted limestones, dolomites and graphitic slates with limestone interbeds. Clay (kaolin and montmorillonite) is a dominant feature and deposits are fine-grained with clasts ranging only up to cobble size.

The unconsolidated section typically consists of the following from top to bottom:

4 metres of late-Pleistocene brown hydromicaceous clay with sand and pebble interbeds;
3-6 metres of late Pliocene yellow and brown clays and pebbly sand interbeds;
7-10 metres of late Miocene-early Pliocene red hydromicaceous clays with pebbly sands;
15 metres of early Miocene grey-white-yellow clays with quartz sand and quartz pebbles.

Platinum and gold occur throughout the section, however the richest grades are found in the late Pliocene sediments and in concentrations along the karst bedrock in the early Miocene clays. The placer consists of 90 to 95% platinum and 5 to 10% gold. Gold fineness averages 877. The main platinum minerals are isoferroplatinum and tetraferroplatinum, with a grain size range of –18 + 60 mesh. Very small platinum nuggets of up to 1 gram are occasionally found.

The deposits are nearly mined out however small remnants of West Alexandrovsk are being hydraulically mined, and large tailings piles from the Novy Log deposit are being reworked. The Novy Log deposit was originally mined for over 30 years and over 3.5 tonnes of platinum was recovered from a 200m by 500 m by 50m pit.

The Russians have a saying: "Nyet Klondike" – it's not the Klondike!

A type of gold pan known as the kopfsh is a common site in the goldfields of the Ural Mountains. The large capacity and high sides allow for efficient washing of the clay-rich pay gravels commonly encountered.

Nevyansk Placer Area

Gold is the dominant placer mineral in the Shuralin-Yagodnaya and Shuralin-Kluchevsk alluvial-deluvial deposits. These deeply-weathered clay-rich deposits range from late Oligocene to Holocene age. Bedrock consists of stratified volcanogenic and sedimentary (limestone and slate) rocks intruded by a large granodiorite-granite massif. Gold-sulphide quartz veins are typically associated with the intrusive contact zone. The main placers often rest upon karsted limestone bedrock.
A typical section consists of the following:

Middle-Upper Pleistocene to Holocene clays, sands and sandy pebble-boulder gravels;
Late Miocene-early Pliocene red-yellow-brown clays with pebbly interbeds;
Early Miocene sandy hydromicaceous clays with

quartz-rich sandy pebbly interbeds;
Late Oligocene dark grey sandy clays.

Gold, although found throughout all units is more highly concentrated in the Middle Pleistocene clays and gravels. Fineness ranges from 924 to 958, and grades of the best layers average approximately 150-200 ppb (.004 - .006 oz/t). This is roughly $1.20 to $1.80/yard with gold at US$300/oz. The Russians have a saying: "Nyet Klondike" – it's not the Klondike!

A slurry of pay material was pumped via this pipeline to a padlocked, tower-mounted sluicebox a few kilometres away.

Russian Mining and Prospecting Methods

With the inherent problems and expense associated with heavy equipment, the Russians in the central Urals use these as little as possible. However, electricity and manpower are cheap and plentiful, so hydraulic mining is prevalent. Large electrical pumps supply several hydraulic monitors at many minesites. Heavy equipment is usually limited to one D-6 sized bulldozer, the occasional wheel-mounted excavator and electric-powered draglines. At Shuralin-Kluchevsk, material was moved mainly with hydraulic monitors, from the mining cut, across the pit to a screen where coarse (boulder and cobble) gravels were blown off with a monitor and finer material fell through the screen into a slurry pond. This slurry was then pumped out of the pit via a pipeline to a padlocked tower-mounted sluicebox a kilometer away. A very large settling pond (tens of acres) provided settling for a number of placer mining operations in the area.

Many of the other mining tools employed at Ural placer mines are similar to those in the West. Expanded metal screens are often used, as are electrically-powered trommels. A type of Nomad matting is used to line the boxes at some operations. Final concentrations are done by screening, panning and air-sifting. Dry platinum metal concentrates are sifted using a technique of tossing the concentrates into the air and gently blowing on them. The heavy platinum metal moves little in the air stream while the chromite and other heavy minerals are blown towards the back of the pan.

When placer prospecting in the Urals, Russians use a traditional Ural gold pan known as a kopfsh. This is a bowl-shaped cast-iron frying pan, often with a long wooden handle affixed to the iron handle. The bottom is round and the pan holds as much as a large North American gold pan. The round bottom and high sides allows for efficient water washing of the clay-rich material typical of the Urals. The long handle allows for upright panning although the technique is somewhat different from western gold-panning methods. When the clay and sand are panned down, a fire is built and the kopfsh is placed on top of it to dry the concentrates. These concentrates are then placed into a specially folded paper which holds them securely. Dinner can then be cooked in the kopfsh.

Summary

Placer deposits in the central Urals are unglaciated, deeply-weathered, clay-rich and reflect local bedrock sources of Platinum Group Elements (PGE) and gold. Platinum is the dominant metal and the location of placer deposits is related to the location of primary deposits of PGE-bearing mafic-ultramafic massifs. Since mining has taken place for over 180 years, many of the rich centres of Ural placer deposits are mined out. Present-day mining continues on lower grade parts of these deposits and in tailings which are being remined. Heavy mining equipment is generally scarce and expensive and mining operations make use of make use of electricity whenever possible to move material with electrical pumps and draglines.

Acknowledgements

The author gratefully acknowledges the hospitality and insights provided by the conference organizers and leaders of the Urals field trip. These include Dr. Yuri Alekseyevich (Institute of Geology and Geochemistry, Ural Branch of Russian Academy of Sciences), Dr. Alexander Grigoryevich (Professor, Ural State Academy of Mining and Geology) and Dr. Kreisha Malitch (All-Russian Institute of Geology and Mineral Resources of the World Ocean, St. Petersburg, Russia). These researchers provided an unforgettable, enjoyable and enthusiastic tour.

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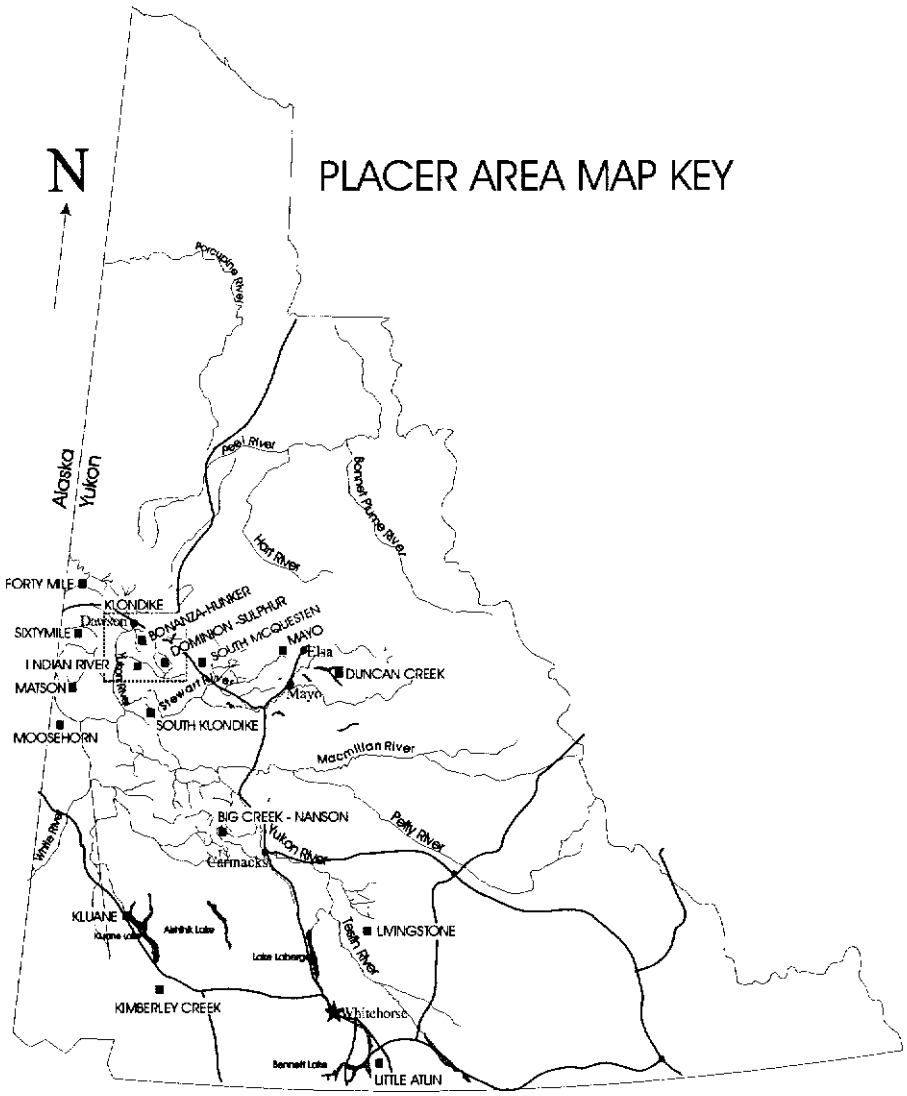
Concentrates in the kopfsh are dried over a campfire, and then collected in a folded paper envelope for later examination.

YUKON PLACER INDUSTRY ACTIVITY



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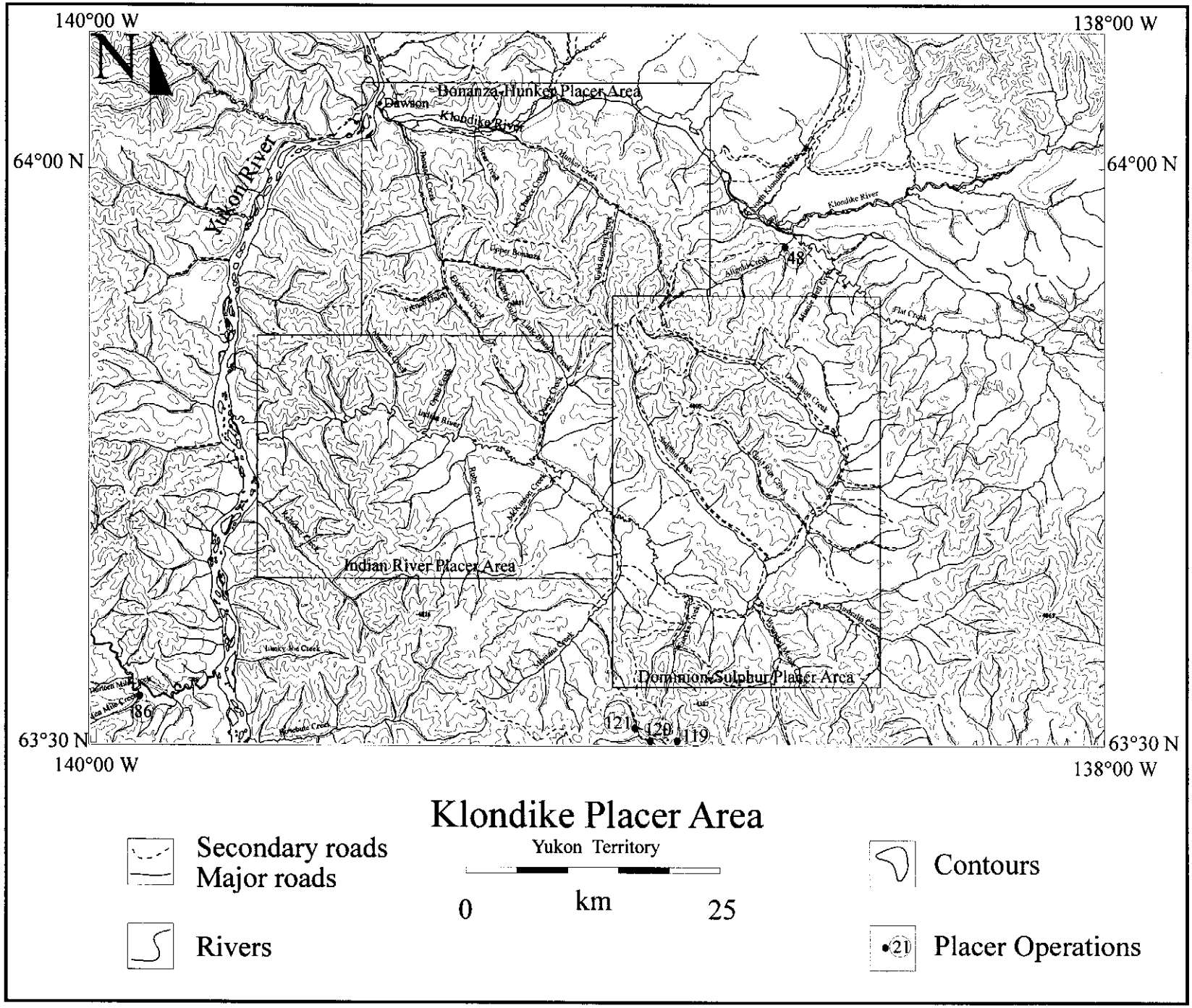
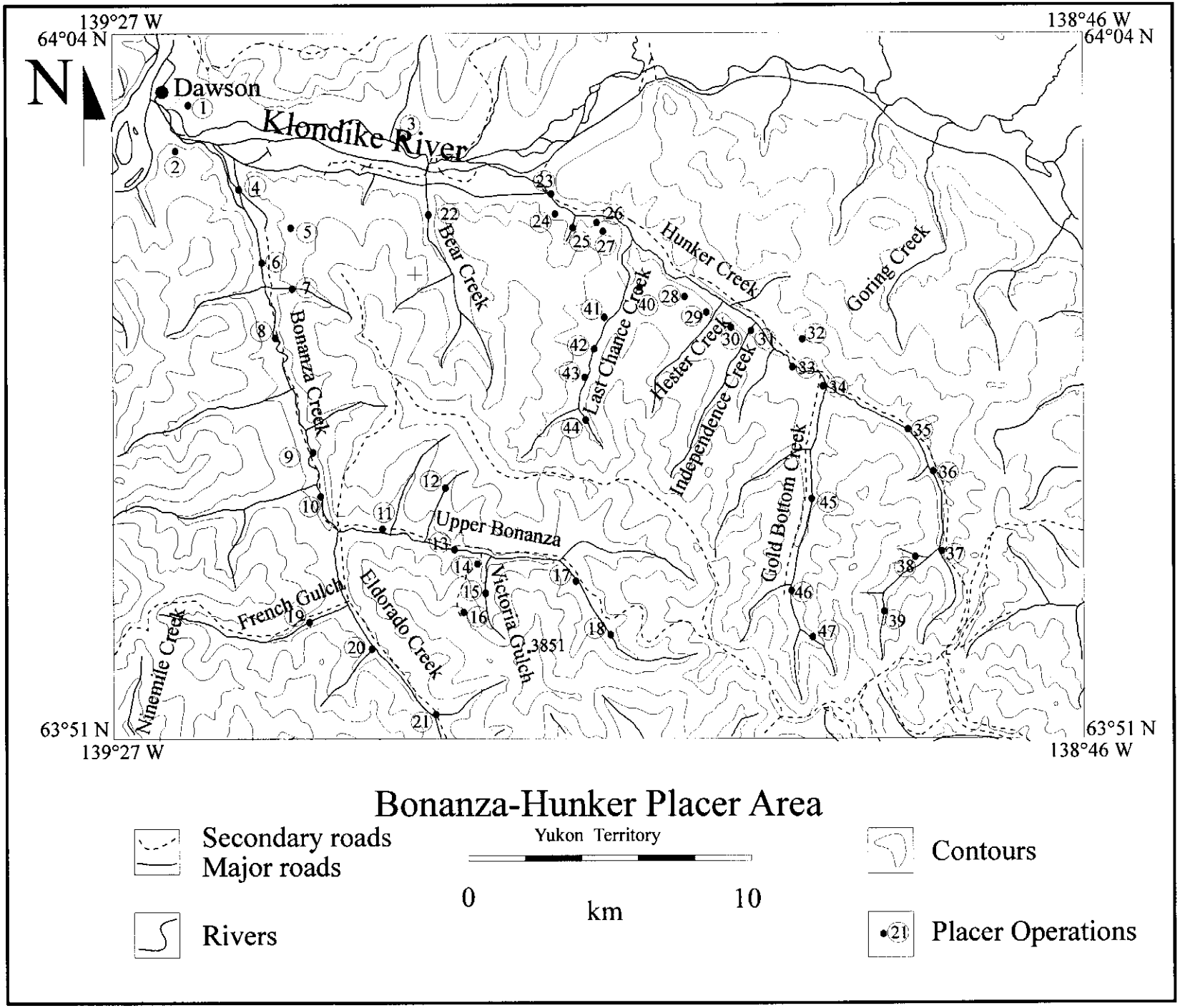

140°00 W
138°00 W
64°00 N
63°30 N
Bonanza-Hunker Placer Area
Dawson
Klondike River
Yukon River
Indian River Placer Area
Dominion-Sulphur Placer Area
48
186
121
120
119
Klondike Placer Area
Yukon Territory
0
km
25
Secondary roads
Major roads
Rivers
Contours
21
Placer Operations


139°27 W
64°04 N
138°46 W
64°04 N
N
Dawson
Klondike River
Bear Creek
Bonanza Creek
Hunker Creek
Goring Creek
Last Chance Creek
Hester Creek
Independence Creek
Gold Bottom Creek
Upper Bonanza
Eldorado Creek
Victoria Gulch
French Gulch
Ninemile Creek
3851
63°51 N
139°27 W
63°51 N
138°46 W
Bonanza-Hunker Placer Area
Secondary roads
Major roads
Rivers
Yukon Territory
0
km
10
Contours
Placer Operations

KLONDIKE RIVER **116 B/03**
Torfinn Djukastein **64°03'N 139°25'W**
Water Licence: PM95-067 **1995, 1996, 1997**
Bonanza-Hunker Placer Area **Site No. 1**

Operation/Location: Torfinn Djukastein continued his four person operation on the Klondike River, just upstream from its confluence with the Yukon River at Dawson City. The mining cuts were excavated on the right limit bench adjacent to the new Dome road and the pay gravel was hauled by truck down to the wash plant which was located in the valley next to the Klondike Highway.

Equipment/Function: One Caterpillar D9H bulldozer and one belly scraper with 25 cubic yards capacity were used to strip overburden. One Caterpillar 980B front end loader was used to load pay gravel into dump trucks. One Caterpillar 966C front end loader was used to feed the wash plant and one 980B loader removed tailings.

Wash Plant: A Derocker, 10 feet by 20 feet, fed a single sluice run, 5 feet wide by 24 feet long. The sluice run contained ½ inch punch plate over expanded metal riffles on Nomad mat for the first 12 feet followed by angle iron riffles. A Paco 8 inch pump supplied about 1500 igpm of water which was used to process approximately 100 cubic yards per hour.

Ground Description: Frozen sandy overburden was 15 feet deep near the edge of the bench but deepened to 60 feet as mining progressed uphill adjacent to the Dome Road. Gravels were 15 to 25 feet deep but only the bottom 2 feet of gravel plus 1 foot of bedrock were sluiced.

Mining Cuts: In 1995 and 1996 mining was carried out within one the large cut adjacent to the Dome Road. In 1997 most of the season was spent working on equipment and only one small cut was stripped about 75 metres by 25 metres.

Water Supply and Treatment: Water was recycled within old dredge tailing ponds adjacent to the Klondike Highway, about 1000 feet away from the river, with no discharge to the river.

Gold: Gold recovered comprised nuggets with quartz attached and rough chunky flakes. The fineness was around 810.

KLONDIKE RIVER **116 B/3**
Don Sandberg **64°02'N 139°25'W**
Schedule III **1995, 1996**
Bonanza-Hunker Placer Area **Site No. 2**

Operation/Location: Don Sandberg operated on the upper level of the Lousetown bench, on the left limit of the Klondike River, about a half a mile upstream from its confluence with the Yukon River, in 1995 and 1996, but did not operate here in 1997.

Equipment/Function: One Caterpillar D8K bulldozer was used for stripping and stockpiling gravel. One Caterpillar 988B front end loader was used to feed the wash plant and remove tailings.

Wash Plant: A 12 foot by 18 foot hopper with grizzly bars fed gravel to a shaker deck which classified to ¾ inch. The undersize was conveyed by belt to a 5 foot diameter by 20 foot long trommel. Sluice runs were 14 feet wide, with ⅝ inch punch plate, followed by angle iron riffles and then expanded metal riffles. An 8 inch by 10 inch Paco pump, powered by a General Motors 471 diesel, delivered approximately 1200 igpm which was used to process about 75 cubic yards per hour.

Ground Description: Only 2 to 3 feet of organic overburden was stripped from thawed gravels which were 10 to 12 feet deep. The bottom 5 feet of gravel plus about 2 feet of ripped bedrock were sluiced.

Mining Cuts: One cut, about 200 feet by 250 feet, was stripped in 1995. In 1996 this cut was excavated to a depth of about 10 feet and a second cut, about 200 feet by 120 feet, was stripped.

Water Supply and Treatment: Make up water from the Klondike River was pumped up onto the bench using a 4 inch by 5 inch Berkley pump and aluminum pipeline. Water was recycled on the

bench within two settling ponds, approximately 120 feet by 200 feet each, with no discharge to the Klondike or Yukon Rivers.

Gold: Gold was mostly fines, with 90% under 10 mesh and fineness of 810.

KLONDIKE RIVER	**116 B/3**
Fred Chudy	**64°02'N 139°17'W**
Water Licence: PM96-072	**1996, 1997**
Bonanza-Hunker Placer Area	**Site No. 3**

Operation/Location: This operation is located on a wide, flat, plateau on the right limit of the Klondike River, just upstream from Wood Gulch. This ground was mined by Jim Conklin and Cam Arkinstall under a lease agreement in 1996 and 1997.

Equipment/Function: A Fiat Allis 41 bulldozer (D10 equivalent) was used for stripping, excavating and stockpiling gravel. A Case front end loader with 5 cubic yard bucket was used to feed the wash plant and to remove tailings.

Wash Plant: The shaker plant consisted of a 4 foot by 18 foot dump box which fed a 4 foot by 8 foot screen deck followed by a single, 12 foot long, sluice run lined with angle iron riffles over Nomad mat. A 6 inch Jaeger pump supplied 450 igpm which was used to process up to 65 cubic yards per hour.

Ground Description: The surface organic layer was about 6 feet deep. Gravels averaged 12 feet deep and contained many large boulders just above bedrock.

Mining Cuts: In 1996 one large cut was excavated about 400 feet wide by 500 feet long by 18 feet deep; in 1997 a second cut was mined about 300 feet long by 100 feet wide by 18 feet deep.

Water Supply and Treatment: Groundwater seepage was pumped from a small test pit dug in 1992. Waste water was settled within the mining cuts with no discharge to the Klondike River.

Gold: Gold was flaky fines and small, coarse, nuggets with fineness around 780.

BONANZA CREEK	**116 B/3**
Michael Creaven	**64°02'N 139°23'W**
Water Licence: PM96-031	**1995, 1996, 1997**
Bonanza-Hunker Placer Area	**Site No. 4**

Operation/Location: Michael Creaven ran a one man operation at the bottom end of the Bonanza Creek valley. He excavated pay gravels from an existing vertical face, within an old mining cut, on the right limit of the valley bottom, near the base of Lovett Hill. He also prepared some ground on the left limit by stripping overburden and trenching.

Equipment/Function: A Caterpillar D6 bulldozer was used for stripping overburden, a Bantam backhoe was used for trenching, digging pay gravels and feeding the wash plant.

Wash Plant: A small pilot plant with hopper, screen deck and a single sluice run, 1 foot wide by 16 feet long, with angle iron riffles, was used to process about 3 cubic yards per hour using approximately 800 igpm supplied by a 3 inch Honda pump.

Ground Description: On the right limit of the valley bottom, pay gravels were excavated from a 20 foot deep vertical face composed of alternating layers of black muck and gravel.

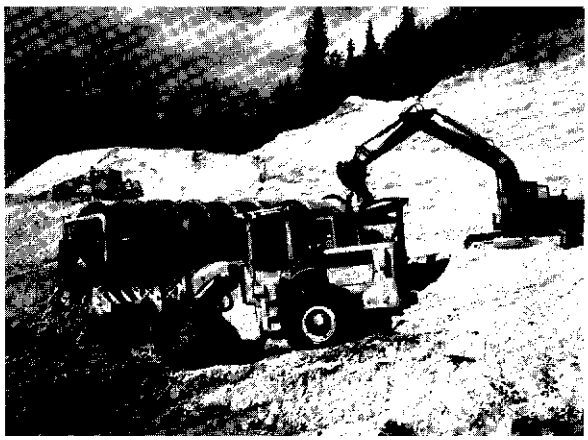
Mining Cuts: Only 20 cubic yards per year were processed from the right limit cut; stripping and trenching on the left limit had not reached depth of pay gravels.

Water Supply and Treatment: Ground water seepage in the right limit mining cut was settled in out of stream ponds.

Gold: Gold was small, flat, smooth and dull coloured. No nuggets were recovered. Fineness was around 800.

BONANZA CREEK	**116 B/3**
Wayne Hawkes	**64°00'N 139°21'W**
Water Licence: PM96-003	**1996,1997**
Bonanza-Hunker Placer Area	**Site No. 5**

Operation/Location: This property is located on the right limit of Lovett Gulch, upstream from its confluence with Bonanza Creek. Wayne Hawkes began mining with two helpers in 1996 at the base of the exposed White Channel gravel deposit on Lovett Hill. In 1997 Mr. Hawkes mined jointly with Mr. H. Swain and they employed three operators.



Swede Swains trommel/concentrator set up at Wayne Hawkes operation on Lovett Gulch on the White Channel bench.

Equipment/Function: One Caterpillar D8 bulldozer was used for excavating and pushing pay gravel, one Caterpillar 235 backhoe was used to feed the wash plant and one Caterpillar 966 front end loader was used to remove and stack tailings.

Wash Plant: A dump box and single sluice run with angle iron riffles and expanded metal riffles was used in 1996, and in 1997 a trommel with centrifugal separators was used.

Ground Description: At the right limit bench of Lovett Gulch an organic layer up 20 feet deep overlies the White Channel gravel deposit. The White Channel deposit is 80 to 120 feet deep in this location. Much of the exposed White Channel gravel had been previously stripped, no bedrock was ripped.

Mining Cuts: In 1996 Mr. Hawkes mined one cut about 200 feet square by 20 feet deep and in 1997 Mr. Swain took out one cut approximately 100 feet by 200 feet and sluiced the bottom 10 feet.

Water Supply and Treatment: Water was ditched from Bonanza Creek to an out of stream dredge pond beside the public access road. Supply water was then pumped from the dredge pond uphill and recycled in two out of stream settling ponds in old mining cuts.

Gold: Gold recovered consisted of fines only with a purity around 830.

BONANZA CREEK	**116 B/3**
Clive Nicholson	**64°01'N 139°22'W**
Water Licence: PM95-043	**1995, 1996, 1997**
Bonanza-Hunker Placer Area	**Site No. 6**

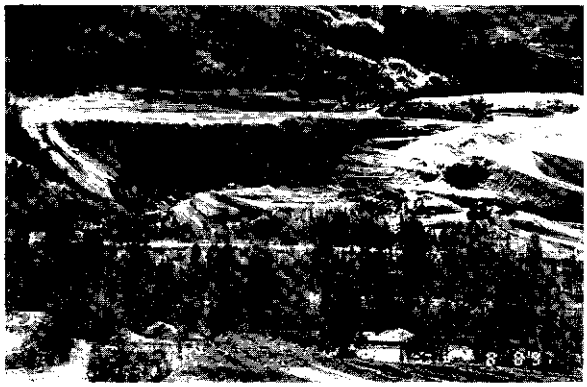
Operation/Location: Clive Nicholson ran a three person operation, on the first tier bench level of Lovett Gulch, a right limit tributary to Bonanza Creek, about three kilometres upstream from its confluence with the Klondike River.

Equipment/Function: One Caterpillar D9 bulldozer and two belly scrapper buggies were used to strip overburden and to dig and stockpile pay gravel. One Caterpillar 920 front end loader was used to feed the wash plant and remove tailings.

Wash Plant: A 7 foot diameter trommel, 40 feet long, fed a single sluice run, 4 feet wide by 15 feet long, with expanded metal riffles over Nomad mat. One 6 by 5 inch Paramount pump, powered by a Caterpillar 3304 diesel, delivered about 1500 igpm which was used to process approximately 100 cubic yards per hour.

Ground Description: Frozen organic overburden was 25 to 45 feet deep on top of White Channel gravels up to 85 feet deep on the bench. The bottom 6 feet of gravel plus up to 3 feet of bedrock were processed.

Mining Cuts: One cut per year was mined, each averaging approximately 200 feet by 200 feet. As mining progressed into the bench the depth increased from about 60 feet up to 100 feet deep.



White channel gravel deposit being mined by Clive Nicholson on Lovett Gulch, Bonanza Creek.

Water Supply and Treatment: Water was pumped from old mining cuts in the valley bottom which have flooded with groundwater. Waste water and tailings were discharged into these same old cuts.

Gold: The gold was flat and dull coloured with fineness around 795.

PURE GOLD GULCH	**115 O/14**
Vince Young	**63°59'N 139°21'W**
Water Licence: PM93-042	**1995, 1996, 1997**
Bonanza-Hunker Placer Area	**Site No. 7**

Operation/Location: Pure Gold Gulch widens to between 150 feet and 300 feet a few claims up from its confluence with Bonanza Creek. Vince Young operated alone in 1995, 1996 and 1997, drilling the ground, rebuilding the access road and preparing a mining cut.

Equipment/Function: One Caterpillar D8H bulldozer was used for stripping, two Caterpillar front end loaders, one 955L and one 988, were used for road building, and one Hitachi UH122 excavator was used for excavating the mining cut. A 6 inch drill was used for exploration.

Wash Plant: No wash plant was set up in 1995, 1996 or 1997.

Ground Description: Two feet of black muck overburden lay on top of 10 to 12 feet of frozen gravel mixed with silt and ice layers. Bedrock had not yet been reached.

Mining Cuts: One mining cut was stripped, approximately 350 feet long by 50 feet wide, with a drain excavated down the middle of the cut.

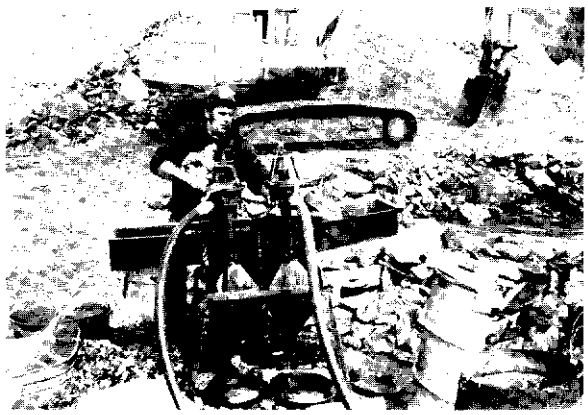
Water Supply and Treatment: No water used in 1995, 1996 or 1997.

Gold: No gold was recovered in 1995, 1996 or 1997.

BONANZA CREEK	**115 O/14**
Kohlman Expl. & Mining Ltd.	**63°59'N 139°22'W**
Water Licence: PM95-042	**1995, 1996, 1997**
Bonanza-Hunker Placer Area	**Site No. 8**

Operation/Location: Leo Twordik continued his three person operation on lower Bonanza Creek about half way between Sourdough Gulch and 49 Gulch.

Equipment/Function: A Caterpillar 225 excavator was used to dig pay gravel. One Caterpillar 966 loader fed the wash plant and one 950 loader removed tailings.



Leo Twordik using a jig to do a clean-up at Kohlman Exploration on Bonanza Creek.

Wash Plant: A 10 foot by 20 foot Derocker box fed to a single sluice run lined with angle iron riffles for the first half and then expanded metal riffles over Nomad mat. Approximately 60 cubic yards per hour were processed using about 2500 igpm of water delivered by a Deutz 6 inch by 8 inch pump.

Ground Description: The left limit of the Bonanza Creek valley had a low level terrace about 60

vertical feet above the creek level composed of mixed gravel and slide bedrock; there were several ice filled shafts exposed.

Water Supply and Treatment: Water was pumped directly from a small reservoir pond in Bonanza Creek and was treated in two large out of stream settling ponds in old mining cuts with seepage discharge.

Gold: Gold recovered consisted mostly of fines with a few small flakes. Fineness was around 780.

BONANZA CREEK 115 O/14
Isis Resources 63°57'N 139°19'W
Water Licence: PM95-088 1995, 1996, 1997
Bonanza-Hunker Placer Area Site No. 9

Operation/Location: Bob Cattermole ran a four person operation located on both the left and right limits of the Bonanza Creek valley bottom about two claim lengths upstream from the Parks Canada Historic Reserve for Dredge Number Four, at the old Poverty Bar location.

Looking downstream at Isis Resources operation on Bonanza Creek, above Dredge Number Four.

Equipment/Function: Two Caterpillar D9U bulldozers were used for stripping and stockpiling gravels, one Caterpillar 235 excavator was used to feed the wash plant and two front end loaders, one 966 and one 980 were used for tailings removal and stockpiling.

Wash Plant: In 1995 a 3 foot by 8 foot hopper with grizzly over a 3 foot by 8 foot dump box fed a 4 foot diameter trommel with 1 inch screen deck and three sluice runs, 3 feet wide by 8 feet long each with Hungarian riffles, 1 inch punch plate and Nomad matting. In 1996 and 1997 a Derocker was used with a 10 foot by 20 foot hopper with grizzly and a 4 foot by 10 foot dump box. The Derocker was set to 1½ inch gaps followed by a single sluice run, 4 feet wide by 20 feet long with Hungarian riffles, 1 inch punch plate and Nomad matting. A 6 inch by 8 inch pump delivered about 800 igpm. About 75 cubic yards per hour were processed using the trommel and about 100 cubic yards per hour with the Derocker.

Ground Description: An average of 5 feet of organic overburden was on top of 20 to 30 feet of gravel which contained boulders up to 2 feet diameter. Bedrock was wavy with quartz dykes and clay content. Some frozen bones were found and some old shafts were encountered.

Mining Cuts: In 1995 one cut approximately 100 feet long by 20 feet wide was excavated next to the Bonanza Creek access road upstream from Adams Gulch. In 1996 three cuts approximately 100 feet long by 20 feet wide were excavated upstream from the Historic Reserve for Dredge Number Four. In 1997 one large cut about 100 feet wide by 500 feet long was excavated.

Water Supply and Treatment: The pump reservoir was connected to Bonanza Creek by a short gravity feed intake ditch. Three out of stream settling ponds discharged into Bonanza Creek immediately upstream from the pump reservoir intake.

Gold: A few angular, rough nuggets were recovered but most gold was bright coloured fines smaller than number 10 mesh. Fineness was approximately 770.

SKOOKUM GULCH 115 O/14
Ivan Daunt 63°55'N 139°20'W
Water Licence: PM96-047 1995, 1996, 1997
Bonanza-Hunker Placer Area Site No. 10

Operation/Location: Dr. Ivan Daunt and sons Kieran and Mark, worked claims on Skookum Gulch and on the left limit bench of Bonanza Creek, at its confluence with Skookum Gulch, near

Grand Forks. Skookum Gulch was narrow and steep with deep, frozen overburden.

Equipment/Function: An Allis Chalmers HD16 bulldozer was used to strip overburden and dig gravel. One Caterpillar 966B front end loader was used to feed the wash plant and a Caterpillar 951 crawler loader was used to remove and stack tailings.

Wash Plant: A shaking screen deck, 5 feet by 12 feet, classified to ¾ inch. The single sluice run was 3 feet wide by 20 feet long with angle iron riffles over ½ inch plastic mat. An 6 inch by 6 inch Morris pump powered by a Perkins diesel engine delivered approximately 1200 igpm. About 40 cubic yards per hour were processed.

Ground Description: Frozen overburden in Skookum Gulch was 20 to 60 feet deep and contained old shafts as well as mammoth bones. Pay gravels were 3 to 6 feet deep and up to 20 feet wide in the gulch bottom. The bench deposit on the left limit of Bonanza Creek, at the mouth of Skookum Gulch, contained 60 to 80 feet of White Channel gravel.

Mining Cuts: The mining cut in the bottom of Skookum Gulch was about 25 feet wide and mining progressed upstream approximately 200 feet per season. The mining cut in the White Channel gravel, on the left limit bench of Bonanza Creek, was approximately 100 feet along the face and was moved back 10 to 20 feet per season.

Water Supply and Treatment: One instream pump pond in Bonanza Creek was removed seasonally; one recycle pond in Skookum Gulch was mechanically cleaned out regularly.

Gold: Gold was rough, chunky, dull coloured, with white and rose quartz attached; fineness was around 630 with up to 18% silver.

BONANZA CREEK **115 O/14**
Stuart Schmidt **63°55'N 139°17'W**
Water Licence: PM95-080 **1996**
Bonanza-Hunker Placer Area **Site No. 11**

Operation/Location: Stuart Schmidt ran a six person operation on upper Bonanza Creek, below Bunker hill, in the valley bottom, among old dredge tailings. Two 12 hour shifts were worked with miners travelling daily to the operation from the camp on Quartz Creek.

Equipment/Function: One Caterpillar D10N bulldozer was used for stripping and one Caterpillar 235 excavator was used to dig pay gravel and to feed the wash plant.

Wash Plant: A triple run sluice box processed about 180 cubic yards per hour using approximately 2500 igpm of water supplied by a Morris pump, 12 inches by 14 inches, powered by a Caterpillar 3408 diesel.

Ground Description: Historical dredge tailings in the valley bottom were 12 to 18 feet deep on top of 4 to 8 feet of slickings and muck. The bottom layer of muck and about 4 feet of ripped bedrock were sluiced.

Mining Cuts: Two cuts were completed in 1995, one about 80,000 square feet and the second about 140,000 square feet.

Water Supply and Treatment: Water was pumped from an instream reservoir in Bonanza Creek. Effluent was settled in out of stream ponds with about 70% recycled and seepage discharged through old dredge tailings.

Gold: Gold consisted mostly of fines around 12 mesh. Fineness was about 830.

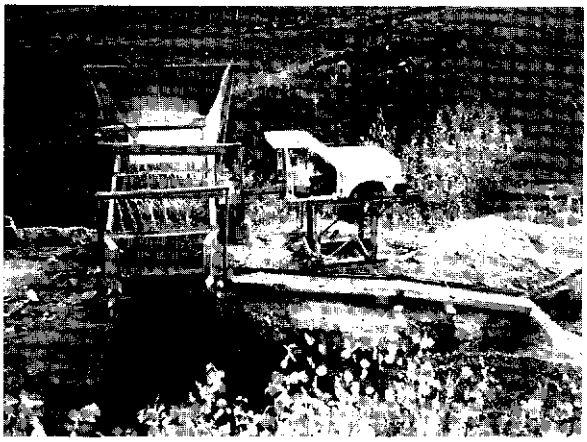
Comments: The operation was discontinued after one season.

BONANZA CREEK **115 O/14**
Alfred and Marlene Roberts **63°56'N 139°16'W**
Water Licence: PM96-004 **1995, 1996, 1997**
Bonanza-Hunker Placer Area **Site No. 12**

Operation/Location: This two person operation was located on Homestake Gulch, about two miles upstream from it's confluence with the right limit of upper Bonanza Creek. The gulch was very narrow and steep sided in this area. The Roberts have operated at this location since the early 1980's.

Equipment/Function: One Caterpillar D8 bulldozer, with angle blade and no ripper, was used for

stripping overburden and digging pay gravel. One Bucyrus Erie 20B dragline was used to lift pay gravel and feed the wash plant and to clean out settling ponds.



Alf Roberts' wash plant and sluice run on Homestake Gulch, Bonanza Creek.

Wash Plant: A Kotman Athey wet shaker screen deck 5 feet by 10 feet classified to 1 inch. This was followed by a single sluice, 24 inches wide by 20 feet long, with expanded metal riffles for the first 12 feet and sloped at 1½ inches per foot, followed by 8 feet of angle iron riffles sloped at 3 inches per foot. One Monarch pump, 4 inches by 4 inches, and one Honda pump, 3 inches by 3 inches, were used to deliver from 200 to 300 igpm. About 30 cubic yards per hour were processed.

Ground Description: Frozen black muck overburden was 10 to 15 feet deep on top of mixed gravel and slide rock from 2 to 4 feet deep. All gravel plus about 4 feet of decomposed and broken bedrock were processed.

Mining Cuts: All narrow cuts in the valley bottom were about 30 feet wide. In 1995 one cut about 500 feet long yielded approximately 5555 cubic yards. In 1996 one cut about 200 feet long produced roughly 4000 cubic yards. In 1997 one cut about 400 feet long provided about 3800 cubic yards.

Water Supply and Treatment: Water was pumped from an instream recycle pond and waste water was discharged into two small out of stream settling ponds prior to overflowing into the recycle pond. Out of stream settling ponds were rebuilt each season and instream ponds were cleaned out each spring with the dragline.

Gold: Gold was dull coloured, chunky and angular with fineness around 663.

BONANZA CREEK	**115 O/14**
Henry Gulch Placers	**63°55'N 139°16'W**
Water Licence: PM95-057	**1995, 1996**
Bonanza-Hunker Placer Area	**Site No. 13**

Operation/Location: John Alton and Marty Knutson ran this four man operation, located on the left limit of upper Bonanza Creek, downstream from O'Neil Gulch, in 1995 and 1996, but did not operate at this location in 1997.

Equipment/Function: A Caterpillar D9H bulldozer with ripper was used for stripping overburden and stockpiling pay gravels. A 631B scrapper was used to haul pay to the wash plant and a 235 excavator was used to load the scrapper. A 225 excavator was used to feed the wash plant and one 980B front end loader was used for tailings removal.

Wash Plant: A 10 foot by 20 foot Derocker was used to classify gravels to 2 inch minus, followed by two oscillating sluice runs, 4 feet wide each, with expanded metal over Nomad matting.

Ground Description: The left limit of the Bonanza Creek valley had up to 20 feet of frozen black muck on top of 4 or 6 feet of gravel. Broken boulders and old shafts were encountered within the gravels. Bedrock varied with best pay found over orange coloured broken bedrock.

Mining Cuts: One cut about 500 feet long by 60 feet wide was worked in 1995 and 1996.

Water Supply and Treatment: Water was pumped from an instream reservoir in Bonanza Creek and was settled in out of stream settling ponds with a creek bypass channel around the settling ponds.

Gold: Gold consisted of all fines with no coarse gold. Fineness was close to 800.

VICTORIA GULCH **115 O/14**
Ray and Shirley Anderson **63°54'N 139°13'W**
Water Licence: PM94-088 **1995, 1996, 1997**
Bonanza-Hunker Placer Area **Site No. 14**

Operation/Location: Ray and Shirley Anderson ran a small operation on two claims, about one half kilometre upstream from the mouth of Victoria Gulch, a left limit tributary to upper Bonanza Creek.

Equipment/Function: One Case 1150B track loader was used to strip overburden, dig pay gravel, feed the wash plant and remove tailings.

Wash Plant: A ten foot square hopper fed a 5 foot by 7 foot shaker deck which classified to ¾ inch. The single sluice run was 30 inches wide by 12 feet long with expanded metal riffles over Nomad mat. A Homelite 3 inch pump supplied about 300 igpm which was used to process approximately 30 cubic yards per hour.

Ground Description: This operation was located in the narrow valley bottom, with about 8 feet of mixed gravels over decomposed bedrock. All gravel was sluiced plus about one foot of bedrock.

Mining Cuts: One small cut was opened up in 1995 and expanded in 1996 and 1997. In 1996 the work area was covered by up to 25 feet of glaciated ice until the middle of July.

Water Supply and Treatment: A small instream pump pond was built at the upstream end of the claims and three, small, instream settling ponds were maintained near the bottom end of the operation.

Gold: Coarse gold has been recovered with fineness around 820.

VICTORIA GULCH **115 O/14**
6077 Yukon Ltd. **63°54'N 139°13'W**
Water Licence: PM94-114 **1997**
Bonanza-Hunker Placer Area **Site No. 15**

Operation/Location: In 1997 Vern Trainer returned to Victoria Gulch, where he had previously mined a group of six claims near the mouth of the gulch, and started working on another group of claims upstream from the confluence with 7 Pup.

Equipment/Function: One Caterpillar D8K bulldozer was used to excavate pay gravel and push toward the wash plant, one Caterpillar 980 front end loader was used to feed the wash plant and to remove tailings.

Wash Plant: A 10 foot by 15 foot Derocker was followed by triple sluice runs stepped and sloped at different angles. An 8 inch by 10 inch Morris pump supplied about 2000 igpm of water which was used to sluice roughly 100 cubic yards of gravel per hour.

Ground Description: Victoria Gulch, in this area, was very narrow with steep sides and very little overburden in the valley bottom; the gravel layer was only 6 feet deep.

Mining Cuts: The valley bottom from rim to rim was only 20 feet wide and was mined for a distance of about 1000 feet.

Water Supply and Treatment: Water was recycled from a series of three instream ponds in Victoria Gulch.

Gold: Gold was coarse with fineness around 815.

VICTORIA GULCH **115 O/14**
Jerry Bryde **63°54'N 139°14'W**
Water Licence: PM96-036 **1995, 1996, 1997**
Bonanza-Hunker Placer Area **Site No. 16**

Operation/Location: Situated near the uphill ends of 7 Pup and 13 Pup, adjacent left limit tributaries to Victoria Gulch, on Upper Bonanza Creek, this operation was located just below the historic Lone Star Mine. Jerry Bryde has run a one man show on these claims for the past twelve years. In 1995 Jerry was helped by Ian and Sally Wilson who devoted several chapters of their recent book "Gold Rush" to his operation.

Equipment/Function: One Caterpillar D7 bulldozer was used for stripping and stockpiling gravel. One Caterpillar 941B track loader was used to feed the wash plant and remove tailings. An Insley dragline was used to clean out the settling ponds.

Wash Plant: A 30 foot by 10 foot by 5 foot deep dump box fed an Overstrom, 4 foot by 8 foot screen deck which classified to 1 inch. The single

sluice run, 2 feet wide by 10 feet long, with expanded metal riffles over Nomad matting, was hung from the screen deck on chains to create a vibrating effect. A 4 inch Honda pump delivered approximately 400 igpm which was used to process about 20 cubic yards per hour.

Ground Description: The surface layer of organic soil was about one foot deep but contained quartz sands with visible gold. Below this was a layer of clay and gravel from 4 to 8 feet deep. Bedrock was fractured and decomposed quartz and schist. Everything below the moss was sluiced. One old shaft went approximately 40 feet down into the bedrock.

Mining Cuts: In 1995 a total of about 300 cubic yards were processed from two small cuts, one approximately 15 feet wide by 50 feet long by 6 feet deep and the other about 15 feet wide by 25 feet long by 10 feet deep. In 1996 and 1997 two larger cuts were mined, each were about 300 feet long by 14 feet wide by 8 feet deep. Winter prospecting included several hand dug shafts and pits.

Water Supply and Treatment: Seepage water from the Boulder Lode adit was collected in a small reservoir pond and gravity fed through about 3500 feet of 1¼ inch plastic pipe to the recycle pond below the wash plant on 7 Pup. The settling/recycle pond, approximately 100 feet long by 30 feet wide by 6 feet deep, was mechanically cleaned out each spring.

Gold: Much of the gold had quartz attached and some crystalline gold was found. Fineness varied from 800 to 860.

Comments: After researching the history of the mining claims on 7 Pup, Mr. Bryde contacted the niece and granddaughter of Phillip Holloway, who mined there from 1901 to 1912.

BONANZA CREEK **115 O/14**
Edward T. Paine **63°54'N 139°08'W**
Water Licence: PM96-013 **1995, 1996, 1997**
Bonanza-Hunker Placer Area **Site No. 17**

Operation/Location: Ted and Nancy Paine continued their family operation on upper Bonanza Creek, just upstream from Carmack Fork, in 1995, 1996 and 1997.

Equipment/Function: A John Deere 350 track loader with a ¾ yard bucket was used to dig pay, feed the wash plant, remove tailings and to build and maintain water use structures.

Wash Plant: Pay gravels were loaded into a 4 foot by 8 foot dump box which fed to a 3 foot by 5 foot shaking screen deck with ¾ inch holes. Undersize pay flowed over a single sluice run, 21 inches wide by 12 feet long, with expanded metal riffles over Astroturf matting, sloped at 2¼ inches per foot. The processing rate was around 10 cubic yards per hour using about 100 igpm supplied by a Gorman Rupp 3 inch pump, powered by a Wisconsin 16 horsepower gasoline engine.

Ground Description: About 2 feet of black muck overburden lay on top of frozen gravels with a total depth to bedrock from 16 to 20 feet. Gravels were rounded and sorted with no large boulders. Gravel layers were seamed with black muck. There was no evidence of old workings. Bedrock was decomposed and shattered. The bottom 2 feet of gravel plus 3 to 4 feet of bedrock were sluiced.

Mining Cuts: In 1995 the mining cut was increased to about 60 feet by 90 feet by a D8 bulldozer on contract. In 1996 and 1997 mining continued deeper into the same cut, processing approximately 300 to 500 cubic yards per season.

Water Supply and Treatment: A small gravity ditch supplied water from Bonanza Creek to the pump pond. Waste water was settled in two out of stream setting ponds, approximately 60 feet by 40 feet and 100 feet by 20 feet, before discharging back into Bonanza Creek.

Gold: Gold was coarse, flat and brightly coloured with quartz attached. Fineness was around 790.

BONANZA CREEK **115 O/14**
6077 Yukon Ltd. **63°54'N 139°07'W**
Water Licence: PM94-003 **1995, 1996, 1997**
Bonanza-Hunker Placer Area **Site No. 18**

Operation/Location: In 1997 Vern Trainer completed mining a block of nine claims on upper

Bonanza Creek, between Carmack Fork and Ready Bullion Gulch, which he began mining in 1991.

Equipment/Function: Two Caterpillar D8H bulldozers were used for stripping and digging. A Caterpillar excavator with a 1½ cubic yard bucket was used to feed the wash plant and a Caterpillar 980 front end loader was used to remove tailings. One JVC excavator was used for cleaning and maintaining settling ponds and drains.

Wash Plant: A Derocker, 10 feet by 15 feet, fed a single sluice run, 4 feet wide by 30 feet long. The sluice was lined with ⅜ inch punch plate over expanded metal riffles for the first 15 feet, followed by large angle iron riffles. About 120 cubic yards per hour were sluiced, using approximately 2000 igpm of water supplied by a Morris 8 inch by 10 inch pump, powered by a Perkins diesel.

Ground Description: Frozen organic overburden varied from 10 to 15 feet deep in the valley bottom. Gravel layers were up to 6 feet deep.

Mining Cuts: In 1995 approximately 1½ claim lengths were excavated in the valley bottom, from 150 to 200 feet wide. In 1996 and 1997 only half of each season was spent mining at this location on upper Bonanza Creek.

Water Supply and Treatment: Water was pumped from a small instream reservoir in Bonanza Creek and was partially recycled from two large, out of stream settling ponds in the right limit of the valley bottom. A creek bypass channel was maintained along the left limit of the valley bottom.

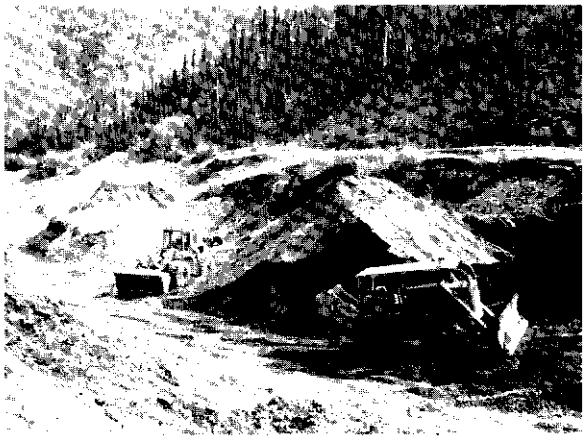
Gold: Gold was generally flat. A few small flakes were recovered. Fineness was around 750.

FRENCH GULCH/ELDORADO CREEK 115 O/14
James Archibald 63°53'N 139°20'W
Water Licence: PM95-076 1995, 1996, 1997
Bonanza-Hunker Placer Area Site No. 19

Operation/Location: James Archibald operated on French Gulch, a left limit tributary to Eldorado Creek, about two kilometres upstream from Grand Forks. In 1995 he mined claims 3 and 4 on French Gulch. In 1996 he worked on the left limit, at the mouth of French Gulch. In 1997 he moved back onto claims 15 and 16 on Eldorado Creek, at the mouth of French Gulch, and resumed mining where he had left off in 1978.

Equipment/Function: One Caterpillar D6C bulldozer was used for road building and maintenance, one Caterpillar D8K bulldozer was used for stripping and excavating, and one Caterpillar 980B front end loader was used to feed the wash plant and to stack tailings.

Wash Plant: The Derocker screening plant was 10 feet wide by 20 feet long, with 2½ inch openings. The single sluice run was 2½ feet wide by 24 feet long with 2½ inch angle iron riffles, set at 17 degrees, with a slope of 2 inches in 12 feet. Approximately 55 cubic yards per hour were sluiced. Water was supplied at a rate of about 1300 igpm by an 8 inch by 10 inch Fairbanks Morris pump powered by a 471 Detroit diesel engine.



Looking downstream on French Gulch at a Caterpillar D8K bulldozer and 980 front end loader belonging to Jim Archibald.

Ground Description: Approximately one kilometre up French Gulch the valley bottom is narrow and steep sided with organic overburden covering sand and silt layers; the bottom gravels varied from a few feet up to 12 feet deep. Overburden was stripped each fall in preparation for the next season. Near the mouth of French Gulch, on the left limit, the pay gravel was covered with up to 40 feet of hydraulic tailings from French Hill. Near the mouth of French Gulch, on the right limit, there was very little overburden and bedrock was close to the surface. On the Eldorado Creek

claims, near the mouth of French Gulch, there were dredge tailings on top of some pay gravels.

Mining Cuts: Several cuts about 50 feet wide each were sluiced in French Gulch in 1995. In 1996 one cut, about 500 feet long by 50 feet wide, was taken out near the base of French Hill. In 1997 one cut, about 500 feet long by 80 feet wide, was mined on Eldorado Creek at the mouth of French Gulch.

Water Supply and Treatment: An instream reservoir dam, reinforced with broken bedrock, was located on French Gulch. Two large settling ponds with about two acres of surface area were located in the Eldorado Creek valley, at the mouth of French Gulch. These settling ponds were drained each fall and cleaned out using a front end loader.

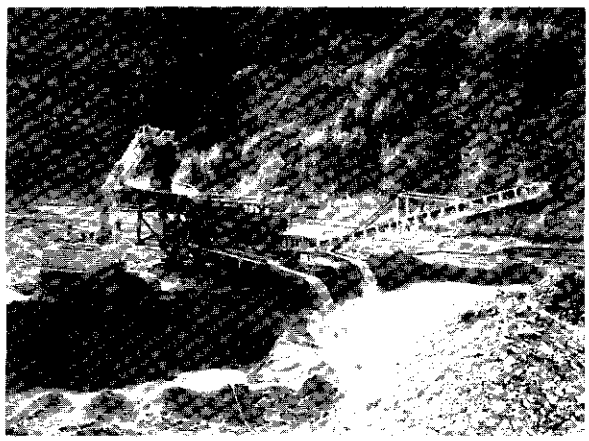
Gold: Upstream in French Gulch the gold was coarse, with 60% larger than 12 mesh. Fineness was around 625. Near the mouth of French Gulch, within the hydraulic tailings, gold was mostly fine, almost all smaller than 16 mesh. Fineness was around 710. In Eldorado Creek the gold was chunkier, most of it was over 16 mesh. Fineness was around 760.

ELDORADO CREEK **115 0/14**
Beron Placers Co. Ltd. **63°54'N 139°18'W**
Water Licence: PM95-003 **1995, 1996, 1997**
Bonanza-Hunker Placer Area **Site No. 20**

Operation/Location: Ron and Bern Johnson moved their operation downstream on Eldorado Creek, from the mouth of Oro Grande Gulch in 1995, to the mouth of Irish Gulch in 1996. In 1997 they mined up Irish Gulch, from its confluence with Eldorado Creek.

Equipment/Function: One Caterpillar D8 bulldozer was used to move equipment, to strip overburden and to flatten tailings. One Caterpillar 245 excavator was used to dig pay gravel and feed the wash plant. One Caterpillar 950 loader was used to move coarse tailings.

Wash Plant: The wash plant was mounted on wheels for portability, with three levelling rams for easy set ups. Pay gravels were loaded into a 14 foot diameter dump box with spray nozzles around its top edges which washed the gravels onto two vibrating sections of punch plate, separated by an 8 inch drop. Punch plates were 4 feet long by 52 inches wide with 1 inch by 3 inch holes. Oversized tailings were removed by a 50 foot long conveyor belt, 42 inches wide. Classified pay gravels passed over 2½ feet of 2 inch riffles and were split into two, double sluice runs, 8 feet wide by 10 feet long. Side runs had sections of expanded metal riffles over Nomad matting, separated by sections of slick plate, and ended in a single sluice 3½ feet wide by 5 feet long, with 1 inch angle iron riffles. Up to 200 cubic yards per hour were processed, using approximately 2000 igpm, supplied by a 6 inch by 8 inch Monarch pump powered by a 471 General Motors diesel.



A Caterpillar 245 excavator feeding Beron Placers wash plant on Eldorado Creek

Ground Description: Eldorado Creek near the mouth of Oro Grande Gulch was previously mined by oldtimers and had 10 to 12 feet of mixed gravels in the valley bottom. Side pay on the right limit of Eldorado Creek, below Oro Grande Gulch, was 15 to 25 feet deep, with 3 to 5 feet of organic mud on top. Decomposed bedrock was ripped 2 to 3 feet deep. The mouth of Irish Gulch was heavily mined by oldtimers and mixed gravels were from 15 to 20 feet deep.

Mining Cuts: In 1995 approximately 30,000 cubic yards were processed from one cut in the Eldorado Creek valley, below Oro Grande Gulch, about 180 feet wide by 400 feet long. In 1996 approximately 8,000 cubic yards were processed from one cut in the Eldorado Creek valley, near the mouth of Irish Gulch, about 90 feet wide by 250

feet long; and approximately 13,000 cubic yards were processed from another cut, in Irish Gulch, about 60 feet wide by 440 feet long.

Water Supply and Treatment: In 1995 water was pumped from Eldorado Creek and recycled in an out of stream settling pond in the Eldorado Creek valley, near the mouth of Oro Grande Gulch. In 1996 and 1997 seepage water from old dredge tailings was pumped to an out of stream recycle pond near the mouth of Irish Gulch.

Gold: Gold recovered from Eldorado Creek was rounded and smooth with fineness around 750; gold in Nugget Gulch was rougher with fineness closer to 650.

ELDORADO CREEK	**115 O/14**
Tom Payne	**63°54'N 139°15'W**
Water Licence: PM95-083	**1995, 1996**
Bonanza-Hunker Placer Area	**Site No. 21**

Operation/Location: Steve Van Bibber and Max Lanzinger operated for one season only in the Eldorado Creek valley bottom, at the mouth of 27 Gulch, reworking an old tailings pile from a previous operation.

Equipment/Function: One Caterpillar D9 bulldozer was used for stripping and pushing pay gravel, one Caterpillar 966 front end loader was used to feed the wash plant and one John Deere loader was used to remove tailings.

Wash Plant: A shaker screen deck, 5 feet by 10 feet, classified down to minus ¾ inch. Two oscillating sluice runs, 4 feet wide by 8 feet long, were lined with expanded metal riffles. About 100 cubic yards per hour were processed using approximately 800 igpm of water supplied by a 6 inch by 8 inch pump.

Ground Description: Thawed tailings ramps, up to 25 feet deep, from previous operations in the valley bottom, were pushed up and sluiced.

Mining Cuts: Two old tailings ramps were sluiced; one was about 100 feet long by 75 feet wide by 25 feet deep and the other was about 150 feet long by 75 feet wide by 25 feet deep.

Water Supply and Treatment: Water was pumped from a small instream reservoir in Eldorado Creek and was settled in old, out of stream, settling ponds in the Eldorado Creek valley, from previous operations.

Gold: Only fine gold was recovered. The fineness of the gold is unknown.

BEAR CREEK	**116 B/3**
Sunrise Placers	**64°00'N 139°14'W**
Water Licence: PM93-100	**1995, 1997**
Bonanza-Hunker Placer Area	**Site No. 22**

Operation/Location: Dave Brickner and Cam Arkinstall operated in the valley bottom near the mouth of Bear Creek in 1995. In 1997 Dave Brickner ran a small scale operation farther upstream, below Discovery Pup, in the centre of the valley bottom.

Equipment/Function: One Fiat Allis 31 bulldozer and one Terex 8250 bulldozer were used for stripping and pushing gravel. A Hough 120 front end loader was used to feed the wash plant and a Hough 90 front end loader was used to remove tailings.

Wash Plant: A 5 foot diameter by 24 foot long trommel classified to ¾ inch, followed by oscillating sluice runs, 16 feet wide by 8 feet long, with expanded metal riffles over Nomad mat. Approximately 1000 igpm of water were supplied by an 8 by 6 inch Berkley pump, powered by a Detroit diesel engine.

Ground Description: The valley bottom near the mouth of Bear Creek had about 30 feet of black muck and slide rock mixed with gravel on top of approximately 10 feet of pay gravel. The bottom 8 feet of gravel plus 2 to 3 feet of decomposed bedrock were sluiced.

Mining Cuts: In 1995 one cut, about 40 feet wide by 600 feet long, was completed near the mouth of Bear Creek; in 1997 a much smaller cut, about 20 feet wide by 60 feet long, was taken out from the left limit of the valley bottom on claim 18.

Water Supply and Treatment: In 1995 water was pumped from an out of stream reservoir and was settled in old dredge ponds in the Klondike Valley.

In 1997 water was recycled within an out of stream pond.

Gold: Gold was flat and coarse with fineness around 680. Clean up was done with a long tom and gold wheel.

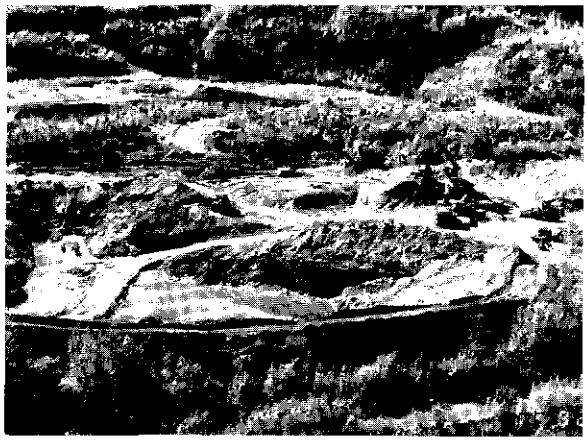
HUNKER CREEK **116 B/3**
T. D. Oilfield Services Ltd. **64°02'N 139°09'W**
Water Licence: PM96-085 **1996, 1997**
Bonanza-Hunker Placer Area **Site No. 23**

Operation/Location: Doug Busat started this new operation at the mouth of Hunker Creek mid season in 1996. The mine was fully into production for the 1997 season. A crew of four miners and one camp person ran the operation in 1997.

Equipment/Function: A Caterpillar D9H bulldozer equipped with a ripper and a Caterpillar 245 excavator (4 yard bucket) were used for clearing and stripping. A Caterpillar 980C loader (5 yard bucket) and Caterpillar 980B loader (4½ yard bucket) were used to haul pay gravel to the sluice plant and for moving the tailings. The sluice plant was fed with a Hitachi EX270 excavator equipped with a 1⅜ yard bucket.

Wash Plant: A hopper feeds into a Clemro double screen deck. The upper screen classifies the pay to ¾ inch minus and the lower screen classifies to ⅜ inch minus. The material between ⅜ inch and ¾ inch is washed through a single sluice run 4 feet wide by 16 feet long. The ⅜ inch minus material is washed through 4 runs 2 feet wide by 5 feet long before entering centrifugal drums 18 inches in diameter by 10 feet long. The sluice runs are lined with Nomad matting and riffles made of 1½ inch flat iron with ½ inch tops. The concentrate from the sluice runs was run through a Millspec concentrator for final clean-up. The material from the concentrator drums was run through 26 inch jigs for clean-up. A 10 inch by 8 inch pump powered by a Caterpillar 3208 engine supplied the 1200 igpm needed to process between 80 and 100 cubic yards per hour.

Ground Description: The ground mined during 1997 averaged 25 to 30 feet deep with between 8 and 10 feet of pay gravel beneath the black muck overburden. The bedrock tended to be wavy and uneven with lots of small quartz boulders. All of the gravels and 1 to 2 feet of the bedrock was sluiced. Numerous old shafts and tunnels were found throughout the workings.



Aerial view of T.D. Oilfield Services Ltd. 1997 mining operation which started near the mouth of Hunker Creek.

Mining Cuts: A small amount of sluicing was done in 1996. The operation made a jump upstream to the left limit side of Hunker Creek in 1997. A single large cut 200 feet by 600 feet was mined with approximately 45,000 cubic yards sluiced. The overburden was stockpiled and then replaced into the cut after the pay material was removed for sluicing.

Water Supply and Treatment: Hunker Creek was elevated with an instream rock dam to deflect a portion of the flow into a ditch to the pump pond located next to the main channel. The water was pumped to the wash plant and the effluent was treated in an out of stream settling complex constructed over old dredge tailings downstream of the operation. Most of the discharge was by seepage through the old tailings.

Gold: The gold was reported to be primarily flat and smooth with no nuggets. The gold was dull in colour and some mercury contamination from old mining activity was found. The purity was reported as 780 fine.

HUNKER CREEK 116 B/3
Henry Gulch Placers 64°02'N 139°08'W
Water Licence: PM96-094 1997
Bonanza-Hunker Placer Area Site No. 24

Operation/Location: Henry Gulch Placers operated for part of the 1997 season along the left limit of Hunker Creek approximately 2,000 feet downstream from the mouth of Henry Gulch. A crew of three miners ran the operation.

Equipment/Function: A Caterpillar 980B loader and a Caterpillar 245 excavator were used to stockpile gravels for sluicing and a Caterpillar 225 excavator fed the sluice plant. A Caterpillar D9G bulldozer was on site and was used where/when needed.

Wash Plant: A single deck shaker plant with ¾ inch punch plate was used. The ¾ inch minus material was washed through a 4 foot wide by 12 foot long sluice run lined with 1 inch angle iron riffles and Nomad matting. The washed material was then split into three oscillating runs (4 feet by 10 feet) lined with expanded metal and Nomad matting. A 10 inch by 8 inch Fairbanks Morse pump powered by a General Motors engine supplied the 1500 igpm needed to sluice between 60 and 75 cubic yards per hour.

Ground Description: No new cuts were mined at this location. Tailings from the J & C Holdings mining operation which used a less efficient sluice box were re-washed.

Mining Cuts: Approximately 22,500 cubic yards of old tailings were processed.

Water Supply and Treatment: Water was pumped from an old instream reservoir on Hunker Creek to the sluice plant. The effluent flowed downstream to the bottom of the property where it was treated in an out of stream settling pond before discharging into Hunker Creek.

Gold: The gold was screened and was found to be approximately 10% +10, 85% -10 to +60 and 5% -60 mesh. The gold was described as dull coloured with some quartz attached. A few small nuggets were recovered. The purity was 710 fine.

Comments: This operation was set up as a test to re-sluice the tailings left from previous mining operations. It was determined that the recovery did not justify the cost of operating with this method and the existing price of gold.

HENRY GULCH 116 B/3
Rick Gillespie 64°01'N 139°09'W
Water Licence: PM94-075 1995, 1996, 1997
Bonanza-Hunker Placer Area Site No. 25

Operation/Location: Rick Gillespie ran a small scale operation on Henry Gulch, a left limit tributary of Hunker Creek. Rick continued mining in an upstream direction from where his father Dick Gillespie had finished his mining.

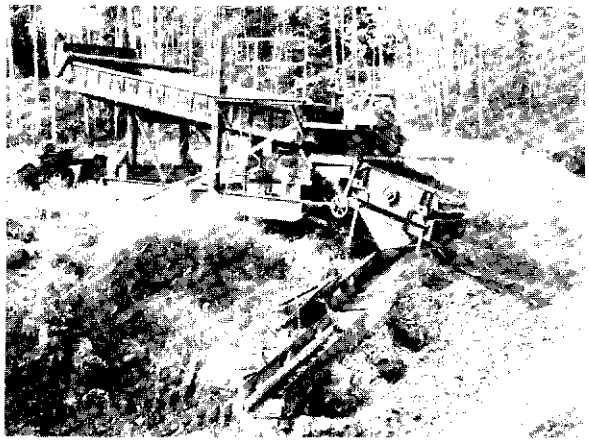
Equipment/Function: A Caterpillar D8H bulldozer with ripper and angle blade, a Caterpillar 966C loader and a Caterpillar 225 excavator were used to mine this property.

Wash Plant: The wash plant consisted of a dump box which fed into a screen deck 3 feet wide by 6 feet long. The pay was classified to 1¼ inch minus and then washed through a single 25 foot long sluice run. Matting, expanded metal and punch plate was put in the lower section of the dump box in 1996. The sluice run was built in two sections. The upper section was 13 feet long by 3½ feet wide and was lined with unbacked Nomad matting, expanded metal and ¾ inch punch plate. The upper section of sluice then tapered into a 2 foot wide by 12 foot long section of sluice. The lower section of sluice was lined with unbacked Nomad matting and 1¼ inch angle iron riffles. Two 4 inch Gorman Rupp electric pumps supplied the water needed to process approximately 25 cubic yards per hour.

Ground Description: Henry Gulch is a narrow steep walled tributary of Hunker Creek. An average 2 feet of vegetation overlies at least 50 feet of frozen black muck and 10 feet (varies) of gravel. Bedrock is generally solid and fractured. Some gumbo clay was encountered. All of the gravels and up to 4 feet of the bedrock was sluiced.

Mining Cuts: This operation has been run on a part time basis and only a small amount of sluicing has been done each year. Rick estimates that he sluiced perhaps 1000 cubic yards in 1997. The

operation has continued upstream into the ground that Dick Gillespie opened. Due to the narrow valley, steep walls and lack of downstream ground Rick has had to carry both the pay and overburden upstream and uphill to process or stack.



Rick Gillespie's sluice plant which he uses at his operation on Henry Gulch.

Water Supply and Treatment: Henry Gulch is a short watershed and lack of surface run-off can limit the amount of sluicing that is possible. The creek run-off and local spring sources are captured and contained in an out of stream recycle pond. The settling pond is then cleaned regularly. Any discharge that occurs is directly back to Henry Gulch.

Gold: The gold recovered has tended to be angular and chunky. Some small nuggets have been recovered. The fineness has varied between 650 and 700.

Comments: Oldtimers workings have been found throughout most of the creek bottom.

HUNKER CREEK **116 B/3**
Wolreid WGR Mining **64°01'N 139°07'W**
Water Licence: PM96-016 **1995, 1996, 1997**
Bonanza-Hunker Placer Area **Site No. 26**

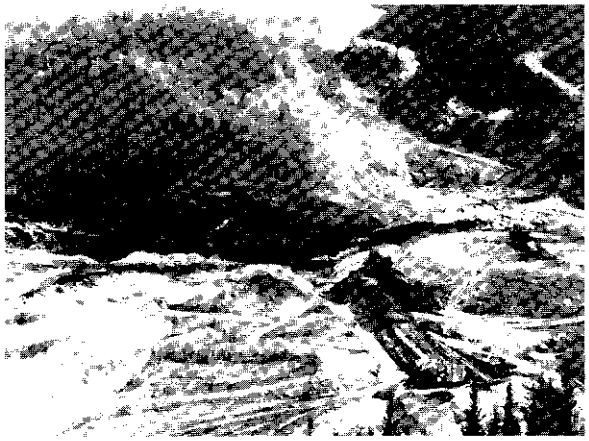
Operation/Location: Wolreid WGR Mining Ltd. mined at the mouth of Dago Gulch, a left limit tributary of Hunker Creek in 1995 and 1996. Part of the operation was moved to Bonanza Creek in 1996 and a scaled down operation was conducted on Hunker Creek in 1997. One cut was mined along the right limit of Hunker Creek at the mouth of Last Chance Creek in the fall of 1997. Bob Cattermole employed six miners and one camp person in 1995 and 1996.

Equipment/Function: Two Caterpillar D9H bulldozers equipped with U-blades and rippers were used for stripping along with a Caterpillar 235 excavator. Two Caterpillar 980C loaders were used for feeding the wash plant and other miscellaneous jobs. Two Caterpillar 641 scrapers were used for settling pond construction and maintenance. A 22B dragline was available when needed.

Wash Plant: A 10 foot wide by 16 foot long Derocker was used to classify the pay gravels prior to being washed through a single sluice run 4 feet wide by 20 feet long. Various combinations of ½ inch punch plate, angle iron riffles, expanded metal and Nomad matting were used in the sluice run. A 6 inch by 8 inch Berckley pump powered by a 671 engine supplied the 1100 igpm needed to sluice approximately 75 cubic yards per hour. The pay gravels that were excavated from the cut at the mouth of Last Chance Creek in 1997 were stockpiled on the left limit side of Hunker Creek and sluiced by Colonial Gold Joint Venture using a 5 foot diameter trommel (see write-up for site no. 32) that was capable of sluicing approximately 50 cubic yards per hour.

Ground Description: The ground at the mouth of Dago Gulch varied in depth from a minimum of 50 feet deep to a maximum of 80 feet deep. Most of the stratigraphic section was composed of frozen black muck. Bedrock was solid and wavy with deep fractures. The lower 5 feet of gravel and up to 5 feet of bedrock was sluiced. Numerous old workings and shafts were found throughout. The cut at the mouth of Last Chance Creek was approximately 30 feet deep.

Mining Cuts: Three cuts (50 feet by 100 feet/50 feet by 100 feet/100 feet by 120 feet) were sluiced at the mouth of Dago Gulch in 1995. A large continuous cut along the left limit of Hunker Creek immediately upstream of Dago Gulch was mined in 1996. One cut was mined on Hunker Creek at the mouth of Last Chance Creek in 1997. Dimensions for the cuts in 1996 and 1997 were not provided.



An aerial view of the Wolreid WGR Mining Ltd. operation on Dago Gulch, a left limit tributary of Hunker Creek.

Water Supply and Treatment: Water was pumped from instream reservoirs on Hunker Creek to the wash plant before being treated in a series of out of stream settling ponds. Discharge was back to Hunker Creek and by seepage to the dredge tailings.

Gold: A variety of gold including flat and round, rough, crystalline and wire gold was recovered. The purity of gold at the mouth of Dago Gulch ranged from 700 to 790 fine.

HUNKER CREEK **116 B/3**
Miben Mining 1976 **64°01'N 139°08'W**
Water Licence: PM92-033 **1995**
Bonanza-Hunker Placer Area **Site No. 27**

Operation/Location: Benny Warmsby and Mike Stutter continued to run this operation on Dago Hill, a left limit bench of Hunker Creek between Henry Gulch and Last Chance Creek. A large deep cut that had been stripped between 1991 and 1994 was sluiced in 1994 and finished in the spring of 1995. Five miners ran the operation.

Equipment/Function: A Caterpillar D9 bulldozer and Caterpillar D8 bulldozer were used to push up the pay gravels for an Hitachi excavator which fed the sluice plant.

Wash Plant: From previous descriptions - A hopper 10 feet wide by 14 feet long lead onto a conveyor and into a trommel 74 inches in diameter by 30 feet long. The last 6 feet of the trommel classified the pay to ½ inch minus. The oversize material was carried to the rim by a conveyor belt. The classified pay was sluiced in three runs 3 feet wide by 8 feet long which were lined with one inch angle iron riffles and matting. These runs channelled the pay into a run 16 feet wide by 18 feet long that was divided into five separate runs. Expanded metal and matting was used in the lower section. Effluent from the sluice plant was collected in a long sluice run and carried away to the bedrock drain. A 12 inch by 14 inch Peerless pump supplied the 3000 igpm needed for processing approximately 150 cubic yards per hour.

Ground Description: The cut averaged 135 feet in depth. Part of the cut had been covered by waste gravel from earlier cuts. The natural strata was made up of 10 feet of fine brown gravels at the surface with 80 to 90 feet of White Channel gravel overlying a layer of altered White Channel gravel 15 feet deep that contained gold throughout. Bedrock was slightly wavy and decomposed. The lower 15 feet of gravels and very little of the bedrock was sluiced.

Mining Cuts: The last of the gravels that remained to sluice from a cut measuring 40 feet by 400 feet were processed in the spring of 1995.

Water Supply and Treatment: Water was pumped from an instream reservoir on Hunker Creek to the permanent sluice plant on Dago Hill. Effluent collected from the sluice plant passed through a bedrock drain and over the rim to settling facilities which were constructed along the left limit side of Hunker Creek in the main valley. Discharge occurred back to Hunker Creek by seepage upstream of the pump pond.

Gold: The gold was reported as being primarily flat and rough with almost all of it between -10 and +60 mesh. The purity ranged from 760 to 825 fine.

HUNKER CREEK **116 B/3**
Tamarack Inc. **64°00'N 139°05'W**
Water Licence: PM95-053 **1995, 1996, 1997**
Bonanza-Hunker Placer Area **Site No. 28**

Operation/Location: Tamarack Inc. continued to operate a large scale mine on Paradise Hill, a left limit bench of Hunker Creek upstream of 80 Pup.

A crew of eleven miners and one camp person ran the operation.

Equipment/Function: A total of ten 657 Caterpillar scrapers and three 641 Caterpillar scrapers were available for stripping and stockpiling the pay gravels. Six D9 Caterpillar bulldozers were used to push the scrapers, feed the sluice plant and other miscellaneous jobs. A 560 International loader, two 966 Caterpillar loaders and miscellaneous other equipment was also available. A mobile auger drill was used to prove up values.

Wash Plant: A 90 cubic yard hopper with a 4 foot by 16 foot apron feeder fed pay gravel onto a variable speed conveyor 4 feet wide by 60 feet long. The conveyor fed a trommel 8 feet in diameter by 60 feet long. The last 6 feet of the trommel classified the pay to ¾ inch minus. The classified pay ran down a 2 foot wide by 45 foot long chute to a distributer that divided the slurry into six oscillating runs 3 feet wide by 20 feet long. Expanded metal and Nomad matting lined the runs. An 8 inch by 10 inch Crane Demming pump powered by a D398 Caterpillar engine lifted the water 350 feet up onto Paradise Hill for sluicing. Approximately 3000 igpm was used to sluice 350 cubic yards per hour.

Ground Description: Paradise Hill is a large White Channel deposit. On average a 25 foot deep layer of vegetation, black muck and clay/gumbo overlies 80 feet of White Channel gravels. Generally the lower 20 feet of gravels are sluiced. Bedrock was usually decomposed and contained very little gold. Domes and depressions in the bedrock have resulted in a great variation in depth across Paradise Hill. Some of the depressions were 60 feet deeper than the surrounding bedrock. Pay values typically increase dramatically in the depressions.

Mining Cuts: A total of 1,200,000 cubic yards were stripped and 560,000 cubic yards were sluiced in 1995. Production increased in 1996 to 1,300,000 cubic yards stripped and 620,000 cubic yards sluiced. A similar volume was stripped and approximately 315,000 cubic yards were sluiced during the 1997 season.

Water Supply and Treatment: Water is pumped from an instream reservoir on Hunker Creek up onto Paradise Hill where the sluicing takes place. The effluent and oversize gravels are dumped over the rim and into the out of stream settling complex which is located along the left limit of Hunker Creek. The treated effluent re-enters Hunker Creek by both direct and seepage discharge above the pump pond and is then largely recycled.

Gold: The gold was reported to be bright yellow, round and rough with 99% -12 to +80 mesh. The purity was 810 fine.

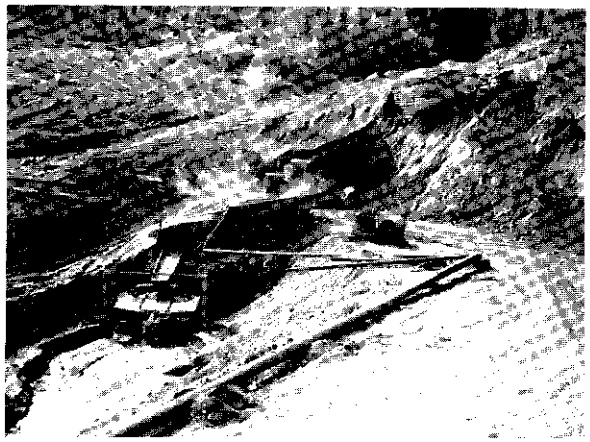
HUNKER/HESTER CREEKS	**115 O/14**
Emile Levesque	**63°58'N 139°00'W**
Water Licence: PM96-067	**1995, 1996, 1997**
Bonanza-Hunker Placer Area	**Site No. 29**

Operation/Location: Emile Levesque continued mining on Hester Creek, a left limit tributary of Hunker Creek. The mining was done on Hester Creek ground in 1995. The operation worked up a left limit draw of Hester Creek in 1996 and was moved onto Paradise Hill in 1997. Paradise Hill is a large bench located on the left limit of Hunker Creek between Hester Creek and 80 Pup. Emile Levesque and two employees ran a single 12 hour shift. Collette Levesque ran the camp.

Equipment/Function: A Caterpillar D6 bulldozer was used for stripping. A Caterpillar 966 loader and a Caterpillar 950 loader were used for sluicing, settling pond maintenance and various other miscellaneous jobs. A Bantom 360 excavator was acquired late in 1997.

Wash Plant: The wash plant consisted of a dump box leading into a 5 foot wide by 11 foot long shaker screen outfitted with 1¼ inch punch plate. The 1¼ inch minus classified gravels were then sluiced through a 16 foot long single run which tapered from 33 inches down to 24 inches before being distributed onto three oscillating sluice runs 4 feet wide by 8 feet long. The upper single run was lined with 2 inch angle iron riffles. Matting was not used except for a small section below the shaker plant which was found to capture a good percentage of the gold. The oscillating runs were lined with expanded metal and Nomad matting. A 6 inch by 8 inch Morris pump powered by a 3306 Caterpillar engine supplied the estimated 2500 igpm required to process 150 cubic yards per hour.

Ground Description: The ground on Hester Creek that was mined in 1995 decreased in depth to approximately 65 feet. A 50 foot layer of frozen black muck overlies 15 feet of gravel and workings from old timers shafting. The ground on Paradise Hill averaged 3 feet deep and consisted entirely of old workings where the overburden had already been removed. All of the old tailings were re-washed.



Emile Levesque sluicing gravels from an old drain/draw along the left limit of Hester Creek.

Mining Cuts: A single cut 300 feet by 300 feet was sluiced on Hester Creek in 1995. An area approximately 500 feet by 500 feet was sluiced on the left limit draw in 1996 and a large area measuring approximately 1000 feet by 1000 feet was re-washed in 1997 on Paradise Hill.

Water Supply and Treatment: Water for sluicing and monitoring came, as in past seasons, from an out of stream reservoir near the mouth of Hester Creek. The reservoir was constructed by using old mine pits. Make-up water came through a gravity ditch from Hunker Creek. The effluent was discharged into Hester Creek and the total creek flow was treated in a large out of stream settling pond complex in the Hunker Creek valley. For part of 1997 the effluent was discharged off Paradise Hill directly into the out of stream settling pond. The settling pond was constructed over dredge tailings and the only discharge is usually by seepage.

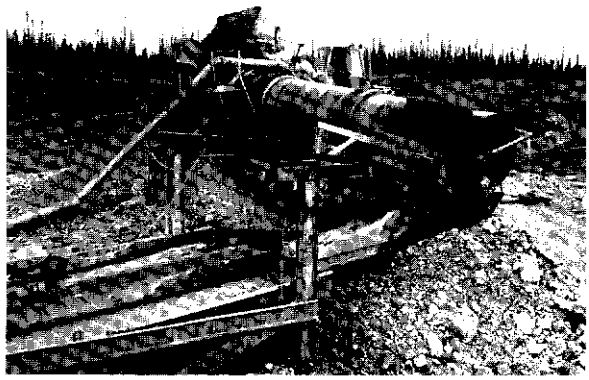
Gold: The gold coming from Hester Creek tended to be fine and rough with a purity of 670. The gold on Paradise Hill is fine and flat with a higher purity averaging 820.

INDEPENDENCE CREEK	**115 O/14**
Peter Gould	**63°58'N 139°02'W**
Water Licence: PM95-062	**1995, 1996, 1997**
Bonanza-Hunker Placer Area	**Site No. 30**

Operation/Location: Peter Gould continued to operate on Nugget Hill, a left limit bench of Hunker Creek between Independence Creek and Hester Creek. Peter Gould and one employee ran a single shift.

Equipment/Function: A Caterpillar D7F bulldozer was used for stripping, pushing up pay, sluicing, contouring tailings and constructing containment ponds as required. A Caterpillar 930 loader fed the sluice plant and carried coarse tailings away.

Wash Plant: As in previous years a hopper fed into a scrubber (trommel) 4 feet in diameter by 30 feet long. The 1 inch minus classified pay was sluiced in two 4 foot wide by 20 foot long oscillating runs. Nomad matting, expanded metal and some riffles lined the sluice runs. A Cornell 6 inch by 8 inch pump powered by a John Deere motor supplied the 1500 igpm needed for sluicing approximately 45 cubic yards per hour.



Peter Gould washing pay gravels from Nugget Hill through his scrubber trommel.

Ground Description: Mining progressed into the bench and away from the rim. The ground averaged 30 feet deep to bedrock and was composed entirely of gravels. The first 15 feet of gravel was pushed off and the remaining 15 feet

of gravel was sluiced. The gold has not travelled into the decomposed bedrock so very little bedrock was sluiced.

Mining Cuts: Peter Gould worked on an expanding cut on the Hester Creek side of Nugget Hill. Approximately 32,000 cubic yards were sluiced in 1995. Due to dry conditions the production decreased to approximately 9000 cubic yards sluiced in 1996. Water was not a limiting factor in 1997 and the production rose to 31,000 cubic yards sluiced.

Water Supply and Treatment: All water for sluicing has continued to come from the two and a half mile ditch which brings natural run-off from Independence Creek to a series of containment ponds on Nugget Hill. This system has proved effective during normal seasons but has limited production during dry seasons such as 1996. Normally no water or effluent is discharged from Nugget Hill.

Gold: The gold was reported to be rough with the majority in the 16 mesh size. The purity was 900 fine.

Comments: The claims on Nugget Hill have been mined by three generations of the Gould family. The ditch which Peter Gould uses to collect water from Independence Creek was originally built in 1907 by Robert Gould, Peter Gould's grandfather. Peter's father John mined these claims for many years as well.

INDEPENDENCE CREEK **115 O/14**
Anton Kosuta **63°59'N 139°02'W**
Water Licence: PM95-105 **1995, 1996, 1997**
Bonanza-Hunker Placer Area **Site No. 31**

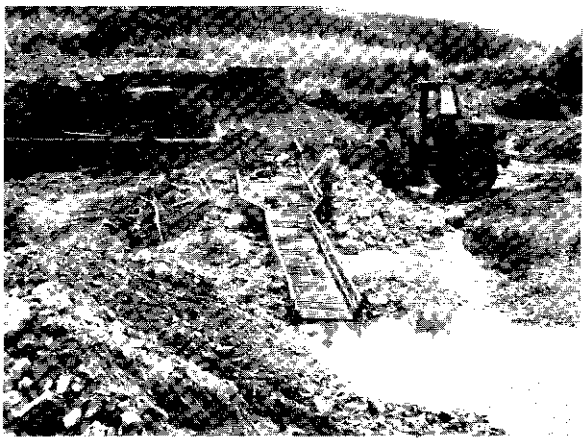
Operation/Location: Tony Kosuta continued to operate a small scale operation near the mouth of Independence Creek, a left limit tributary of Hunker Creek. Independence Creek is typically narrow and the valley walls are steep. Tony ran the mine by himself most of the time although he had some help at times during 1995 and 1996.

Equipment/Function: An older Caterpillar D5 bulldozer, a 941 Caterpillar track loader, a Caterpillar 4R bulldozer and a Caterpillar 930 loader were used to mine this property. The track loader and the 930 loader were usually used for stripping and feeding the sluice plant. Occasional large stripping and trenching jobs were contracted out.

Wash Plant: An 8 foot wide by 14 foot long dump box tapers down to a 3 foot wide by 24 foot long single sluice run. The dump box and sluice run is lined with matting and angle iron riffles. A Caterpillar 8 inch by 6 inch pump supplied the estimated 1200 igpm needed to process approximately 50 cubic yards per hour.

Ground Description: The depth to bedrock varied from 12 to 20 feet deep. Normally a shallow layer of moss overlays 12 to 15 feet of frozen black muck. Usually 2 to 3 feet of gravel was found sitting on black shaly bedrock. All of the gravel and a small amount of bedrock was processed. The pay streak has been found to alternate from the right to left limit of the valley and can be very spotty.

Mining Cuts: A 60 foot wide by 150 foot long cut was processed in 1995. The same cut was enlarged during 1996 and another cut measuring 50 feet wide by 75 feet long was mined during 1997.



Tony Kosuta posing next to an old single run sluice box where box tending involved real work.

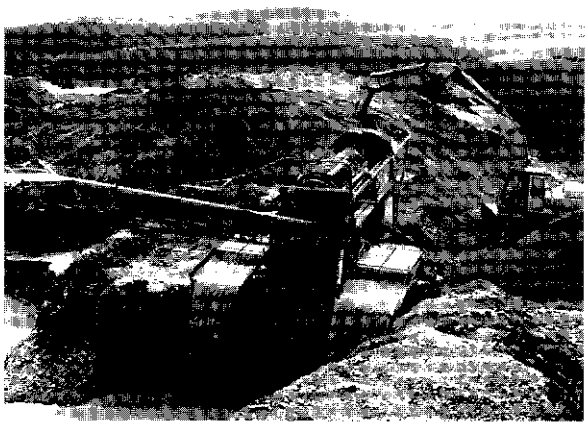
Water Supply and Treatment: An instream reservoir was constructed on Independence Creek and the water was piped to the sluice plant with a gravity system. A sump pump was also used to recycle water from a large out of stream mine pit in 1995 and 1996. No recycling was done during

1997. The effluent was treated in the mined out cuts downstream and in an area of dredge tailings.

Gold: The gold tended to be rough and much of it was stained black. A mixture of coarse and fine gold was recovered with an occasional nugget. The purity was approximately 750.

HUNKER CREEK	**115 O/15**
Colonial Gold Joint Venture	**63°58'N 138°58'W**
Schedule III	**1996, 1997**
Bonanza-Hunker Placer Area	**Site No. 32**

Operation/Location: Colonial Gold Joint Venture is made up of a group of New Zealanders that have come to the Yukon over the last couple of years. A couple of different sites were mined using either existing Water Use Licences or a Schedule III. In 1996 the mining operation was on a right limit bench of Hunker Creek immediately downstream from Bee Gulch. The operation was moved in 1997 to Williams Hill, a right limit bench of Hunker Creek downstream from Gold Bottom Creek. Colonial Gold Joint Venture also sluiced pay gravels for Wolreid WGR Mining Ltd. on Hunker Creek after the ground was stripped. A crew of four miners and one camp person ran the operation in 1996. An additional miner was added in 1997.



A New Zealand style trommel wash plant working at the Colonial Gold Joint Venture operation on Hunker Creek.

Equipment/Function: Two Hitachi EX200 excavators were used in 1996 for stripping, feeding the sluice plant and dealing with the tailings. A Kobelco 907 excavator was added in 1997 for feeding the sluice plant. A Caterpillar D9H bulldozer was used sparingly for stripping in 1997 on Williams Hill.

Wash Plant: The plant consisted of a hopper feeding into a 5 foot diameter trommel that classified the pay gravels to ⅜ inch minus. The classified gravels were then washed through two 6 foot wide sluice runs equipped with hydraulic riffles. The oversize gravels were carried away and stacked by a 40 foot conveyor. An Ajax pump powered by a 6-cylinder Ford engine supplied the 600 igpm for sluicing in 1996. A 6 inch by 5 inch Cornell pump powered by a 635 four-cylinder Perkins engine was used. The wash plant processed an average of 60 cubic yards per hour but depending on the material being washed would vary between 40 and 70 cubic yards.

Ground Description: The bench mined in 1996 sits approximately 240 feet above Hunker Creek. The ground varied in depth as the cut moved away from the rim. The ground was described as having 3 feet of surface clay material overlying 4 to 8 feet of brown gravels and 2 to 8 feet of White Channel gravels. Bedrock was fully decomposed. The ground on Williams Hill also varied considerably. Six to 8 feet of surface clay overlies 2 to 10 feet of brown gravels and 1 to 10 feet of White Channel gravel. At both locations all of the gravel and from 6 inches to 1 foot of the bedrock was sluiced.

Mining Cuts: Three cuts (480 feet by 75 feet/360 feet by 75 feet/300 feet by 75 feet) totalling approximately 56,000 cubic yards were sluiced in 1996. A similar volume was sluiced in 1997.

Water Supply and Treatment: Both bench operations used water that was pumped from a reservoir constructed next to Hunker Creek up to recycle ponds on the bench. The water was then recycled 100% with make-up water pumped only when needed. No direct discharge occurred.

Gold: The gold recovered off both bench operations was described as being primarily fine, flat and smooth. Some wire gold and occasional small nuggets with quartz attached were recovered off the Bee Gulch bench. Both benches produced gold with a purity of approximately 820 fine.

HUNKER CREEK 115 O/15
Daval Mining 63°58'N 139°00'W
Water Licence: PM94-074 1995, 1996, 1997
Bonanza-Hunker Placer Area Site No. 33

Operation/Location: Dave and Allen Gould continued to mine in an upstream direction along the left limit of Hunker Creek between the left limit tributaries Colorado Creek and Not Much Gold Creek. Ian Thomas joined the operation as a partner starting in 1996.

Equipment/Function: A Caterpillar 950B loader and a Caterpillar PC220 excavator were used to mine this property. The loader was primarily used during sluicing but also was used for handling pay gravels during stripping. The excavator was used for stripping and sluicing.

Wash Plant: Three different wash plants were used. In 1995 a conventional single run sluice box was used. A dump box that narrowed from 11 feet wide to 4 feet wide led into a 2 foot wide by 18 foot long single sluice run. The sluice run was lined with 1½ inch angle iron riffles and Nomad matting. This sluice plant could process approximately 30 cubic yards per hour. In 1996 a trommel wash plant was rented. A hopper fed into a 4 foot diameter by 8 foot long trommel which classified the pay gravels to ½ inch minus. The classified pay was washed through a single 8 foot wide by 5 foot long sluice that was lined with hydraulic riffles. This wash plant also processed approximately 30 cubic yards per hour. A trommel wash plant was purchased for the 1997 season. A hopper fed into a 5 foot diameter by 15 foot long trommel. Twelve feet of the trommel was outfitted with ½ inch screen. The classified pay gravels were washed through a single sluice run 10 feet wide by approximately 5 feet long. The first 29 inches were outfitted with hydraulic riffles and the remainder of the run used expanded metal and Nomad matting. The oversize material was stacked with a 28 foot long by 3 foot wide conveyor. This wash plant increased the production to 50 cubic yards per hour. A 6 inch Gorman Rupp pump powered by a Deutz engine supplied the 600 to 1000 igpm needed to operate the three wash plants.

Ground Description: All the ground mined was dredged in approximately 1919 which completely altered the original strata. An average of 9 to 12 feet of coarse tailings overlie approximately 7 feet of sand and 12 feet of mud. The first 2 to 3 feet of bedrock and any gravels that were missed by the dredge were sluiced.

Mining Cuts: All of the upper materials were backfilled into the previous cut. One cut was sluiced in each season with an average size of 2200 square yards.

Water Supply and Treatment: The mine pit is well below the water table so that seepage inflow needs to be pumped off during the stripping phase. When the pay material has been removed from the pit and stockpiled the pit is allowed to fill with water. The pay is then sluiced back into the pit and the water is recycled. No discharge occurs.

Gold: Most of the gold was flat and fine. A few small nuggets were recovered. The purity of the gold was 820 fine.

HUNKER CREEK 115 O/15
Jack and Ian Fraser 63°58'N 138°58'W
Water Licence: PM96-066 1995, 1996, 1997
Bonanza-Hunker Placer Area Site No. 34

Operation/Location: Jack and Ian Fraser mined on Temperance Hill for the first part of 1995 and then sluiced dredge tailings along Hunker Creek upstream from the main camp for the remainder of the season. More of the dredge tailings were sluiced in 1996 along with two left limit cuts just upstream of the main camp. Very little work was done during 1997. Three to four people ran the operation in 1995 and 1996.

Equipment/Function: Two Caterpillar D8H bulldozers, a Caterpillar D6 bulldozer and a Caterpillar 950 loader were used in 1995. A Caterpillar 225 excavator was acquired for the 1996 season to get to the bottom of the dredge tailings and to strip the side pay.

Wash Plant: A 5 foot by 14 foot double deck screen plant classified the pay to 1 inch minus. The classified pay was spread onto an 8 foot wide by 22 foot long sluice box that was divided into four runs. The first 4 feet of the run used 1¼ inch angle iron riffles. The next 12 feet were lined

with heavy expanded metal and the last 6 feet used 1¼ inch angle iron riffles. Nomad matting was used down the entire length. An 8 inch by 6 inch pump powered by a 471 Cummings and an 8 inch by 6 inch pump powered by a 671 Cummings supplied the water for sluicing in 1995. A 4 inch by 6 inch Gorman Rupp trash pump was added in 1996. Approximately 1500 igpm was needed to sluice 45 cubic yards per hour.

Ground Description: The dredge completely altered the stratigraphic profile of the ground. The tailings were stacked with a maximum height of 15 feet above the creek level. Coarse tailings were encountered to 6 feet below creek level where dredge slickings were encountered until a depth of 21 feet below creek level. Mud was then found to a depth of 31 feet. Bedrock was usually encountered at 31 feet below the creek level. The dredge had completely cleaned all gravels from the bedrock. The cuts that were mined along the left limit in 1996 averaged 12 feet deep with 6 feet of overburden and 4 feet of pay gravels. The lower 4 feet of gravel and usually 2 feet of bedrock was sluiced. In some areas as much as 5 feet of the bedrock needed to be sluiced.

Mining Cuts: All of the dredge tailings were processed from the top down. In 1995 two cuts approximately 300 feet long by 75 feet wide by 15 feet deep were mined. In 1996 the dredge tailings were stripped off to see what was at the bottom. A cut 300 feet long by 80 feet wide by 30 feet deep was mined. The two cuts along the left limit that were mined measured 300 feet long by 150 feet wide by 6 feet deep and 300 feet long by 80 feet wide by 8 feet deep. Very little activity and no sluicing occurred in 1997.

Water Supply and Treatment: Water was pumped from instream pump ponds on Hunker Creek to the wash plant. The effluent was treated in out of stream ponds prior to discharge back to Hunker Creek.

Gold: The gold was reported to have been a little coarser than usual in 1996. The purity is 810 fine.

HUNKER CREEK **115 O/15**
Art Sailer **63°57'N 138°54'W**
Water Licence: PM92-079 **1995**
Bonanza-Hunker Placer Area **Site No. 35**

Operation/Location: Art Sailer ran a small operation during 1995 on Hunker Creek at the base of Whiskey Hill just downstream from Rogers Gulch. The operation was run with a small crew that commuted daily from Dominion Creek. No work was done at this site in 1996 or 1997.

Equipment/Function: Two Caterpillar D9 bulldozers, two Caterpillar D8 bulldozers, three Caterpillar 980 loaders, a Caterpillar 225 excavator and a Caterpillar EL300 excavator were available for mining the property. The equipment required was trucked to Hunker from the main mining operation on Dominion Creek.

Wash Plant: The pay gravels were classified with a 5 foot by 14 foot screen plant. The classified pay was fed through a 4 foot wide by 12 foot long sluice run utilizing 1¼ inch angle iron riffles and a 10 foot by 10 foot sluice run with expanded metal and Nomad matting. Approximately 100 cubic yards per hour were sluiced.

Ground Description: This portion of Hunker Creek has been impacted by both dredge operations and mining on Whiskey Hill which resulted in a deposition of tailings onto the creek ground. The ground varied in depth from 20 to 30 feet with 10 to 20 feet of muck and tailings over 5 to 10 feet of gravel. Due to the nature and history of the ground the gravels were washed in the cut and all the material remaining was sluiced.

Mining Cuts: A single cut covering an area of approximately 2000 square yards was stripped. Approximately 6000 cubic yards were sluiced.

Water Supply and Treatment: Water for sluicing came from an instream reservoir on Hunker Creek. The effluent was treated in an out of stream settling pond and then returned to Hunker Creek upstream of the instream pump pond.

Gold: The gold was coarse and some small nuggets were recovered. The purity was approximately 820 fine.

HUNKER CREEK	**115 O/15**
John Erickson	**63°57'N 138°63'W**
Water Licence: PM96-082	**1995, 1996, 1997**
Bonanza-Hunker Placer Area	**Site No. 36**

Operation/Location: John and Sharon Erickson continued to mine on Hunker Creek in the Mint Gulch area. Most of the mining was done on left limit side pay although some dredge tailings were processed.

Equipment/Function: A Caterpillar D8 bulldozer was available for stripping and stockpiling pay gravels for sluicing. A Caterpillar 988 loader and a Caterpillar 966 loader were used for feeding the sluice plant and handling tailings. Monitors were used to strip and wash the side pay cuts.

Wash Plant: A 10 foot by 12 foot dump box fed into a conventional single run sluice box 3 feet wide by 20 feet long. Nomad matting and 1½ inch angle iron riffles lined the sluice run. A 10 inch by 12 inch Dayton pump powered by a Caterpillar engine supplied the 2000 igpm needed to process approximately 60 cubic yards per hour.

Ground Description: Most of the ground mined was side pay left along the left limit of Hunker Creek. An average of 20 feet of black muck, ice lenses and peat type vegetation overlies an average of 4 feet of gravel. Bedrock is usually solid and rises away from the creek. The overburden was washed away with monitors and all remaining gravels and up to 2 feet of the bedrock was sluiced.

Mining Cuts: A 500 foot long by 60 foot wide cut was mined in 1995. A similar sized cut was processed in 1996 along with some dredge tailings. The operation made a jump upstream in 1997 to a new piece of ground but poor results were obtained. A small left limit cut downstream of Mint Gulch was mined late in 1997.

Water Supply and Treatment: Water is generally pumped from Hunker Creek or from reservoirs built in Hunker Creek. The water is then used for monitoring or sluicing and then treated in a series of out of stream settling ponds. During periods of low flows the water is recycled near the sluice plant.

Gold: Most of the gold recovered from the side pay cuts tended to be smaller than 10 mesh. The fineness was consistent at 830.

HUNKER CREEK	**115 O/15**
Paul Mahoney	**63°54'N 138°53'W**
Water Licence: PM94-062	**1995, 1996, 1997**
Bonanza-Hunker Placer Area	**Site No. 37**

Operation/Location: Paul Mahoney has continued to operate a small scale operation on the left fork of Hunker Creek immediately upstream from its confluence with the right fork. Paul ran the operation by himself.

Equipment/Function: A TD18 bulldozer and a Bantam C350 excavator were used for stripping, sluicing and settling pond maintenance.

Wash Plant: The wash plant consisted of a wet chute passing over a grizzly before running through a single run sluice box. A 3 inch Honda pump supplied approximately 250 igpm for sluicing approximately 15 cubic yards per hour. Water delivered by gravity from an old historic ditch was also used for sluicing.

Ground Description: The cut had an average of 6 feet of frozen black muck overlying 6 to 7 feet of gravel. Bedrock is slabby and solid. The lower 1 to 2 feet of gravels were sluiced.

Mining Cuts: One small cut measuring 20 feet wide by 60 feet long was sluiced over a three year period. In Pauls words, "Not much accomplished".

Water Supply and Treatment: Water comes from the old historic ditch to the wash plant. The effluent was treated in a pre-settling pond before final treatment in an out of stream settling pond located near the main forks. Discharge occurred back to the left fork of Eureka Creek and no recycling occurred.

Gold: The gold was described as mainly flat, rough and had a purity of approximately 830.

24 PUP/RIGHT FORK HUNKER CREEK 115 O/15
Gerald and Elizabeth Ahnert 63°53'N 138°56'W
Water Licence: PM95-033 1995, 1996, 1997
Bonanza-Hunker Placer Area Site No. 38

Operation/Location: Gerald and Elizabeth Ahnert continued their small scale mining operation on 24 Pup, a steep left limit tributary of the right fork of Hunker Creek. Mining over the past several seasons has proceeded downstream along a narrow meandering pay channel.

Equipment/Function: A 1969 John Deere 400 rubber tired loader/backhoe was used for stripping, stockpiling pay, feeding the sluice plant and levelling tailings.

Wash Plant: A 3 foot by 8 foot wet screen shaker was used to classify the pay to 2 inch minus. The classified material was washed in a single run sluice, lined with expanded metal and 1 inch Hungarian riffles. A 3 inch Honda pump, powered by an 8 horsepower engine, supplied the 250 igpm needed to process a maximum of 10 cubic yards per hour.

Ground Description: The stratigraphic section was composed of approximately 12 feet of peat muck overlying 5 feet of pay gravel. The bedrock varied from highly rotted and decomposed to solid and blocky along short sections of the creek. As in past seasons all of the gravel and up to 2 feet of the bedrock was sluiced.

Mining Cuts: Since the initial cut was made all mining has been generally working in a downstream direction. A cut 60 feet long by 20 feet wide was mined in 1995. A smaller cut, measuring 50 feet long by 15 feet wide, was mined in 1996. A similar volume was processed during 1997.

Water Supply and Treatment: 24 Pup is a steep, narrow and relatively short drainage. Throughout most of a typical summer there is no surface run-off and all water used for sluicing is captured from small sources of ground water exposed during mining. The water is contained in out of stream ponds and then fully recycled.

Gold: This creek produces some interesting and varied types of gold. As much as 60% of the gold recovered is either dendritic or crystalline. The gold is usually coarse and the fineness has varied from 827 to 845.

Comments: The pay streak made an abrupt turn towards the right limit in 1996 which made it difficult to mine that year because the ground thawed slower than usual due to cooler temperatures. Gerald Ahnert continued to use his metal detector for checking tailings, mapping the pay zone and to see whether enough blocky bedrock had been excavated. A 2½ ounce nugget was found while scanning the bedrock.

RIGHT FORK HUNKER CREEK 115 O/15
Tom McMahon 63°53'N 138°55'W
Water Licence: PM95-094 1996
Bonanza-Hunker Placer Area Site No. 39

Operation/Location: Tom McMahon ran a small scale operation in 1996 by himself on the right fork of Hunker Creek. The mine site is near the headwaters of Hunker Creek and lack of surface run-off can be a problem. The valley is narrow and has steep hillsides.

Equipment/Function: A Caterpillar 225 excavator did all the work including stripping, feeding the wash plant and handling tailings.

Wash Plant: A 3½ foot trommel was used to classify the pay to ½ inch minus before being sluiced through a single 6 foot by 5½ foot sluice run. The upper 2 feet used 1 inch angle iron riffles and the lower 3½ feet used expanded metal. The run was lined with unbacked Nomad matting. A 5 inch Ajax pump powered by an Izuzu engine supplied the 500 igpm needed to process a maximum of 50 cubic yards per hour.

Ground Description: The ground mined averaged 20 feet deep with 14 feet of frozen black muck overlying 4 feet of gravel. Bedrock was decomposed. All of the gravels and up to 1 foot of the bedrock was sluiced.

Mining Cuts: A small cut was sluiced along the right limit in 1996. Further work was planned for 1997 but no mining was done.

Water Supply and Treatment: Water shortages are a problem at this site because the mine is located

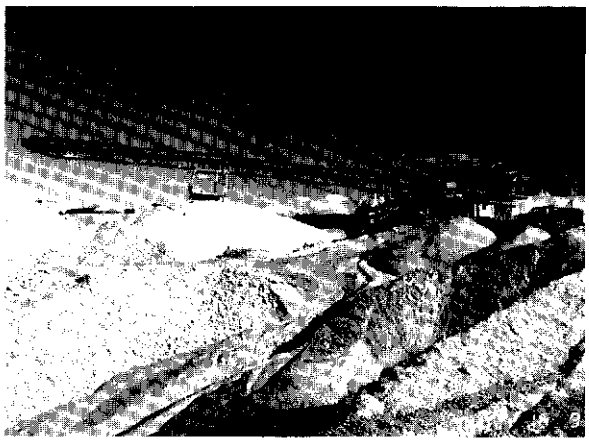
near the top of the watershed. All surface run-off was channelled into an instream recycle pond where it was pumped to the sluice plant. The effluent was settled in an out of stream pre-settling pond prior to being discharged back into the recycle pond. The creek was dry for part of the summer in 1996 and small sources of water from underground springs were used for make-up water.

Gold: The gold was screened to approximately 30% +12 mesh, 15% -12 to +15 mesh and 50% -15 to +35 mesh. Most of the gold was rough and many of the small nuggets contained quartz. Some loose mercury was recovered during sluicing and clean-up. The fineness of the gold varied from 790 to 820.

Comments: Tom McMahon operated under the White Industries Ltd. Water Use Licence.

LAST CHANCE CREEK 115 O/14, 116 B/3
Northway Mining 63°00'N 139°06'W
Water Licence: PM95-091 1995, 1996, 1997
Bonanza-Hunker Placer Area Site No.40

Operation/Location: This operation was located on Preido Hill, which is on the right limit of Last Chance Creek at its confluence with Hunker Creek. Three miners worked 11 hours per day in 1995. Five to six miners worked 11 hours per day in 1996.



Northway Mining's wash plant set up on Preido Hill.

Equipment/Function: The equipment used included a 245 Caterpillar excavator, a D9L Caterpillar bulldozer and two 35 ton rock trucks. Two 55 ton rock trucks were added in 1996.

Mining Cuts: The operation mined bench gravels on Preido Hill. Stripping occurred from mid July to late September 1995 and through the 1996 mining season. In 1995 and 1996 an area 380 yards long with a width of 250 feet at one end and 500 feet at the other was stripped. In 1997 sluicing was started.

Water Supply and Treatment: This operation utilized a 100% recirculation system for water supply. Make up water for the pond on the bench was pumped from Last Chance Creek up the hill to an historic ditch which conveyed the water to the pond.

LAST CHANCE/DISCOVERY PUP 115 O/14
Peter I. Erickson 63°59'N 139°05'W
Water Licence: PM95-043 1995, 1996, 1997
Bonanza-Hunker Placer Area Site No. 41

Operation/Location: Two miners usually worked 8 hours per day, but sometimes up to 10 hours, at this site on Discovery Pup at its confluence with Last Chance Creek. In addition two students were hired in 1996 and one in 1997.

Equipment/Function: In 1995 a D8 Caterpillar bulldozer with a ripper was used for stripping overburden and a D6 Caterpillar bulldozer was used for sluicing. An excavator with a 1 yard bucket was hired as needed. In 1996 a D9 Caterpillar bulldozer with a bull blade and ripper was hired to strip. A D6C Caterpillar bulldozer with a straight blade was used for pushing up paydirt. An excavator was hired to feed the sluice box. In 1997 the bulldozers used and the jobs they performed were the same as in 1996.

Wash Plant: This operator used a 30 foot trommel including a 15 foot scrubbing section and a 15 foot screen. The sluice run fitted on the trommel is 12 feet long and from 3 to 5 feet wide. The sluice run is fitted with punch plate and expanded metal. In 1996 the operator went back to using a regular sluice box for half of the cut due to the presence of wood and large rocks. Once the wood and rocks were through, the trommel was used. The washplant was supplied with 1000 igpm of water using a Worthington 8 inch by 6

inch pump powered by a 4-53 General Motors engine. The process rate was 60 loose yards per hour.

Ground Description: The stratigraphic section in Discovery Pup is 30 to 40 feet of frozen black muck on bedrock. The bedrock varied from hard to soft gumbo clay. A cut in the Last Chance valley at the mouth of Discovery Pup had overburden that was shallow in places and full of oldtimers logs. The sluice section in 1995 was 3 feet, in 1996 it was 2 to 3 feet and in 1997 it was 3 to 4 feet.

Mining Cuts: In 1995 one cut 300 feet by 60 feet was mined, in 1996 one cut 250 by 70 feet was mined and in 1997 one cut was mined and another was stripped in preparation for the 1998 mining season.

Water Supply and Treatment: In 1995 water for the operation was obtained from an instream pump pond on Last Chance Creek and by pipeline 300 to 400 feet up Discovery Pup to the sluicing operation. Waste was treated in an out of stream pond on the left limit of Last Chance Creek prior to discharging to the pump pond. This allowed an estimated 50% recirculation rate. In 1997 water was pumped from the end of the settling pond allowing 100% recirculation.

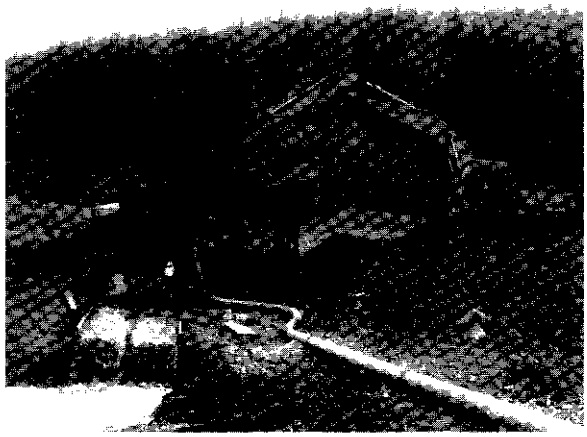
Gold: In 1995 gold recovered was about 80% fine grained and about 20% coarse. In 1996 only about 10% of the gold was coarse and in 1997 about half was fine and half was coarse. Fineness was from 690 to 700.

Comments: The cut mined in 1995 had been mined by oldtimers and had 2 to 3 feet of ice on bedrock. Most of the gold recovered was in the bedrock. In 1996 the mine cut was on the right limit of Discovery Pup. A small area at the end of the cut (about 50 feet by 25 feet) was missed by the oldtimers.

LAST CHANCE CREEK	**115 O/14**
Murray Crockett	**63 58'N 139 08' W**
Water Licence: PM94-051	**1995, 1996, 1997**
Bonanza-Hunker Placer Area	**Site No. 42**

Operation/Location: Murray Crockett mined claims on Last Chance Creek between Discovery Pup and the mouth of 8 Above Pup from 1995 to 1997. In 1995 and 1996 the mine crew numbered four with one additional worker in camp. The miners worked 10 to 12 hours per day.

Equipment/Function: In 1995 and 1996 Mr. Crockett used two Caterpillar bulldozers, a D9L and a D9G, as well as one Caterpillar 980C loader and an EL300 excavator with a 2 yard bucket to mine the property. In 1997 the D9G bulldozer and EL300 excavator were used.



Wash plant used by Murray Crockett on Last Chance Creek.

Wash Plant: Mr. Crockett processed pay gravels using a 5 foot by 16 foot El-Russ screen deck. The 4 foot by 6 foot feed sluice fed into a distribution box dividing into two sluice runs 4 by 15 feet. The first 2 feet of sluice run had 1 inch riffles with the remainder expanded metal. A Worthington 10 by 10 inch pump powered by a 6-71 General Motors pump provided 2000 igpm of water to the wash plant. 175 to 200 loose yards per hour were processed in 1995 and 1996. The process rate in 1997 was 100 to 150 loose yards per hour.

Ground Description: The stratigraphic section varied widely between claims. Some claims had tailings from old hydraulic operations covering the overburden. Muck was from 12 feet to 45 feet deep and gravel was from 4 to 15 feet deep. Bedrock was a mixture of gumbo and sandstone. The sluice section consisted of 2 to 3 feet of gravel as well as 3 to 8 feet of bedrock. The mouth of 8 Above Pup had many old works. There was evidence of earlier miners using both

wood fires and steam to thaw frozen ground. Muck was 45 to 50 feet deep and frozen on the right limit. Old bones were also found.

Mining Cuts: Four cuts were mined in 1995. The first was 200 by 500 feet, the second 250 by 200 feet and the last two small cuts totalled 150 by 100 feet. In 1996 three cuts were mined. The first was 200 by 150 feet, the second was 330 by 275 feet and the third 300 by 275 feet. In 1997 two cuts were mined. The first was 320 by 150 feet and the second was tapered in shape with average dimensions of 400 by 175 feet.

Water Supply and Treatment: At all sluicing setups Mr. Crockett utilized total recirculation settling ponds with make up water taken from Last Chance Creek. Any discharge from the ponds was via seepage.

Gold: Gold recovered from Last Chance Creek was very fine grained. The purity was 680 to 700. At the mouth of 8 Above Pup the gold was rough and chunky.

Comments: Sluicing rates varied due to gumbo clay encountered in some of the cuts which slowed things down. Bedrock was very uneven. Recontouring of stripping and tailings piles was completed at the site to encourage revegetation.

LAST CHANCE CREEK **115 O/14**
Lokey Mining Services Ltd. **63°58'N 139°07'W**
Water Licence: PM93-107 **1995, 1996, 1997**
Bonanza-Hunker Placer Area **Site No. 43**

Operation/Location: Last Chance Placers Ltd. operated under this licence. Mining took place on 15 Above Pup, Last Chance Creek, Gumbo Hill and Treasure Hill. There were three miners and one camp employee working an average of 11 hours per day.

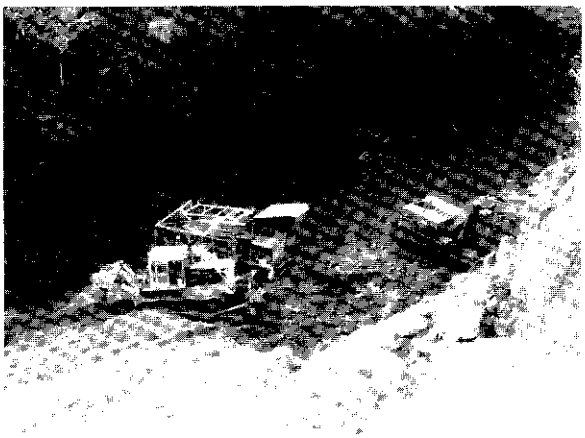
Equipment/Function: The equipment used included a 235 Caterpillar excavator, two D8H Caterpillar bulldozers and a D9H Caterpillar bulldozer. The bulldozers were equipped with U-blades and rippers. The D9H was added late in 1997. Only one of the D8H's was used in 1997. The excavator was used to rip frozen overburden for stripping and to feed the wash plant. The bulldozers were used to rip and strip overburden, to push up pay gravel and to move tailings. The D9H was used on Treasure Hill only.

Wash Plant: The wash plant consisted of a 5 foot by 11 foot single deck oscillating screen deck with ¾ inch punch plate. Undersize material flowed to a static 4 foot by 6 foot tray with one inch angle iron riffles over Nomad matting, then to two 4 foot by 8 foot oscillating trays with large expanded metal over Nomad matting. The screen deck was modified from a Clinton Creek asbestos screener. The pump used was a 6 by 5 inch Cornell pump powered by a 6-cylinder Mitsubishi engine. The plant processed 100 loose yards of material per hour.

Ground Description: In 1995 the stratigraphic section for the area mined on 15 Above Pup was 50 feet of frozen muck over 4 feet of poorly sorted angular gravel and cobbles, etc. The sluice section was 4 feet of gravel and 3 feet of bedrock. On Gumbo Hill the material was thawed and consisted of 6 feet of brown channel gravels over carbon schist bedrock. The entire section was sluiced on Gumbo Hill. In 1996 one cut was taken in the Last Chance Creek valley near the mouth of 15 Above Pup. The ground there consisted of 25 feet of muck over 5 feet of cobbles. A cut taken from the right limit of 15 Above Pup had 55 feet of muck over 3 feet of gravel and the cuts from the centre of the15 Above Pup valley had 60 feet of muck over 3 feet of gravel. All of the gravels and 3 feet of bedrock were sluiced. In 1997 the area mined on 15 Above Pup was along the extreme right limit wall. It consisted of 60 feet of frozen black muck over 5 feet of poorly sorted angular gravels, cobbles and boulders. Bedrock was decomposed carbonaceous schist which became more solid at 2 feet in depth, and was blocky at 4 feet. The sluice section was the gravel and 4 feet of bedrock. Two areas were mined on Treasure Hill. One was from an area previously disturbed by J. Boyle's hydraulic mining in 1916. The decomposed bedrock of the cut floor was sluiced. The upper 2 feet were described as being like "Nestle Quick" powder and the lower 2 feet were more consistent. The other area mined was from the west wall of Boyle's cut, midway between 15 Above Pup and 8 Above Pup.

This area had 50 feet of well sorted White Channel cobbles and rounded boulders over bedrock which varied between decomposed graphitic schist and orange coloured, decomposed schist.

Mining Cuts: In 1995 a total of 4 cuts were mined. The Gumbo Hill cut was 45 feet by 240 feet. The Last Chance cut was 60 feet by 300 feet. The 15 Above Pup cuts were 30 feet by 150 feet and 70 feet by 330 feet long. In 1996 a total of 4 cuts were taken. In 1997 three cuts were mined. The 15 Above Pup cut was 75 feet by 600 feet. The area from Boyle's cut floor was 400 feet by 400 feet and the cut at the west wall of the Boyle cut was 50 feet by 300 feet.



Lokey Mining Services Ltd. working on a cut on 15 Above Pup in 1995.

Water Supply and Treatment: Water for this operation was pumped from a small intake pond off Last Chance Creek. The water was pumped up to an height surveyed at 360 feet. Effluent from the 15 Above Pup operations was settled in a pond at the mouth of the pup. Settled water discharged to Last Chance Creek upstream from the intake pond where it was pumped back up to the sluice sites.

Gold: The 15 Above Pup gold had a fineness of 675. The Treasure Hill gold had a fineness of 700. The gold was described as angular and bright, often having a dendritic form. Approximately 5% was +20 mesh.

LEFT FORK LAST CHANCE CREEK 115 O/14
Alfred D. Roberts 63°57'N 139°08'W
Water Licence: PM94-073 1995, 1996, 1997
Bonanza-Hunker Placer Area Site No. 44

Operation/Location: This property is located on the upper reaches of Last Chance Creek on its left fork. The valley width in this area is estimated at 100 feet. A test program has been performed at the site under this licence and its predecessor PM91-095. In 1995 an area was stripped using a D8H Caterpillar bulldozer. In 1996 and 1997 an International 125 C track loader was used to dig a small cut. The testing has not yet located a profitable pay-zone.

GOLD BOTTOM CREEK 115 O/15
Mogul Gold Placers 63°55'N 138°58'W
Water Licence: PM93-059 1995, 1996, 1997
Bonanza-Hunker Placer Area Site No. 45

Operation/Location: Dave Millar continued mining on Gold Bottom Creek upstream of Soda Creek during 1995, 1996 and 1997. Three to four miners and a student were employed in each season to operate a single 10 to 12 hour shift.

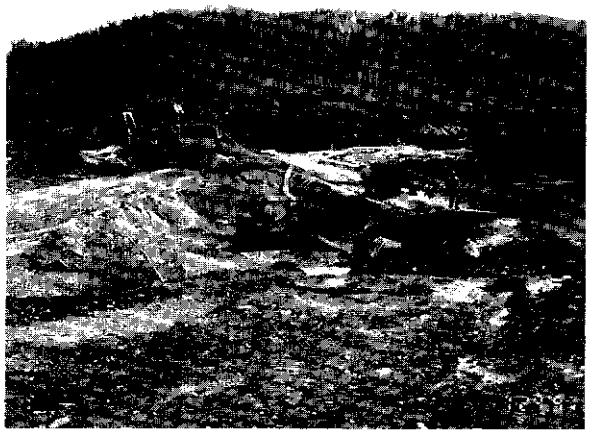
Equipment/Function: Two Caterpillar D8H bulldozers were used for stripping and stockpiling the pay gravels. A Caterpillar 966C loader was used for feeding the sluice plant. A 666 Caterpillar loader was available when required.

Wash Plant: Several sluice plants were used during the three years covered by this report. In 1995 both a Ross Box and a trommel were used. The trommel was equipped with hydraulic riffles and oscillating sluice runs. In 1996 a 5 foot diameter trommel was used. The sluice runs were equipped with expanded metal. A trommel was used in 1997 as well. Either a 6 inch trash pump or a 10 inch by 12 inch pump supplied the approximately 1500 igpm required to run the trommels. The Ross Box required 5000 igpm.

Ground Description: Cuts along the right limit as well as creek ground in the centre of the valley were mined. The overall depth increased along the limit. An average cut had a 15 foot layer of frozen black muck overlying 10 feet of gravel.

Bedrock varied from chunky and solid to fully decomposed as in past seasons. The lower several feet of gravel and the first foot of bedrock was usually sluiced.

Mining Cuts : Four separate cuts were sluiced in 1995. Production increased to five cuts (52,500 cubic yards sluiced) in 1996. Four cuts (31,500 cubic yards sluiced) were mined during 1997.



Mogul Gold Mining sluicing along the right limit of Gold Bottom Creek with the mine cut in the background.

Water Supply and Treatment: Water was usually captured in an instream pump pond using a water control box. The water was pumped to the sluice plant before being treated in downstream settling ponds which handled the entire creek flow. The final settling ponds were constructed near the mouth of Gold Bottom Creek.

Gold: The gold was reported to have a purity of 778 fine.

GOLD BOTTOM CREEK	**115 O/15**
Roger Kay	**63°54'N 138°59'W**
Water Licence: PM96-090	**1996,1997**
Bonanza-Hunker Placer Area	**Site No. 46**

Operation/Location: Roger Kay moved his operation to Gold Bottom Creek in 1996 and mined at the mouth of the first unnamed right limit tributary upstream from Gold Bottom Gulch. The operation worked along the right limit of Gold Bottom Creek between Gold Bottom Gulch and the unnamed right limit tributary throughout the 1997 season. No information was provided by the miner for this operation.

Ground Description: The ground that was mined in 1997 was partially prepared over the last few years by natural thaw. A thick overlying layer of frozen muck and ice lenses covers a shallower layer of gravels.

Mining Cuts: A large cut which took the mouth of the unnamed right limit tributary upstream of Gold Bottom Gulch was mined during the later part of 1996. Narrow long cuts were mined along the right limit of Gold Bottom Creek in 1997.

Water Supply and Treatment: Water for sluicing came from Gold Bottom Creek and Gold Bottom Gulch. The water was usually contained in an out of stream recycle/settling pond. Final effluent treatment was provided in an instream settling pond downstream on Gold Bottom Creek.

Gold: The gold recovered from this area by previous operators was reported to have a purity of about 810 fine.

GOLD BOTTOM CREEK	**115 O/15**
Bert Oud	**63°53'N 138°59'W**
Water Licence: PM94-042	**1995, 1996, 1997**
Bonanza-Hunker Placer Area	**Site No. 47**

Operation/Location: Bert Oud continued to mine with his sons Jason and Lou on Gold Bottom Creek and Soap Creek. The operation finished on Soap Creek in 1995 and then moved to the top end of Gold Bottom Creek for the remainder of the season. Cuts downstream of Gold Bottom Gulch along Gold Bottom Creek were mined during 1996 and 1997. The operation was largely shut down in 1997 and it is expected that no further mining will be done.

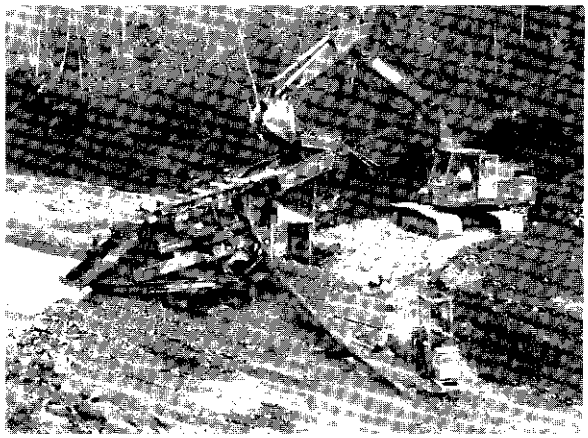
Equipment/Function: A Komatsu 355 bulldozer equipped with a U-blade and ripper was used for stripping the cuts. A Caterpillar D8H bulldozer equipped with a U-blade and ripper assisted with the stripping and was used to clear tailings during sluicing. The wash plant was fed with a UH 07 Hitachi excavator.

Wash Plant: A hopper fed a 4 foot wide by 12 foot long Tyler screen plant. The ½ inch minus classified pay was sluiced through four oscillating runs 4 feet wide by 8 feet long. The sluice runs were lined with heavy Nomad matting and

expanded metal. Approximately 100 cubic yards per hour could be processed. An 8 inch by 6 inch Monarch pump supplied the water for sluicing.

Ground Description: There was considerable variation in depth on the cuts that were mined during this three year period. The cuts at the top end of Gold Bottom Creek became very deep and had a thick overlying layer of frozen black muck. No information was provided for the individual cuts.

Water Supply and Treatment: Water was pumped from instream reservoirs to the sluice plant. The operation on Soap Creek and upper Gold Bottom Creek required a full recycle system due to lack of water throughout much of the season. Final treatment occurred downstream on Gold Bottom Creek usually. The lower Gold Bottom Creek operation did not have as much difficulty receiving make-up water for sluicing.



Sluicing pay gravels at Bert Oud's operation on Gold Bottom Creek.

Gold: The gold reported in the past from this property was rounded with some coarse gold. The purity was approximately 800 fine.

ALLGOLD CREEK	**115 O/15**
Henry Gulch Placers	**63°55'N 138°40'W**
Water Licence: PM96-093	**1995, 1996, 1997**
Klondike Placer Area	**Site No. 48**

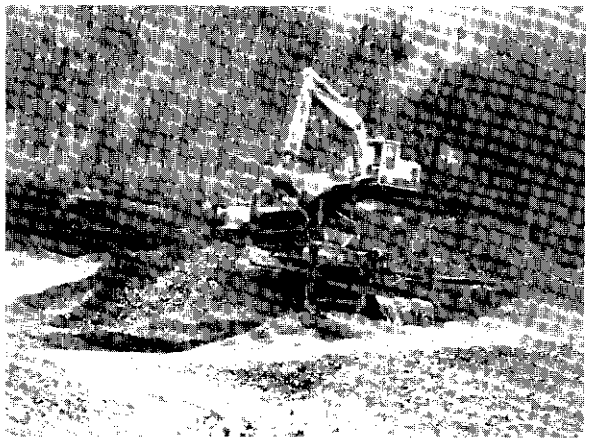
Operation/Location: This property near the downstream end of Allgold Creek was mined utilizing eight miners in 1995, ten miners in 1996 and an average of five miners and two camp personnel in 1997. In 1995 and 1996 two 12 hours shifts were run per day. In 1997 the operation stripped from 1 to 11 hours and sluiced from 2 to 22 hours per day.

Equipment/Function: In 1995 the property was mined using two D9H Caterpillar bulldozers and a Caterpillar 631-B scraper to strip, a 235 Caterpillar excavator to dig drains and load the scraper and sluice, a 980B Caterpillar loader to haul pay to the plant and pack away tailings and a 225 Caterpillar excavator to feed the plant. In 1995 one D9H was replaced with a D9G and a 245 Caterpillar excavator was added for stripping and digging drains. In 1997 the operation utilized one D9G Caterpillar bulldozer, one model 235 and one model 245 Caterpillar excavators, and two 35 ton articulating trucks to mine.

Wash Plant: The washplant used in 1995 and 1996 was a single deck shaker plant obtained from the Clinton Creek Mine. The shaker plant screened to ¾ inch minus and had three 4 foot oscillating runs with expanded metal over Nomad matting for recovery. A Fairbanks-Morse 10 inch by 8 inch pump powered by a 3-71 General Motors engine provided the 1500 igpm of water needed to process 75 loose yards per hour. In 1997 a two deck Tyrock screener was used. The Tyrock screened to ¾ inch minus and fed four 4 foot wide oscillating runs with expanded metal over Monsetta matting for recovery. A Fairbanks-Morse 8 inch by 8 inch pump powered by a Deutz engine provided 1200 igpm of water to process 85 to 100 loose yards per hour.

Ground Description: Ground mined in 1995 was 40 feet deep. This consisted of 25 feet of frozen mud over 15 feet of frozen gravel which were fairly uniform. Bedrock was wavy. In 1997 the mud layer increased to 40 feet for an overall total of 55 feet. The gravel section was uniform in size with some coarse rocks near bedrock. Bedrock was wavy and was not rising as work progressed towards the rim. In 1997 the mining operation moved upstream on Allgold Creek where the average depth was 17 feet but the valley width reduced significantly. The maximum depth was 22 feet and the minimum was 14 feet. The composition was uniform and frozen. The watercourse was approximately 5 feet below the virgin ground profile. Bedrock was wavy with a

few crosscutting quartz dykes. A number of old shafts were encountered. The sluice section taken in all areas was 3 to 4 feet of gravel along with 2 to 4 feet of bedrock.



Henry Gulch Placers' wash plant on Allgold Creek in 1995.

Mining Cuts: In 1995 one 1800 foot by 80 foot by 40 foot cut was mined. In 1996 two cuts were mined. One was on the right limit of the Allgold Creek valley and measured 1200 feet by 100 feet by 55 feet. The other cut was located downstream along the Klondike River from the mouth of Allgold Creek and measured 600 feet by 90 feet by 10 feet. In 1997 one cut was mined at the upstream area and measured 1100 feet by 100 feet by 20 feet.

Water Supply and Treatment: Out of stream water acquisition ponds of a "flow by on demand" design were used in 1995 and 1996. The settling ponds in these years were 500 feet by 100 feet by 10 feet in 1995 and 500 feet by 100 feet by 15 feet in 1996. In 1997 the operation moved to an instream system with the move to the narrower upstream area. An instream dam created the water acquisition pond upstream of the sluicing set up. Effluent travelled downstream to an instream pond 800 feet by 200 feet by 16 feet in size.

Gold: Gold from the lower cuts on Allgold Creek was flat with 70% of the clean-ups -14 mesh. Fineness was 840. Gold recovered from the upstream cut was flat with very little coarse. 20% was +10 mesh, 75% was -10 to +60 mesh, and 5% was -60 mesh. Fineness was 850. Few nuggets were recovered from any of the locations.

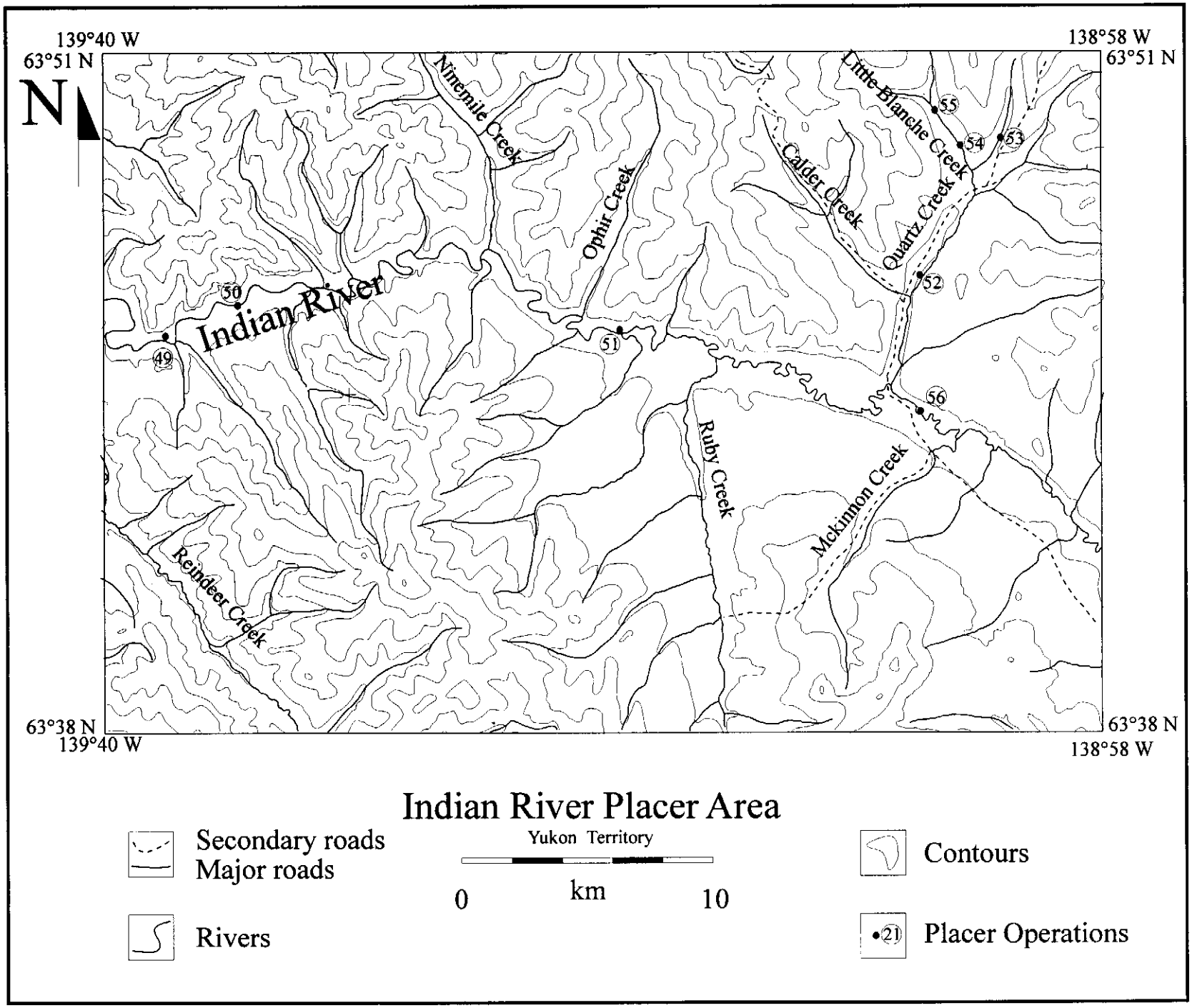
Comments: The large cut which worked into the right limit of the Allgold valley got too deep to pay as mining progressed into the rim. The quantity of old workings found at the upstream area led to more optimism than was warranted. The licence PM96-093 is an amendment of PM95-058 which replaced PM92-081.

INDIAN RIVER	**115 O/13**
Beron Placers Co. Ltd.	**63°47'N 139°30'W**
Water Licence: PM94-105	**1996**
Indian River Placer Area	**Site No. 49**

Operation/Location: During 1995, Ron and Bern Johnson built an access road into a block of claims on the lower Indian River, about half way between the mouth of Nine Mile Creek and the mouth of Bertha Creek. In 1996 they tested ground by drilling and trenching and they also stripped and mined one cut. No work was done at this site in 1997.

Equipment/Function: One Caterpillar D6 bulldozer was used for road building and moving equipment. One Caterpillar D8K bulldozer was used for stripping overburden and recontouring tailings. One Caterpillar 245 excavator was used to dig test pits and feed the wash plant.

Wash Plant: The wash plant was mounted on wheels for portability, with three levelling rams for easy set ups. Pay gravels were loaded into a 14 foot diameter dump box with spray nozzles around its top edges which washed the gravels onto two vibrating sections of punch plate, separated by an 8 inch drop. Punch plates were 4 feet long by 52 inches wide, with ¾ inch by 2 inch holes. Oversized tailings were removed by a 50 foot long conveyor belt, 42 inches wide. Classified pay gravels passed over 2½ feet of 2 inch riffles and were split into two, double sluice runs, 8 feet wide by 10 feet long. Side runs had sections of expanded metal riffles over Nomad matting, separated by sections of slick plate, and ended in a single sluice 3½ feet wide by 5 feet long, with 1 inch angle iron riffles. Approximately 160 cubic yards per hour were processed using about 1800 igpm, supplied by a 6 inch by 8 inch Monarch


139°40 W
63°51 N
138°58 W
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N
Ninemile Creek
Ophir Creek
Little Blanche Creek
Calder Creek
Quartz Creek
Indian River
Ruby Creek
Mckinnon Creek
Reindeer Creek
49
50
51
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53
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55
56
63°38 N
139°40 W
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Indian River Placer Area
Yukon Territory
0
km
10
Secondary roads
Major roads
Rivers
Contours
21
Placer Operations

pump powered by a 471 General Motors diesel engine.

Ground Description: The valley bottom averaged about 500 feet wide in the area of operation with 3 to 5 feet of organic black muck on top of a layer of sand which varied from a few inches up to 7 feet deep. Pay gravels were from 5 to 10 feet deep over hard, angular, bedrock boulders.

Mining Cuts: Approximately 5000 cubic yards were processed in 1996 from one cut about 100 feet by 200 feet; several test pits were dug and sluiced in 1996.

Water Supply and Treatment: Water was pumped from the Indian River and was retained in out of stream settling ponds.

Gold: Gold was small and flat with fineness around 800.

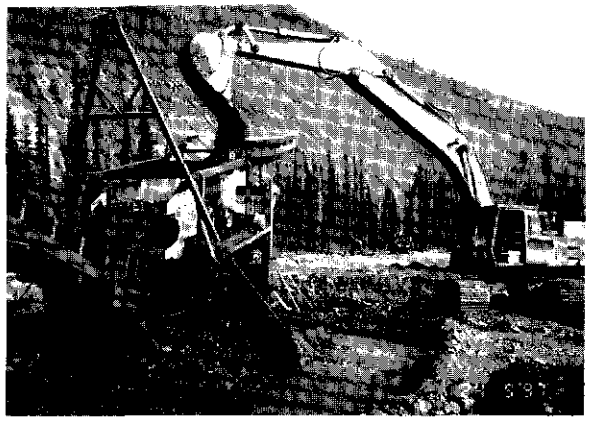
INDIAN RIVER	**115 O/13**
Barry Graham	**63°46'N 139°34'W**
Water Licence: PM95-012	**1997**
Indian River Placer Area	**Site No. 50**

Operation/Location: In 1997 Barry Graham began a two person operation on the left limit of the Indian River below Bertha Creek, under David McBurney's water licence.

Equipment/Function: One Caterpillar D9H bulldozer was used for stripping, moving the wash plant and flattening tailings; one Hitachi UH181 excavator was used to excavate gravel and feed the wash plant.

Wash Plant: A new 12 foot by 5 foot vibrating double screen deck classified to 1 ½ inches and to ½ inch. A 36 inch wide by 50 foot long conveyor powered by a 75 kilowatt Isuzu stacked tailings. There were three sluice runs on each side, 3 feet wide by 10 feet long each with 4 feet of hydraulic riffles followed by expanded metal riffles over Nomad mat. A Paco 8 inch by 10 inch pump supplied between 1200 and 2000 igpm of water which was used to process approximately 150 to 200 loose cubic yards per hour.

Ground Description: The left limit of the valley bottom had been previously stripped of about 6 feet of frozen overburden, gravels were roughly 6 feet deep and up to 4 feet of chunky bedrock were excavated.



An Hitachi UH181 excavator feeding Barry Graham's vibrating screen deck on the Indian River.

Mining Cuts: One small cut was completed about 90 feet wide by 150 feet long.

Water Supply and Treatment: Water was pumped directly from the Indian River using number 4 mesh fish screen on the pump intake and was treated in two large out of stream settling ponds prior to discharge back into the Indian River.

Gold: Very fine gold was recovered with fineness around 830.

INDIAN RIVER	**115 O/13**
David McBurney	**63°46'N 139°34'W**
Water Licence: PM95-012	**1995, 1996, 1997**
Indian River Placer Area	**Site No. 50**

Operation/Location: David McBurney ran a two person operation on the lower Indian River, below the confluence with Bertha Creek; the valley bottom was approximately 400 to 500 feet wide in the area of operation. David McBurney mined on the left bank and right bank in 1995, and on the right bank only in 1996 and 1997. In 1997 Barry Graham mined on the left bank under D. McBurney's Water Licence.

Equipment/Function: One Caterpillar D9G bulldozer, with U-blade and single ripper, was used for stripping overburden, removing and levelling tailings, and for topsoil restoration work. One Hitachi EX200 excavator, with a 1 cubic yard

bucket, was used to dig pay gravel and feed the wash plant, and to do some of the restoration work. A new Hitachi EX200/3 excavator was added in 1996.

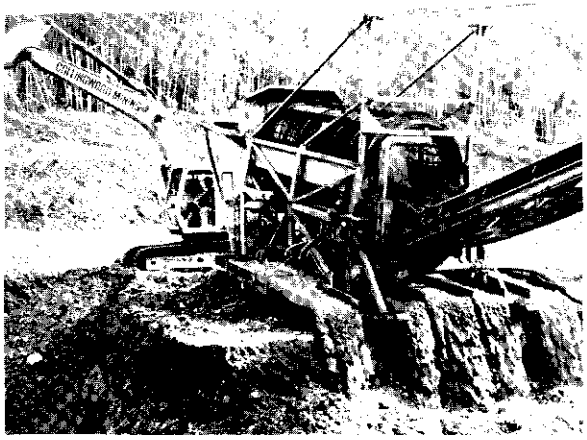
Wash Plant: David McBurney used a skid mounted trommel, about 5 feet in diameter by 15 feet long, which classified gravels to ½ inch minus, with oversize removed by a conveyor belt 40 feet long. A single sluice run with angle iron riffles, about 2 ½ feet wide by 4 feet long, expanded onto 5 riffle tables with a total width of about 13 feet by 12 feet long, with hydraulic riffles. An Ajax pump, 5 inches by 4 inches, powered by a Perkins 6354T diesel engine, delivered from 850 to 900 igpm water which was used to process about 85 to 100 loose yards per hour.

Ground Description: On both the right and left banks, frozen, sandy overburden varied from 3 feet to 9 feet deep on top of frozen pay gravels which averaged 6 feet deep but varied from 1 foot to 10 feet. Bedrock varied from soft and decomposed to hard and blocky.

Mining Cuts: Two cuts were mined in 1995. One cut on the left limit, low bench, about 10 feet above river level, was approximately 150 feet wide by 700 feet long. The second cut, on the right limit at river level, was about 150 feet wide by 700 feet long. Two cuts were mined in 1996. One cut, on the right limit, was approximately 150 feet wide by 1000 feet long and one cut, adjacent to the river, was about 200 feet wide by 500 feet long. In 1997 two cuts were mined on the right limit which produced approximately 77,000 cubic yards of pay gravels. One of these cuts was rectangular, approximately 120 feet wide by 500 feet long, the other was roughly triangular, about 360 feet on each side.

Water Supply and Treatment: Water was pumped directly from the Indian River and was settled in out of stream ponds within mined out cuts. Pump intakes in the Indian River were enclosed with number 4 mesh fish screens.

Gold: Gold was mostly fine and flat with a small percentage of coarse gold (3mm. to 5mm.) and fineness between 803 and 814. Clean up was done using a long tom and gold wheel.



Five hydraulic riffle tables under David McBurney's trommel on the Indian River.

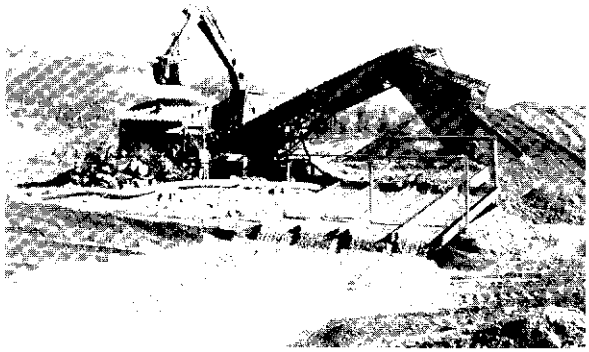
Comments: Site specific permission was granted by the Department of Fisheries and Oceans to mine a portion of the 10 metre leave strip on the right limit only of a straight section of the Indian River. Rehabilitation work included widening the river channel by about ten feet and reconstructing the right limit river bank using large boulders (up to 3 feet diameter) and coarse rock (plus 8 inch diameter) with regularly spaced groins, protruding 8 to 10 feet out from the bank, every 65 feet. Topsoil with vegetation, which had been previously stripped and stockpiled separately, was spread over the reconstructed river bank. Willow cuttings were planted to actively encourage revegetation.

INDIAN RIVER	**115 O/14**
8629 Yukon Ltd.	**63°45'N 139°21'W**
Water Licence: PM95-087	**1995, 1996, 1997**
Indian River Placer Area	**Site No. 51**

Operation/Location: Dennis Foy and son Ken continued their four person operation in the Indian River valley, upstream from Ophir Creek.

Equipment/Function: One Caterpillar D10N bulldozer was used for stripping overburden and pushing pay gravel, one Caterpillar excavator was used to feed the wash plant and one Fiat HD31 bulldozer was used to remove tailings.

Wash Plant: A grizzly and dump box, 24 feet by 15 feet, was lined with ½ inch punch plate followed by a conveyor feeding a wet hopper with



8629 Yukon Ltd.'s wash plant with grizzly hopper, conveyor, wet screen deck and four sluice runs.

four sluice runs lined with angle iron riffles. A 10 inch by 12 inch Morris pump delivered approximately 3000 igpm of water which was used to sluice about 150 cubic yards per hour.

Ground Description: The Indian River valley was very wide and flat in this area, with 4 to 6 feet of overburden on top of gravel layers averaging 10 to 12 feet deep. All gravels plus 2 or 3 feet of decomposed bedrock were processed.

Mining Cuts: Mining cuts were excavated adjacent to the river at several locations.

Water Supply and Treatment: Groundwater seepage was recycled within out of stream mining cuts.

Gold: Gold was mostly fine, with 95% smaller than 35 mesh and fineness around 800.

QUARTZ CREEK 115 O/14
Newcan Placers Ltd. 63°47'N 139°08'W
Water Licence: PM93-037 1995
Indian River Placer Area Site No. 52

Operation/Location: Bruce Cowan and family operated on Quartz Creek, upstream from Calder Creek, for three years, finishing in 1995. Mining in 1995 occurred at the base of a White Channel deposit, on the right limit, under some waste overburden from a previous bench operation.

Equipment/Function: One Caterpillar D10N bulldozer with a U-blade was used for stripping. One Komatsu D155A bulldozer was used for stripping and pushing tailings. An Hitachi UH143 excavator was used to feed the wash plant and an Hitachi EX200 excavator was used to dig pay gravel and to clean drains and settling ponds.

Wash Plant: A 5 foot diameter trommel classified to ½ inch, followed by sluice runs 12 feet wide by 8 feet long with hydraulic riffles and expanded metal riffles. A 35 foot long conveyor belt stacked tailings. About 100 cubic yards per hour were processed using 1000 igpm supplied by an Ajax 6 by 6 inch pump, powered by an Isusu diesel.

Ground Description: Twenty feet of White Channel gravel, stripped from the right limit bench by a previous operation, overlay about 10 feet of thawed black muck and 5 feet of creek gravel. All gravel plus about 2 feet of decomposed bedrock were sluiced.

Mining Cuts: The cut mined in 1995 was about 175 feet wide by 1300 feet long.

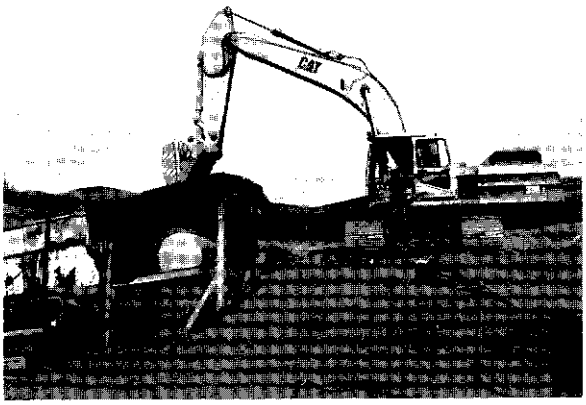
Water Supply and Treatment: Water was pumped from Quartz Creek and was settled in old dredge ponds in the Quartz Creek valley.

Gold: Mostly fine gold was recovered with fineness around 760.

QUARTZ CREEK 115 O/14
Tatlow Placer Mines Ltd. 63°49'N 139°04'W
Water Licence: PM95-070 1995, 1996, 1997
Indian River Placer Area Site No. 53

Operation/Location: Kevin and Gary Tatlow continued their operation on upper Quartz Creek. Mining occurred along the right limit bench below the confluence with Little Blanche Creek as well as in the valley bottom at the mouth of Little Blanche Creek.

Equipment/Function: Two Caterpillar bulldozers, one D9I and one D10L, were used for stripping overburden, pushing up pay gravel and spreading tailings. A Caterpillar 330L excavator was used to feed the wash plant and to dig drains.



A Caterpillar 330L excavator feeding the shaker screen deck at Tatlow Mining on Quartz Creek.

Wash Plant: An 8 by 12 foot hopper with spray nozzle fed a shaker screen deck 6 feet wide by 20 feet long which classified to ¾ inch and ½ inch followed by 3 sluice runs with expanded metal riffles. A Morris 12 inch pump supplied about 2000 igpm of water which was used to process approximately 200 cubic yards per hour.

Ground Description: The right limit bench of Quartz Creek had about 5 feet of frozen overburden on top of up to 50 feet of coarse reddish gravel with another 15 feet of White Channel gravel under that. All of the White Channel gravel plus about 3 feet of decomposed bedrock were sluiced. In the valley bottom of Little Blanche Creek there were about 12 feet of black muck on top of mixed brown and grey gravel layers up to 15 feet deep.

Mining Cuts: Mining excavations were carried out on the right limit bench in 1995 and 1996 and in 1997 several cuts were taken from Little Blanche Creek.

Water Supply and Treatment: Water was pumped from a reservoir at the mouth of Little Blanche Creek and was settled in large ponds downstream on Quartz Creek with final settling in old mining cuts in the Indian River valley at the mouth of Quartz Creek.

Gold: Gold from the White Channel deposit was coarse and chunky with fineness around 780.

LITTLE BLANCHE CREEK **115 O/14**
Harvey Miller **63°48'N 139°05'W**
Water Licence: PM95-044 **1995, 1996, 1997**
Indian River Placer Area **Site No. 54**

Operation/Location: Harvey Miller mined on Little Blanche Creek, a right limit tributary to Quartz Creek, about one mile upstream from the confluence with Quartz Creek. Mr. Miller mined fairly small scale with one helper in 1995 and 1996, but in 1997 he leased one claim to Kevin and Gary Tatlow who used dozers and scrappers to remove one large cut.

Equipment/Function: One Caterpillar D8 bulldozer, with a U-blade but no ripper, was used for stripping and excavating gravel. One International front end loader, with a 3 cubic yard bucket, was used to feed the wash plant and remove tailings. One P&H dragline, with a 1¼ cubic yard bucket, was used to clean out settling ponds and drains.

Wash Plant: An 18 foot by 8 foot dump box fed a single sluice run, 3 feet wide by 25 feet long, with 1½ inch Hungarian riffles. A 6 inch Gould pump, powered by a 271 General Motors diesel engine, provided about 1200 igpm, which was used to process around 40 cubic yards per hour.

Harvey Miller's mining cut on Little Blanche Creek, excavated by Tatlow Mining.

Ground Description: Frozen overburden was from 10 to 15 feet deep on top of pay gravel layers which averaged between 12 and 18 feet deep. Bedrock varied from blocky brown schist to decomposed grey clay.

Mining Cuts: In 1995 Mr. Miller mined about 10,000 cubic yards from one cut. In 1996 he mined about 7,000 cubic yards. In 1997 the Tatlows mined one large cut about 200 feet wide by 200 feet long by 25 feet deep.

Water Supply and Treatment: A small instream dam and out of stream settling pond were used by Mr. Miller in 1995 and 1996. In 1997 the Tatlows used their own wash plant and settling facilities on Quartz Creek to process the pay gravels from Little Blanche Creek.

Gold: Gold was rough and chunky with 40% larger than 20 mesh; fineness was around 700.

LITTLE BLANCHE CREEK	115 O/14
Irvin Nafziger	63°49'N 139°06'W
Water Licence: PM94-004	1995, 1996, 1997
Indian River Placer Area	Site No. 55

Operation/Location: Irvin Nafziger continued his three person operation on Little Blanche Creek about three kilometres upstream from Quartz Creek. The valley bottom was 200 to 300 feet wide and the sides were not steep.

Equipment/Function: Two Caterpillar D8 bulldozers were used to strip overburden, excavate and push gravel as well as to remove and spread tailings. A backhoe excavator was used to feed the wash plant.

Wash Plant: A 10 foot by 10 foot hopper with grizzly fed a Super Sluice IV screen deck followed by 2 sluice runs 3 feet wide by 6 feet long, lined with angle iron riffles. This was followed by 4 feet of slick plate leading to 2 more sluice runs 4 feet wide by 12 feet long, lined with expanded metal over Nomad mat. An 8 inch pump, powered by a General Motors 371 diesel engine, delivered approximately 1500 igpm of water which was used to process about 85 cubic yards per hour.

Ground Description: Frozen organic overburden, up to 10 feet deep, was stripped from on top of gravel layers about 6 feet deep. Some overburden was mixed in with the gravel layers. All gravel plus about 2 feet of bedrock were sluiced.

Mining Cuts: One cut, approximately 200 feet wide by 500 feet long, was mined per year.

Water Supply and Treatment: Water was stored in an instream reservoir on Little Blanche Creek and was recycled from settling ponds in old mining cuts.

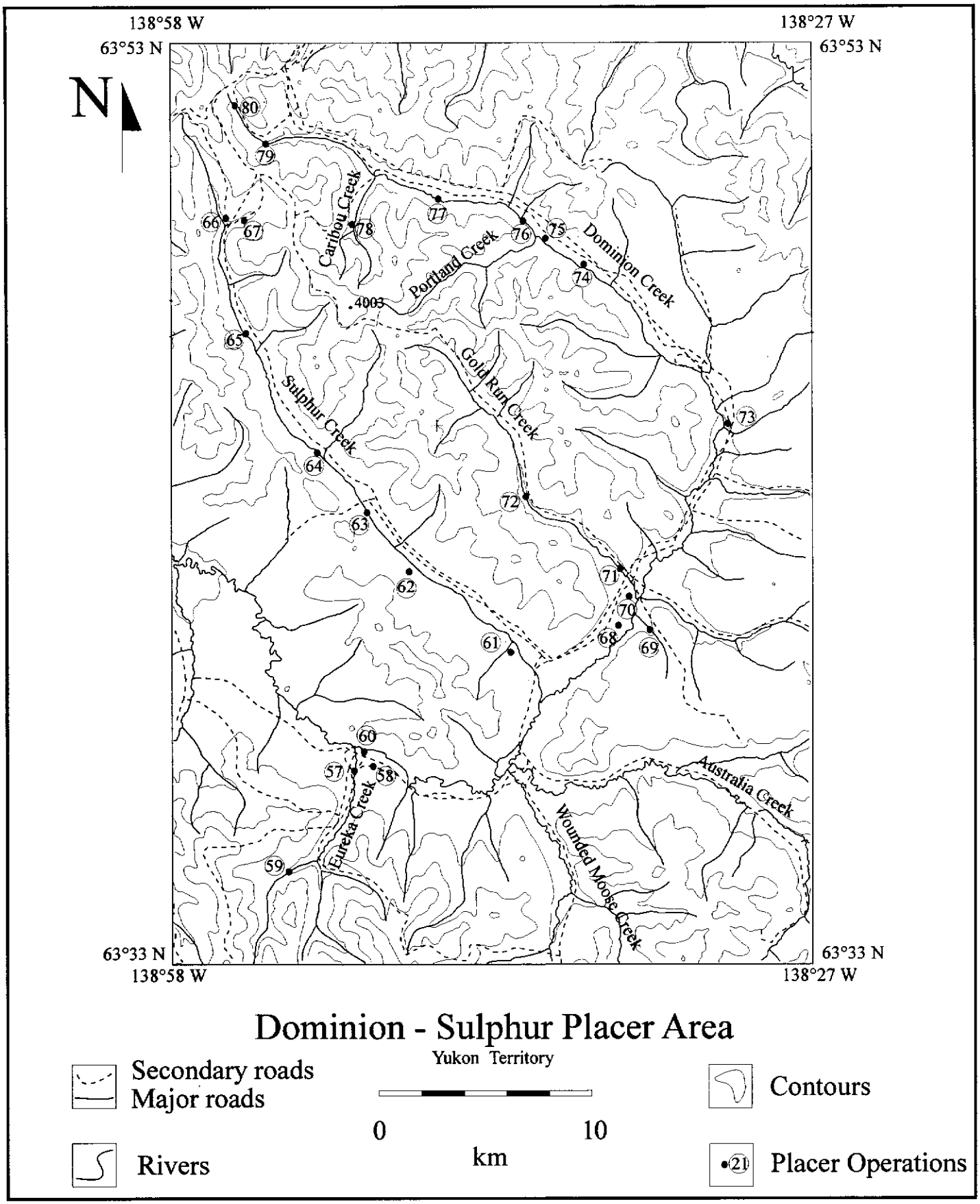
Gold: Gold was flat with 80% below the 20 mesh size. Fineness was around 630.

INDIAN RIVER	115 O/14
Midas Rex Mining & Exp.	63°45'N 139°06'W
Water Licence: PM93-093	1995, 1996, 1997
Indian River Placer Area	Site No. 56

Operation/Location: Stuart Schmidt employed a crew of six miners at two locations in 1995 and 1996; a floating trommel was used in the Indian River valley, downstream from Quartz Creek, and a stationary sluice box was used near the mouth of Ruby Creek. In 1997 the operation at Ruby Creek was discontinued and the dredge was moved upstream in the Indian River valley, above the confluence with Quartz Creek. The mining camp was permanently located in the Quartz Creek valley, near Calder Creek.

A Caterpillar 235 excavator feeding floating wash plant with trommel and conveyor at Midas Rex Mining on the Indian River.

Equipment/Function: One Caterpillar D10N bulldozer was used for stripping, digging pay gravel, feeding the wash plant and removing tailings from the conventional sluicing operation at the mouth of Ruby Creek. One Caterpillar 235D excavator was used to dig pay gravel and feed the floating trommel in the Indian River valley. The D10N bulldozer was used to strip ahead of the trommel and to flatten tailings behind it.



Dominion - Sulphur Placer Area

Yukon Territory

Secondary roads
Major roads

0 10

km

Contours

Rivers

21 Placer Operations

Wash Plants: The conventional sluice at Ruby Creek had a 14 foot by 20 foot dump box with 5 parallel sluice runs. Approximately 200 cubic yards per hour were processed using about 3000 igpm of water, supplied by a 10 inch by 12 inch Morris pump powered by a Caterpillar 3408 diesel engine. The floating trommel was 8 feet in diameter with 6 sluice runs, each 4 feet wide. Tailings were removed and stacked by a 40 foot long conveyor. About 300 cubic yards per hour were processed using approximately 3000 igpm of water supplied by a 10 inch by 12 inch Morris pump powered by a Caterpillar 3306 diesel engine.

Ground Description: The left limit of the Indian River valley, near the mouth of Ruby Creek, had 10 to 14 feet of frozen black muck on top of gravel layers 8 to 12 feet deep. The bottom 4 to 6 feet of gravel plus up to 3 feet of decomposed bedrock were sluiced. The Indian River valley, upstream from Quartz Creek, had 4 to 8 feet of frozen muck and clay on top of gravel layers averaging 12 feet deep.

Mining Cuts: About 40,000 square feet per year were mined by the operation at the mouth of Ruby Creek; about 2 million square feet per year were mined with the floating trommel in the Indian River valley.

Water Supply and Treatment: Water was ditched from Ruby Creek by gravity feed and seepage water was recycled from the dredged pond for the trommel.

Gold: Gold recovered at the Ruby Creek location was mostly fines, under 12 mesh, with fineness around 800. The gold recovered from the rest of the Indian River valley was 80% under 20 mesh with fineness of 790.

EUREKA CREEK **115 O/10**
AMT Resources Ltd. **63°37'N 138°49'W**
Water Licence: PM94-002 **1995**
Dominion-Sulphur Placer Area **Site No. 57**

Operation/Location: AMT Resources Ltd. ran a large operation near the mouth of Eureka Creek during 1995. The mine was shut down and all the restoration was completed in the fall of 1995.

Equipment/Function: Two Caterpillar D10N bulldozers were used for stripping the cuts, stockpiling pay gravels and sluicing. Two Caterpillar 966E loaders and a Caterpillar 235 excavator were used for sluicing and loading the three 27 ton haul trucks which were also used for handling the overburden. Roads into and on the property were maintained with a 740A grader. An 8 inch drill was used to define the pay channels.

Wash Plant: AMT Resources continued to use a conveyor, 3 feet wide by 100 feet long, feeding into a hopper that fed onto a 5 foot wide by 16 foot long wet screen deck. The classified pay was sluiced through four oscillating runs 4 feet wide by 16 feet long. A 4 inch by 6 inch John Deere pump supplied the 1250 igpm needed to process between 200 and 300 cubic yards per hour.

Ground Description: The large area mined near the mouth of Eureka Creek varied considerably in depth and make-up. Between 6 and 20 feet of frozen black muck overlies 1 to 6 feet of gravels. Much of the bedrock was decomposed and wavy. Large areas of clay were encountered. The lower 1 to 3 feet of gravels and between 2 and 3 feet of the bedrock was sluiced. Old workings were found in several places.

Mining Cuts: Although a large pit measuring 850 feet wide by 2800 feet long was stripped in 1995 not all of the cut was sluiced. Sky Dawn Mining finished the sluicing during the 1996 season. AMT Resources Ltd. sluiced approximately 565,000 cubic yards during 1995.

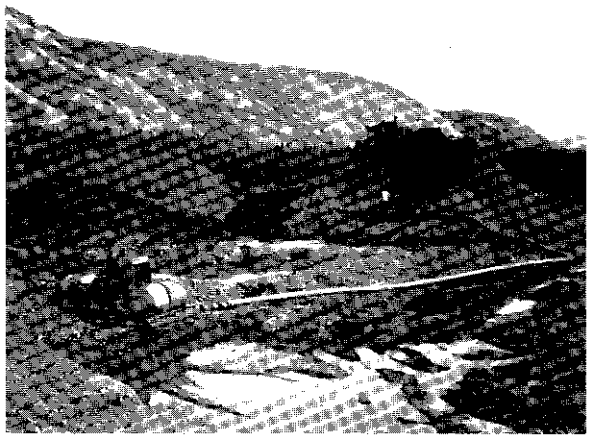
Water Supply and Treatment: Water for sluicing came from Eureka Creek and then was recirculated from the mine pits after the pay gravels were removed. The cuts tended to be 3 to 4 feet below the water line and were submerged unless pumps were used to keep the cuts dry. No discharge occurred.

Gold: The gold was reported as primarily flat, round and chunky with almost all of it falling between the -10 to +60 mesh size. Some of the larger pieces contained quartz and mercury contamination was not uncommon. The purity varied from 680 to 710 fine.

EUREKA CREEK/INDIAN RIVER **115 O/10**
Sky Dawn Mining **63°37'N 138°49'W**
Water Licence: PM96-011 **1996, 1997**
Dominion-Sulphur Placer Area **Site No. 58**

Operation/Location: Wayne Tatlow and Pamela Nowlin mined along the left limit of the Indian River upstream of Eureka Creek in 1996 and on Eureka Creek near the mouth in 1996 and 1997. A crew of two miners and one camp person ran a 12 hour shift each day in 1996. The crew was increased to four in 1997 so that two 12 hour shifts could be run. Sky Dawn Mining purchased this property from AMT Resources Ltd. in the spring of 1997.

Equipment/Function: A Caterpillar D9H bulldozer equipped with a U-blade and ripper was used for stripping, stockpiling pay gravels, feeding the sluice plant and ramping tailings. A mobile B50 8 inch drill mounted on a nodwell was used to test the ground.



Sky Dawn Mining sluicing a contained cut along the left limit of the Indian River.

Wash Plant: A 20 foot long end dump box lined with ½ inch punch plate fed into three runs. The centre run is 3 feet wide by 16 feet long and is lined with 1 inch punch plate and Nomad matting. The two side runs are 4 feet wide by 16 feet long and are lined with expanded metal and Nomad matting. A 10 inch by 12 inch pump powered by a Caterpillar 3406 engine supplied approximately 4000 igpm needed to sluice between 70 and 125 cubic yards per hour.

Ground Description: All the waste overburden for the Indian River and Eureka Creek cuts that were mined in 1996 was stripped by AMT Resources Ltd. in 1995 prior to shutting down. The remaining gravels varied in depth from 4 to 8 feet deep. The ground mined in 1997 varied in depth with between 23 feet and 50 feet of muck overlying 3 feet of gravel. The bedrock on the Indian River tended to be flat and chunky while the bedrock on Eureka Creek was fully decomposed with mud seams that ran through both the bedrock and gravel. Generally all the gravel and 2 to 3 feet of bedrock was sluiced.

Mining Cuts: During 1996, 150,000 cubic yards of gravel were sluiced from five cuts on the Indian River as well as 71,000 cubic yards from two cuts on Eureka Creek that averaged 400 feet by 300 feet. Four cuts (1200 feet by 50 feet/125 feet by 500 feet/125 feet by 250 feet/1000 feet by 200 feet) were mined on Eureka Creek during 1997.

Water Supply and Treatment: The water for sluicing came from either the Indian River or Eureka Creek and from seepage inflow to the mine pit. The water was then recycled 100% in the out of stream cuts after the pay gravels were removed. No discharge except by seepage occurred.

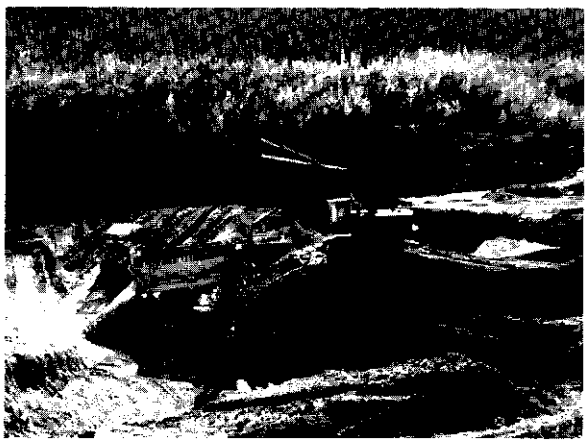
Gold: The gold recovered from the Indian River tended to be coarse, flat, brightly coloured and with a purity of approximately 850 fine. The gold from Eureka Creek was fine, stained and had an average purity of 750 fine. Up to ½ ounce nuggets were recovered from Eureka Creek. Mercury contamination from old workings was common on Eureka Creek.

EUREKA CREEK **115 O/10**
Richard Allen **63°35'N 138°52'W**
Water Licence: PM94-058 **1995, 1996, 1997**
Dominion-Sulphur Placer Area **Site No. 59**

Operation/Location: Richard Allen continued mining on the right fork of Eureka Creek approximately half a mile upstream from the main forks. Two miners were employed.

Equipment/Function: Two Caterpillar D8H bulldozers and a Caterpillar D9G bulldozer

equipped with rippers were used to strip the cuts and maintain settling facilities. A Warner Swayse 900A excavator was used to feed the sluice plant. Tailings were ramped with the bulldozers.



Richard Allen sluicing pay gravels through a trommel wash plant at his operation on the right fork of Eureka Creek

Wash Plant: The pay gravels were fed into a hopper before being classified to ¾ inch minus in a 6 foot diameter trommel. The classified pay was then put through two sluice runs 8 feet wide. The sluice runs are lined with matting, expanded metal and 1 inch angle iron riffles. A Morris pump powered by a Caterpillar 3406 engine supplied approximately 2000 igpm for sluicing between 100 and 150 cubic yards per hour.

Ground Description: The cuts varied in depth but an average of 25 feet of frozen black muck overlies 10 feet of gravel. The lower gravels and up to 5 feet of bedrock was sluiced.

Mining Cuts: All mining during 1995, 1996 and 1997 occurred on the right fork of Eureka Creek. Mining progressed in an upstream direction. No data was provided for actual production.

Water Supply and Treatment: Water from Eureka Creek was contained in an instream pump pond and was managed with a water control box. The water was then pumped to the wash plant with the effluent flowing downstream to the main forks where it was treated in a large instream settling pond. Smaller instream settling ponds were constructed closer to the sluicing operation in 1997 because the large pond at the forks became full and could no longer be used.

Gold: The gold is mostly fine with a purity of 690 fine.

INDIAN RIVER **115 O/10**
Aurion Placers **63°38'N 138°51'W**
Water Licence: PM95-055 **1995, 1996, 1997**
Dominion-Sulphur Placer Area **Site No. 60**

Operation/Location: Aurion Placers continued to mine on the left limit side of the Indian River upstream of Eureka Creek. By 1997 the mining was being done immediately upstream from the mouth of Eureka Creek. Four miners and two camp staff kept two 12 hour shifts going in 1995. An additional miner was added in 1996. The operation grew to eight miners and two camp staff in 1997.

Equipment/Function: A Caterpillar D10 bulldozer and a Caterpillar D9L bulldozer were used for stripping and pushing up pay gravels for sluicing. Both bulldozers were equipped with U-blades and single shank rippers. A Caterpillar EL300 excavator was used for feeding the sluice plant and any ditching that was required. A Caterpillar 980C loader was acquired in 1996 to stack tailings. Roads on the property were maintained with a Champion 720 grader.

Wash Plant: A hopper, a 5 foot by 16 foot El-Rus incline shaker screen deck and four 4 foot by 16 foot sluice runs were used to process the pay gravel. The runs were lined with unbacked Nomad matting and expanded metal. A short 4 foot section of 1 inch Hungarian riffles was built into each run halfway down its length. The wash plant could handle between 180 and 200 cubic yards per hour depending on the type of material being sluiced. A 2 hutch jig and Long Tom were used for clean-ups. The 2000 igpm needed to run the wash plant was supplied by an 8 inch by 10 inch Morris pump powered by a Caterpillar 3306 engine.

Ground Description: The cuts on the left limit of the Indian River had an average of 6 to 8 feet of frozen black muck overlying 4 to 8 feet of frozen silt and gravel. The frozen black muck overburden in the cut at the mouth of Eureka Creek varied in depth from 5 feet to 35 feet with an average of 10 feet. The gravels varied in depth from 2 feet to 20 feet. Bedrock generally was decomposed

and wavy although solid slabby bedrock was encountered. The lower 4 feet of gravel and up to 4 feet of bedrock was sluiced.

Mining Cuts: Five cuts ranging from 250 feet to 400 feet wide by 500 feet long were sluiced in 1995. In 1996 three cuts measuring 250 feet wide by 350 feet long and four cuts which ranged from 250 feet to 400 feet wide by 500 feet long were mined. Six cuts averaging 225 feet by 425 feet were sluiced in 1997.

Water Supply and Treatment: Water for sluicing was usually acquired from the Indian River and then recirculated in out of stream settling ponds built from abandoned mine cuts. A small volume of effluent discharge occurred at the end of the settling pond system.

Gold: The gold recovered from the Indian River was usually in the -10 to +60 mesh size and had a fineness of 820. An assortment of flat, angular and round gold was found. The gold recovered in 1997 appears to have come from Eureka Creek and the fineness dropped to an average of 770.

Comments: Aurion Placers has been completing their site restoration after an area has been mined.

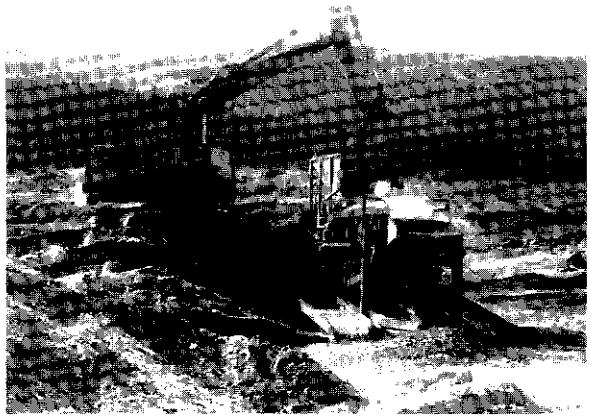
SULPHUR CREEK **115 O/10**
John Brown **63°39'N 138°42'W**
Water Licence: PM93-097 **1995**
Dominion-Sulphur Placer Area **Site No. 61**

Operation/Location: Murray Conner mined this property under John Brown's water licence during the 1995 mining season. The operation was located on Sulphur Creek near the mouth of the Sulphur Creek valley. The cut taken worked in toward the right limit of the valley.

Equipment/Function: The equipment used to mine the cut was a 235 Caterpillar excavator, a 455 Komatsu bulldozer and a 980 Caterpillar loader.

Wash Plant: The washplant used was a 6 foot by 20 foot screen deck. A 6 by 8 inch Cornell pump powered by a 3208 Caterpillar engine provided the water need to process approximately 120 loose yards of material per hour.

Ground Description: The stratigraphic section consisted of 20 feet of black muck over 10 feet of Sulphur gravel on 10 feet of White Channel gravel. The sluice section was the entire 20 feet of gravel.



Norcon Holdings' wash plant operating under John Brown's licence on Sulphur Creek in 1995.

Mining Cuts: The one cut mined was approximately 200 feet by 250 feet in area.

Water Supply and Treatment: Water for sluicing and for any hydraulic stripping was obtained from the cut which was filled via seepage. Settling was accomplished in dredge tailings.

Gold: Fineness was estimated to be 820.

SULPHUR CREEK **115 O/10**
Henry O. Kruger **63°42'N 138°48'W**
Water Licence: PM96-056 **1995, 1996, 1997**
Dominion-Sulphur Placer Area **Site No. 62**

Operation/Location: Mr. Kruger's operation has been located at this site on the right limit of the Sulphur Creek valley for over 21 years. In 1995, 1996 and 1997 it continued as a one person operation with the operator working 8 hours per day.

Equipment/Function: Mr. Kruger used a model D7 and a model D9 Caterpillar bulldozer to strip ground. A model 605 Koehring dragline was used to dig drains and to hoist material out of the pit. A model 120C Hough loader was used to feed the

sluice plant. The D9 bulldozer was used the most of the two bulldozers.

Wash Plant: The washplant used was a variation of a Ross box. It had a 15 cubic yard dump box, 13 feet by 8 feet tapering to 4 feet. The centre run was 3 feet wide by 24 feet long with approximately 2 feet of the width available for recovery. The two side runs were 4 feet wide by 24 feet long. The dump box was equipped with ½ inch punch plate. The centre run was equipped with punch plate 1½ inches above expanded metal over Nomad matting. The side runs were equipped with expanded metal over the whole length and with Nomad matting in the first few feet. In 1996 the configuration of the centre run was changed to punch over the whole length, 1½ inches above riffles in the first 5 to 6 feet and then expanded metal over the remainder of the length. From 50 to 70 loose yards of gravel were processed through the plant each hour. Water was provided using an 8 inch pump powered by a 6-71 General Motors pump.

Ground Description: The depth of the material encountered by the operator at this site varied from 30 to 34 feet. This typically comprised a 15 foot muck layer over a 15 foot deep gravel layer. The sluice section consisted of the gravel layer as well as ½ to 1 foot of decomposed bedrock.

Mining Cuts: In 1995 13,000 cubic yards of material were sluiced. The area stripped was 150 feet by 150 feet. In 1996 another 13,000 cubic yards of material were sluiced. Two areas were stripped, one was a continuation of the area mined in 1995. This area was 150 feet by 150 feet by 15 feet deep. Stripping was started on a area upstream from Mr. Kruger's old camp site. The preparatory stripping accomplished in the upstream area was 300 feet long by 150 feet wide by 4 feet deep. In 1997 Mr. Kruger sluiced approximately 3000 cubic yards each from the upstream and downstream areas.

Water Supply and Treatment: Water used by this operation was seepage water pumped from cuts. Effluent was settled in primary ponds on site and in dredge tailings downstream from the operation.

Gold: The gold recovered from this site was mostly very fine grained with a fineness of 810.

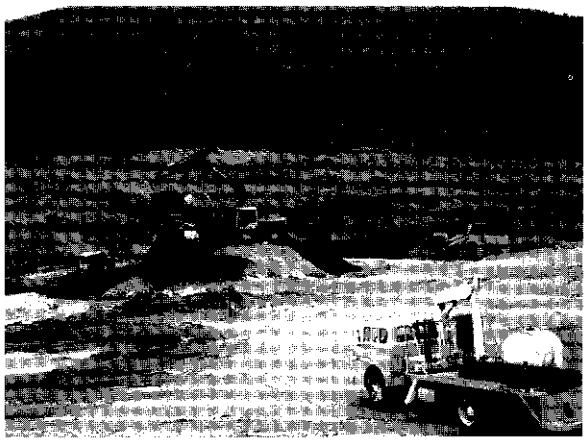
Comments: In 1995 and 1996 mining was performed under water licence number PM93-088. PM96-056 is a renewal of that licence.

SULPHUR CREEK **115 O/10**
Balner Enterprises Ltd. **63°56'N 138°49'W**
Water Licence: PM95-063 **1995,1996**
Dominion-Sulphur Placer Area **Site No. 63**

Operation/Location: Gatenby Mining Services had four miners working 12 hours per day at this property on the right limit of the Sulphur Creek valley near old Dredge Number Eight.

Equipment/Function: One D8H Caterpillar bulldozer was used for stripping and mining. An Hitachi EX200 excavator was used for stripping, ditching and feeding the plant. A John Deere 844 loader hauled ore to the plant and stacked tailings.

Wash Plant: The washplant consisted of a vibrating feed to a two deck screen. Minus ½ inch material goes into an 8 foot distributor then into three 3 foot by 22 foot vibrating trays which are lined with 4 pound grating and ½ inch unbacked Nomad matting. An 8 inch by 10 inch Berkeley pump powered by a 220 Cummins engine provided the 2000 igpm of water to process 90 loose yards per hour.



Gatenby Mining Services mining on Sulphur Creek.

Ground Description: In 1995 the stratigraphic section of the property mined was 10 to 12 feet of silt from an abandoned settling pond, 8 to 12 feet of black in situ silt with plenty of old works, and 1 to 6 feet of gravel on bedrock. For half of

the cut the bedrock consisted of a chloritic schist while the other half it was a schist with an abundance of pyrite. In 1996 the stratigraphic section was up to 10 feet of silt from an abandoned settling pond over 10 to 20 feet of in situ black silt with old works and 1 to 6 feet of gravel on bedrock. The ratio of chloritic schist bedrock to the pyritic schist bedrock was 1:9 for this cut. The sluice section each year was 2 to 3 feet of bedrock and all of the gravel.

Mining Cuts: One cut was mined each year. In 1995 the cut was 600 feet by 300 feet with a total of 32,000 cubic yards sluiced. In 1996 the cut was 640 feet by 300 feet with a total of 34,200 cubic yards sluiced.

Water Supply and Treatment: In 1995 water for the operation was obtained via pump from a small instream pond. Settling was accomplished in a 500 foot by 200 foot out of stream pond. In 1996 the operators switched to a total recirculation settling system using the 1995 mine pit. The pond was 600 feet by 300 feet.

Gold: The gold recovered was flaky, less than 1% +10 mesh, and had a fineness of 810 to 830.

Comments: Mining of the site became easier as the miners worked past the the area covered by silt from the old settling pond.

SULPHUR CREEK **115 O/10**
Luckylady Placers **63°44'N 138°51'W**
Water Licence: PM95-097 **1995, 1996, 1997**
Dominion-Sulphur Placer Area **Site No. 64**

Operation/Location: This operation was located on the right limit of Sulphur Creek near its confluence with Brimstone Gulch. A crew of seven miners covered two 10 hour shifts per day when sluicing and one 10 hour shift per day when stripping.

Equipment/Function: In 1995 and 1996 two D9 Caterpillar bulldozers, two 980C Caterpillar loaders, a 245 Caterpillar excavator, two 3505 Koehring dump trucks, two 270 Caterpillar scrapers and a 12E Caterpillar grader were used to mine this property. One bulldozer stripped while the other pushed pay into a stockpile. During sluicing one loader fed the sluice plant and the other handled tailings. The excavator was used for ditching, cleaning corners of cuts and other odd jobs. Dump trucks hauled the pay to the sluice plant and the overburden out of the cut. The grader was used to maintain haul roads. In 1997 two more D9 Caterpillar bulldozers and a 621 Caterpillar scraper were added. Three bulldozers were used to strip with one spare and one bulldozer was used to push pay up. The dump trucks were not used in 1997. The scraper was used to haul diking material. A 10 by 12 pump powered by an Allis Chalmers 468 horsepower engine was used for hydraulic stripping of some of the overburden.

Wash Plant: A conveyor 46 inches wide by 60 feet long fed a 5 foot wide by 14 foot long double deck screen plant. The ½ inch minus classified pay gravel was sluiced in two sluice runs 4 feet wide by 20 feet long. Expanded metal and Nomad matting were used in the sluice runs. A 36 inch by 60 foot tailings stacker was added to this plant in 1995. The plant was capable of handling 100 loose yards per hour. A 6 by 8 inch pump powered by a 671 General Motors engine supplied the 2000 igpm needed for sluicing.

Wash plant used by Luckylady Placers on Sulphur Creek.

Ground Description: Overburden consisted of an average of 30 feet of frozen muck. The sluice section was a total of 6 to 10 feet deep comprised of gravel and 2 to 4 feet of bedrock.

Mining Cuts: In 1995 one cut 300 by 330 feet was mined upstream of Brimstone Gulch. In 1996 and 1997 one cut 300 by 300 feet was mined each year. These cuts were located on the right limit of the Sulphur Creek valley across from

Brimstone Gulch. In addition an area 340 by 450 feet was stripped at the end of 1997 in preparation for the 1998 mining season. This area is located upstream from the 1995 cut.

Water Supply and Treatment: Water for sluicing and monitoring was supplied from an out of stream reservoir that captured runoff from Brimstone Gulch. Initial effluent treatment was accomplished in a settling pond on-site with final treatment occurring in the Sulphur Creek Community Settling Pond.

Gold: The operators generally recovered very little coarse gold, however in 1996 they did find the most coarse gold they've ever had from an area where the oldtimers had worked heavily. Fineness was 810.

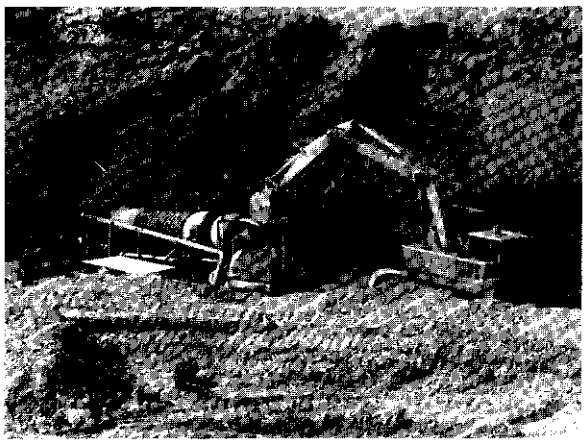
SULPHUR CREEK 115 O/15
Sulpher Gold Placers 63°47'N 138°55'W
Water Licence: PM93-056 1995, 1996, 1997
Dominion-Sulphur Placer Area Site No. 65

Operation/Location: This operation is located on the right limit of Sulphur Creek upstream from its confluence with Friday Gulch. In 1995 there were four miners working 12 hours per day. In 1996 there were four miners covering two 10 hour shifts per day. In 1996 five miners worked for approximately six weeks in June and July. Due to low gold prices the crew was reduced to three miners after July.

Equipment/Function: Mechanical stripping and sluicing were accomplished using 2 Caterpillar bulldozers, models D8K and D7. An 8 by 10 inch pump with a 3208 Caterpillar motor was used for hydraulic stripping. An Hyhoe excavator was used to dig drains and to feed the trommel. In 1996 a 355 Komatsu bulldozer was leased for 200 hours to help with stripping.

Wash Plant: The washplant was a 5 foot diameter trommel. Water supply to the pump was via a 4 inch Flygt pump. From 50 to 60 loose yards per hour were processed.

Ground Description: In 1995 the miners encountered from 30 to 50 feet of muck over 3 to 5 feet of gravel. In 1996 there was 15 to 50 feet of muck over 3 to 6 feet of gravel. In 1997 the muck was not quite as deep as mining advanced upstream. The average muck depth was 35 feet. The gravels were found to be in a slightly thicker layer of from 6 to 8 feet. All of the gravel and from 1 to 2 feet of bedrock were sluiced.



Sulpher Gold Placers Ltd. sluicing on Sulphur Creek in 1995.

Mining Cuts: 1995's cut was 200 feet by 150 feet. In 1996 two cuts 200 feet by 250 feet were stripped. Only one quarter of the second cut could be sluiced due to a cool year causing poor thawing. In 1997 the two cuts mined continued upstream from those mined in 1996 and were 200 by 250 feet and 200 by 275 feet.

Water Supply and Treatment: Water is obtained from Sulphur Creek. Primary settling is done on the property during sluicing. Effluent from hydraulic stripping is sent to the Sulphur Creek community settling pond.

Gold: Fineness at this property is 800.

SULPHUR CREEK/GREEN GULCH 115 O/10,15
Neils Sprokkreeff 63°50'N 138°56'W
Water Licence: PM96-070 1995, 1996, 1997
Dominion-Sulphur Placer Area Site No. 66

Operation/Location: Tunica Gold Placers mined at this property at the confluence of Sulphur Creek and Green Gulch. In 1995 and 1996 four miners and two camp personnel worked in excess of 12 hours per day at the site. In 1997 three miners with an occasional additional miner and a camp cook worked the property. The Sulphur Creek valley is approximately 500 feet wide in this area.

Equipment/Function: The equipment used to mine this site included a 355A Komatsu bulldozer, a D8K Caterpillar bulldozer, and a two yard model 35A American excavator. Both bulldozers were equipped with U-blades and rippers. The bulldozers were used to strip and to process material through the sluice box. The excavator was used to feed the trommel. In 1997 the sluice box was not used.

Wash Plant: A triple run sluice box was used for passive screening of material in 1995 and 1996. The dump box was lined with 1 inch punch plate. The 1 inch minus material was diverted into two 3 foot by 20 foot side runs equipped with expanded metal and cocoa matting. One inch plus material flowed to the 3 foot by 20 foot centre run which was equipped with 2 inch riffles and cocoa matting. A 4 foot diameter by 20 foot long trommel was also used at the site. The trommel screened to 2 inch minus. Recovery was accomplished in two sluice runs. The 6 foot long by 5 foot wide top run was equipped with expanded metal. The first foot of the 12 foot long by 5 foot wide bottom run was equipped with hydraulic riffles. The remaining 11 feet were covered with expanded metal. Nomad matting was installed over the whole length of both sluice runs. In 1995 and 1996 water was provided by a 12 inch Caterpillar pump powered by a 3306 Caterpillar engine. In 1997 the pump used was a 12 by 10 inch Gorman Rupp powered by a 3-71 General Motors engine. The process rate in 1995 and 1996 was 150 loose yards per hour. In 1997 the process rate using the trommel dropped to 60 loose yards per hour.

Ground Description: At this site overburden consisted of 40 feet of frozen mud. This lay on 5 feet of gravel on flat bedrock. The sluice section consisted of all of the gravel and 2 to 5 feet of bedrock.

Mining Cuts: One cut was mined in each of 1995 and 1996. The cuts were 300 feet by 150 feet in area. In 1997 mining took place at the mouth of Green Gulch and the total area mined was 400 feet in length by 60 feet wide.

Water Supply and Treatment: In 1995 and 1996 water was obtained using 100% recirculation of the total creek flow. In 1997 water had to be stored before sluicing could commence. Sluicing could only be performed when enough water had accumulated, roughly every 2 to 5 days. A recirculation system was not used in 1997. On site settling was accomplished in a pond 500 feet long by 150 feet wide. Final settling was in the Sulphur Creek community settling pond.

Gold: Gold recovered was angular, mostly fine grained and had a fineness of 780.

Comments: The oldtimers worked throughout the area mined by this operator. Mining in 1995 and 1996 was under water licence number PM92-012.

GREEN GULCH **115 O/15**
Darrell Morgan **63°50'N 138°54'W**
Water Licence: PM95-029 **1995, 1996, 1997**
Dominion-Sulphur Placer Area **Site No. 67**

Operation/Location: Green Gulch is a left limit tributary of Sulphur Creek near its headwaters. The valley is narrow with steeply sloped sides. Mining continued upstream during the period of this report.

Sluicing at Darrell Morgan's on Green Gulch, a left limit tributary to Sulphur Creek

Equipment/Function: Mr. Morgan used a D8K Caterpillar bulldozer to strip overburden, push pay up to the sluice box and remove tailings. A Bantam Koehring ½ cubic yard excavator fed the sluice box.

Wash Plant: The wash plant was a double run sluice box with an 8 by 20 foot dump box, a main

run 2 feet wide by 20 feet long and one side run 14 inches wide by 20 feet long. The dump box was lined with 1 inch punch plate. The runs were equipped with 2½ inch riffles, some expanded metal and cocoa matting for recovery. The slope of the sluice box was 3 inches per foot. A 10 by 10 inch Gorman Rupp pump powered by a General Motors engine provided the 3000 igpm of water used to process up to 100 loose yards of pay material per hour.

Ground Description: In working upstream Mr. Morgan encountered frozen ground up to 40 feet deep. On average 6 feet of gravel and 1 foot of bedrock were sluiced.

Mining Cuts: Mr. Morgan reported stripping 4400 square feet in 1995. 40,000 square feet were moved in 1996. In 1997 30,000 square feet were stripped downstream from the settling pond and 4000 square feet were mined at the upstream end of the workings.

Water Supply and Treatment: An instream recirculation pond was used at this site. Very little water is available to the miner during the bulk of the mining season. Coarse material and heavy sediments were trapped in a primary pond which was mechanically cleaned on a regular basis during each mining season. Sluicing water was pumped from a second pond located further downstream.

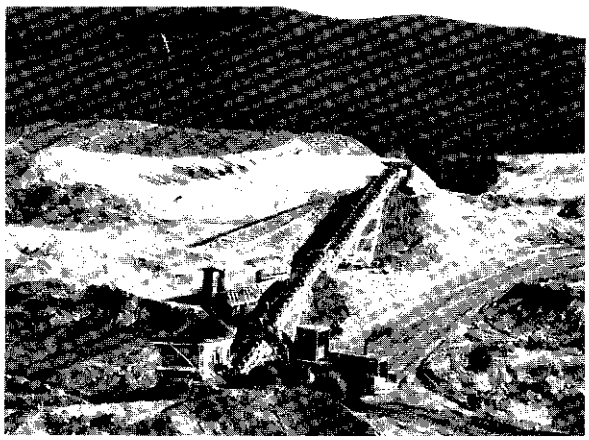
Gold: Fineness at this property is approximately 750.

DOMINION CREEK **115 O/10**
Gimlex Enterprises Ltd. **63°40'N 138°39'W**
Water Licence: PM96-050 **1995, 1996, 1997**
Dominion-Sulphur Placer Area **Site No. 68**

Operation/Location: The operation on Dominion Creek upstream from the confluence with Sulphur Creek employed seven miners in 1995, five miners in 1996 and from three to five miners in 1997. Miners worked 12 hours per day. Three camp workers were employed in each year.

Equipment/Function: Stripping at this site in 1995 and 1996 was accomplished using one 155 and two 355 Komatsu bulldozers assisted by one Caterpillar 235 excavator. The excavator was also used to move tailings and dig drains. Two Komatsu WA600 loaders were used for gravel stripping, sluicing and hauling tailings. In 1996 an El Russ 42 inch belt feeder with an 18 yard hopper and two 36 inch by 80 foot conveyors were used to feed the sluice box. In 1997 a 475 Komatsu bulldozer was added for stripping.

Wash Plant: In 1995 and 1996 Gimlex Enterprises used a 12 foot by 50 foot triple run Pierson sluice box. In 1997 an El Russ two deck screen was used to process 200 to 250 loose yards per hour. The screen deck was equipped with two 4 foot by 16 foot riffle runs and four 4 foot by 28 foot expanded metal runs and a coarse tailing conveyor delivers minus ¾ inch material to one side. In all three years water was supplied using a 10 by 12 inch Morris pump powered by a Caterpillar 3406 engine.



Conveyor feeding to the wash plant at Gimlex Enterprises Ltd. on Dominion Creek.

Ground Description: In the upstream area mined in 1995 and part of 1996 the total depth averaged 42 feet all of which was frozen. The stratigraphic section consisted of 15 feet of mud, 10 feet of brown sand and gravel and 17 feet of grey gravel (White Channel). Bedrock was grey and green schist which rose towards the south side of the cuts. The new area started in 1996 consisted of 35 feet of frozen mud on 6 to 10 feet of frozen gravel. In 1997 the miners encountered 20 to 45 feet of sandy and silty mud on 5 to 10 feet of gravel all of which was frozen. In 1995 and 1996 the sluice section was the lower 8 feet of gravel and the upper decomposed bedrock. In 1997 all of

the gravel was taken along with the upper decomposed bedrock, approximately 2 to 3 feet.

Mining Cuts: Two cuts were mined in 1995, each 300 feet wide and one 350 feet and the other 700 feet long. In 1996 two cuts were mined in the same area as in 1995. These were 300 feet by 700 feet and 300 feet by 650 feet. One cut was mined in a new area downstream on the right limit of the valley. This cut was 300 feet by 500 feet. In 1997 two cuts were mined in the new area. One was 200 feet by 600 feet and the other was 300 feet by 600 feet.

Water Supply and Treatment: Water used by this operation is obtained via ditches from the upstream operation Ross Mining. The primary source of the water is Dominion Creek. Settling at this site is in out of stream ponds. In the older area upstream the two settling ponds were 200 feet by 600 feet and 400 feet by 100 feet. In the newer area a recycle settling system was started. The primary pond size in 1996 was 200 feet by 300 feet. Effluent then drained away via seepage through coarse dredge tailings to another pond 20 feet by 600 feet. In 1997 the primary settling was in a 300 foot by 500 foot pond. The discharge from the pond was carried via a ditch approximately 1000 feet long to a lower 500 foot by 1000 foot pond. Discharge from the lower pond was via a spillway into an old ditch where it mixed with the discharge from Ross Mining.

Gold: The gold recovered from this property was described as mainly fine grained with any coarser gold being dendritic and crystalline in form. The fineness was 850 to 880.

Comments: Most of the sluicing at this property was done using a single loader except when the tailings runs became too long.

UNNAMED TRIB. OF DOMINION CK 115 O/10
Gyppo Mining Ltd. 63°41'N 138°35'W
Water Licence: PM93-102 1995, 1996, 1997
Dominion-Sulphur Placer Area Site No. 69

Operation/Location: This operation is working on the unnamed left limit tributary of Dominion Creek downstream from Rob Roy Creek, also referred to as Lee Pup or Gyppo Creek. Six employees worked 12 hours per day at this site.

Equipment/Function: A 355 Komatsu bulldozer was used to strip. A D8 Caterpillar bulldozer pushed pay to the plant. A Hein Werner excavator fed the hopper, and a 966C Caterpillar loader stacked tailings.

Wash Plant: The wash plant consisted of a Tyroc vibratory double deck screen feeding sluice runs. The top screen was 3 inch plus and the lower one was 1 inch minus. The sluice runs utilized riffles or expanded metal over Nomad matting for recovery. Process water was pumped using a 10 inch pump powered by a 6-cylinder engine which provided 1500 igpm to process 80 loose yards per hour.

Ground Description: Overburden averaged 25 feet in depth, all of which was in permafrost. The average depth of the sluice section was 6 feet.

Mining Cuts: This operation processed five cuts per year. Each cut averaged 6000 in place cubic yards sluiced.

Water Supply and Treatment: Water was obtained from Dominion Creek. Settling was accomplished in out of stream ponds off "Lee Pup". Up to 100% of the water used was recycled through the system.

Gold: Gold recovered was reported as being coarse with a fineness of 900.

Comments: More drilling of the property will be required to determine the viability of mining into the millennium.

DOMINION CREEK 115 O/10
Ross Mining Ltd. 63°41'N 138°35'W
Water Licence: PM94-050 1995, 1996, 1997
Dominion-Sulphur Placer Area Site No. 70

Operation/Location: This operation located near the confluence of Dominion and Gold Run Creeks employed from nine to ten miners and from five to six camp workers during the period of this report. The regular shift for workers was 10 hours per day.

Equipment/Function: Excavation, ore hauling and transportation of waste were accomplished using three bulldozers, three excavators, three rock trucks and two loaders. The bulldozers were

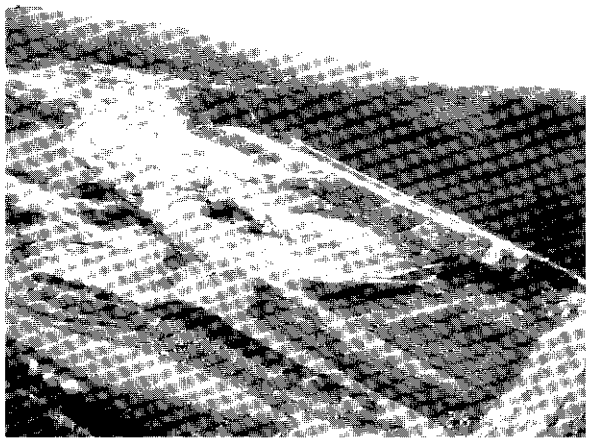
Caterpillar models D10, D9L and D8L. The excavators were Hitachi model EX1100, Caterpillar model 245 and Komatsu model PC400. The rock trucks were all 60 ton Terex model 3309. The loaders were Caterpillar models 992 and 988. A fourth rock truck was added in 1996. The PC400 excavator was not part of the operation in 1997. A grader was also used at the site for the road building and maintenance undertaken by this operation.

Wash Plant: The washplant was comprised of a hopper feeder to a conveyor which in turn fed the material into a triple deck screen plant and then into an oscillating sluice. A coarse tailings stacker was added in 1996. The screen deck was changed to a double deck in 1997. In 1995 and 1996 a 12 by 14 inch B & D pump powered by a Cummins engine provided the 3000 igpm needed by the washplant to process from 200 to 400 loose yards per hour of material. In 1997 the pump used was a 12 by 14 inch Daton pump.

Ground Description: In 1995 this operation encountered 10 to 20 feet of muck over 20 to 50 feet of gravel. In 1996 the stratigraphic section was 10 to 25 feet of muck over 15 to 45 feet of gravel. All of the material was frozen. Approximately 50% of the material was sand or smaller grained with very few large boulders (>2 feet). In 1997 three pits were mined. The total depths varied from 30 feet to 75 feet. Cut one was 10 feet of muck and sand, over 6 to 10 feet of Dominion gravel on 12 to 15 feet of White Channel gravel. Cut two was 6 to 8 feet of muck over 8 to 10 feet of Dominion gravel on 15 to 20 feet of White Channel gravel. Cut three was 25 feet of muck and sand on 10 feet of red Dominion gravel over 25 to 30 feet of slide rock on 10 feet of White Channel gravel. The sluice section in the first year was 6 to 10 feet of gravel and 2 to 5 feet of bedrock. In the second year it was 6 to 15 feet of gravel and old dredge tailings along with 2 to 5 feet of bedrock. The third year's sluice section was 6 to 12 feet of White Channel gravel.

Mining Cuts: In 1995 approximately 500,000 square feet were mined. In 1996 the square footage was 550,000. The 1997 cuts ranged in size from 100,000 to 300,000 square feet.

Water Supply and Treatment: This operation utilized a recirculation settling system with make up water coming from Dominion Creek. From 95 to 96% of the water is recycled through a five pond system. A new primary settling pond is established each year. The ponds range in size from 200 by 700 feet to 100 by 400 feet.



An aerial view of Ross Mining Ltd. looking from Gold Run Creek downstream over the series of mine pits and settling ponds toward Dominion Creek.

Gold: The gold recovered is described as angular, rough and spongy in form with 50% -50 mesh. Fineness in 1995 and 1996 was 882 to 886. In 1997 the fineness ranged from 845 to 865.

Comments: This open pit style operation has all ore hauled to a central processing plant. Rehabilitation work is planned to coincide with the stripping program to backfill and reclaim mined out areas. This operation sets a good example of how with planning reclamation can be accomplished in an economically feasible manner as a part of the overall mining plan.

GOLD RUN CREEK **115 O/10**
Teck Mining Group Ltd. **63°42'N 138°37'W**
Water Licence: PM93-035 **1995, 1996, 1997**
Dominion-Sulphur Placer Area **Site No. 71**

Operation/Location: Teck Mining Group Ltd. mined an area at the mouth of the Gold Run Creek valley. They employed eighteen miners and five camp personnel in 1995. In 1996 and 1997 there were four camp workers. Virgin ground and previously

dredged ground were mined in 1995. In 1996 and 1997 the ground mined was an area that had been dredged from 1914 to 1919.

Equipment/Function: Mining of the property was accomplished using three Caterpillar 637-E scrapers, three Caterpillar D9N bulldozers, one Caterpillar 966 loader and one Caterpillar 350 excavator.

Wash Plant: Up to 3500 igpm of water were pumped using an 8 by 10 inch Cornell pump powered by a 3406 Caterpillar engine to process from 230 to 240 loose yards per hour through the washplant. The washplant consisted of a 14 foot long by 5 foot wide Hewitt Robbins screen deck with ¾ inch punch plate and a belt feeder. The first two 4 foot wide runs were equipped with angle iron riffles. The next three runs and the bottom four runs were equipped with expanded metal.

Teck Mining Group Limited's sluice set up on Gold Run Creek.

Ground Description: The virgin ground mined in 1995 consisted of 20 feet of waste muck and sand and 7 feet of pay gravel. The dredged area mined in 1995 was a total of 42 feet to bedrock. There were some pay gravels on bedrock however most of the values came from the muck section. The dredged area in 1996 and 1997 consisted of 25 feet of black muck, waste sand and gravel over 8 feet of pay gravel and pay bedrock. The bedrock was uneven. The sluice section had an average depth of 8 feet. Ninety percent of the mined area was frozen.

Mining Cuts: An area 1000 by 1000 feet was mined in 1995. In 1996 and 1997 the mined area was 3700 feet long with an average width of 284 feet.

Water Supply and Treatment: Water was obtained using an out of stream 100% recycle pond. In 1995 the pond was 1500 feet long by 300 feet wide. In 1996 and 1997 the pond used was 800 feet wide by 3000 feet long.

Gold: The gold was fine grained and had a fineness of 850.

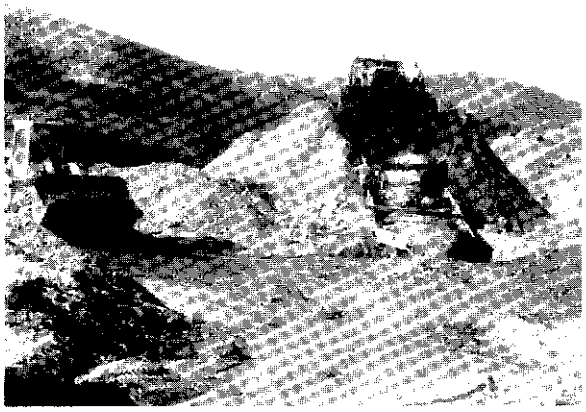
Comments: Teck Mining Group Ltd. completed mining in this area at the end of the 1997 mining season. The required reclamation work was completed.

GOLD RUN CREEK **115 O/10, 155 O/15**
D & P Mining Expl. Ltd. **63°45'N 138°42'W**
Water Licence: PM94-065 **1995, 1996, 1997**
Dominion-Sulphur Placer Area **Site No. 72**

Operation/Location: This operation was located on Gold Run Creek approximately five miles upstream from its confluence with Dominion Creek. The valley bottom was mined. There were two miners and one camp worker employed at the site. One 10 hour shift was worked per day.

Equipment/Function: Two Caterpillar bulldozers, models D9G and D8H, equipped with U-blades and rippers, were used to rip and push frozen mud overburden and stockpile pay gravels. The D8 was also used to feed the dump box on the wash plant. A Caterpillar 235C excavator was used to dig drains, clean up bedrock and stockpile paydirt. A Caterpillar 966C loader was used to remove and stockpile tailings.

Wash Plant: The washplant consisted of a 6 yard dump box with a spray bar which washed the paydirt into the sluice box. The sluice box consisted of six sections of 4 by 8 foot punch plate (¾ and ½ inch holes) over expanded metal and Nomad matting. The slope of the sluice is 2½ inches per foot. A Worthington 10 by 12 inch pump powered by a Caterpillar 3208 engine provided 1000 igpm to process 60 loose yards of material per hour.



D & P Mining Mining Exploration Ltd. sluicing in 1996.

Ground Description: The stratigraphic section of this property consisted of 30 to 40 feet of frozen muck over 2 to 5 feet of gravel (average 3 feet). The composition was uniform and frozen. Particle sizes varied from sand to gravel to rock 1 to 2 feet in diameter (mostly quartz). This was underlain by wavy blue and green, fractured, decomposed bedrock. There were old shafts and a few ancient bones in the overburden. The sluice section was an average of 3 feet of gravel and 3 feet of decomposed bedrock.

Mining Cuts: An area of 200 by 300 feet was stripped during the 1995 mining season. This area was 30 feet deep. Test holes were drilled upstream to define the pay zone. An employee was hired for two weeks to work on the equipment. No sluicing was done in 1995. In 1996 an additional 200 by 300 foot area was stripped. Sluicing of this and the area stripped in 1995 was not completed due to equipment down time and water shortages. In 1997 sluicing of the 1996 cut was completed. Stripping was started on the next cut upstream. This new cut is approximately 250 by 400 feet. Additional test holes were drilled upstream using a mobile B-31 6 inch auger drill to further define the payzone.

Water Supply and Treatment: An instream recirculation settling system was used. Effluent generated by an old ditch requires that the operators settle the water prior to using it. Low water levels in 1996 meant that sluicing was limited to alternate days.

Gold: Gold recovered was 20% +10, 70% -10 to +60 and 10% -60 mesh. The shape was mostly rounded, smooth and chunky. There was some flat, angular, rough and wiry material. Nuggets recovered were ¼ ounce and under and had quartz attached. Fineness was 840.

Comments: D & P Mining Exploration Ltd. have been battling the influence of an old ditch from the outset of their mining of the property. Additional settling ponds were added on mined out Teck Mining Ltd. property to improve water quality for downstream operators when D & P were not using water.

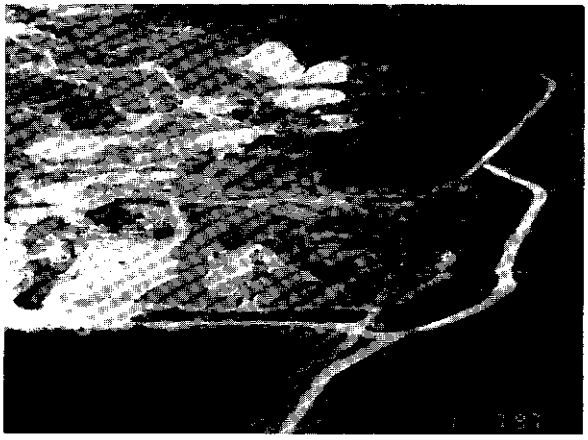
DOMINION CREEK 115 O/10, 115 O/15
Miles and Vicki Johnson 63°45'N 138°32'W
Water Licence: PM96-061 1997
Dominion-Sulphur Placer Area Site No. 73

Operation/Location: Maverick Gold Mines Inc. mined ground on Dominion Creek at its confluence with Arkansas Creek. The Dominion Creek valley is approximately 1200 feet wide at this location with steep sloped sides on the west (right) limit and a shallower slope on the east (left) limit.

Equipment/Function: This site was mined using a D9L Caterpillar bulldozer, a 980C Caterpillar loader, a 42 inch by 100 foot conveyor and a 42 inch dozer trap with a 42 inch by 50 foot conveyor.

Wash Plant: The wash plant used was a double deck horizontal screen wash pan with a straight run sluice to a 4 foot by 20 foot oscillating sluice. The upper deck screened to 1½ inch minus. The lower deck was equipped with ½ inch by 1 inch cross slot. A 10 by 12 inch General Motors pump powered by a Caterpillar 6-71 engine provided 1200 igpm of water to wash from 75 to 140 loose yards of material per hour.

Ground Description: The black mud layer in this area ranged from 0 to 20 feet deep. Fine waste gravels including sand and silt layers were from 5 to 25 feet deep. The sluice section was from 3 to 8 feet deep. The waste section was from 15 to 28 feet deep. The elevation to watercourse is 10 to 20 feet.



Miles and Vicki Johnson's site on Dominion Creek in 1997.

Mining Cuts: One cut was mined to a total area between 230,000 and 270,000 square feet.

Water Supply and Treatment: Water was obtained from either Dominion or Arkansas Creek. When there was a discharge from the site it was to Dominion Creek. Approximately 50% of the water used at the site was recycled. The settling pond area was 200 by 150 feet.

Gold: Gold recovered from the site was fine grained.

Comments: Reclamation of the site is addressed as mining progresses.

DOMINION AND NEVADA CREEKS 115 O/15
Arthur Sailer 63°48'N 138°38'W
Water Licence: PM93-062 1995, 1996, 1997
Dominion-Sulphur Placer Area Site No. 74

Operation/Location: Arthur Sailer mined three properties on Dominion Creek each year. His crew was made up of six miners and two camp workers. On average two miners worked at each site with movement of employees between the sites as required. The regular shift was 10 hours per day. The property mined under this licence is a left limit bench of Dominion Creek. The approximate valley width in this area is 1500 feet.

Equipment/Function: Equipment used by Mr. Sailer to mine the three properties was four Caterpillar bulldozers, three Caterpillar front end loaders, one Caterpillar excavator and one Hitachi excavator. Three of the bulldozers, models D9G, D9H, D8-14A, were equipped with U-blades and rippers. The other bulldozer, model D8-14A, was equipped with an S-blade and a winch. The loaders were model 980B with 5 cubic yard buckets. The Caterpillar excavator was a model 225. The Hitachi excavator was a model EL300. In 1997 a model 235 Caterpillar excavator was added. Generally a bulldozer, a loader and an excavator were used at this site, however, equipment was moved as required between the sites.

Wash Plant: The washplant used on the Dominion Creek and Nevada Creek site was a 5 foot by 14 foot screen plant with a sluice run having a 10 foot by 10 foot section with expanded metal and Nomad carpet and an 8 foot by 4 foot run with 1¼ inch angle iron riffles. This plant processed approximately 100 loose yards per hour. Pumps used for the Dominion Creek Champion Pup and the Dominion and Nevada Creek sites were a 12 by 14 inch Byron Jackson and a 10 by 12 inch Dayton Dowd each powered by a D13000 Caterpillar engine.

Ground Description: The miners encountered from 10 to 40 feet of muck over 5 to 15 feet of gravel. Of this from 6 to 12 feet of the gravel and up to 5 feet of the bedrock was sluiced.

Mining Cuts: In 1995 26,000 cubic yards were sluiced. In 1996 18,000 cubic yards were sluiced. In 1997 three cuts totalling 39000 cubic yards were sluiced.

Water Supply and Treatment: Out of stream water acquisition and settling ponds were used at this site.

Gold: Gold recovered from this site was fine, flat and flaky with some spongy and quartzy nuggets. There was 1% +10 mesh, 50% -10 mesh to +60 mesh and 49% -60 mesh.

DOMINION CREEK 115 O/15
James P. Taylor 63°49'N 138°40'W
Water Licence: PM95-114 1995, 1996
Dominion-Sulphur Placer Area Site No. 75

Operation/Location: Kevin and Linda McClintock and sons mined cuts on both sides of Dominion Creek at its confluence with Portland Creek. J. P.

Taylor mined on a small scale on the left limit of the Dominion Creek valley downstream from the confluence with Portland Creek. The McClintock's operated with three miners and one camp employee in 1995 and two miners and one camp employee in 1996. In 1995 the miners worked around the clock in two shifts. In 1996 there was one 12 hour shift per day. Mr. Taylor operated with the aid of a part-time helper.

Equipment/Function: The McClintocks used a Caterpillar D9G bulldozer with an U-blade and ripper for stripping, pushing up pay gravel and removing tailings. A John Deere 790D excavator was used for feeding the washplant, drainage and stripping. Mr. Taylor used a D8 Caterpillar 14A bulldozer with a straight blade, a Bobcat 130 excavator and a John Deere 450 loader.

Wash Plant: The washplant used by the McClintocks was a 20 foot long 6 foot diameter trommel. The trommel screened to 9/16 of an inch. The screened material travels through boil boxes then across 10 foot wide by 6 foot long sluice runs on either side of the trommel. The runs had expanded metal over Nomad matting. Water was supplied using a Gorman Rupp 6 by 6 inch pump powered by a Hercules 110 horsepower engine. The process rate was 80 loose yards per hour. Mr. Taylor's washplant was a Derocker with a 2 foot by 24 foot sluice run. Mr. Taylor used one of three 3 inch Honda pumps to provide water to the washplant. His process rate was 25 loose yards per hour.

Ground Description: At the mouth of Portland Creek on the right limit of Dominion Creek the stratigraphic section was 24 to 26 feet of black muck over 8 to 10 feet of gravel on decomposed bedrock. On the left limit of Dominion Creek, against a bedrock rise, one cut was taken in gravel left by previous cat miners. The second cut was on a bench where 10 feet of brown earth was found over 10 feet of mainly thawed gravel. In 1996 the sluice section of the cuts taken on Portland Creek was 18 feet of black muck over 7 feet of gravel on hard blocky bedrock with decomposed bedrock at a lower level. The sluice section taken was 3 to 4 feet of gravel and 1 to 2 feet of bedrock. The stratigraphic section in the area worked by Mr. Taylor was 12 to 15 feet of muck over 1 foot of clay on 5 feet of gravel. The sluice section was 4 feet of gravel and 1 foot of bedrock.

Mining Cuts: The McClintocks mined five cuts totalling 50,200 square feet in 1995 and two cuts totalling 40,000 square feet in 1996. In 1995 a 500 foot long strip of overburden was removed working into the bench. In 1996 four feet of gravel and approximately a foot of bedrock were mined from a 15 foot width of the strip for about 400 feet of its length.

Water Supply and Treatment: When working on Portland Creek in 1995 the McClintocks out of stream settling pond discharged to Dominion Creek via a long drain. Effluent from works on the left limit of Dominion Creek was settled in dredge ponds with discharge via seepage. In 1996 they used a recirculation settling system with any discharge again through the drain to Dominion Creek. Mr. Taylor's water system was fed via seepage water. Water was recirculated through the ponds using three Honda pumps, one of which fed the Derocker.

Gold: The average fineness of gold recovered by the McClintocks was 825. The gold was described as flat, smooth and bright. The gold from the left limit works was in chunkier flakes. Along the left limit bench where Mr. Taylor worked the fineness was 815. The gold was flat and flaky and mostly 10 to 50 mesh.

Comments: Work performed in 1995 was under the previous licence numbers PM93-003 and PM93-005 which were amalgamated into the current licence effective in June 1996.

DOMINION CREEK/CHAMPION PUP 115 O/15
Arthur Sailer 63°49'N 138°41'W
Water Licence: PM93-061 1995, 1996, 1997
Dominion-Sulphur Placer Area Site No. 76

Operation/Location: Arthur Sailer mined three properties on Dominion Creek each year. His crew consisted of six miners and two camp workers. On average two miners worked at each site with movement of employees between the sites as required. The regular shift was 10 hours per day. The property mined under this licence is creek and left limit bench ground of Dominion Creek. The

valley width in this area is approximately 1500 feet.

Equipment/Function: Equipment used by Mr. Sailer to mine the three properties was four Caterpillar bulldozers, three Caterpillar front end loaders, one Caterpillar excavator and one Hitachi excavator. Three of the bulldozers, models D9G, D9H, D8-14A, were equipped with U-blades and rippers. The other bulldozer, model D8-14A, was equipped with an S-blade and a winch. The loaders were model 980B with 5 cubic yard buckets. The Caterpillar excavator was a model 225. The Hitachi excavator was a model EL300. In 1997 a model 235 Caterpillar excavator was added. Generally two bulldozers, a loader and an excavator were used at this site, however, equipment was moved as required between the sites.

Wash Plant: The washplant used on the Dominion Creek and Champion Pup site was a 10 foot by 20 foot Derocker. This plant processed approximately 100 loose yards per hour. Pumps used for the Dominion Creek Champion Pup and the Dominion and Nevada Creek sites were a 12 by 14 inch Byron Jackson and a 10 by 12 inch Dayton Dowd each powered by a D13000 Caterpillar engine.

Ground Description: The miners encountered from 10 to 40 feet of muck over 5 to 15 feet of gravel. Of this from 6 to 12 feet of the gravel and up to 5 feet of the bedrock was sluiced.

Mining Cuts: In 1995 two cuts totalling 25,000 cubic yards were sluiced. In 1996 four cuts totalling 50,000 cubic yards were sluiced. In 1997 three cuts totalling 34000 cubic yards were sluiced.

Water Supply and Treatment: An instream reservoir was used at this site. Settling was accomplished in out of stream ponds.

Gold: Gold recovered from this site was fine, flat and flaky with some spongy and quartzy nuggets. There was a slightly higher portion of coarser gold than that found at the Dominion Creek and Nevada Pup site.

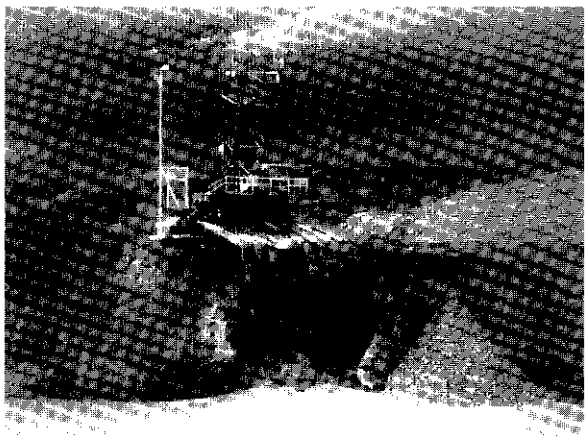
DOMINION CREEK **115 O/15**
Favron Enterprises Ltd. **63°50'N 138°45'W**
Water Licence: PM96-019 **1995, 1996, 1997**
Dominion-Sulphur Placer Area **Site No. 77**

Operation/Location: Personnel at this operation increased from six mine workers and two camp staff in 1995 to seven miner workers in 1996 and three camp workers in 1997. The mine operated on a single 12 hour day shift.

Equipment/Function: Two 82-30 Terex bulldozers with U-blades were used for feeding the washplant. In 1995 stripping was accomplished using two 82-50 Terex bulldozers with U-blades as well as one TS24 and two TS18 Terex scrapers. The scrapers also hauled pay dirt to the washplant. Two Bucyrus Erie 350 excavators with 2½ yard buckets were used to establish drains or channels and to finish a bank cut. In 1996 one D9L Caterpillar bulldozer with a U-blade and ripper was added for stripping. In 1997 one FD50 Fiat Allis bulldozer with U-blade and ripper was added for stripping. Also added in 1997 were two more TS24 Terex scrapers and one more TS18 Terex scraper for stripping and hauling pay. A 12 inch by 10 inch Bingham pump powered by a 6-71 Detroit diesel engine was used to monitor.

Wash Plant: The washplant consisted of a 42 inch by 21 foot feeder belt which fed a 42 inch by 60 foot elevating conveyor which travelled to a 5 foot by 10 foot double screen deck. There was 1½ inch screen on the first deck and ¾ inch screen on the second deck. Any material over ¾ inch travelled out a 36 inch by 35 foot radial stacking conveyor. Material smaller than ¾ inch was divided between two 9 foot by 12 foot slick plates channelling into six 36 inch sluice runs (three per side). The runs were equipped with expanded metal with Nomad matting for 12 feet, at a slope of 1½ inch to the foot, and an additional 2 foot by 4 foot of 1 inch riffles with Nomad matting at a slope of 2 inches to the foot. A 12 by 10 inch Peerless pump powered by a 4-71 Detroit diesel engine supplied 2500 igpm of water to the washplant. The plant processed 200 loose yards per hour. A 12 inch by 6 foot longtom was used to concentrate material from the washplant. The material was then cleaned using a reverse spiral wheel.

Ground Description: In 1995 and 1996 the stratigraphic section was reported to be 30 feet of frozen black muck with ice seams over 4 feet of gravel with small boulders and remnants of previous workings. This was underlain by sloped wavy bedrock consisting of decomposed sand to flat hard bedrock. The sluice section was 4 feet of gravel and 1 foot of bedrock. Bedrock was an average of 20 feet below creek level. In 1997 the frozen black muck increased to 80 feet.



Favron Enterprises Ltd. sluicing into a mined out cut in 1996.

Mining Cuts: In 1995 the total cubic yard moved were 241,495 and total cubic yards sluiced were 78,388 from four cuts. In 1996 the total cubic yards moved were 379,019 and total cubic yards sluiced were 44,910 from five cuts. In 1997 a total of 245,739 cubic yards were moved and a total of 42,375 cubic yards were sluiced.

Water Supply and Treatment: Water circulated from Dominion Creek, through a settling pond, back to Dominion Creek. Effluent treatment was out of stream with 50% of water recycled.

Gold: Gold recovered was described as mostly flat with occasional smooth or rough appearance, dull yellow in colour. 90% of the gold is -10 screen, the remaining 10% can range up to raisin size, any larger nuggets being quartzy. Fineness is 82%.

Comments: Valley slopes range from a steep to gradual on the right limit to a gentle slope on the left. Most sluicing is done back into a mined out area or cut. Winter preparation consists of returning creek out of settling ponds to the existing creek channel. Overburden and tailings piles are levelled to the contours of the land. Scrapers are used to haul black muck to cover gravel areas to help vegetation grow.

CARIBOU CREEK **115 O/15**
Jim Stuart **63°49'N 138°49'W**
Water Licence: PM93-114 **1995,1996,1997**
Dominion-Sulphur Placer Area **Site No. 78**

Operation/Location: Jim Stuart and his son continued to operate on Caribou Creek.

Equipment/Function: Two Caterpillar bulldozers (models D9G and D8H), a 966 Caterpillar loader, an Hein Werner C14A excavator (in 1995 only), and a 125B Case excavator (1996 and 1997) were used to mine the property.

Mining Cuts: In 1995 one cut was mined on the left limit of Caribou Creek approximately 2500 feet upstream from it confluence with Dominion Creek. In 1996 two cuts totalling 31,900 cubic yards were mined on Caribou Creek immediately upstream from its confluence with Lion Creek. In 1997 two more cuts totalling 37,800 cubic yards were mined on Caribou Creek upstream from the confluence with Lion Creek.

Water Supply and Treatment: Process water was obtained from either Caribou or Lion Creek as the location of the current sluice set up indicated. Settling was accomplished in small instream ponds with final settling in a large pond on the right limit of the Dominion Creek valley at the mouth of Caribou Creek. The large pond was instream during the mining season with flows routed around the pond at the end of each season.

Gold: Fineness of gold recovered from this creek varies from 816 to 840.

UPPER DOMINION CREEK **115 O/15**
Arthur Sailer **63°51'N 138°54'W**
Water Licence: PM95-102 **1995, 1996, 1997**
Dominion-Sulphur Placer Area **Site No. 79**

Operation/Location: This property is located on Upper Dominion Creek near its confluence with Lombard Pup. Arthur Sailer mined three properties on Dominion Creek each year. The crew consisted of six miners and two camp

workers. On average two miners worked at each site with movement of employees between the sites as required. The regular shift was 10 hours per day.

Equipment/Function: Equipment used by Mr. Sailer to mine the three properties was four Caterpillar bulldozers, three Caterpillar front end loaders, one Caterpillar excavator and one Hitachi excavator. Three of the bulldozers, models D9G, D9H, D8-14A, were equipped with U-blades and rippers. The other bulldozer, model D8-14A, was equipped with an S-blade and a winch. The loaders were model 980B with 5 cubic yard buckets. The Caterpillar excavator was a model 225. The Hitachi excavator was a model EL300. In 1997 a model 235 Caterpillar excavator was added. Generally a bulldozer, a loader and an excavator were used at each site, however, equipment was moved as required between the sites.

Arthur Sailer's Upper Dominion Creek mine site.

Wash Plant: The washplant used on Upper Dominion Creek was a 5 foot by 20 foot trommel which fed to a 4 foot by 18 foot sluice run. The run was equipped with expanded metal as well as angle iron and water riffles. An 8 by 10 inch Marlow pump powered by a 6-cylinder Deutz engine provided the water needed to process approximately 100 loose yards per hour.

Ground Description: The miners encountered from 10 to 40 feet of muck over 5 to 15 feet of gravel. Of this from 6 to 12 feet of the gravel and up to 5 feet of the bedrock was sluiced.

Mining Cuts: In 1995 12,000 cubic yards were sluiced. In 1996 10,000 cubic yards were sluiced. In 1997 7000 cubic yards were sluiced.

Water Supply and Treatment: Water for mining this property was obtained from an instream reservoir. Settling was accomplished using a series of out of stream settling ponds.

Gold: Gold recovered from Upper Dominion was coarser than that found at the other two sites. It was "shotty" down to the finest grain size making it easier to save.

Comments: In 1995 mining was performed under Discovery Mines water licence PM92-064.

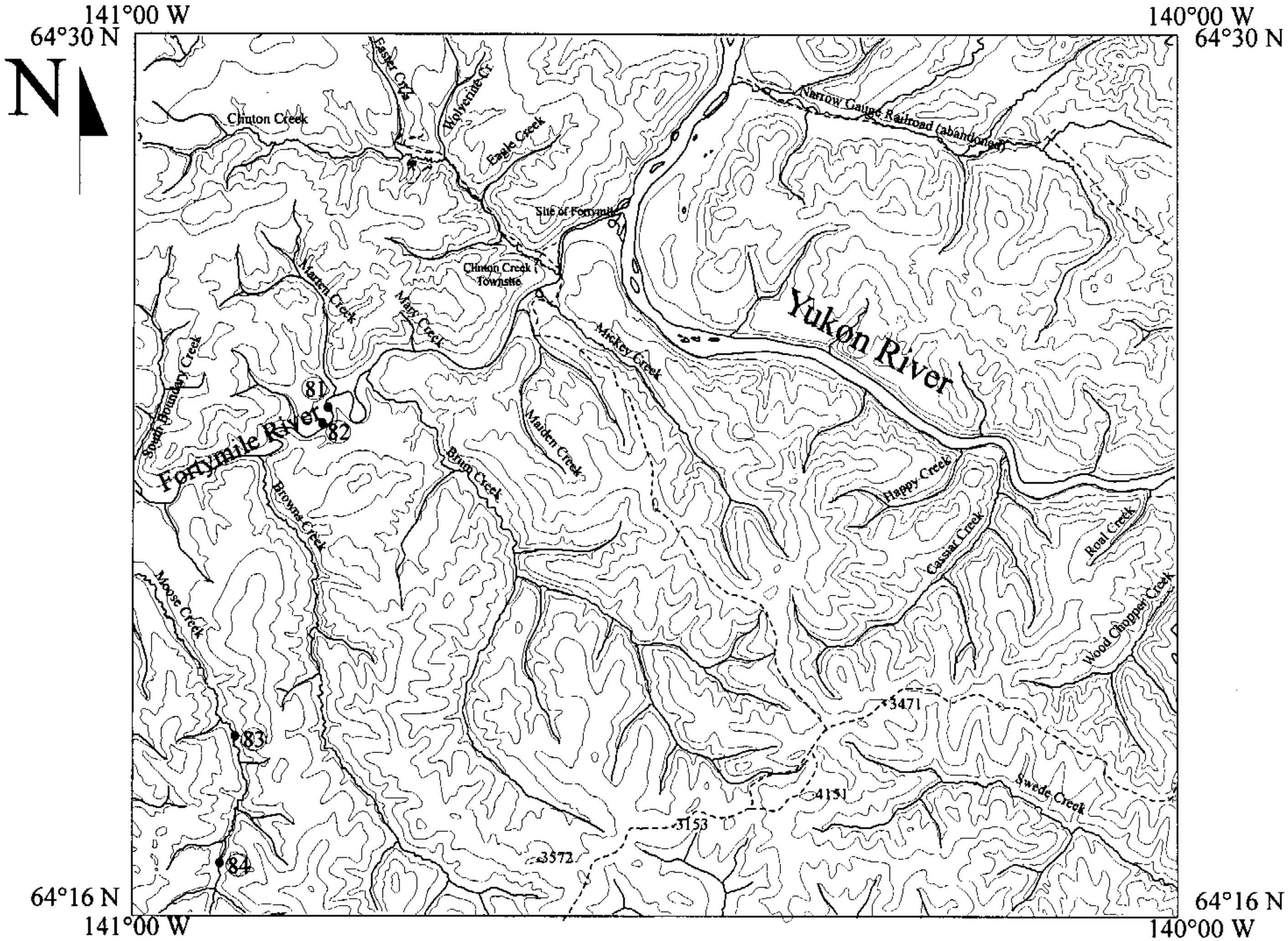
UPPER DOMINION CREEK **115 O/15**
John Adam **63°52'N 138°55'W**
Water Licence: PM93-063 **1996, 1997**
Dominion-Sulphur Placer Area **Site No. 80**

Operation/Location: This operation located at the uppermost reaches of Dominion Creek occupied two miners on a part time basis in a testing program.

Equipment/Function: The operation uses a 977 Caterpillar track loader with a 3 cubic yard bucket to feed the dump box and haul tailings, a D6 Caterpillar bulldozer with an angle blade to do road and dam work and stripping and a Caterpillar 225 excavator with a ½ cubic yard bucket to dig test pits.

Wash Plant: The washplant was a 28 inch trommel with a 9 by 16 foot dump box and 24 by 16 foot sluice trays. Two pumps were used to provide the 150 igpm needed to process 12 to 15 loose yards per hour through the test plant.

Ground Description: The operators were reworking tailings and old cuts as well as doing test pits into side pay. The stratigraphic section of the side ground was 6 to 8 feet of slide rock over 1 foot of mud and sticks on 6 to 8 feet of gravel. The gravel was very black with some rounded white quartz. Bedrock was both green schist and decomposed red schist.


141°00 W
64°30 N
140°00 W
64°30 N
N
Clinton Creek
Easter Crk
Wolverine Cr.
Eagle Creek
Narrow Gauge Railroad (abandoned)
Site of Fortymile
Clinton Creek Townsite
Marten Creek
Mary Creek
Mickey Creek
Yukon River
South Boundary Creek
81
82
Fortymile River
Maiden Creek
Bruin Creek
Browns Creek
Happy Creek
Cassiar Creek
Roal Creek
Moose Creek
Wood Chopper Creek
3471
83
4151
Swede Creek
3153
3572
84
64°16 N
141°00 W
64°16 N
140°00 W

Forty Mile Placer Area

Yukon Territory

0 km 10

Secondary roads
Major roads

Rivers

Contours

Placer Operations

Mining Cuts: The operators processed a total of 1000 cubic yards in 100 cubic yard samples. The test pits were 10 to 15 feet deep.

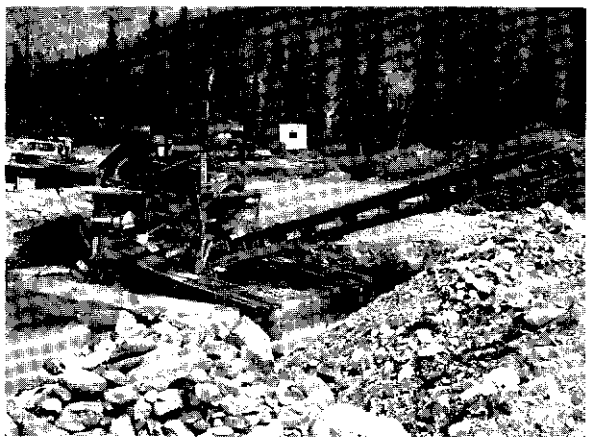
Water Supply and Treatment: A small instream, dugout, recycle pond with an estimated 20,000 gallon capacity was used at this site.

Gold: Gold recovered was fine with some small nuggets and rough looking sharp white quartz with gold attached. Fineness was 800.

Comments: Testing must be done in spring as the water goes underground and is very low during summer. Water must be recycled 100% to ensure enough for the plant.

FORTYMILE RIVER	**116 C/2**
Fortymile Placers	**64°21'N 140°49'W**
Water Licence: PM96-023	**1995, 1996, 1997**
Forty Mile Placer Area	**Site No. 81**

Operation/Location: Leslie Chapman and Bill Claxton operated on the bench about 100 vertical feet above the left bank of the Fortymile River, approximately two miles upstream from Marten Creek.



Leslie Chapman and Bill Claxton's floating trommel wash plant at their bench operation on the Fortymile River.

Equipment/Function: A Caterpillar D6C bulldozer was used for stripping overburden, an Hitachi UH10 excavator was used for digging pay and feeding the wash plant and a Caterpillar 920 front end loader was used for tailings removal.

Wash Plant: Mounted on floating, 30 inch diameter by 16 foot long pontoons, were a 4 foot diameter trommel, 12 feet long, with a 5/16 inch screen deck and two, 4 foot by 6 foot sluice tables with hydraulic riffles, followed by two 4 foot wide by 12 foot long sluice runs. A Flyte 4 inch electric pump supplied approximately 750 igpm of water which was used to process about 100 cubic yards per hour.

Ground Description: Black spruce and moss vegetation were stripped from 1 to 3 feet of frozen, sandy overburden on top of 10 to 18 feet of gravel. Broken schist bedrock was ripped for 3 to 5 feet.

Mining Cuts: In 1995 the cut was about 100 feet wide by 250 feet long and in 1996 it was extended to about 150 feet wide by 350 feet long. In 1997 the cut was excavated on the uphill side another 100 feet by 300 feet.

Water Supply and Treatment: Melt water was collected in the cut and make up water was pumped from the Fortymile River; waste water was contained and recycled within the cut with no discharge to the Fortymile River.

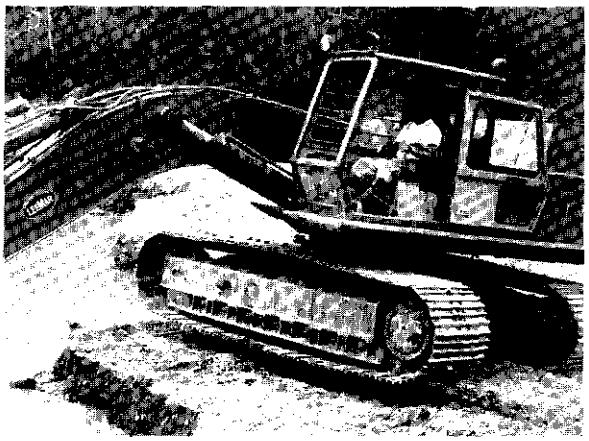
Gold: Gold was fine with 30% under 100 mesh and fineness around 840.

FORTYMILE RIVER	**116 C/2**
Fortymile Placers	**64°21'N 140°49'W**
Water Licence: PM94-081	**1995, 1996, 1997**
Forty Mile Placer Area	**Site No. 82**

Operation/Location: Leslie Chapman and Bill Claxton mined one gravel bar on the left limit of the Fortymile River about a half a mile upstream from Marten Creek. The mining pit was excavated during low water and was kept separated from the river channel by a protective berm. The wash plant was floated within the mining pit which filled with groundwater seepage.

Equipment/Function: A Caterpillar D6C bulldozer was used to build protective berms and to level tailings; an Hitachi UH10 excavator was used to excavate pay gravel and to feed the wash plant.

Wash Plant: Mounted on floating, 30 inch diameter by 16 foot long pontoons, were a 4 foot diameter trommel, 12 feet long, with a 5/16 inch screen deck and two, 4 foot by 6 foot sluice tables with hydraulic riffles, followed by two 4 foot wide by 12 foot long sluice runs. A Flyte 4 inch electric pump supplied approximately 750 igpm of water which was used to process about 100 cubic yards per hour.



Bill Claxton gets maximum leverage digging with an Hitachi UH10 backhoe in the mining cut on the Fortymile River.

Ground Description: River bar gravel depth varied from 6 to 18 feet on top of bedrock.

Mining Cuts: Water levels were too high to mine the bar in 1995 but in 1996 one cut approximately 120 feet wide by 600 feet long was mined. In 1997 one additional cut was mined approximately 100 feet wide by 500 feet long.

Water Supply and Treatment: Water was recycled within the mining pit with no discharge to the Fortymile River. At the end of each season the mining pit was backfilled and the tailing piles were flattened and recontoured to the original shape of the bar.

Gold: Gold consisted of mostly fines with about 5% coarse (over 10 mesh) and fineness of 840.

Comments: Specific operating conditions approved by the Department of Fisheries and Oceans were included in this water licence to allow mining of the river bar during low water periods only. Protective berms were built and maintained between the mining area and the river channel. Prior to the end of each season the mined area was reclaimed and recontoured.

MOOSE CREEK **116 C/2**
Ronald E. McMillan **64°12'N 140°54'W**
Water Licence: PM95-110 **1995, 1996, 1997**
Forty Mile Placer Area **Site No. 83**

Operation/Location: Ron McMillan and Dick Jones continued mining on the lower part of Moose Creek, about four miles upstream from the Alaska border. Moose Creek is a right limit tributary of the Fortymile River. Mr. McMillan and his wife Pat have been mining at this location since 1989.

Equipment/Function: One Caterpillar D6 bulldozer was used for light chores only; a Caterpillar D8 bulldozer was used for stripping overburden, digging and stockpiling gravel and flattening tailings. An Hitachi UH14 excavator was used to dig drains, dig pay gravel, feed the wash plant and clean out settling ponds.

Wash Plant: Starting in 1995, a 4 foot diameter trommel, 40 feet long, with ½ inch slots, was used. This was followed by a single sluice run, 4 feet wide by 30 feet long, with expanded metal riffles over plastic mats. Approximately 70 cubic yards per hour were processed.

Ground Description: The valley bottom was 200 to 300 feet wide with 2 to 4 feet of frozen overburden over gravel layers up to 8 feet deep. Decomposed bedrock was ripped to a depth of about 2 feet.

Ron McMillan and Dick Jones beside a new trommel, 40 feet long with ½ inch slots, on Moose Creek.

Mining Cuts: In 1995 one cut, approximately 65 feet long by 40 feet wide by 10 feet deep, was mined. In 1996 one cut provided approximately 5300 cubic yards of pay gravel and in 1997 only 1000 yards were processed.

Water Supply and Treatment: Water was ditched by gravity from Moose Creek to a small pump reservoir. Waste water was held in two out of stream settling ponds in old mining cuts prior to discharge back to Moose Creek.

Gold: Coarse gold and small nuggets with quartz attached were recovered. Fineness was around 850.

MOOSE CREEK **116 C/2**
Robert Young **64°11'N 140°54'W**
Water Licence: PM93-096 **1995, 1996, 1997**
Forty Mile Placer Area **Site No. 84**

Operation/Location: Robert Young and Will Crayford continued mining on Moose Creek about three miles upstream from the Alaska border.

Equipment/Function: One Caterpillar D9 bulldozer was used to strip overburden, one Caterpillar 235 excavator was used to dig gravel and feed the wash plant and a 988 front end loader was used to remove and stack tailings.

Wash Plant: A 12 foot square vibrating hopper fed a double barrel trommel, 10 feet in diameter, with reversing spirals between barrels. This was mounted on four large rubber tires with hydraulically controlled independent suspensions. In 1997 a wet hopper with single sluice run was used. A 10 inch Cornell pump, powered by a Detroit 871 diesel engine, was mounted on a truck and delivered about 3000 igpm of water which was used to process up to 300 cubic yards per hour.

Ground Description: Frozen organic overburden up to 12 feet deep was previously stripped from on top of gravel layers which were 8 to 10 feet deep and contained large boulders.

Mining Cuts: In 1995 and 1996 mining cuts were located downstream from the camp. In 1997 the operation moved upstream.

Water Supply and Treatment: Water was pumped from a small instream reservoir in Moose Creek and was treated in a series of out of stream settling ponds with a creek bypass channel maintained along the left limit of the valley.

Gold: Most gold recovered was coarse and some nuggets had quartz attached, fineness was around 845.

MOOSE CREEK **116 C/2**
Daniel Jones **64°08'N 140°55'W**
Water Licence: PM94-117 **1995, 1996, 1997**
Sixtymile Placer Area **Site No. 85**

Operation/Location: Daniel Jones mined a block of 8 claims near the upper end of Moose Creek for about one month in 1995 with 1 helper. In 1996 and 1997 Mr. Jones was only on site for about 2 weeks each season while he dug a few small test holes.

Equipment/Function: A Case 1187B excavator with a one yard bucket was used to dig pay gravel, feed the wash plant, remove tailings and construct dams.

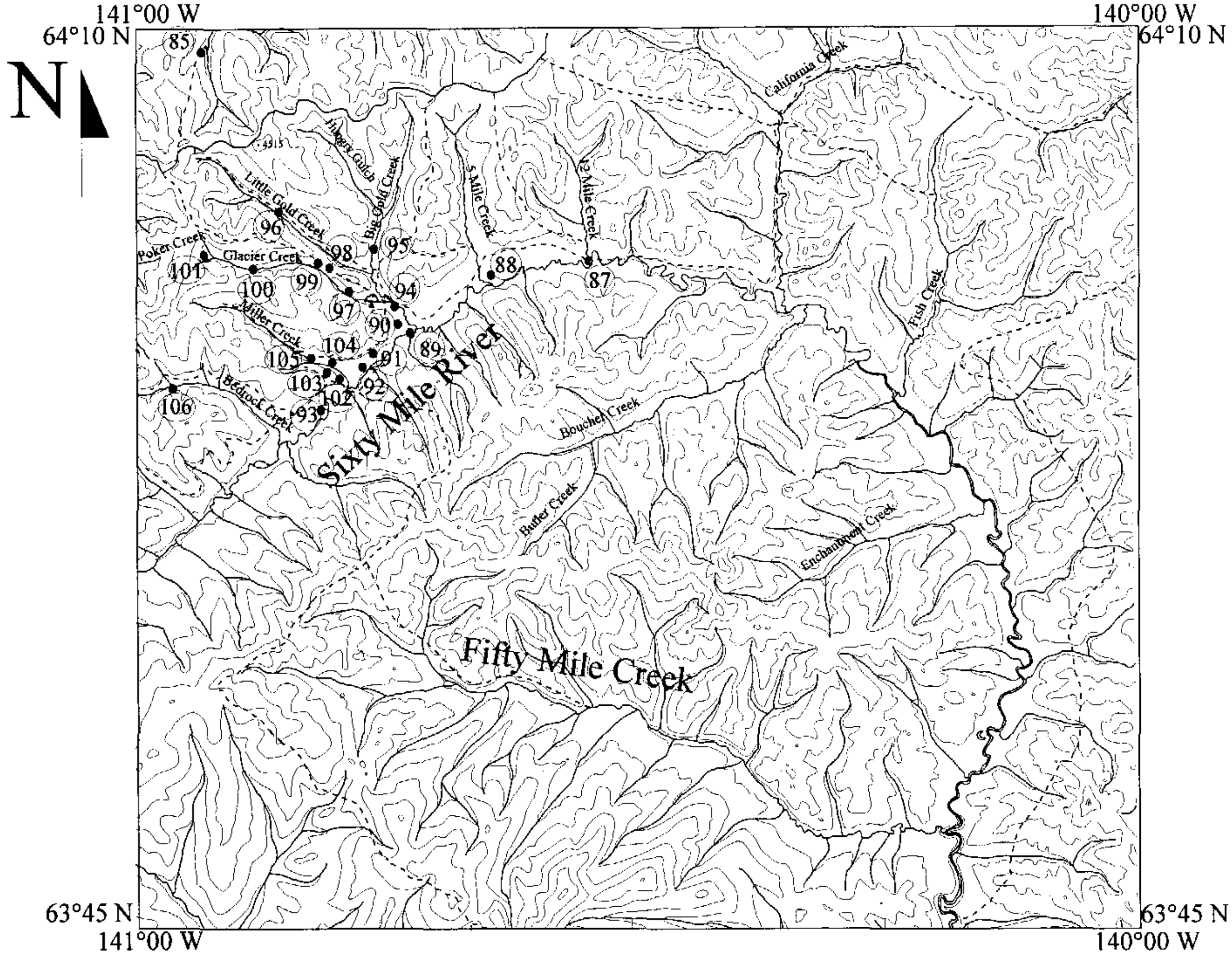
Wash Plant: A 10 foot by 10 foot grizzly with iron bars 4 inches apart fed a single sluice box 10 feet long by 2 feet wide with angle iron riffles over miners moss matting. Approximately 300 igpm of water, supplied by a 3 inch Gorman Rupp pump, were used to process about 10 cubic yards per hour.

Ground Description: Organic overburden was 1 to 3 feet deep on top gravels from 4 to 8 feet deep. Bedrock was clay and shale.

Mining Cuts: About 1000 cubic yards were mined from one cut approximately 200 feet long by 25 feet wide in 1995. In 1996 and 1997 only a few hundred yards were sluiced from several small test holes.

Water Supply and Treatment: Water was pumped from an instream reservoir and was settled in a series of small settling ponds.

Gold: Gold was mostly coarse with less than 10% smaller than number 60 mesh and about 50%



Sixtymile Placer Area

Yukon Territory

Secondary roads
Major roads

Rivers

0 km 10

Contours

Placer Operations

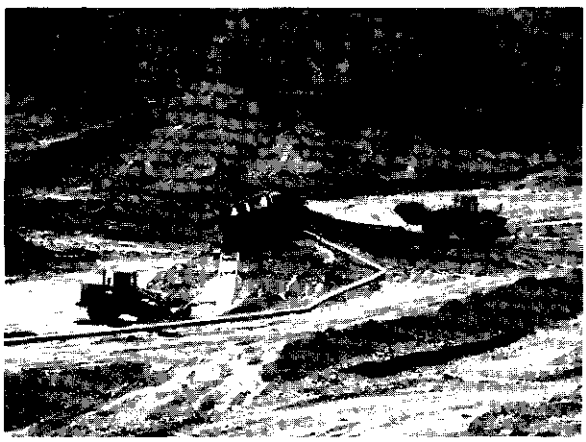
larger than number 10 mesh with some nuggets up to ¼ ounce. The purity is unknown.

TEN MILE CREEK	**115 O/12**
Jonathan M. Ganter	**63°32'N 140°00'W**
Water Licence: PM96-074	**1995, 1996, 1997**
Klondike Placer Area	**Site No. 86**

Operation/Location: Jonathan Ganter mined near the mouth of Ten Mile Creek in 1995 and 1996. The operation was moved upstream several miles in 1997 to where Oak Bay Manor had finished their mining. Jonathan Ganter and a crew of five operated the mine during 1995. The number of miners employed dropped to four in 1996 and three in 1997.

Equipment/Function: A Caterpillar D9H bulldozer and a Caterpillar D8K bulldozer were used for stripping and stockpiling pay gravels. A Caterpillar 988A loader and a Caterpillar 966D loader were used for feeding the sluice plant and dealing with tailings.

Wash Plant: A 10 foot wide Derocker classified the pay gravels before being washed through a single sluice run 4 feet wide by 37 feet long. The run was lined with 1 inch angle iron riffles and Nomad matting. The run was designed with a 2 inch gap between the matting and riffles. A 10 inch by 12 inch Paco pump supplied the 5000 igpm needed to sluice approximately 75 cubic yards per hour.



Jonathan Ganter sluicing with a Derocker near the mouth of Ten Mile Creek.

Ground Description: The ground mined in 1997 at the upstream end of Ten Mile Creek averaged 16 feet deep with 10 feet of frozen mud/muck overlying 6 feet of gravels. The bedrock was usually hard and flat. All of the gravels and about 1 foot of the bedrock was sluiced. The cuts near the mouth of Ten Mile Creek varied in depth from 6 to 25 feet deep but averaged 10 feet. The bedrock tended to be soft and wavy.

Mining Cuts: Four cuts (300 feet by 50 feet, 325 feet by 225 feet, 650 feet by 50 feet, 325 feet by 225 feet) were sluiced during 1995. A single cut measuring 300 feet by 250 feet was sluiced in 1996. Another single cut measuring 350 feet by 125 feet was sluiced near the top of Ten Mile Creek in 1997.

Water Supply and Treatment: Water was pumped from instream reservoirs/recycle ponds on Ten Mile Creek. The effluent was treated in both instream and out of stream settling ponds.

Gold: A variety of gold sizes were recovered. Approximately 10% of the gold was +10 mesh with the majority of the gold -10 to +60 mesh. The larger nuggets were usually smooth. The purity of the gold was 830.

Comments: A 3½ ounce nugget was recovered in 1997. Only one larger nugget from Ten Mile Creek is known about.

SIXTY MILE RIVER	**116 C/2**
6077 Yukon Ltd.	**64°03'N 140°33'W**
Water Licence: PM95-050	**1996**
Sixtymile Placer Area	**Site No. 87**

Operation/Location: In 1996 Vern Trainer and one to two employees mined a cut on a left limit bench of the Sixty Mile River upstream from its confluence with Twelve Mile Creek. The miners worked 8 hours per day. Work finished at the site by July.

Equipment/Function: A 225 Caterpillar excavator was used to feed the sluice plant, a 980 Caterpillar loader was used to move and stack tailings and a D8 Caterpillar bulldozer was used to strip and stockpile pay gravel at the sluice plant.

Wash Plant: The sluice plant used was a 10 foot by 25 foot Derocker with one sluice run for recovery. The sluice run was 4 feet wide by 30 feet long. The first 10 feet of the sluice run were equipped with punch plate and the remaining 20 feet were equipped with 12 inch riffles. Nomad matting was used over the entire length of the run. Water was supplied using a 6 inch by 6 inch Morris pump powered by a Perkins engine.

Mining Cuts: The cut mined was 500 feet long by 200 feet wide by 20 feet deep.

Water Supply and Treatment: Water was pumped from the Sixty Mile River up to the bench. Settling was accomplished in ponds on the bench adjacent to the cut, with discharge via seepage.

Gold: The gold recovered was fine grained and had a fineness reported to be 720.

Comments: Mr. Trainer moved from this site to work under Dredge Master Gold Ltd. licence on Big Gold Creek.

SIXTY MILE RIVER	**116 C/2**
Eldorado Placers Ltd.	**64°02'N 140°04'W**
Water Licence: PM93-072	**1995, 1996, 1997**
Sixtymile Placer Area	**Site No. 88**

Operation/Location: Eldorado Placers Ltd. mined property on the left limit of the Sixty Mile River near Five Mile Creek. Seven miners worked around the clock in two shifts. Camp duties were covered by two people in 1995 and 1996 and three people in 1997.

Equipment/Function: Eldorado Placers used two D9L Caterpillar bulldozers and one 245 Caterpillar excavator to mine the property in 1995. In 1996 another D9L bulldozer was added.

Wash Plant: The plant used at this property was a belt fed screen deck with a tailings stacker. The process rate through the plant in 1995 and 1996 was 375 loose yards per hour. In 1997 the process rate dropped to 250 loose yards per hour.

Ground Description: In 1995 and 1996 the stratigraphic section was found to be a fairly consistent 8 feet of black muck overlaying 12 feet of gravel. The sluice section was 4 feet of gravel and 3 feet of bedrock. In 1997 black muck depth was reported to be from 0 to 32 feet over 12 feet of gravel. The sluice section was 4 feet of gravel and 4 feet of bedrock.

Mining Cuts: In 1995 the surface area of mine cuts taken totalled 148,000 square yards. In 1996 the total was 102,000 square yards and in 1997 the total was 105,000 square yards from 5½ cuts.

Water Supply and Treatment: Eldorado Placers used a 10 by 12 Peerless pump powered by a 3306 Caterpillar engine to provide 2100 igpm from the recirculation pond to the screen deck.

Gold: The fine grained gold recovered from this property had a fineness of 840.

Comments: Site recontouring is addressed as mining progresses at this property. The diversion channel constructed by the operator in 1993 withstood the flood events of the 1997 season where unaltered stream reaches did not.

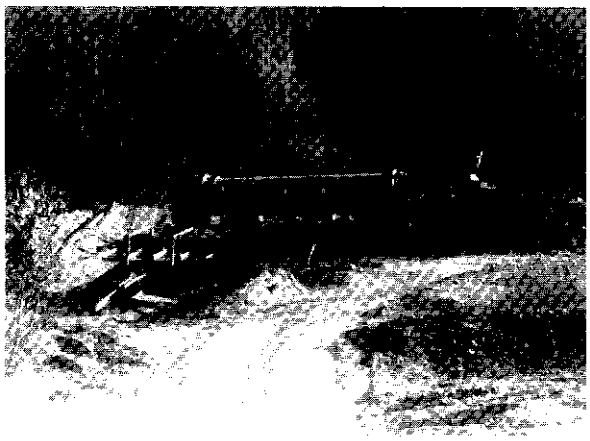
SIXTY MILE RIVER	**116 C/2**
Coulee Resources	**64°01'N 140°43'W**
Water Licence: PM94-033	**1995**
Sixtymile Placer Area	**Site No. 89**

Operation/Location: Tim Coles and Campbell Arkinstall excavated a test cut on the left limit of the Sixty Mile River upstream from its confluence with Big Gold Creek. Work at the site started in August, with sluicing of the cut completed by October 15. There were two to three miners working 12 hours per day at the site during testing.

Equipment/Function: A Fiat Allis 31 bulldozer, and a Hough 120 loader with a 6 cubic yard bucket were used for mining the site. A 235 Caterpillar excavator was used for odd jobs at the site.

Wash Plant: The washplant used was a 6 foot diameter trommel which screened to 1 inch minus. The sluice runs were 10 feet wide by 12 feet long. The runs were equipped primarily with Nomad matting and expanded metal. Water for the washplant was provided using a 6 inch Gorman Rupp pump powered by a Deutz engine.

Ground Description: The total depth to bedrock in this area was 15 feet. The 5 feet of gravel at the site was covered with 10 feet of overburden. The sluiced section was the gravel and 1 to 1½ feet of andesite bedrock.



Tim Coles & Campbell Arkinstall used this trommel to process a cut on the Sixty Mile River.

Mining Cuts: The cut was approximately 250 by 360 feet. A total of 20,000 bank yards were sluiced in 200 hours.

Water Supply and Treatment: The operators were able to recycle seepage water from the cut to sluice.

Gold: The gold recovered from the site was reported to be very fine grained. The fineness was 820.

Comments: The results of the test cut were unfavourable, therefore, on completion of the test site reclamation and clean-up were completed and the site was abandoned.

SIXTY MILE RIVER	**116 C/2**
Coulee Resources	**64°01'N 140°44'W**
Water Licence: PM94-033	**1995, 1996, 1997**
Sixtymile Placer Area	**Site No. 90**

Operation/Location: Graham Ventures mined a left limit bench of the Sixty Mile River upstream from Glacier Creek under this licence during the period of this report. Two miners worked 12 hours per day in 1995. In 1996 and 1997 there were three miners working 12 hours per day.

Equipment/Function: A Caterpillar D9H bulldozer with a ripper and U-blade was used for stripping overburden, pushing pay to the sluice box and restoration work. An Hitachi UH181 excavator with a 2¼ cubic yard digging bucket was also used for stripping as well as digging drainage and feeding the washplant.

Wash Plant: The washplant was a triple run sluice box. A 20 cubic yard hopper fed to a centre run equipped with 1½ inch riffles, heavy expanded metal and Nomad matting, one side run equipped with 16 feet of 1 inch riffles then 12 feet of expanded metal and a second side run with heavy expanded metal and Nomad matting. Water was supplied at 2000 igpm using a Paco 10 by 8 inch pump powered by a 671 General Motors engine. The plant processed from 60 to 80 loose yards of material per hour.

Ground Description: The stratigraphic section for this bench property was 1 foot of moss over 12 feet of frozen mud over 12 feet of gravel. The mud layer increased to 18 feet thick in 1997. The bedrock elevation was 30 feet above the elevation of the Sixty Mile River. Bedrock was flat and broken with quartz seams and galena and was covered by a layer of tan decomposed bedrock. In the section mined in 1997 the bedrock was wavy with quartz seams having purple clay on top and mixed in. The sluice section was 3 feet of gravel and 4 feet of bedrock.

Mining Cuts: One cut was mined each year. In order they were 250 feet by 250 feet, 250 feet by 150 feet and 400 feet by 450 feet.

Water Supply and Treatment: Water for this operation was pumped up onto the bench from the Sixty Mile drain. At the outset of mining, effluent was first settled in a 250 by 300 foot settling pond then discharged to a mined out area downstream along the Sixty Mile River. Part way through the 1995 mining season the operators started settling in a 150 by 700 foot mined out section on the bench. Discharge from the newer area was via seepage. Part way through the 1997 season the operator returned to using the mined out area downstream on the Sixty Mile River for settling.

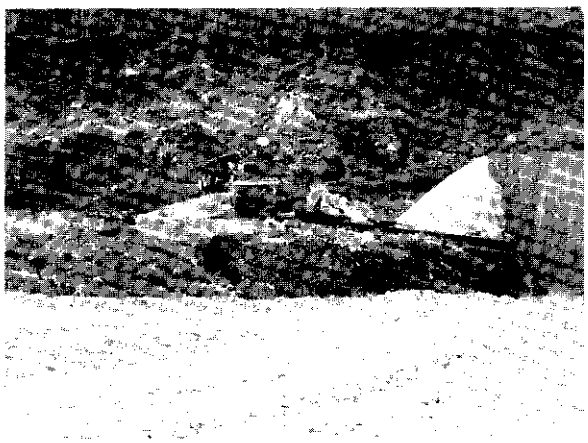
Gold: Gold recovered in 1995 and 1996 was described as mainly flat, rounded and fine-grained with a few small nuggets. In 1997 the shape varied and was described as flat, round, spongy, crystalline, wire and fine. Fineness was 830.

Comments: Graham Ventures finished mining at this location on August 10, 1997 and completed the last of their restoration work by August 15, 1997. A new operation was set up on the Indian River. One small mammoth tusk was discovered at the top of the gravel section during the 1997 mining season.

SIXTY MILE RIVER	**116 C/2**
Aardvark Placer	**64°00'N 140°45'W**
Water Licence: PM92-013	**1995**
Sixtymile Placer Area	**Site No. 91**

Operation/Location: This operation was located on a left limit bench of the Sixty Mile River, midway between Miller Creek and Glacier Creek. Chuck and Lynn McDougall worked the site assisted by one employee.

Equipment/Function: One D8H Caterpillar bulldozer was used for ripping and stripping overburden as well as sluicing. Hydraulic stripping was also used to remove the frozen muck on this property. The effluent generated by the hydraulic stripping was settled in old workings on the Sixty Mile flats.



Aardvark Placers' sluice box set up on a left limit bench of the Sixty Mile River.

Wash Plant: For their last year of mining the McDougalls continued to use the same wash plant as in previous years. This plant consisted of a 17 foot by 6 foot dump box with a 33 foot long run and two 6 foot by 6 foot undercurrents. Recovery was accomplished using astroturf matting under ½ inch punch plate. This system used 2000 igpm of water to process 75 cubic yards per hour of pay gravels.

Ground Description: The average depth of the overburden at this site was 25 feet. This consisted of frozen mud, moss and trees overlaying a layer of slide rock which was moved using the bulldozer. The bedrock was wavy. A ten foot section of gravel and bedrock was sluiced.

Mining Cuts: In 1995 one 200 foot by 200 foot cut was mined.

Water Supply and Treatment: Water for this operation was obtained from the Sixty Mile ditch which was fed by seepage from the river and Miller Creek. From the ditch water was pumped up to the bench using a 6 by 8 inch Berkley pump powered by a 471 General Motors engine.

Gold: Gold recovered at this location was very fine and flat. The screen size averaged 32 mesh and purity was 830 fine.

Comments: A few bones were recovered from the site during the 1995 mining season. The McDougalls completed their mining of this site in 1995.

SIXTY MILE RIVER	**116 C/2, 115 N/15**
Tri-Kay Properties	**64°00'N 140°45'W**
Water Licence: PM95-071	**1995, 1996, 1997**
Sixtymile Placer Area	**Site No. 92**

Operation/Location: Frank and Karen Hawker mined dredge tailings on the left limit of the Sixty Mile River using the Tri-Kay Properties water license. Four miners and one camp worker covered the 17 hours per day that the operation ran in 1995 and 1996. In 1997 there were three miners and one camp worker who worked 12 hours per day.

Equipment/Function: One Caterpillar D9H bulldozer was used for stripping and reclamation work. An Hitachi UH07-7 excavator was used for feeding the screen. An Hitachi EX300 was added in 1997

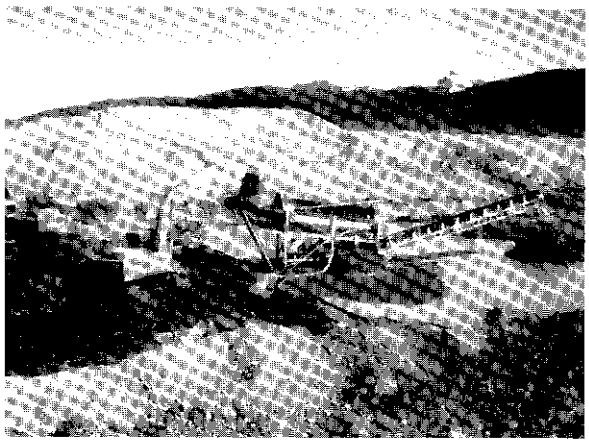
for stripping, pushing out tailings and ripping bedrock.

Wash Plant: An Indeng 6 inch pump powered by a 3306 Caterpillar engine provided the 1000 igpm of water needed to process 80 loose yards per hour. The washplant was a 5 foot diameter trommel screening to ½ inch with a 35 foot stacking conveyor and two 7 foot wide runs with hydraulic riffles.

Ground Description: Dredge tailings varying from 12 to 30 feet deep were stripped off. The sluice section was from 2 to 6 feet deep and consisted of small areas of virgin ground and bedrock.

Mining Cuts: Thirteen cuts averaging 100 by 300 feet were mined in 1995. A total of 75,000 loose yards were sluiced. In 1996 76,000 loose yards were sluiced from twelve cuts of the same average dimensions as in 1995. The eight cuts mined in 1997 were 350 feet by 100 feet in area from which 62,000 loose yards were sluiced.

Water Supply and Treatment: The Sixty Mile ditch provided the water needed by this operation. Settling was in old cuts.



Frank & Karen Hawker's trommel operating on the left limit of the Sixty Mile River in 1997.

Gold: The gold recovered was generally flaky with few nuggets. Fineness was 830.

Comments: Mining in 1995 was under licence PM92-092. The Hawker's addressed the reclamation requirements of the site on an ongoing basis.

SIXTY MILE RIVER **115 N/15**
Walter Yaremcio **63°58'N 140°50'W**
Water Licence: PM96-084 **1997**
Sixtymile Placer Area **Site No. 93**

Operation/Location: Walter Yaremcio began mining at this location on the Sixty Mile River upstream from its confluence with Miller Creek in 1997. The Sixty Mile River valley in the area mined is approximately 2500 feet wide. A crew of five miners and two camp employees worked two 11 hour shifts per day.

Equipment/Function: A D8L Caterpillar bulldozer equipped with a U-blade and a ripper, and a 966 Caterpillar loader were used to mine the site.

Wash Plant: A 4 foot by 8 foot screening plant with a 6 foot by 12 foot sluice area was used. The sluice run was equipped with "New Zealand" hydraulic riffles and ¾ inch punch plate. An 8 inch by 10 inch pump powered by a Caterpillar engine provided up to 2000 igpm of water used to process 80 loose yards of material per hour.

Ground Description: The average depth of the ground mined was 12 feet. Some of the material encountered was frozen. Bedrock was very wavy. The sluice section consisted of 1 foot of gravel and up to 6 feet of bedrock.

Mining Cuts: Ten cuts were mined in 1997. The cuts averaged 80 feet by 120 feet in area each.

Water Supply and Treatment: Water used at this operation was pumped from the Sixty Mile River. Settling was accomplished in out of stream ponds.

Gold: The gold recovered from this site was bright coloured with 60% described as being the size of rolled oats and the rest fine grained. Fineness was 830.

BIG GOLD AND GLACIER CREEKS **116 C/2**
Steve Prohaszka **64°01'N 140°44'W**
Water Licence: PM94-082 **1995, 1996, 1997**
Sixtymile Placer Area **Site No. 94**

Operation/Location: This property is located on the right limit of Glacier Creek near the mouth of the Big Gold Creek valley. Mr. Prohaszka's camp is situated between the two creeks.

Equipment/Function: Two Caterpillar bulldozers, models D9G and D9H, two Caterpillar loaders, models 980 and 988, and one Drott 50 excavator were used to mine the property. Both of the bulldozers were equipped with U-blades and rippers. The loaders had 5 cubic yard buckets. The excavator had a ¾ cubic yard bucket. The bulldozers were used to strip. The loaders were used to feed the plant and haul tailings. The excavator was used for digging drains and other jobs.

Wash Plant: In 1995 the washplant used was a 6½ foot trommel which fed to 24 foot by 7 foot sluice runs equipped with Hungarian riffles and 3M matting. The slope of the sluice runs was 2½ inches per foot. In 1996 and 1997 a dump box and a 40 inch by 40 foot sluice run were used. The sluice run was equipped with 2 inch riffles and 3M matting. The sluice run slope was 2½ inches per foot. A 6 inch Flygt submersible pump powered by a 94 kilowatt Lister generator provided 1600 igpm of water to process 100 loose yards of pay gravel per hour.

The trommel used by Steve Prohaszka at his operation located on Big Gold and Glacier Creeks in 1995.

Ground Description: The sluice section taken at this property was 3 to 4 feet of gravel and 4 feet of bedrock. The waste section varied from 35 to 40 feet of muck and 5 to 6 feet of gravel in 1995 to 20 feet of muck and gravel in 1996 and 1997. All of the material was frozen.

Mining Cuts: One cut 250 feet square was mined in 1995. One cut 100 feet by 200 feet was mined in each of 1996 and 1997.

Water Supply and Treatment: Water was obtained from Big Gold Creek or, when there was enough water, from Glacier Creek. When possible, primary settling was at the sluice site with final settling downstream on Glacier Creek in mined out areas, prior to discharge to the Sixty Mile River.

Gold: Gold recovered was mostly very fine grained material with a fineness of 840.

BIG GOLD CREEK	**116 C/2**
Dredge Master Gold Ltd.	**64°03'N 140°46'W**
Water Licence: PM96-022	**1996**
Sixtymile Placer Area	**Site No. 95**

Operation/Location: After mining at a site on a Sixty Mile River bench upstream for the confluence with Twelve Mile Creek earlier in the year Vern Trainer and David Trainer mined a cut under this licence on Big Gold Creek.

Equipment/Function: A 225 Caterpillar excavator was used to feed the sluice plant, a 980 Caterpillar loader was used to move and stack tailings and a D8 Caterpillar bulldozer was used to strip and stockpile pay gravel at the sluice plant.

Wash Plant: The sluice plant used was a 10 foot by 25 foot Derocker with one sluice run for recovery. The sluice run was 4 feet wide by 30 feet long. The first 10 feet of the sluice run was equipped with punch plate and the remaining 20 feet was equipped with 12 inch riffles. Nomad matting was used over the entire length of the run. Water was supplied using a 6 inch by 6 inch Morris pump powered by a Perkins engine.

Mining Cuts: The cut was 400 feet long by 175 feet wide by 15 feet deep.

Water Supply and Treatment: A small rock weir was placed instream in Big Gold Creek to back water up into a small pump pond. The out of stream settling pond was 100 feet long by 40 feet wide by 7 feet deep.

Gold: The gold recovered was very fine grained and had a fineness reported to be 720.

Comments: In addition to the cut which was sluiced, an area at the mouth of an unnamed right

limit tributary was tested. This test cut was 200 feet long by 50 feet wide by 12 feet deep.

LITTLE GOLD CREEK	**116 C/2**
Blakely Placer Inc.	**64°03'N 140°48'W**
Water Licence: PM95-024	**1995, 1996**
Sixtymile Placer Area	**Site No. 96**

Operation/Location: In 1995 a cut was put on the left limit of Little Gold Creek by Blakely Placer Inc. In July 1996 Don Trainer mined under this licence on Little Gold Creek. One cut was put in on each limit of the creek on one claim.

Equipment/Function: A D7 Caterpillar bulldozer was used by Blakely Placer Inc. to strip and mine the cut. In 1996 Don Trainer used a D8 Caterpillar bulldozer, a 966 Caterpillar loader and a 225 Caterpillar excavator at this site.

Mining Cut: In 1995 the mining area excavated was approximately 8000 square feet. In 1996 the left limit cut measured 250 feet long by 125 feet wide by 30 feet deep. The right limit cut was 270 feet long by 50 feet wide by 21 feet deep.

Water Supply and Treatment: Both operators obtained water from an out of stream reservoir fed by a ditch from the creek. Out of stream ponds were used for settling.

Comments: The licence was assigned from Blakely Placer Inc. to Allan Downes in September of 1996.

GLACIER CREEK	**116 C/2**
Erich Rauguth	**64°02'N 140°46'W**
Water Licence: PM94-047	**1996, 1997**
Sixtymile Placer Area	**Site No. 97**

Operation/Location: Tim Coles ran an operation under this licence. The operation mined side pay from this previously mined valley. Two miners worked 12 hours per day at the site.

Equipment/Function: A John Deere 890 excavator was used to mine this property.

Wash Plant: The wash plant was a 22 foot long by 4 foot diameter trommel which screened to 1 inch minus and fed to two sluice runs. The sluice runs were each 4 feet by 10 feet with expanded metal over half the length and 1 inch riffles over the other half. Nomad matting underlay both. A 50 foot by 24 inch tailings stacker mounted on a 450 John Deere was added late in the 1997 mining season. An 8 by 10 inch Paco pump powered by a 195 Cummins engine provided the 1500 igpm used to sluice 50 to 60 loose cubic yards per hour.

Ground Description: The area mined had a maximum total depth of 15 feet, but varied from 10 to 15 feet. A muck layer 6 to 8 feet deep lay over 2 to 4 feet of red sandy gravels and the balance of the depth was pay gravel. The sluice section consisted of 4 feet of gravel and 2 feet of bedrock.

Mining Cuts: The cut mined in 1996 was an average of 300 feet long by 50 feet wide. In 1997 the cut was 300 feet long by 100 feet wide. Late in 1997 an additional small cut was mined on a deep bench at the mouth of the Glacier Creek valley. The depth was estimated at 60 feet.

Water Supply and Treatment: Water acquisition was initially from an out of stream reservoir, but was later switched to an instream reservoir. Settling was accomplished in a series of old mined out cuts.

Gold: Occasional coarse gold was found, "what the oldtimers missed". Most of the gold recovered was from -20 to +30 mesh. Fineness was 830.

GLACIER CREEK	**116 C/2**
Henry and Barbara Hanulik	**64°02'N 140°49'W**
Water Licence: PM96-060	**1995, 1996, 1997**
Sixtymile Placer Area	**Site No. 98**

Operation/Location: As in previous years this small family operation was located on the left limit of Glacier Creek. Two miners worked limited hours during the summer mining season.

Equipment/Function: A 955 Caterpillar track loader with a two yard bucket was used to strip the cut, transport pay gravel to the wash plant, and haul tailings away.

Wash Plant: The sluice box consisted of a dump box with punch plate, expanded metal, and matting, which fed a 2 foot by 30 foot sluice run with 2 inch riffles and expanded metal on Nomad

matting. The sluice box used 1200 igpm of water to process 20 to 30 loose yards per hour of pay gravel. Water was provided by a 6 by 6 inch pump powered by a 4-cylinder Ford diesel engine. A long tom was used for clean-ups.

Ground Description: Left limit side pay was mined by these operators. The stratigraphic section was 1 to 2 feet of old tailings over moss, and 15 feet of mud and gravel. The material was partially thawed above creek level. Old workings were found in the cut. Approximately 5 feet of gravel was sluiced.

Mining Cuts: The miners continued to work upstream in small cuts.

Water Supply and Treatment: Process water was obtained either via seepage through old dredge tailings to an out of stream reservoir on the left limit of Glacier Creek or pumped from Glacier Creek to the reservoir. Settling occurred in two large out of stream settling ponds.

Gold: The gold was generally fine, with a black stain. Fineness was 820 to 830.

Comments: The licence PM96-060 replaced PM93-073 in April of 1997.

GLACIER CREEK **116 C/2**
K-1 Mining and Services **64°02'N 140°49'W**
Water Licence: PM95-072 **1995, 1996, 1997**
Sixtymile Placer Area **Site No. 99**

Operation/Location: K-1 Mining and Services mined this property previously worked by Glacier Creek Gold Company. The average valley width in the area of this operation is 1000 feet. A crew of three miners and one camp worker (two in 1996) worked 11 hours per day in a single shift.

Equipment/Function: Two D8H Caterpillar bulldozers were used to rip and push overburden, feed pay to the excavator, push tailings and perform reclamation work. An Hitachi UH09-7 22 tonne excavator was used to feed the box, dig drains, strip and perform reclamation work. In 1996 a Komatsu D-115A-1 bulldozer with U-blade and ripper was used to rip and push overburden and only one of the D8H bulldozers was used.

Wash Plant: A modified triple run sluice box fitted with punch plate in the dump box, 2 by 2 inch and 1 by 1 inch angle iron riffles in the main run and expanded metal and 1 by 1 inch angle iron riffles in the side runs, was used to process 65 loose yards per hour. The processing rate increased to 75 loose yards per hour in 1997. Water was supplied using a 6 by 8 inch Peerless pump powered by a General Motors 4-71 diesel engine.

Ground Description: In 1995 the operators encountered up to 40 feet of ice rich muck over up to 10 feet of gravel on schist bedrock. The muck layer increased to up to 60 feet in 1996 and the gravel layer was up to 12 feet. In 1996 the gravel layer in the valley decreased to 8 to 10 feet. Work commenced on the right limit bench where there was 50 feet of frozen gravels with from 1 to 3 feet of muck and moss covering. The bedrock was decomposed schist. The sluice section in 1995 was 5 feet of gravel and 4 feet of bedrock. In 1996 it was 3 feet of gravel and up to 4 feet of bedrock. The sluice section in 1997 was 6 feet of gravel and from 3 to 5 feet of bedrock.

Mining Cuts: Two cuts were mined in 1995. The first was a continuation of one started in 1994. 7100 cubic yards were sluiced from this cut. Cut number two was an average of 215 feet by 385 feet. In 1996 the two cuts mined were 450 by 180 feet and 200 by 70 feet. In 1997 eight cuts of various sizes were mined along the creek following oldtimers workings and one cut of 300 by 100 feet was mined on the right limit bench.

Water Supply and Treatment: In 1995 and 1996 an instream recirculation system was used for water acquisition. The primary settling is accomplished in old cuts which are out of stream. Discharge is from the final settling pond located downstream from the recycle pond. In 1997 the operation switched to out of stream recycle and settling ponds. The recycle ponds were 250 feet by 70 feet and 250 feet by 100 feet.

Gold: The size of the gold varied with location. In 1995 10% of the gold was nuggets, which varied in shape from smooth and flattened to angular, and had a black stain. In 1996 only 2% of the gold was nuggets. Gold recovered from the bench gravels was described as "fine as dust". Fineness

of the gold was 840 in 1995 and 1996 and 830 in 1997.

Comments: The operator encountered extensive old works with evidence of drifting, shafting and open cut hand work. Cleaned and stacked rocks were found underground. Extensive log timbering dowelled together and box drains were found. Evidence of wood fire thawing was found in the works on the upper bench. The 100 year old timbering was still green and had the bark on.

GLACIER CREEK	**116 C/2**
Altak Mining & Expl. Ltd.	**64°02'N 140°51'W**
Water Licence: PM93-110	**1995, 1996, 1997**
Sixtymile Placer Area	**Site No. 100**

Operation/Location: Altak Mining & Exploration was active over the years covered by this report for testing and reclamation purposes. In 1995 the site mined in previous years was reclaimed. In 1996 a test program was performed on bench ground. In 1997 equipment that remained on the property was removed and the camp area was cleaned up. The licence expired 01 October 1997.

Equipment/Function: One D8H Caterpillar bulldozer was used to perform reclamation work as well as to strip test areas.

UNNAMED TRIB. GLACIER CREEK	**116 C/2**
Cecelia Moldwon	**64°03'N 140°56'W**
Water Licence: PM95-046	**1996, 1997**
Sixtymile Placer Area	**Site No. 101**

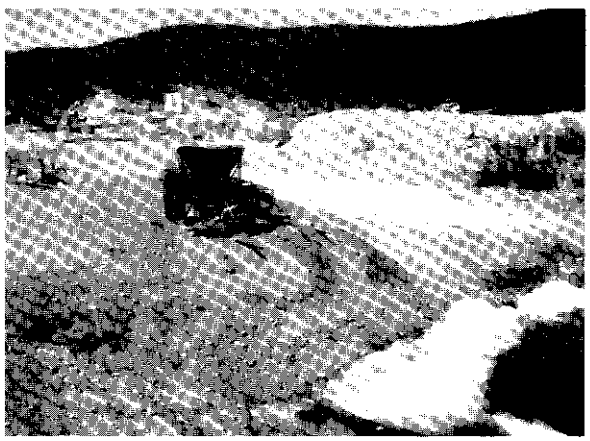
Operation/Location: This property is located on a left limit tributary of Glacier Creek at its headwaters. Two small test cuts were put in over a period from early June until mid July in 1996. One miner worked approximately 6 hours per day at the site. A late spring and ice in the creek prevented an earlier start on the test program.

Mining Cuts: The two cuts were excavated using a model 500 International front end loader with a ⅝ cubic yard bucket. The cuts were 40 feet wide by 30 feet long by 2 feet deep and 6 feet wide by 40 feet long by 2 feet deep. In 1997 a limited amount of additional testing was done.

MILLER CREEK	**115 N/15**
J. M. Mining	**63°59'N 140°48'W**
Water Licence: PM95-109	**1995, 1996, 1997**
Sixtymile Placer Area	**Site No. 102**

Operation/Location: Jayce Murtagh mined this property at the mouth of Miller Creek. The operation ran with two miners in 1995 and 1996 and one miner in 1997. The shift was 10 hours per day in 1995 and 12 hours per day in 1996 and 1997.

Equipment/Function: The equipment used to mine this property was a Caterpillar 980 B loader with a 5 cubic yard bucket and a TD25 International bulldozer with an angle blade and a P&H ¾ yard excavator. The 980B was used to feed and remove tailings from the screen deck wash plant. The TD25 was used to strip and push up pay. The P&H excavator was used to strip and dig drains.



J. M. Mining's wash plant on Miller Creek.

Wash Plant: The washplant was a 4 by 12 foot screen deck with ½ inch punch plate, a 12 yard feed hopper and two sluice runs. The sluice runs were 8½ feet wide by 8 feet long with two nugget traps, 3 feet of hydraulic riffles and 3 feet of expanded metal all over Nomad carpet. The punch plate was changed to ¾ inch in 1997. A 5 by 6 inch Mission pump powered by a V8 Deutz engine provided 1100 igpm of water to the plant. The process rate went from 50 loose yards per hour in 1995, to 60 in 1996, and 65 in 1997.

Ground Description: The waste section of this property averaged 5 yards in depth in 1995. It consisted of partially frozen gravel layered with

black muck starting approximately 1 yard above creek level. The sluice section was 3 yards of gravel and 1 yard of bedrock. The schist bedrock had a wavy contour. Waste gravels were stockpiled mechanically. In 1996, in addition to ground similar to that mined in 1995, a section of an old tailings pile was mined. 1997's waste section averaged 2 yards in depths in addition to the tailings pile sluiced in 1996. The sluice section consisted of 4 yards of gravel and 1 yard of bedrock.

Mining Cuts: One cut 75 by 36 yards in area was mined in 1995. In 1996 approximately 10,000 cubic yards were sluiced from and old tailings pile. In addition, a cut 75 by 50 yards adjoining the downstream end of 1995's cut was mined. In 1997 one cut adjoining the upstream end of the 1995 and 1996 cuts was mined. This cut was 90 by 90 yards in area.

Water Supply and Treatment: An out of stream water acquisition pond was used. The pond was gravity filled from Miller Creek via a 12 inch gated pipe. Settling was accomplished in an out of stream settling pond. In 1996 and 1997 no surface discharge was noted from the pond used. Effluent discharge was via seepage.

Gold: Gold recovery was reported as 1% +10 mesh, 20% -10 to +20, 40% -20 to +45 and 39% -45 mesh. The +10 mesh material had quartz attached. The rest of the material was dull in colour. Fineness was 800.

Comments: Water licence PM95-109 replaced PM94-095.

MILLER CREEK — **116 C/2, 115 N/15**
Phil Jenner — **64°00'N 140°50'W**
Water Licence: PM93-117 — **1995, 1996**
Sixtymile Placer Area — **Site No. 103**

Operation/Location: Phil Jenner mined on the right limit of Miller Creek upstream from the Bedrock Creek access road crossing. Two miners worked one 10 hour shift per day.

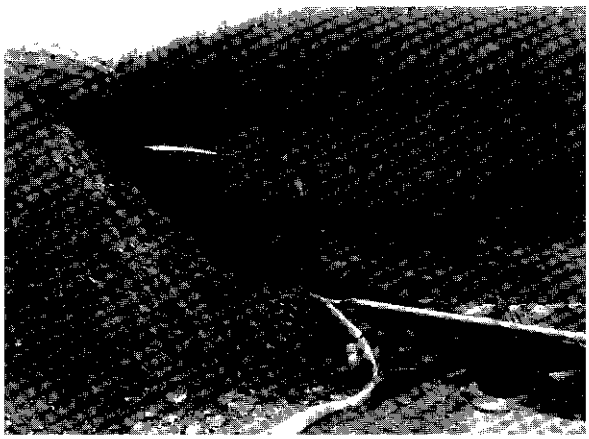
Equipment/Function: A Caterpillar D7E bulldozer was used to clean bedrock and pile material for the loader. A Caterpillar 950 loader was used to feed the washplant and to remove and stack waste from the washplant and from the cut.

Wash Plant: The washplant consisted of a 2 by 8 foot double deck screen deck, a 6 by 12 foot hopper and a 2 foot by 9 inch sluice run feeding to an 8 by 8 foot sluice run. Five pound expanded metal and 2 by 2 inch riffles of Nomad rubber backed matting were used for recovery. The process rate was 10 loose cubic yards per hour. Water was supplied by a 6 by 8 inch pump powered by a 471 Detroit diesel engine.

Ground Description: The sluice section taken in 1996 was 8 to 10 feet of bedrock and gravel. In 1996 the sluice section was 2 to 4 feet.

Mining Cuts: One cut was mined over the two years. It was approximately 50 by 180 feet.

Water Supply and Treatment: Water was obtained from an old cut located out of stream and fed by seepage. Water was recirculated 100%.



Phil Jenner's wash plant operating in 1995 on Miller Creek.

Gold: Gold recovered was 10% -18 to +60 mesh and 90% -60 mesh. Fineness was 800 to 850.

Comments: Mr. Jenner has finished mining at this location and removed his equipment from the site.

MILLER CREEK **115 N/15**
Brisebois Bros. Construction **64°00'N 140°48'W**
Water Licence: PM95-098 **1995,1996,1997**
Sixtymile Placer Area **Site No. 104**

Operation/Location: Brisebois Brothers Construction returned to this property on Miller Creek in the Sixtymile area in 1995. Work performed in 1995 was testing of values of an unnamed left limit tributary to Miller Creek. In 1996 and 1997 the unnamed tributary was mined.

Equipment/Function: Equipment used to test and mine the site included an 866 Koehring excavator and a 950 Caterpillar loader.

Water Supply and Treatment: Water was obtained from a small instream pond on the unnamed tributary. Effluent was treated in an out of stream pond which discharged primarily via seepage.

Comments: In 1997, Brisebois Brothers Construction began preparations to mine Miller creek ground near the mouth of the unnamed tributary which had been mined by Phil Jenner previously.

MILLER CREEK **115 N/15, 116 C/2**
Sixty Mile Enterprises Ltd. **64°00'N 140°49'W**
Water Licence: PM94-109 **1995, 1996**
Sixtymile Placer Area **Site No. 105**

Operation/Location: Walter Yaremcio continued to mine a site on a left limit bench at the downstream end of this property on Miller Creek. The average valley width in this area is approximately 150 feet. A crew of four miners and two camp employees covered two 11 hour shifts per day.

Equipment/Function: A D8L Caterpillar bulldozer equipped with a U-blade and a ripper, and a 966 Caterpillar loader were used to mine the site.

Wash Plant: A 4 foot by 8 foot screening plant with a 6 foot by 12 foot sluice area was used. The sluice run was equipped with "New Zealand" hydraulic riffles and ¾ inch punch plate. An 8 inch by 10 inch pump powered by a Caterpillar engine provided up tp 2000 igpm of water to process 40 loose yards of material per hour.

Ground Description: In 1995 the miners had to contend with 30 feet of frozen muck over 80 feet of frozen gravel. The sluice section was 10 feet of gravel and 3 feet of bedrock. In 1996 the average depth of the frozen muck layer dropped to 25 feet and the gravel layer depth dropped to 70 feet. The sluice section taken in 1996 was 8 feet of gravel and 4 feet of bedrock. The bedrock was wavy.

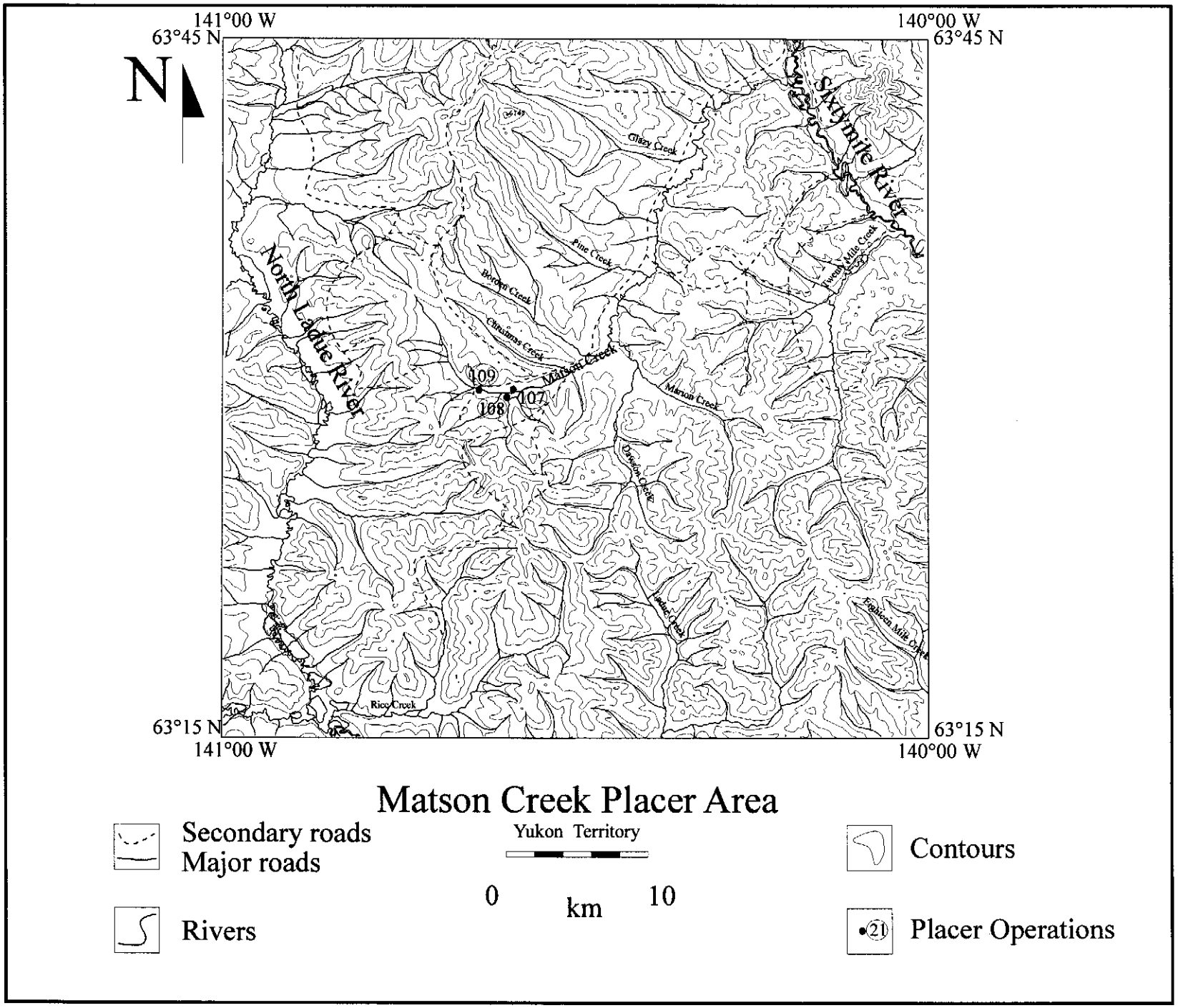
Mining Cuts: In 1995 three cuts with an average area each of 150 feet long by 75 feet wide were mined. The average area of each of the three cuts mined in 1996 increased to 100 feet by 150 feet.

Water Supply and Treatment: Water was pumped up to the sluice site on the bench from an out of stream water acquisition pond on the left limit of Miller Creek. The operator continued to use two large out of stream ponds on the left limit of the creek for settling.

Gold: The fineness of the black stained, rough, chunky gold recovered was 800.
Comments: Site restoration was addressed at selected mined out locations on the property in each year. The miner continued to use the camp at this property in 1997 while mining another property upstream from Miller Creek on the Sixty Mile River.

BEDROCK CREEK **115 N/15**
Jack Stewart **63°59'N 140°58'W**
Water Licence: PM94-055 **1995, 1996**
Sixtymile Placer Area **Site No. 106**

Operation/Location: Jack Stewart used a Terex bulldozer to upgrade the drainage on this property on the upper reaches of Bedrock Creek. Approximately 1300 cubic yards were moved in 1995 and 800 cubic yards in 1996. Work was done in preparation for future mining. There was no water use at the site. No residence was established at the site.


141°00 W
63°45 N
140°00 W
63°45 N
N
Sixtymile River
North Ladue River
Glacier Creek
Pine Creek
Boulder Creek
Christmas Creek
Matson Creek
Matson Creek
Dawson Creek
Ladue Creek
Eagle Creek
Rico Creek
Fourteen Mile Creek
109
108
107
63°15 N
141°00 W
63°15 N
140°00 W
Matson Creek Placer Area
Yukon Territory
0
km
10
Secondary roads
Major roads
Rivers
Contours
21
Placer Operations

MATSON CREEK	115 N/7
Gene Fowler	63°29'N 140°35'W
Water Licence: PM94-089	1995, 1996, 1997
Matson Creek Placer Area	Site No. 107

Operation/Location: Gene Fowler continued to mine near the area locally known as Val D'Or in 1995 and 1997. During the 1996 season the operation worked at the mouth of Bow Pup, a right limit tributary of Matson Creek near the Goldmark/Orbanski camp and airport. A crew of five miners ran the operation in 1995 and 1996. An additional miner was added for the 1997 season.

Equipment/Function: Three Caterpillar D9G bulldozers were used for stripping the cuts and a Terex 92B loader hauled the pay gravels to the wash plant in 1995 and 1996. The Terex loader was replaced by three Caterpillar 621 scrapers for the 1997 season. A 350 Bucyrus Erie excavator fed the wash plant and was used to dig trenches/drains. A Hough 90 loader was used for miscellaneous yard work.

Wash Plant: The wash plant consisted of a grizzly over a hopper which fed the pay gravels onto a 30 inch wide conveyor. The pay gravels were fed at a constant rate onto a double deck screen plant. The classified gravels were washed through a single sluice run which then splits into two oscillating sluice runs. The oversize material was carried off by a 36 inch conveyor stacker. A 6 inch Cornell pump powered by a Duetz engine supplied the 1000 igpm that was required to process between 150 and 250 cubic yards per hour.

Ground Description: The ground averaged 32 feet deep with 30 feet of frozen black muck overlying a shallow layer of gravel 1 to 3 feet deep. The bedrock was fully decomposed. The bottom foot of gravels and approximately 3 feet of the bedrock was sluiced. It was found that almost all of the gold was contained in the bedrock and very little in the gravels.

Mining Cuts: A cut 300 feet by 300 feet and a second cut 300 feet by 450 feet were sluiced during the 1995 season. A single larger cut 350 feet by 600 feet was sluiced during the 1996 season. A cut 250 feet by 700 feet, a cut 250 feet by 300 feet and a cut 250 feet by 360 feet were mined during the 1997 season.

Overhead view showing Gene Fowler's fixed sluice plant along the left limit of Matson Creek.

Water Supply and Treatment: Water from Matson Creek was used to fill out of stream ponds that were constructed from old mine pits. The water was then pumped to the wash plant and the effluent flowed back into the old mine pits and was recycled 100%. Make-up water from Matson Creek was used.

Gold: The gold recovered in 1995 and 1996 was reported to be rounded and rough with most of the gold -8 mesh. The gold became more coarse in 1997 with approximately 20% +10 mesh. Up to ¾ ounce nuggets were recovered in 1997. The purity of the gold was 895 fine.

MATSON CREEK	115 N/7
No Name Resources Inc.	63°29'N 140°35'W
Water Licence: PM95-085	1995, 1996
Matson Creek Placer Area	Site No. 108

Operation/Location: No Name Resources Inc. continued to mine at the mouth of Donna Pup, a right limit tributary of Matson Creek near the area locally known as Val D'Or. A crew of six miners and one camp person ran the operation during 1995. Two additional miners were added in 1996.

Equipment/Function: A Caterpillar D9H bulldozer equipped with a ripper, a Caterpillar D8K bulldozer and a Caterpillar 235 excavator were used for stripping and stockpiling pay gravel during 1995.

A second D9H bulldozer was used during 1996. Two Caterpillar 980C loaders were used to carry the pay gravels from the cut to the wash plant and for handling tailings. The wash plant was fed with a Case 680 backhoe.

Wash Plant: A hopper fed into a 5 foot diameter by 8 foot long trommel which classified the pay gravels to ½ inch minus before being washed through two 4 foot wide by 8 foot long sluice runs. Low pressure hydraulic riffles were used in the sluice runs. An extra length of sluice run that was divided down the centre was added in 1996. One side of the run was used to sluice the classified gravel more and the other side was used as a nugget trap and to sluice the oversize material leaving the trommel. The extra sluice run was lined with 2 inch angle iron riffles and Nomad matting. A 4 inch Monarch pump powered by an Isuzu engine supplied the 350 igpm needed to process approximately 40 cubic yards per hour.

Brent Pasareno posing next to his low volume trommel wash plant on Matson Creek

Ground Description: An average of 15 feet of frozen black muck overlies 5(+) feet of gravel. Bedrock tends to be decomposed and is wavy. The lower 5 feet of gravel and 1 to 2 feet of bedrock was sluiced.

Mining Cuts: Five cuts with an average size of 300 feet by 100 feet were sluiced in 1995. Another five cuts with similar dimensions were sluiced in 1996.

Water Supply and Treatment: Water from Matson Creek and Donna Pup were used for sluicing. The effluent was treated in a series of out of stream settling ponds before discharging back to Matson Creek downstream of the operation.

Gold: The gold was reported as being bright yellow and rough. Most of the gold was fine although a few small nuggets were recovered. The purity was approximately 895 fine.

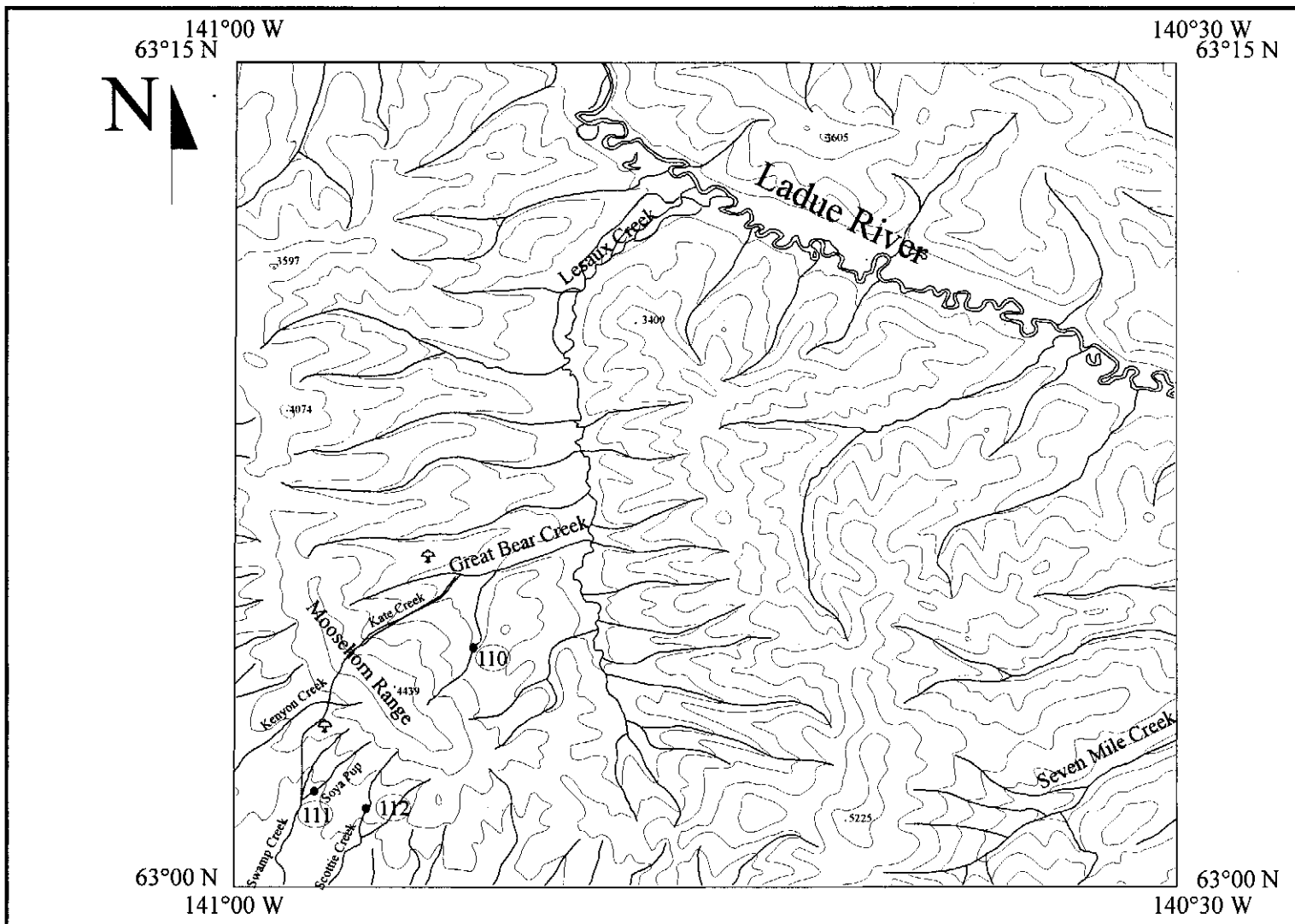
Comments: No Name Resources Inc. shut down their operation mid season in 1996. All clean-up and restoration was finished prior to the end of the summer.

MATSON CREEK	**115 N/7, 115 N/10**
Orbanski, M.W. Ltd.	**63°30'N 140°35'W**
Water Licence: PM94-092	**1995, 1996**
Matson Creek Placer Area	**Site No. 109**

Operation/Location: Murray Orbanski continued to mine near the headwaters of Matson Creek at the mouth of Bow Pup in 1995 and 1996. The operation was shut down in 1996 and all the equipment was removed from the creek. A crew of approximately nine were employed.

Equipment/Function: Four Caterpillar D9H bulldozers were used for stripping and preparing the pay gravels. Three Caterpillar 631 scrapers hauled the pay gravels from the cut to the wash plant and hauled the tailings away. A Caterpillar D7 bulldozer, a Caterpillar 245 excavator and a Caterpillar 966 loader were available when needed. Roads were maintained with a Caterpillar 16 grader.

Wash Plant: The pay was dumped into a hopper which fed a trommel 56 feet long by 8 feet in diameter. Oversize material was carried away from the trommel by a conveyor and stacked. The classified pay was sluiced in a single run 4 feet wide by 10 feet long that was lined with 2 inch angle iron riffles and Nomad matting. The pay then moved into a variable distributor which spread it evenly over twelve oscillating sluice runs 30 inches wide by 20 feet long. One inch angle iron riffles and Nomad matting was used for the first 4 feet in each run. The lower 16 feet used expanded metal over Nomad matting. The effluent from each run was collected in a trough and carried away. Up to 300 cubic yards per hour



Moosehorn Placer Area

Yukon Territory

0 km 5

Secondary roads
Major roads

Rivers

Contours

Placer Operations

were sluiced with this plant. A 14 inch by 16 inch pump supplied the 2500 igpm needed for sluicing.

Ground Description: An average cut was 26 feet deep with 22 feet of frozen muck overlying 4 feet of gravel. Bedrock was decomposed. All of the gravels and up to 6 feet of the bedrock was sluiced.

Water Supply and Treatment: Water was pumped from a large instream reservoir on Matson Creek directly to the sluice plant. The effluent was treated in a series of out of stream settling ponds along the right limit of Matson Creek. Discharge occurred through both seepage and direct release back to Matson Creek.

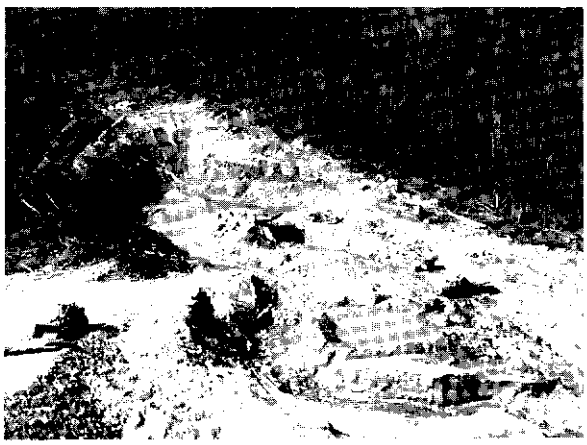
Gold: The gold has a fair bit of coarse gold in the 10 mesh size with some larger nuggets. The purity ranged between 889 and 900.

GREAT BEAR PUP	**115 N/2**
Moosehorn Exploration	**63°05'N 140°53'W**
Water Licence: PM97-002	**1995, 1996, 1997**
Moosehorn Placer Area	**Site No. 110**

Operation/Location: Ian and Kate Warrick continued to mine upstream on Great Bear Pup, a right limit tributary of Kate Creek. Kate Creek is a left limit tributary of Lesaux Creek (also known as Claymore Creek). The operation was run by three miners in 1995. The crew was increased to four for the 1996 and 1997 seasons. Kate Warrick maintained the camp.

Equipment/Function: Two Caterpillar D7 bulldozers equipped with rippers and winches were used for stripping and stockpiling pay gravels. Two Caterpillar 966C loaders fed the sluice plant and handled tailings. A Caterpillar 225 excavator was available for various jobs when needed.

Wash Plant: A single wash plant was used during 1995. Two plants were in operation during the 1996 and 1997 seasons. The plant used in 1995, 1996 and 1997 consisted of a 12 foot by 14 foot wet dump box leading over a grizzly which classified the pay to 1 inch minus. The classified pay was then sluiced through a single run 4 feet wide by 12 feet long. One inch angle iron riffles and Nomad matting was used in the run. The single run then branched into three sluice runs 3½ feet wide by 12 feet long. The second plant that was put to use in 1996 is similar to one used for the last several years. The wet dump box led to a grizzly which classified the pay to ¾ inch minus. The classified pay was sluiced through a 4 foot by 17 foot run. Angle iron riffles, expanded metal and Nomad matting were used. A 6 inch by 6 inch Isuzu pump was used for one wash plant and a 10 inch by 12 inch Morris pump was used for the other plant to supply the 1500 and 2000 igpm of water needed to process approximately 45 cubic yards per hour through each plant.



Aerial view of the Moosehorn Exploration operation at the mouth of an unnamed left limit tributary of Great Bear Pup.

Ground Description: The cuts have increased in depth as mining has moved upstream. The average depth in 1995 was approximately 30 feet with between 0 and 6 feet of black muck and loess covering an average of 25 feet of pay gravels. In 1996 the average cut had 3 feet of muck overlying 35 feet of pay gravel. The depth to bedrock increased to as much as 65 feet on the unnamed left limit tributary of Great Bear Pup that was mined in 1996 and 1997. Bedrock tended to be decomposed granodiorite. All of the gravels and a small amount of the bedrock was sluiced.

Mining Cuts: Three cuts with an average size of 75 feet wide by 200 feet long were mined on Great Bear Pup during 1995. Two cuts of a similar size were mined on Great Bear Pup in 1996 along with a single cut 60 feet wide by 200 feet long on the unnamed left limit tributary of Great Bear Pup. Two cuts 150 feet wide by 225 feet long were mined in 1997 on the main creek along

with a single cut 150 feet wide by 75 feet long on the unnamed tributary.

Water Supply and Treatment: Due to the small watershed above the mine site the surface run-off has been unreliable and fluctuates greatly. Instream reservoirs/recycle ponds were constructed in old cuts. 1996 was a cool and very dry summer which made 100% recirculation necessary. A very dry period in the spring of 1997 saw the creek dry right up. The second half of the 1997 season saw rain every day which provided too much run-off. Final effluent treatment was in downstream instream ponds that are by-passed seasonally.

Gold: The gold recovered is almost entirely fine with approximately 98% -20 mesh. The gold was described as frothy and hackly and had a purity of 820.

SWAMP/SOYA CREEKS **115 N/2**
Sikanni Oilfield Construction **63°03'N 140°58'W**
Water Licence: PM95-039 **1995, 1996**
Moosehorn Placer Area **Site No. 111**

Operation/Location: Sikanni Oilfield Construction Ltd. continued to mine on Soya Creek, a left limit tributary of Swamp Creek and on Swamp Creek in 1995 and 1996. Very little mining was done in 1996 and the operation did not return to mine in 1997. The equipment and most of the camp was removed on the winter road in the spring of 1997. Testing of hardrock samples from quartz claims in the immediate area was the main focus in 1995 and 1996.

Equipment/Function: As in previous years one Caterpillar D9G bulldozer, two Caterpillar D8K bulldozers, one Caterpillar D8H bulldozer, two Caterpillar D6C bulldozers, a Caterpillar 235 excavator, a Caterpillar 225 excavator, a Caterpillar 980C loader, a Caterpillar 966C loader and a #80 scraper were all available to mine this property.

Wash Plant: A trommel 78 inches in diameter by 40 feet long classified the pay before being run through eight centrifugal concentrators 20 inches in diameter by 9 feet long. A 10 inch Gorman Rupp pump powered by a TD15 IHC motor supplied the 1600 igpm needed to sluice approximately 100 cubic yards per hour.

Ground Description: The cuts on Soya Creek were frozen throughout and had considerable variation in depth. Between 5 and 15 feet of frozen silt/muck covered 10 to 20 feet of gravel and larger boulders. Bedrock was decomposed. All of the gravel and up to 1 foot of bedrock was sluiced.

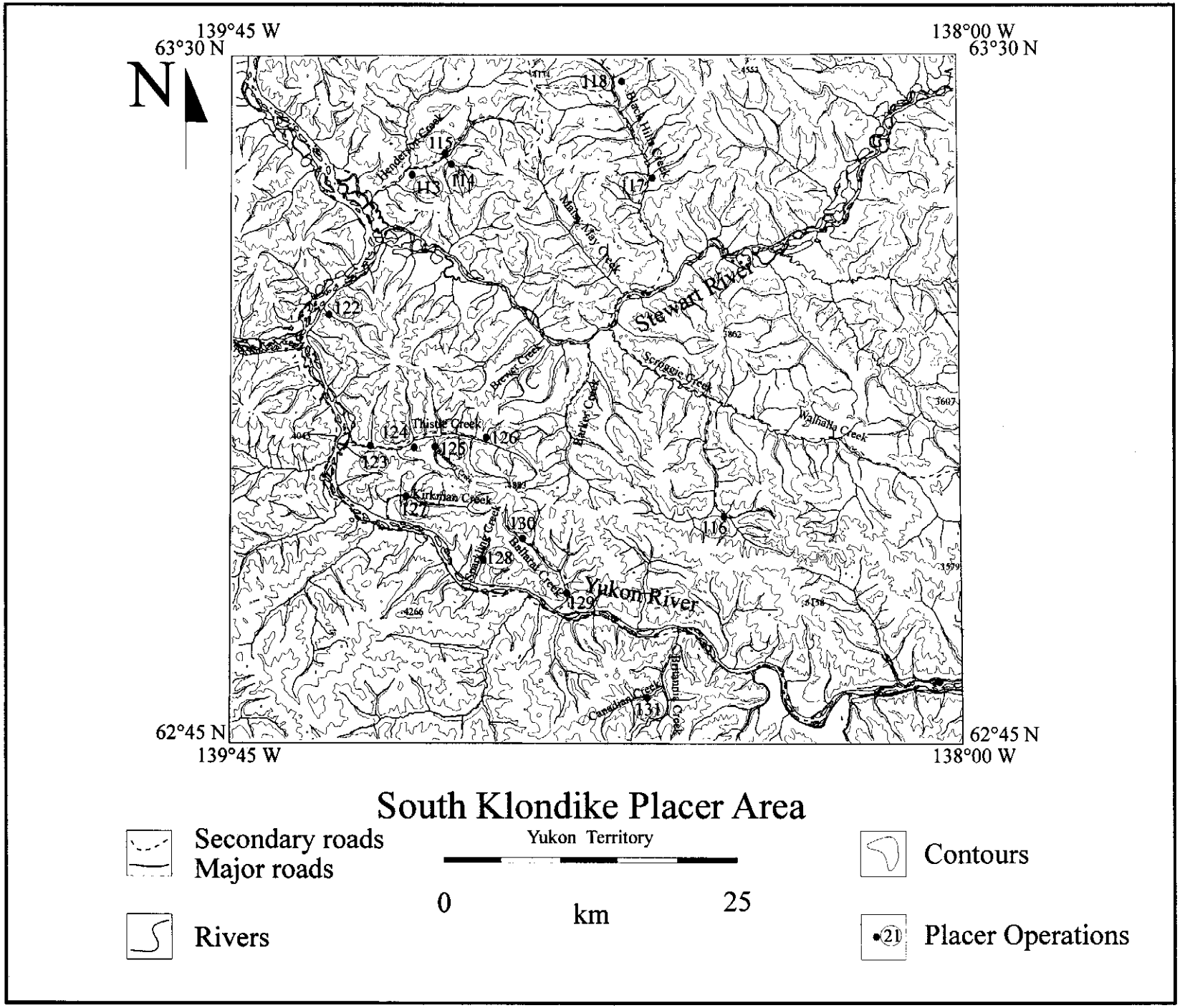
Mining Cuts: Mining on Soya Creek was finished up in 1995 and the operation worked part of a season in 1996 on Swamp Creek. The ground beneath the large instream dam built by Canada Tungsten was tested in 1996 to see whether it had been covered prior to being sluiced. A large volume of waste tailings were moved but it was determined that the ground did not warrant further work and the area was abandoned.

Water Supply and Treatment: Sikanni Oilfield Construction Ltd. continued to mine near the headwaters of both Soya and Swamp Creek so run-off was a problem except during spring melt and heavy rain periods. Instream recycle/storage ponds were used with up to 90% of the water recycled. The effluent was treated in both instream and out of stream settling ponds. A final polishing pond that was built by Canada Tungsten downstream near the U.S. border continued to be used.

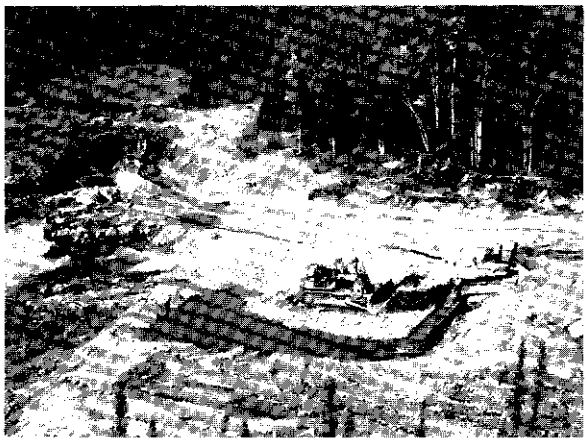
Gold: The gold was reported to be mainly fine and rough with a purity of 800 fine. The gold has a distinct shape when magnified and has not travelled far from its original source.

UNNAMED TRIB OF SCOTTIE CREEK **116 N/2**
Glen Hartley **63°02'N 140°56'W**
Water Licence: PM97-012 **1995, 1996, 1997**
Moosehorn Placer Area **Site No. 112**

Operation/Location: Glen Hartley ran this operation near the headwaters of an unnamed tributary of Scottie Creek southeast of Swamp Creek. No sluicing was done in 1995 and only a small amount was done during 1996. A crew of three miners and two camp staff ran the operation in 1997.


139°45 W
63°30 N
138°00 W
63°30 N
N
118
Black Hills Creek
115
Henderson Creek
113
114
117
Matson Ray Creek
Stewart River
122
Scroggie Creek
Brewer Creek
Barker Creek
Thistle Creek
124
125
126
123
Walhalla Creek
Kirkman Creek
127
130
116
Sonora Gulch Creek
Ballarat Creek
128
Yukon River
129
Britannia Creek
Canadian Creek
131
62°45 N
139°45 W
62°45 N
138°00 W
South Klondike Placer Area
Yukon Territory
0
km
25
Secondary roads
Major roads
Rivers
Contours
21
Placer Operations

Equipment/Function: Two Terex 82-40 bulldozers were used to strip overburden and clear tailings. An Insley H1500C excavator dug the pay gravels and loaded a Kenworth W900 truck which carried the pay gravels to the sluice plant.



An aerial view looking upstream at Glen Hartley's mining operation on an unnamed tributary of Scottie Creek.

Wash Plant: The wash plant consisted of a dump box leading into a 4 foot wide by 10 foot long Telsmith screen deck which classified the pay to ¾ inch minus. The classified gravels were washed through a 20 foot long sluice run. The upper 8 feet of the run was lined with Nomad matting and expanded metal. A section of slick plate was left in the middle with the last 4 feet of the run lined with angle iron riffles and matting. A 6 inch Gorman Rupp pump powered by a Caterpillar engine supplied the 1200 igpm needed to sluice approximately 30 cubic yards per hour.

Ground Description: The cuts averaged 14 feet deep with 8 feet of frozen black muck overlying 6 feet of gravel. All of the gravel and 2 feet of the bedrock was sluiced.

Mining Cuts: No sluicing was done in 1995 although Glen Hartley was on site. The sluice plant was set up, a pit was opened up and a small amount of sluicing was done during 1996. A cut approximately 75 feet wide by 300 feet long was sluiced during 1997.

Water Supply and Treatment: Water was acquired from the main creek for sluicing and then recycled 100% through out of stream settling/recycle ponds. A pre-settling pond increased the life of the recycle ponds. Final effluent treatment was in a downstream instream settling pond. Ground water flow into the cut proved to be a problem even though the operation is located near the headwaters of the creek.

Gold: The gold was reported to be primarily fine and rough. The purity is 820 fine.

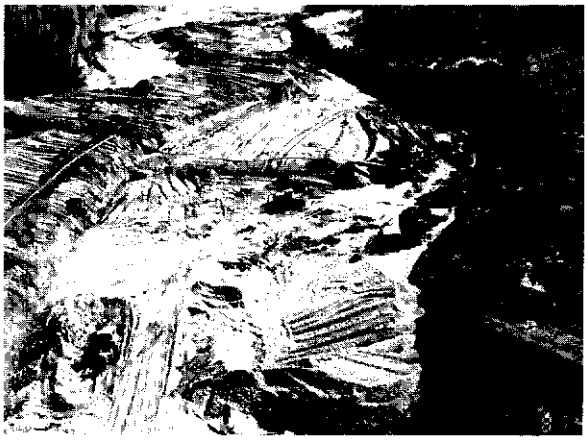
HENDERSON CREEK	**115 O/6**
Newcan Placers Ltd.	**63°22'N 139°19'W**
Water Licence: PM94-090	**1996, 1997**
South Klondike Placer Area	**Site No. 113**

Operation/Location: Bruce Cowan moved his operation to Henderson Creek in the fall of 1995 and started mining in 1996. A small cut a few miles downstream from the camp along the left limit, adjacent to old dredge tailings, was mined in the spring of 1996. The operation was then moved upstream to the mouth of Golden Gate Pup, a right limit tributary of Henderson Creek, near the main camp. The last part of 1996 was spent mining a cut adjacent to the airstrip along the right limit. The operation was moved downstream to the left limit of Henderson Creek just upstream from the confluence with North Henderson Creek for the first part of 1997. The season finished with a cut approximately one mile downstream from the main camp at the old dredge workshop. A testing operation was also conducted on Emaline Pup, a left limit tributary of North Henderson Creek during 1997. Newcan Placers Ltd. own a large number of claims on the Henderson Creek watershed and the operation has moved around a lot. A crew of four miners and one camp person ran the mine 24 hours each day during 1996. The crew was reduced to three for 1997.

Equipment/Function: A Caterpillar D10N bulldozer and a Komatsu D155A bulldozer were used for stripping and levelling tailings. The wash plant was fed with an Hitachi UH143 excavator and an Hitachi EX200 excavator was used to dig drains when required and other miscellaneous jobs.

Wash Plant: The wash plant consists of a hopper feeding into a 5 foot diameter trommel which classifies the pay to ½ inch minus. The oversize material is carried off with a 35 foot conveyor and stacked. The ½ inch minus material is washed

through a single sluice run 12 feet wide by 8 feet long. The first 2½ feet of the run are equipped with hydraulic riffles and the remainder of the run is lined with matting and 1 inch flat bar. A 6 inch by 6 inch Ajax pump powered by an Isusu engine supplied the 1000 igpm required to sluice between 90 and 100 cubic yards per hour.



Aerial view looking upstream of the Newcan Placers Ltd. operation at the main forks of Henderson Creek.

Ground Description: As noted several different locations have been mined in 1996 and 1997. Mouth of Golden Gate Pup - 5 feet of muck and gravel mix overlying 4 feet of gravel. Right limit at airport - 10 feet of black muck overlying 6 feet of gravel. At forks of Henderson and North Henderson - 25 feet of frozen black muck over 3 feet of sand and 4 feet of gravel. The cut at the dredge workshop - 10 feet of frozen black muck overlying 3 feet of sand and 3 feet of gravel. Bedrock was usually found to be hard, broken and blocky. An average of 4 feet of gravel and 2 feet of bedrock was sluiced. Up to 6 feet of bedrock was sluiced in the cut at the dredge workshop.

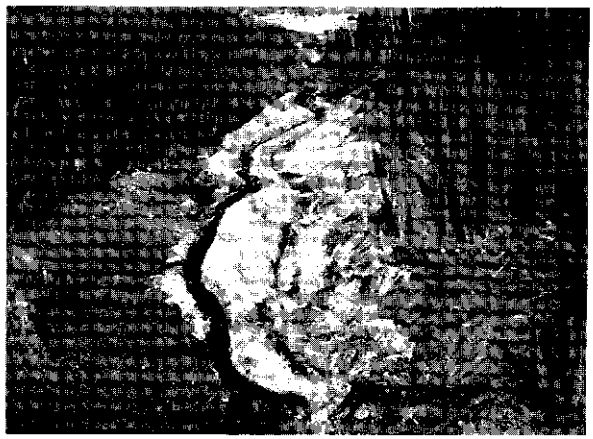
Mining Cuts: Golden Gate Pup - 300 feet long by 200 feet wide. Adjacent to airstrip - 2000 feet long by 150 feet wide. At confluence of Henderson and North Henderson - 1500 feet long by 200 feet wide. At dredge workshop - 1000 feet long by 100 feet wide.

Water Supply and Treatment: Water was pumped from instream pump ponds on Henderson Creek to the sluice plant. The effluent was then treated in old mine pits downstream from the operation prior to being discharged back to Henderson Creek. No recycling was necessary.

Gold: The gold was reported to be primarily fine grained and varied in purity from 734 in 1996 to 780 in 1997.

MOOSEHORN CREEK **115 O/6**
Coulee Resources Ltd. **63°22'N 139°14'W**
Water Licence: PM96-002 **1997**
South Klondike Placer Area **Site No. 114**

Operation/Location: Coulee Resources Ltd. began stripping ground at the mouth of Moosehorn Creek in 1995 and sluiced one small cut in 1997 along the right limit side of the creek. Moosehorn Creek is a relatively large left limit tributary of Henderson Creek approximately three miles upstream from the main forks. The operation was run by one employee of Coulee Resources Ltd..



Aerial view looking downstream at the small test cut which was processed by Coulee Resources Ltd. near the mouth of Moosehorn Creek.

Equipment/Function: The ground was stripped with bulldozers that were brought over from the Black Hills Creek property and the sluicing was done with an excavator.

Water Supply and Treatment: Water for sluicing came from Moosehorn Creek and the effluent was treated in small out of stream settling ponds prior to discharging back to Moosehorn Creek.

Comments: No information was provided by the miner for this operation.

HENDERSON CREEK **115 O/6**
Shellbrite Placers Ltd. **63°23'N 139°15'W**
Water Licence: PM96-043 **1996, 1997**
South Klondike Placer Area **Site No. 115**

Operation/Location: Dave McInroe set up and started a new operation on Henderson Creek in 1996. The mining was done on creek ground upstream of Moosehorn Creek, a left limit tributary of Henderson Creek. A crew of three miners ran a single 12 hour shift in 1996 and in 1997.

Equipment/Function: An Hitachi UH143 excavator was used for stripping, handling tailings and restoration in 1996. An Hitachi UH083 excavator fed the wash plant and dug drains when required. A Komatsu 155 bulldozer was used for stripping and handling tailings in 1997 and the Hitachi UH143 was used for feeding the trommel.

Wash Plant: A typical New Zealand style wash plant was used with a hopper feeding into a 5 foot diameter trommel which classifies the pay gravels to ½ inch minus. The classified material is washed through sluice runs 12 feet wide by 10 feet long that are equipped with hydraulic riffles. The oversize material is carried off and stacked with a 35 foot conveyor. A 4 inch Ajax pump powered by an Isuzu engine supplied the 1000 igpm needed to sluice between 70 and 100 cubic yards per hour.

Ground Description: The cuts had an average of 2 feet of moss and black muck overlying 3 feet of silt and 4 feet of mixed gravels. Bedrock tended to be fractured and slabby. The lower 2 feet of gravels and a small amount of the bedrock was sluiced in 1996. The amount of gravel processed was increased in 1997.

Mining Cuts: Some tailings and bedrock were sluiced during 1996. A continuous cut with a total of 27,000 cubic yards was sluiced. Three cuts (13,000 square feet/27,000 square feet/105,000 square feet) were sluiced in 1997.

Water Supply and Treatment: Water was pumped from an instream pump pond to the wash plant with downstream settling facilities. Some recycling was necessary in 1997.

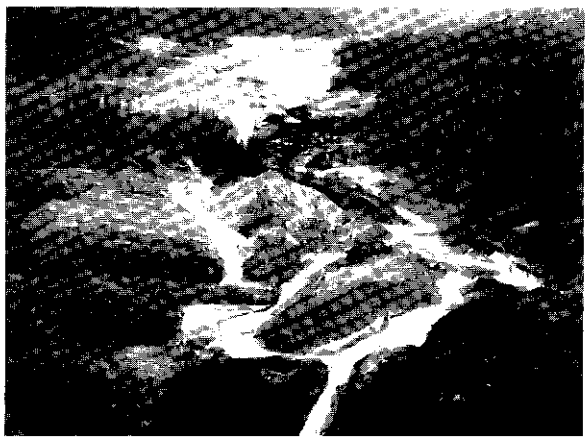
Gold: The gold was reported as being brightly coloured and typically flat and smooth. The purity was 780 fine.

Comments: Dave McInroe found that floating debris entering the instream pump pond was causing difficulties with the hydraulic riffles plugging on the wash plant. His solution was to construct a rotating screen which continually cleans itself with pressure jets. The intake for the pump is contained inside the screened drum.

SCROGGIE CREEK **115 O/2**
Zdenek Bidrman **62°59'N 138°34'W**
Water Licence: PM94-098 **1995,1996,1997**
South Klondike Placer Area **Site No. 116**

Operation/Location: Zdenek Bidrman began mining just below the confluence of Scroggie and Mariposa Creeks in 1995. Three miners and one cook worked one 12 hour shift.

Equipment/Function: A D9G Caterpillar bulldozer and a 375 Komatsu bulldozer were used to strip and stockpile material. A Warner & Swasey H900A excavator was used to feed the sluice.



View looking upstream of Zdenek Bidrman's operation on upper Scroggie Creek.

Wash Plant: A dump box fed material over a grizzly which classified the gravels to 1 inch minus and discarded the coarse gravels. The minus 1 inch pay was washed through a 5 foot wide sluice run lined with 1¼ inch riffles and expanded metal.

Ground Description: The total average depth to bedrock was 11 feet. Four feet of black muck overlies 5 feet of frozen gravel. The bedrock is mostly flat although some wavy sections are encountered. The lower 2 feet of gravel and 3 feet of bedrock was sluiced.

Mining Cuts: A total of six cuts were mined over the three years, with approximately 150,000 cubic yards of material sluiced.

Water Supply and Treatment: Water to the sluice was provided by a 10 inch by 10 inch Allis Chalmers pump, powered by a Cummings 250 diesel engine at a rate of 1500 igpm. The effluent was treated in two out of stream settling ponds before being discharged into Scroggie Creek.

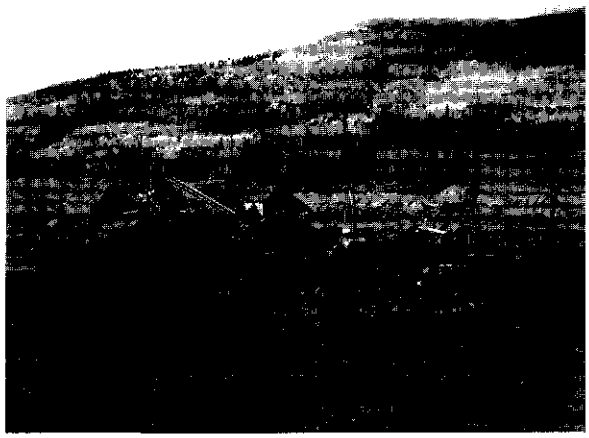
Gold: The gold was described as being bright in colour, round and chunky, with varying sizes. Fineness was 900.

BLACK HILLS CREEK	**115 O/7**
Coulee Resources Ltd.	**63°24'N 138°46'W**
Water Licence: PM94-110	**1995, 1996, 1997**
South Klondike Placer Area	**Site No. 117**

Operation/Location: Coulee Resources Ltd. started a large scale operation on Black Hills Creek in 1995 just downstream from the mouth of Kernine Creek. Tailings near the main camp at the mouth of Dome Creek were also processed during 1995. Mining during 1996 was confined to the lower claims near Kernine Creek. The operation continued mining upstream in 1997 from where they finished in 1996 and a second operation was started on a left limit bench of Black Hills Creek. The number of employees varied but approximately eight miners and four camp staff were employed at peak season.

Equipment/Function: Mining began in 1995 with a Komatsu 455 bulldozer, a Caterpillar D9 bulldozer, a Caterpillar 8L bulldozer and a Komatsu PC400 excavator. A second Komatsu 455 bulldozer was added in 1996 and a third 455 bulldozer was acquired in 1997. The bulldozers were used to strip and stockpile the pay gravels. The excavator fed the sluice plant.

Wash Plant: Two separate wash plants were used during 1995, 1996 and 1997. A Super Sluice was used for most of the mining in 1995. It was refitted in 1996 and used at the bench operation in 1997. The plant initially had two runs divided into two sections. The upper section was 3 feet wide by 6 feet long and used 1 inch angle iron riffles and matting. The lower section opened up to 6 feet wide and was 16 feet long. Expanded metal and matting was used in the lower section. This setup was limited to approximately 90 cubic yards per hour. The two runs were replaced with four 4 foot by 20 foot sluice runs in 1996 which doubled the production to approximately 180 cubic yards per hour. A "land dredge" was used to process tailings in 1995. It was moved to the lower operation on Black Hills Creek for 1996 and 1997. The plant consisted of a grizzly hopper and 80 foot conveyor feeding a Clemroll double screen deck. The ½ inch minus classified pay was sluiced in four 5 foot by 20 foot runs lined with expanded metal and matting. The oversized gravels were stacked with another 80 foot conveyor. This plant was capable of processing approximately 270 cubic yards per hour. A 10 inch pump powered by a Caterpillar 3406 engine supplied the water for sluicing.



Coulee Resources Ltd. sluicing at the lower operation on Black Hills Creek

Ground Description: The ground in the valley bottom averaged 14 feet deep with 5 feet of frozen black muck and 9 feet of gravel. The bedrock was hard and came out in large chunks when ripped. Most of the gravels and a couple of feet of bedrock was sluiced. The bench operation varied in depth from a couple of feet deep at the toe of the bench to approximately 30 feet deep at the back of the cut. The reddish upper gravels

were wasted and the more compacted lower gravels were sluiced. The bedrock tended to be decomposed and very little was sluiced.

Mining Cuts: During 1995 three large pits (the third pit was not completed during 1995) measuring approximately 700 feet wide by 400 feet long were mined along with tailings at several locations. Ten smaller pits with an average size of 200 feet by 400 feet were sluiced in 1996. Eight pits approximately 350 feet wide by 500 feet long were mined along Black Hills Creek in 1997. An area approximately 140 feet wide by 3000 feet long was also mined in 1997 on the left limit bench.

Water Supply and Treatment: Water was pumped from instream reservoirs in Black Hills Creek to the sluice plant and then settled in a series of out of stream settling ponds. The settling ponds located at the bottom operation were used for final effluent treatment for all locations mined.

Gold: The gold recovered from the bench tended to be fine and had a purity of 820. The creek gold was more coarse and had a purity of 800.

Comments: The operation began mining near the mouth of Kernine Creek because of the high number of old cabins that were found in the area.

BLACK HILLS CREEK	**115 O/7**
Dave Brickner	**63°25'N 138°47'W**
Water Licence: PM95-111	**1996**
South Klondike Placer Area	**Site No. 118**

Operation/Location: Dave Brickner and his family ran this operation on a left limit bench of Black Hills Creek where Queenstake Resources had finished their mining in 1989. The mining cuts continued into the bench well away from the rim.

Equipment/Function: A Terex bulldozer was used for stripping, stockpiling pay gravels, sluicing, settling pond construction and reclamation. A trommel wash plant was used.

Ground Description: The ground was approximately 30 feet deep with 12 feet of frozen mud overlying 18 feet of gravel.

Water Supply and Treatment: Water for sluicing came from an instream reservoir on Black Hills Creek. The water was lifted up onto the bench to the wash plant and the effluent returned to out of stream settling ponds in the valley bottom before discharging back to Black Hills Creek.

Gold: The gold recovered in the past from this site was reported as being mainly fine grained and flat with a purity of 780 fine.

Comments: No information was provided by the miner for this operation.

CHILDS GULCH	**115 O/10**
Reid Haines	**63°30'N 138°51'W**
Water Licence: PM97-010	**1997**
Klondike Placer Area	**Site No. 119**

Operation/Location: Reid Haines set up and started a small scale operation in 1997 on Childs Gulch, a left limit tributary of Black Hills Creek. The mining cuts were along the right limit approximately one mile upstream from the mouth.

Water Supply and Treatment: Water for sluicing was pumped from Childs Gulch to the sluice plant and the effluent was treated in out of stream settling ponds along the right limit side of the creek. A small amount of sluicing was done.

Gold: The gold that has been recovered from this area in the past was reported to be around 20 mesh size and with a purity of 750 fine.

Comments: No information was provided by the miner for this site.

BLACK HILLS CREEK	**115 O/7**
Paydirt Holdings	**63°30'N 138°52'W**
Water Licence: PM95-006	**1995, 1996, 1997**
Klondike Placer Area	**Site No. 120**

Operation/Location: As in past seasons Paydirt Holdings have continued mining in an upstream direction on Black Hills Creek. The main operation is now located approximately one mile upstream from the mouth of Childs Gulch. A single cut was also mined downstream near the main camp in 1997. Four miners and a camp person ran a single 12 hour shift in 1995 and 1996. Two additional miners were employed in 1997.

Equipment/Function: Three Caterpillar D9H bulldozers equipped with U-blades and rippers were used for stripping the cuts and stockpiling the pay gravels near the sluice plant. A Caterpillar 235 excavator fed the sluice plant and a Caterpillar 980C loader hauled the tailings away.

Wash Plant: A 10 foot long Derocker was used to classify the pay gravels prior to being washed through a single 42 inch wide by 45 foot long sluice run. The sluice run was lined with Nomad matting and expanded metal. Two inch angle iron riffles were also used randomly in the run. A 12 inch pump powered by a 3208 Caterpillar engine supplied the 3000 igpm needed to sluice between 90 and 120 cubic yards per hour.

Aerial view looking downstream along Black Hills Creek at Paydirt Holdings mining operation.

Ground Description: An average cut has an 18 to 20 foot layer of frozen muck overlying 4 feet of gravel. The bedrock along the left limit tends to be solid with gray clay streaks throughout whereas the bedrock along the right limit is decomposed. Many old shafts, underground drifts and cabins were found in this area of Black Hills Creek. Generally all the gravels and between 2 and 3 feet of the bedrock was sluiced.

Mining Cuts: Three cuts averaging 150 feet wide by 400 feet long were sluiced in 1995. Four cuts averaging 200 feet wide by 300 feet long were mined in 1996. Four cuts averaging 200 feet wide by 300 feet long were mined at the upstream end of the property in 1997 along with a single cut 100 feet wide by 250 feet long near the main camp.

Water Supply and Treatment: Water for sluicing came from instream reservoirs on Black Hills Creek. Usually the water is discharged to a series of downstream settling ponds which are both instream and out of stream. A final finishing pond continued to be used at the bottom of the property. During dry periods the operation had to recycle the sluice water due to lack of make-up water.

Gold: The gold was reported to be angular, chunky and rough. Some wire gold and small nuggets were recovered. The purity varied between 700 and 718 fine.

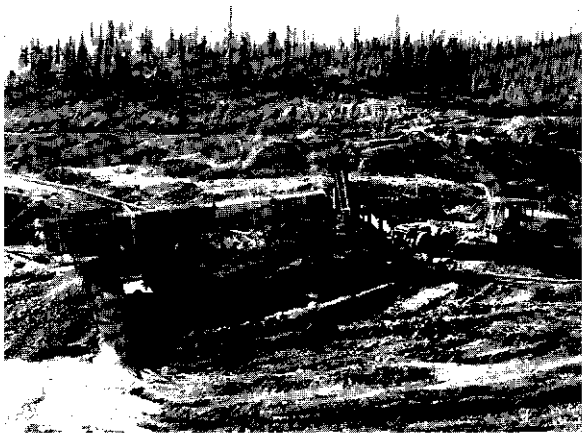
BLACK HILLS CREEK **115 O/10**
Rod Smith **138°57'N 63°31'W**
Water Licence: PM96-075 **1996, 1997**
Klondike Placer Area **Site No. 121**

Operation/Location: Rod Smith and one employee ran this operation near the top of Black Hills Creek in 1996 and 1997. Rod's brother Dean would occasionally help out as well. The active mining continued in an upstream direction from where previous operators had finished at the mouth of a large unnamed right limit tributary of Black Hills Creek.

Equipment/Function: A Caterpillar D8H bulldozer was used for stripping and stockpiling the pay gravels. A Caterpillar 225 excavator fed the sluice plant and built/maintained the settling ponds.

Wash Plant: A scrubber style trommel 4 feet in diameter by 32 feet long was used to classify the pay gravels. Two sections of screen were used. The first section of screen classified the gravels to minus ⅜ inches and the lower section of riffles classified the gravels to minus ¾ inches. The classified gravels from each section of screen were sluiced through separate sluice runs. The minus ⅜ inch material was washed through a 4 foot wide by 10 foot long run. The first 4 feet of the run were lined with Nomad matting and hydraulic riffles. The next 4 feet were lined with Nomad matting and modified (½ inch top by 1 inch side) angle iron riffles. The last 2 feet of the run was lined with Nomad matting and expanded metal. The minus ¾ inch material was also washed through a 4 foot wide by 10 foot long sluice run. The first 2 feet of the run was lined

with Nomad matting and hydraulic riffles. The next 6 feet of the run used Nomad matting and modified angle iron riffles. The last 2 feet was lined with Nomad matting and expanded metal. This wash plant was built by Rod Smith and was capable of processing approximately 50 to 60 cubic yards per hour. A 6 inch by 6 inch Monarch pump supplied the 1000 igpm needed for sluicing.



Rod Smith processing pay gravels through a trommel wash plant at his Black Hills Creek operation.

Ground Description: The ground varied in depth considerably between the centre and sides of the creek. An average cut found 8 to 12 feet of frozen muck overlying 8 feet of gravel. The bedrock was usually fully decomposed although some boulders were encountered. Most of the gravel and up to 1 foot of the bedrock was sluiced.

Mining Cuts: The ground was tested for a portion of the 1995 season and mining began in 1996. One larger cut measuring 90 feet wide by 210 feet long was mined during 1996. Four cuts (250 feet by 60 feet/150 feet by 40 feet/100 feet by 40 feet/150 feet by 150 feet) were stripped during the 1997 season. One half of one cut was not able to be sluiced before cold weather arrived in the fall. *Information came from the Mining Recorder files.

Water Supply and Treatment: Water was captured in an instream reservoir on Black Hills Creek and then pumped to the sluice plant. The effluent was treated in a series of out of stream settling ponds downstream from the operation before being discharged back into Black Hills Creek.

Gold: A wide variety of gold was recovered from this site although most of the gold was flat and round and around the 12 mesh size. An occasional nugget as large as ⅓ ounce was recovered and some wire gold showed up. The purity was 680 fine.

FRISCO CREEK	**115 O/3**
Stretch, Eric	**63°12'N 139°30'W**
Water Licence: PM96-020	**1997**
South Klondike Placer Area	**Site No. 122**

Operation/Location: Eric and Wanda Stretch tested various locations along Frisco Creek, a right limit tributary of the Yukon River downstream from Thistle Creek, throughout the 1996 and 1997 seasons. Two employees were hired for most of 1996 and 1997.

Equipment/Function: A Caterpillar 225 excavator was used for trenching, building roads and will feed the wash plant when sluicing begins. A Caterpillar D7G bulldozer was used for road construction and stripping work. When sluicing begins the bulldozer will be used for stockpiling pay gravels and handling tailings. A 350 John Deere is available for testing and light duty work where needed.

Wash Plant: A hopper feeding onto an 8 foot wide by 16 foot long shaker deck classified the pay gravels to ¾ inch minus. The classified pay was then washed through two sluice runs 4 feet wide by 7 feet long. Pulsating riffles were used. The material between 3 inch and ¾ inch in size was channelled over a nugget trap before being discharged into the tailings. A 4 inch Kubota pump supplied water to the sluice plant but a larger pump will be acquired for 1998 in order to increase the water volume from 1200 to 1500 igpm. The wash plant is expected to process 80 cubic yards per hour.

Ground Description: An average cut had 1 foot of moss overlying 3 feet of frozen black muck and 12 feet of gravel. The gravel layer showed a variety of sand, shale and pit run. Bedrock was usually decomposed and fractured easily.

Mining Cuts: No mining cuts were processed during 1996 and 1997. Testing at several locations along Frisco Creek was done in 1996

and 1997. Two cuts were stripped in the fall of 1997 and will be mined during 1998.

Water Supply and Treatment: Water is pumped from an instream depression in Frisco Creek to the wash plant. Settling facilities will be constructed out of stream and up to 75% recycle is expected when sluicing begins. Discharge will be back to Frisco Creek.

Gold: No gold has been recovered from this operation other than inspiration pieces from the testing operation.

Comments: This property was originally staked and prospected by Fred Stretch in the early 1990's. Eric Stretch took over and has maintained the property since Fred Stretch was lost in a boating accident on the Yukon River in 1992.

THISTLE CREEK /ELIS BENCH **115 O/3**
Stuart Schmidt **63°05'N 139°25'W**
Water Licence: PM93-095 **1995,1996,1997**
South Klondike Placer Area **Site No. 123, 124**

Operation/Location: Stuart Schmidt had a crew of five miners working two 12 hour shifts. Mining took place in several different locations over the three mining seasons.

Equipment/Function: One D10N Caterpillar bulldozer was utilized for all functions of the mining process.

Wash Plant: A triple run sluice box was used to process 160 cubic yards of loose material per hour. The centre run was used to process material over ¾ inch and the side runs processed the ¾ inch minus pay gravels.

Ground Description: On Thistle Creek proper, below Green Gulch, the depth to bedrock was approximately 45 feet deep, with the top 15 feet of black muck overlaying mixed sand and gravels to bedrock. Elis Bench was approximately 40 feet in depth with 20 feet of black muck overlaying 20 feet of homogenous gravels to bedrock.

Mining Cuts: In 1995 five cuts below Green Gulch measuring 300 feet by 400 feet were mined. In 1996 four cuts below Green Gulch measuring 300 feet by 400 feet were processed. Two cuts at the mouth of Green Gulch measuring 300 feet by 400 feet along with one long continuous cut on Elis Bench which measured 300 feet by 600 feet were mined in 1997.

Water Supply and Treatment: A Morris 12 by 14 inch pump with a Caterpillar 3408 diesel engine provided 2800 igpm to the sluice box. Effluent was treated in the previous seasons instream mining cuts.

Gold: The gold was described as being smooth and round on Thistle but coarse and not as rounded on Elis Bench. Fineness was 860.

BLUEBERRY CREEK **115 O/3**
Panterra Minerals Inc. **63°04'N 139°28'W**
Water Licence: PM95-112 **1995, 1996, 1997**
South Klondike Placer Area **Site No. 125**

Operation/Location: This operation is located halfway upstream on Blueberry Creek from its confluence with Thistle Creek. Mike and Jay Hughes ran this operation with the help of one cook.

Stripping at Mike and Jay Hughes' operation on Blueberry Creek in 1995.

Equipment/Function: Equipment used at the mine included a D9H Caterpillar bulldozer, a D8K Caterpillar bulldozer and a 980C Caterpillar loader.

Mining Cuts: Mining progressed up Blueberry Creek during the period covered by this report.

Comments: Some restoration work has occurred on Thistle Creek.

THISTLE CREEK	**115 O/3**
Peter Walsh	**63°04'N 139°09'W**
Water Licence: PM96-078	**1997**
South Klondike Placer Area	**Site No. 126**

Operation/Location: The unnamed right limit tributary of Thistle Creek is located approximately seventeen miles upstream from the mouth of Thistle Creek.

Equipment/Function: A D8 Caterpillar bulldozer with U-blade and ripper was used to strip overburden and push up pay gravels. A 466 excavator with a 2½ yard bucket was used to dig drains and feed the wash plant.

Wash Plant: A 50 cubic yard per hour shaker plant with a 4 foot by 10 foot screen deck classified material to 1 inch minus before being processed through a sluice run.

Ground Description: Six feet of black muck covered 10 feet of mixed gravels with the bottom 4 feet thawed.

Mining Cuts: One mining cut 90 feet by 90 feet was processed in the 1997 mining season.

Water Supply and Treatment: A 6 inch by 6 inch Monarch pump was powered by a Ford 4-cylinder diesel which supplied 1500 igpm to the sluice plant. Effluent discharged into a large out of stream dredge pond at the mouth of this tributary to Thistle Creek.

Gold: Gold was described as being flat, round and rough with quartz in the gold. Fineness was 860.

Comments: This is the first year of mining at this site. Hydraulic stripping may be used in 1998 to aid in the removal of frozen organic material.

KIRKMAN CREEK	**115 O/3**
Merrit Sager	**63°00'N 139°13'W**
Water Licence: PM97-009	**1995,1996,1997**
South Klondike Placer Area	**Site No. 127**

Operation/Location: Merrit Sager and his family ran this operation. Locations at the upper end, middle and bottom of Kirkman Creek were mined.

Equipment/Function: A Fiat Allis HD31 bulldozer, an HD40 bulldozer and a D7 Caterpillar bulldozer were used for stripping overburden, pushing up pay gravels and removing tailings. A 235 Caterpillar excavator was used to dig bedrock drains and feed the wash plant.

Wash Plant: A 4 foot by 8 foot screening plant was used in 1995 and 1996, with a new plant built for the 1997 mining season. This shaker plant was a 5 foot by 12 foot Elruss double screen deck with two 4 foot runs.

Ground Description: The stratigraphic sections for middle and upper Kirkman that were mined in the 1995 and 1996 mining seasons saw 15 to 30 feet of black muck over 5 to 6 feet of gravel to a decomposed or cubed bedrock. Lower Kirkman Creek was mined during 1997. Eight to 12 feet of black muck overlies 4 to 6 feet of gravels to a decomposed bedrock.

Mining Cuts: In 1995 and 1996 eleven cuts measuring 150 feet by 100 feet were stripped and mined. In 1997 two cuts 250 feet square were mined.

Water Supply and Treatment: A Byron Jackson 6 inch by 6 inch pump powered by a 471 General Motors diesel supplied 1760 igpm of water to wash 80 to 100 cubic yards of material per hour in 1995 and 1996. In 1997 a new 14 inch by 10 inch Caterpillar pump powered by a 3408 Caterpillar diesel supplied 2500 igpm to process 200 cubic yards of material through the new wash plant. Progressive out of stream settling ponds were used to treat the effluent before being discharged into Kirkman Creek.

Gold: The gold on this creek was described as being round, pounded and thin with mostly fine gold recovered. Fineness was 846 to 866.

SPARKLING CREEK	**115 J/14**
Caley's Dream Inc.	**62°57'N 139°09'W**
Water Licence: PM94-022	**1997**
South Klondike Placer Area	**Site No. 128**

Operation/Location: This operation is located approximately two thirds of the way upstream on Sparkling Creek from the confluence with the Yukon River. Al Radford mined this ground in 1995 under an agreement with Maynard Fuhre and Mona Anderson, who returned as operators of this property in 1996. In 1997 this property was sold to Werner Renggli. The current mine manager is Kel Sax.

View of recycling ponds on Sparkling Creek with sluice plant in background.

Equipment/Function: A D8K Caterpillar bulldozer was used for stripping and pushing up pay. Excavators used at the minesite were a 235 Caterpillar and, during 1995 only, a Samsung SE350 excavator.

Washplant: A shaker plant was used during all three years with some modifications made during this time

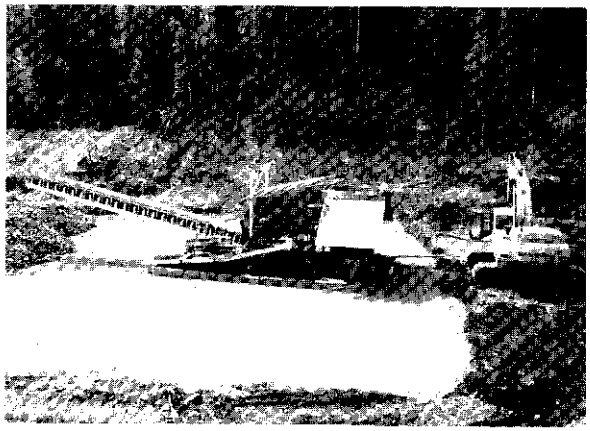
Ground Description: The pay channel has been described as meandering; pay is therefore inconsistent.

Water Supply and Treatment: An extensive series of instream settling ponds are used, with partial recirculation of the water.

BALLARAT CREEK	**115 J/14**
Hutchison, Brian	**62°56'N 138°57'W**
Water Licence: PM95-066	**1996, 1997**
South Klondike Placer Area	**Site No. 129**

Operation/Location: Brian Hutchison along with two workers and a cook were active on lower Ballarat Creek.

Equipment/Function: A Samsung SE350 excavator fed the wash plant and a 9L Caterpillar bulldozer was used for stripping.



View of Brian Hutchison's floating shaker wash plant on lower Ballarat Creek.

Wash Plant: Material was fed to a 5 foot by 8 foot floating shaker wash plant. Two single run sluice boxes, approximately 4 feet wide by 15 feet long, containing a nugget trap, processed the undersize material. A 30 foot tailings stacker disposed of the oversize material. Approximately 150 cubic yards per hour were processed.

Mining Cuts: Mining occurred out of stream in one large continuous cut.

Water Supply and Treatment: Settling took place in the floater pond and any effluent discharged was by seepage.

Comments: Mining is completed at this site due to low gold values.

BALLARAT CREEK **115 J/14**
Fell-Hawk Placers **62°59'N 139°06'W**
Water Licence: PM97-004 **1995,1996,1997**
South Klondike Placer Area **Site No. 130**

Operation/Location: Joe and Wendy Fellers mined on Ballarat Creek, a right limit tributary of the Yukon River.

Equipment/Function: A D9L and a D8L Caterpillar bulldozer were used to strip overburden and push up pay gravels and move tailings.

Wash Plant: A Derocker wash plant with a 5 foot by 20 foot sluice was used to process 100 loose cubic yards per hour.

Ground Description: The stratigraphic section consisted of 12 feet of homogenous gravels to bedrock. Two feet of pay gravel and 3 to 5 feet of bedrock were sluiced.

Mining Cuts: In 1995 five cuts were mined with an average of 18,000 square bedrock feet each. In 1996 five cuts were taken with 24,000 square bedrock feet each. In 1997 two small cuts upstream averaging 20,000 square bedrock feet and three cuts downstream averaging 33,000 square bedrock feet were mined.

Water Supply and Treatment: Water was delivered to the Derocker by an 8 by 8 inch high pressure pump powered by a 3208 Caterpillar diesel engine, at a rate of 1000 igpm. Effluent treatment occurred in three large settling ponds before being discharged into Ballarat Creek.

Gold: Heavy coarse gold was recovered. Fineness was 860.

Comments: Mining took place approximately one and a half miles downstream from the headwaters of this very narrow valley. Mr. Fellers is re-mining previously mined ground from the 1950's with some virgin side pay.

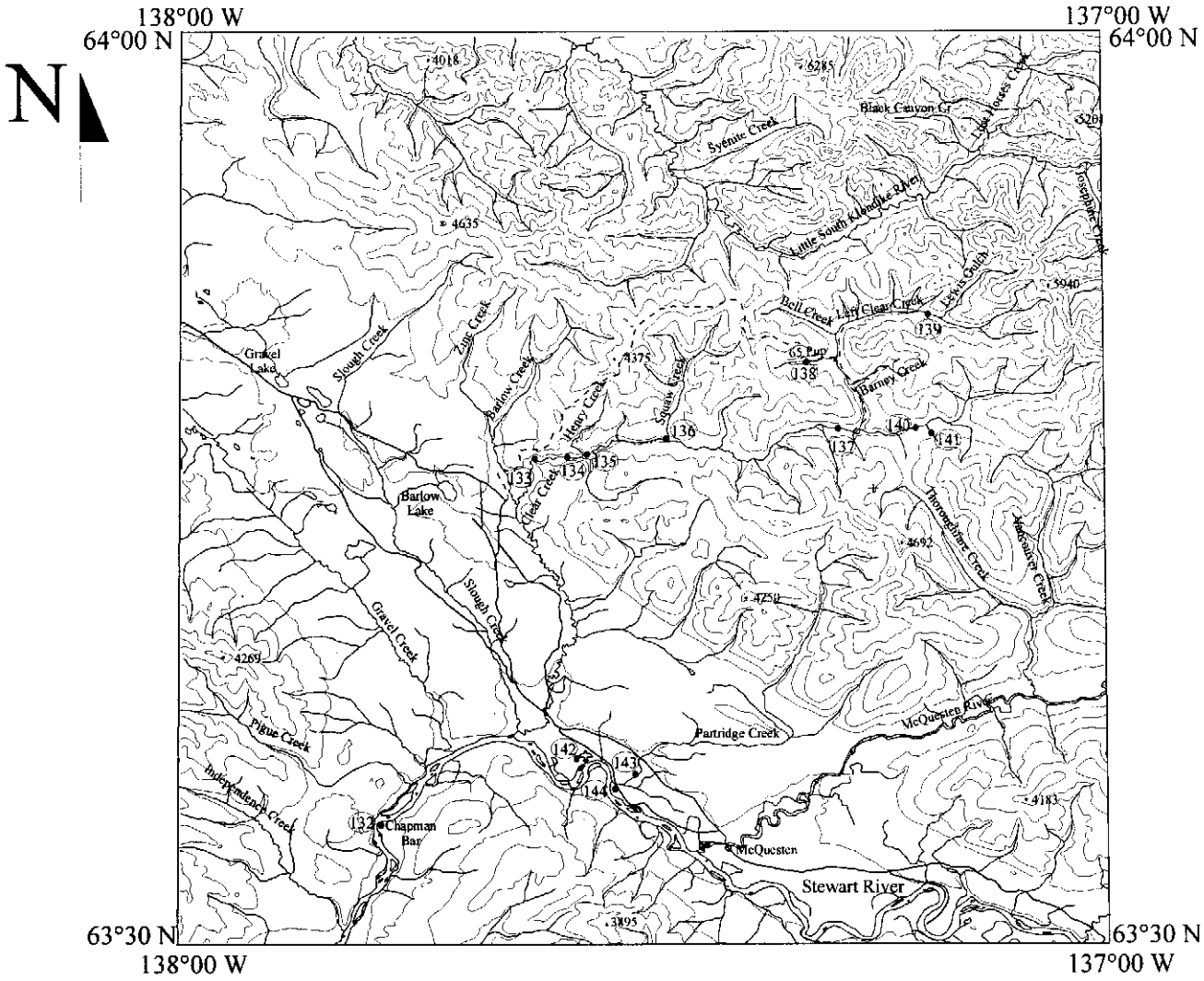
CANADIAN CREEK **115 J/15**
Britannia Pacific Mining Ltd. **62°47'N 138°46'W**
Water Licence: PM94-037 **1996, 1997**
South Klondike Placer Area **Site No. 131**

Operation/Location: This operation is located on Canadian Creek about two miles upstream of the confluence with Britannia Creek.

Equipment/Function: A D10N Caterpillar bulldozer was used for stripping. Two Samsung SE350 excavators with 3¾ yard buckets were used for trenching, stripping (a ripper attachment on the bucket was used for stripping the frozen black muck), digging bedrock drains and feeding the sluice plant.

Aerial view of Al Radford's floating shaker wash plant on Canadian Creek

Wash Plant: In 1996 a small wash plant was set up for testing purposes. Material fed to the grizzly was then fed directly onto a single run sluice. The processing rate was approximately 30 cubic yards per hour. A new floating shaker washplant was set up for the 1997 season. The wash plant, which operated in about 5 feet of water, containeda dump box that had a 22 second dump cycle which allowed material to be processed at a rate of approximately 400 yards per hour. The 5 foot by 20 foot long sluice runs had 4 foot sections of expanded metal alternating with 1 foot sections of slick plate.



South McQuesten Placer Area

Secondary roads
Major roads

Rivers

Yukon Territory

0 km 10

Contours

Placer Operations

Mining Cuts: In 1996 about 10 claims were stripped on the left limit in addition to the ground tested. Un 1997 about 10 claim lengths were sluiced using the floating washplant.

Water Supply and Treatment: A diversion in the creek supplied water to the floater pond. An onboard pump supplied water from the pond to the shaker plant. Two large out of stream ponds were used for settling.

STEWART RIVER	115 P/12
Bruce McLennan	63°34'N 137°46'W
Water Licence: PM95-014	1995, 1996
South McQuesten Placer Area	Site No. 132

Operation/Location: This property, located in the vicinity of Chapman Bar on the left limit of the Stewart River was mined by Bruce McLennan and two helpers. Old bar deposits on the inside bank of a meander bend were mined 30 feet back from the river.

Equipment/Function: A D2 Caterpillar bulldozer was used for stripping. A KH41 Kubota excavator was used for excavating and feeding the wash plant.

Wash Plant: A 2 foot by 2 foot vibrating screen classified material to ¼ inch minus which was then fed to a single run sluice lined with expanded metal over Nomad matting. The processing rate varied from 6 to 20 cubic yards per hour.

Ground Description: Six feet of frozen silt and sand was underlain by approximately 6 to 10 feet of gravels. The depth to bedrock was not determined and only the bar gravels were sluiced.

Mining Cuts: One cut was mined in 1995. The dimensions of the cut are 150 feet by 100 feet by 16 feet deep. One cut was mined in 1996. The dimensions are 150 feet by 30 feet by 8 feet deep.

Water Supply and Treatment: Water was pumped from the Stewart River at a rate of 45 to 60 igpm. Old cuts were used as settling ponds and there was no surface discharge.

Gold: The gold was very fine and bright in colour. Fineness was 840.

CLEAR CREEK	115 P/13
William Wasylenko	63°46'N 137°34'W
Water Licence: PM95-082	1995, 1996, 1997
South McQuesten Placer Area	Site No. 133

Operation/Location: Bill Wasylenko continued his operation on the main fork of Clear Creek, upstream from its confluence with Barlow Creek. Mining occurred in the valley bottom, on both left and right limits. Johnny Fisher operated a dredge on Clear Creek during 1996 under this water licence.

Equipment/Function: One Caterpillar D9 bulldozer was used for stripping overburden and pushing gravel, one Hyundai 38 ton excavator was used to dig pay and feed the wash plant and one Caterpillar 950 front end loader was used to remove and stack tailings.

Johnny Fisher's dredge operating on Clear Creek

Wash Plant: A Super Sluice 6 with a 3 foot by 16 foot single sluice run was used in 1995. In 1996 and 1997 a 6 feet diameter trommel on floating pontoons was used with a single sluice run. A 6-cylinder Isuzu diesel engine powered the trommel as well as the 6 inch pump; about 80 to 100 cubic yards per hour were sluiced using approximately 900 igpm of water.

Ground Description: About 4 feet of sandy topsoil was stripped from gravels which averaged about 20 feet deep. Bedrock had ridges running across the valley as well as patches of yellow clay.

Mining Cuts: In 1995 about 60,000 cubic yards were sluiced and about 40,000 cubic yards were stripped; in 1996 about 185,000 cubic yards were sluiced and about 170,000 cubic yards were stripped; in 1997 about 40,000 cubic yards were sluiced and about 20,000 cubic yards were stripped from two cuts, approximately 300 feet by 300 feet each.

Water Supply and Treatment: Water was recycled and settled out of stream in old dredge ponds in 1995. In 1996 and 1997 water was recycled within the mining cut which held the floating trommel, and was settled in out of stream dredge ponds.

Gold: Only fine gold was recovered, bright yellow in colour and containing about 10% silver. Fineness was between 820 and 840.

CLEAR CREEK 115 P/14
Ray Lizotte 63°48'N 137°34'W
Water Licence: PM94-099 1995, 1996
South McQuesten Placer Area Site No. 134

Operation/Location: In 1995 and 1996 Ray Lizotte and his brother moved to this property on Clear Creek. Work was done under a water use licence held by Bill Wasylenko.

Ray Lizotte's reclaimed mine site on Clear Creek.

Equipment/Function: Two D8 Caterpillar bulldozers were used for stripping. A 988 Caterpillar loader was used to stack tailings. A 215 Caterpillar excavator was used for ditching and to feed the trommel. A D7 Caterpillar winch bulldozer with a gin pole was used for repairs.

Wash Plant: A 10 cubic yard wet hopper fed a trommel 38 feet long by 7 feet in diameter with angle iron riffles and ½ inch screens. A 4 foot wide by 8 foot long sluice box was lined with 4 feet of hydraulic riffles and expanded metal. The processing rate was 100 cubic yards per hour.

Ground Description: The ground on the left limit of Clear Creek consisted of 8 feet of stream gravel with bedrock with quartz reefs. The ground had been previously stripped.

Water Supply and Treatment: Water was pumped from Clear Creek at a rate of 700 igpm by a 10 by 12 inch pump powered by a 3208 Caterpillar diesel engine. An aluminum pipe 6 inches in diameter conveyed the water to the wash plant. Effluent was treated in a medium sized out of stream pond.

CLEAR CREEK 115 P/13
David Kosuta 63°46'N 137°33'W
Water Licence: PM95-068 1995, 1996
South McQuesten Placer Area Site No. 135

Operation/Location: David Kosuta ran a small placer operation on the main branch of Clear Creek, about three miles below Squaw Creek.

Equipment/Function: One Caterpillar D5 bulldozer was used for stripping and pushing gravel, one Caterpillar 920 front end loader was used to feed the wash plant and to remove and stack tailings.

Wash Plant: An 8 foot by 14 foot dump box fed to double sluice runs, one 30 inches wide by 16 feet long with angle iron riffles and one 30 inches wide by 12 feet long with expanded metal riffles over Nomad mat. A Dayton pump, 6 inches by 8 inches, supplied about 1200 igpm of water which was used to process approximately 30 cubic yards per hour.

Ground Description: From 4 to 8 feet of frozen black muck lay on top of gravels up to 8 feet deep with mixed sand, gravel and boulders up to 4 feet in diameter. All gravels plus about 1 foot of bedrock were sluiced.

Mining Cuts: In 1995 about 750 cubic yards were sluiced and about 450 cubic yards were stripped; in 1996 about 2000 cubic yards were sluiced and about 1250 cubic yards were stripped.

Mining a small cut on the right limit of Clear Creek.

Water Supply and Treatment: Water was pumped from Clear Creek and was settled in out of stream ponds.

Gold: Only flat fine gold was recovered. Fineness was around 855.

CLEAR CREEK **115 P/14**
W.J.H. Scott **63°49'N 137°19'W**
Water Licence: PM95-001 **1995, 1996, 1997**
South McQuesten Placer Area **Site No. 136**

Operation/Location: John Scott and son Gordon mined on 65 Pup, a right limit tributary to the left fork of Clear Creek as well as on Squaw Creek, a right limit tributary to the main lower portion of Clear Creek. The operation at the lower end of 65 Pup, a steep narrow gulch, has worked steadily upstream over the past ten years. The operation at the mouth of Squaw Creek started in 1996.

Equipment/Function: One Caterpillar D9G bulldozer with S-blade and single ripper was used for stripping overburden and excavating pay gravel. A John Deere 690 backhoe with ½ cubic yard bucket was used to feed the wash plant. One Hough 50B loader, with a 2 cubic yard bucket, and one Caterpillar 977H loader, with a 3 cubic yard bucket, were used to remove tailings and to clean drains and ditches.

Wash Plant: A wet hopper 3 feet wide by 10 feet long fed material into a trommel 4 feet in diameter by 20 feet long which classified to 1 inch minus. In 1997 the trommel was replaced with a 3 foot by 6 foot vibrating screen deck which classified to ½ inch. Sluice runs were 4 feet wide by 12 feet long with hydraulic riffles for the first 2 feet then expanded metal riffles over Nomad mat. About 50 cubic yards per hour were processed using approximately 500 igpm of water supplied by 6 inch Gorman Rupp pump powered by a 300cc diesel engine.

Ground Description: In 65 Pup there was up to 4 feet of organic overburden on top of about 10 feet of gravel. In Squaw Creek there was 4 feet of overburden on top of 3 to 6 feet of gravel. The bottom 2 feet of gravel and 4 to 6 feet of decomposed bedrock were sluiced.

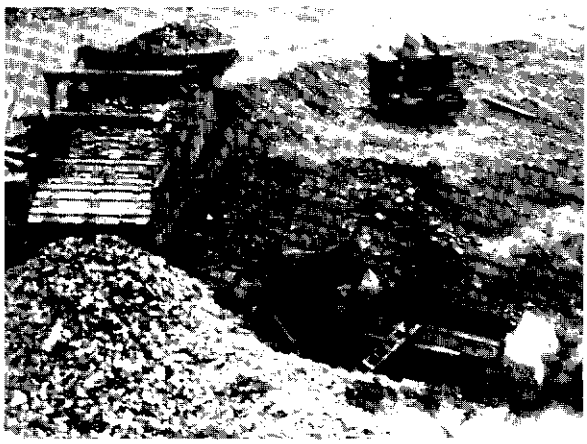
Mining Cuts: In 1996 two claims were stripped about 200 feet wide by 1000 feet long; one cut was mined about 150 feet wide by 500 feet long. In 1997 much of the season was spent working on equipment but one cut, 150 feet wide by 500 feet long, was taken out on Squaw Creek.

Water Supply and Treatment: On 65 Pup water was recycled from an instream reservoir/settling pond and was further treated in an instream settling pond at the downstream end of the operation. On Squaw Creek water was pumped from a small instream reservoir and was treated in out of stream settling ponds.

Gold: Gold recovered was bright coloured, smooth and flat, most below #14 mesh with fineness around 900.

CLEAR CREEK **115 P/14**
4757 Yukon Ltd. **63°48'N 137°16'W**
Water Licence: PM95-037 **1995, 1996, 1997**
South McQuesten Placer Area **Site No. 137**

Operation/Location: John and Dean Klassen continued this family operation located on the main branch of Clear Creek, below the confluence of the left and right forks, as well as on the left fork of Clear Creek, about four miles above the forks.



Clean-up at the Klassen family operation on Clear Creek. (John Klassen standing in sluice box)

Equipment/Function: Two Caterpillar D9H bulldozers were used to strip overburden and to stockpile gravel, a Caterpillar 235 excavator was used for digding ditches and for stripping, two Caterpillar front end loaders, one 966 and one 980, were used to feed the wash plant and remove tailings.

Wash Plant: A 10 foot Derocker classified to 1 inch minus and was followed by 200 square feet of sluice runs with expanded metal and angle iron riffles. From 60 to 100 cubic yards per hour were processed using between 2000 and 3000 igpm of water supplied by a 6 inch Flyte pump powered by a Caterpillar 3306 diesel engine.

Ground Description: An average 15 feet of frozen black muck on top of about 16 feet of gravel, some of which was thawed. The bottom 4 feet of gravel plus 2 to 4 feet of bedrock were sluiced.

Mining Cuts: In 1995 two cuts were mined for a total of approximately 66,000 cubic yards and in 1996 two more cuts were mined for a total of 70,000 cubic yards. Approximately 200,000 cubic yards were stripped per season.

Water Supply and Treatment: Water was pumped from an instream reservoir in Clear Creek and was settled in a series of out of stream ponds in old mining cuts.

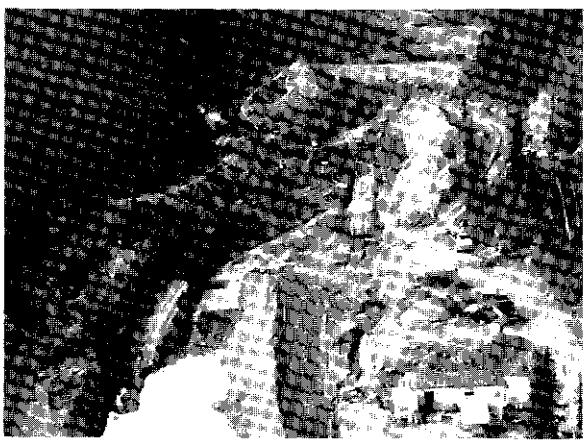
Gold: Gold was flat with a few nuggets and fineness was around 820.

CLEAR CREEK **115 P/14**
Stoney Mines Ltd. **63°49'N 137°16'W**
Water Licence: PM95-073 **1996**
South McQuesten Placer Area **Site No. 138**

Operation/Location: Paul and Sonya Fisher continued operating on 65 Pup, a tributary to the left fork of Clear Creek, upstream from Scott and son.

Equipment/Function: One Caterpillar D8H bulldozer was used for stripping overburden and digging pay gravel. A Komatsu 220 excavator was used to dig pay and to feed the wash plant. One Caterpillar 966 front end loader was used to remove tailings.

Wash Plant: A 6 cubic yard wet hopper fed material into a 60 inch diameter Beaver trommel which classified to 1 ¼ inch minus. A single sluice run, 3 feet wide by 20 feet long, was lined with expanded metal riffles over Nomad mat and had 6 inch nugget traps at the top and bottom. Approximately 65 cubic yards per hour were sluiced using about 500 igpm of water supplied by a 6 inch Monarch pump, powered by a Ford diesel.



Aerial view of Paul Fisher's operation on 65 Pup.

Ground Description: Roughly 12 to 14 feet of glacial till were stripped from on top of 4 to 6 feet of gravel; the pay channel was up to about 30 feet at the widest. The ground got deeper as the operation progressed upstream.

Mining Cuts: In 1996 about 40,000 cubic yards were stripped and about 24,000 cubic yards were sluiced.

Water Supply and Treatment: Water was pumped from an instream reservoir and was treated in a series of three instream settling ponds on 65 Pup.

Gold: Gold recovered was coarse with 80% larger than #4 mesh, fineness was between 940 and 960.

CLEAR CREEK **115 P/14**
Blackstone Placer Mining **63°50'N 137°07'W**
Water Licence: PM95-059 **1995, 1996, 1997**
South McQuesten Placer Area **Site No. 139**

Operation/Location: Nelson Harper and family continued their mining operation on the left fork of Clear Creek in 1995 and 1996. In 1997 they did some stripping and ground preparation but did not sluice.

Equipment/Function: Two Caterpillar D8 bulldozers with U-blades and one with a ripper were used for stripping overburden and excavating pay gravel. One Hough 90E front end loader was used to feed the wash plant and remove tailings.

Wash Plant: A five cubic yard wet hopper fed pay gravels into a trommel, 5 feet in diameter by 30 feet long, followed by a double screen deck with a 1½ inch screen over a ½ inch screen. The oversize from the ½ inch screen went into a sluice run which was 2 feet wide by 20 feet long and lined with 2 inch angle iron riffles for the first 2 feet, followed by a nugget trap and then expanded metal riffles on Nomad matting; the undersize from the ½ inch screen went into a sluice run which was 4 feet wide by 20 feet long with expanded metal riffles. A 6 inch by 8 inch Allis Chalmer pump, powered by a Perkins diesel engine, delivered approximately 900 igpm of water which was used to process from 35 to 40 cubic yards per hour.

Ground Description: Overburden consisted of slide rock mixed with glacial till and varied in depth up to 20 or 30 feet. Coarse bottom gravels, up to 8 feet deep, containing large boulders, plus about one foot of decomposed bedrock were sluiced. Good gold values were found near the large boulders.

Mining Cuts: In 1995 about 27,000 cubic yards were stripped and about 7,000 cubic yards were sluiced. In 1996 about 16,000 cubic yards were stripped and about 5,500 cubic yards were sluiced. In 1997 stripping and ground preparation only occurred.

Water Supply and Treatment: Water was pumped from an instream reservoir and waste water was settled in a series of out of stream dredge ponds.

Gold: Coarse gold was recovered, with some nuggets. Fineness was around 820.

CLEAR CREEK **115 P/14**
Prospecta Mining Ltd. **63°47'N 137°14'W**
Water Licence: PM96-086 **1995, 1996, 1997**
South McQuesten Placer Area **Site No. 140**

Operation/Location: Dick Board mined the right fork of Clear Creek, with a four person crew; in 1997 the operation continued upstream into a left limit tributary.

Equipment/Function: Two Komatsu 155A bulldozers with ripper and U-blade were used for stripping frozen overburden and stockpiling gravel. A Bantam C260 backhoe was used to dig drains and ditches and to feed the wash plant and one front end loader, with a 4½ cubic yard bucket, was used to remove tailings.

Dick Board's operation on the Right Fork of Clear Creek.

Wash Plant: A 5 foot diameter by 40 foot long trommel classified to ¾ inch minus, followed by a single sluice run 4 feet wide by 42 feet long, lined with both angle iron riffles and expanded metal over Nomad mat. Up to 100 cubic yards per hour

were sluiced, using approximately 1200 igpm of water, supplied by an 8 inch pump.

Ground Description: Most of the ground in the main valley of the right fork had been previously stripped and was thawed. The unnamed left limit tributary had frozen overburden and gravel from 8 to 15 feet deep.

Mining Cuts: In 1997 four cuts about 200 feet wide by 300 feet long, plus one cut about 500 feet long by 50 feet wide, were mined. In 1996 a total of fifteen cuts were taken out, with approximately 55,000 cubic yards sluiced. In 1995 about 50,000 cubic yards were sluiced from six cuts, roughly 500 feet by 150 feet each.

Water Supply and Treatment: Water was pumped from an instream pond in Clear Creek and was recycled from two out of stream settling ponds.

Gold: Approximately 80% was flat and smooth and about 20% was rough. Some nuggets up to ¾ ounce and some crystalline nuggets were found in 1997. Fineness was around 840.

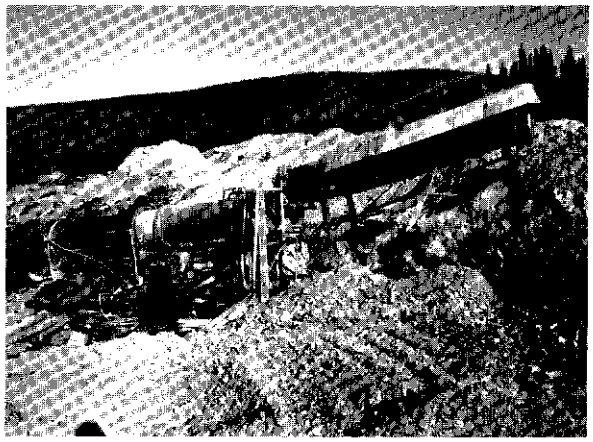
CLEAR CREEK	**115 P/14**
Lon Austin	**63°46'N 137°13'W**
Water Licence: PM94-064	**1995, 1996**
South McQuesten Placer Area	**Site No. 141**

Operation/Location: Lon Austin continued working on Quartz Creek, a left limit tributary to the right fork of Clear Creek, in 1995 and 1996.

Equipment/Function: One Caterpillar 977 tracked loader with a 3 cubic yard bucket was used for stripping overburden, digging gravel, feeding the wash plant and removing tailings.

Wash Plant: A 32 inch diameter trommel, 24 feet long, lined with 1 inch punch plate, fed a single sluice run lined with 1 inch angle iron riffles over Nomad mat. Between 15 and 30 cubic yards per hour were processed using about 180 igpm of water supplied by a 3 inch Honda gas powered pump.

Ground Description: A thawed layer of mixed muck and gravel, from 12 to 18 feet deep, with large quartz boulders, overlay 2 to 3 feet of rust coloured gravel on top of bedrock.



Lon Austin's trommel on Quartz Creek

Mining Cuts: Approximately 2000 cubic yards were processed in 1995 and 6000 cubic yards were processed in 1996.

Water Supply and Treatment: Water was pumped directly from an instream pump pond in Clear Creek and was settled in a series of about ten old dredge ponds before discharging back into the creek.

Gold: Gold was recovered from two distinct gravel layers; the top layer was rust coloured and contained mostly fines; the bottom layer was lighter coloured and had up to 15% as small nuggets with quartz attached. Fineness varied from 790 to 820.

STEWART RIVER	**115 P/12**
Robert Stirling	**63°36'N 137°33'W**
Water Licence: PM93-124	**1995, 1996, 1997**
South McQuesten Placer Area	**Site No. 142**

Operation/Location: Robert Stirling drilled (1995) and mined (1996) a bench deposit on the right limit of the Stewart River in the vicinity of the McQuesten airstrip. At the peak of mining two miners and two camp workers were employed. Work during 1997 consisted of thirty days of sampling by hand.

Equipment/Function: Thirty four holes were drilled in 1995 using an Auger drill mounted on a Nodwell. A total of 360 feet were drilled. Equipment used for mining included a Caterpillar D7 bulldozer and a Caterpillar 235 excavator.

Wash Plant: During 1995 the entire drill sample from each hole was processed with a "Le Trap" plastic sluice box. The sluice box concentrate was then reduced to about 30 grams by panning. The 30 gram sample was then submitted to Northern Analytical Labs for a fire assay. The resulting gold bead was weighed to determine the gold grade in the drill hole. In 1996 the procedure for processing the gravels was as follows. A trommel, 4 feet in diameter and 12 feet long, screened material to ¼ inch. This was followed by two oscillating, Bennett style, sluice boxes, 4 feet wide by 12 feet long, containing expanded metal over un-backed Nomad matting. The sluice runs were angled at 1½ inches per foot. Concentrate was screened to 1mm and roughly processed on a gold screw wheel. The fine processing was done on a Gold Genie wheel.

Sluicing in progress on Robert Stirling's property located on a bar deposit close to the McQuesten airstrip.

Ground Description: The depth to bedrock is estimated at 45 to 70 feet. Up to 3 feet of soil, clay and sand material was removed and stockpiled prior to processing. All of the gravel, most of it frozen, was processed.

Mining Cuts: Approximately 15,000 cubic yards were processed from one cut.

Water Supply and Treatment: One hundred percent of the process water consisted of residual ground water (from thawing gravel and rainwater) and was obtained from the active mining cut and recirculated. A reservoir was established in the mining cut to hold the water required for the sluicing operation. No additional water was used from the Stewart River. A 4 inch Gorman Rupp pump powered by a Lister diesel engine supplied 300 igpm to the wash plant.

Gold: Gold was very fine grained and bright yellow in colour. Some flat flakes up to 1.5mm in diameter were recovered.

Comments: Drilling was in frozen ground and the auger drill had difficulty penetrating the unaltered quartz rich gravels. By establishing a reservoir in the mining cut in 1996, clean water for sluicing was readily obtained.

PARTRIDGE CREEK **115 P/12**
Del Buerge **63°40'N 137°30'W**
Schedule III **1997**
South McQuesten Placer Area **Site No. 143**

Operation/Location: Del Buerge ran a small placer testing operation on a right limit bench of Partridge Creek, between the Klondike Highway and the Stewart River.

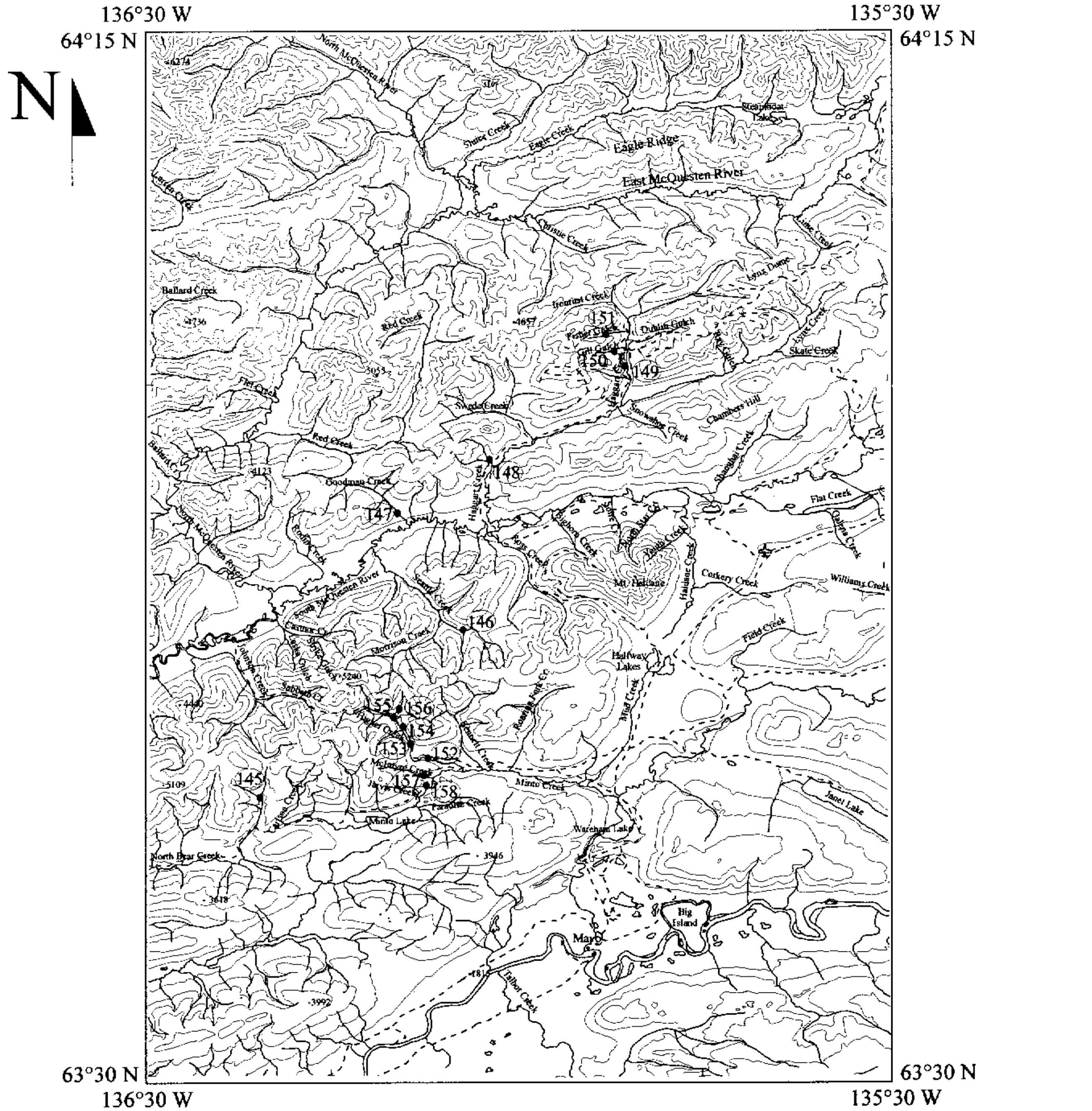
Equipment/Function: A small Caterpillar D4 bulldozer was used to strip overburden and a Bobcat loader with a ⅓ cubic yard bucket was used to feed the wash plant.

Wash Plant: A 1 cubic yard dump box, lined with ½ inch punch plate, fed material into a 16 inch diameter trommel, 4½ feet long, with single sluice run, 3 feet long. A gas powered, 3 inch Honda pump supplied approximately 80 igpm of water and about 5 cubic yards per hour were processed.

Ground Description: Less than 1 foot of organic soil was stripped from a thin layer of river gravels which varied from 2 to 4 feet deep; this shallow bench deposit was only about 4 feet above creek level.

Mining Cuts: One cut, about 100 feet long by 50 feet wide, was excavated.

Water Supply and Treatment: Make up water was pumped from Partridge Creek and waste was settled in and recycled from one out of stream pond.



Mayo Placer Area

Yukon Territory

Secondary roads
Major roads

Rivers

0 20
km

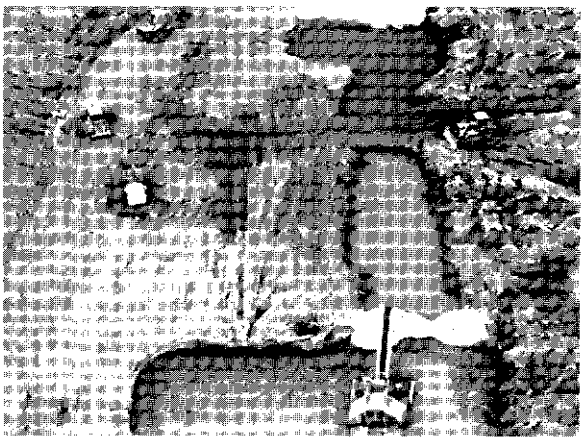
Contours

Placer Operations

Gold: Bright yellow, flat, round, smooth fine gold was recovered; 85% was less than 60 mesh, with fineness around 850.

STEWART RIVER	**115 P/12**
Al Falle	**63°35'N 137°32'W**
Water Licence: PM96-010	**1995**
South McQuesten Placer Map	**Site No. 144**

Operation/Location: During 1996 Al Falle mined a bar deposit on the Stewart River near the mouth of Partridge Creek.



Dredging operation on the right limit of the Stewart River near the mouth of Partridge Creek.

Equipment/Function: A floater dredge was used to process the gravels. An excavator fed the dredge plant. A Caterpillar D8 bulldozer was used to level tailings.

Ground Description: The gravel was 14 to 16 feet deep with some frozen lenses. Depth to bedrock is unknown.

Mining Cuts: Approximately 10,000 cubic yards were sluiced and 30,000 cubic yards were stripped in 1995.

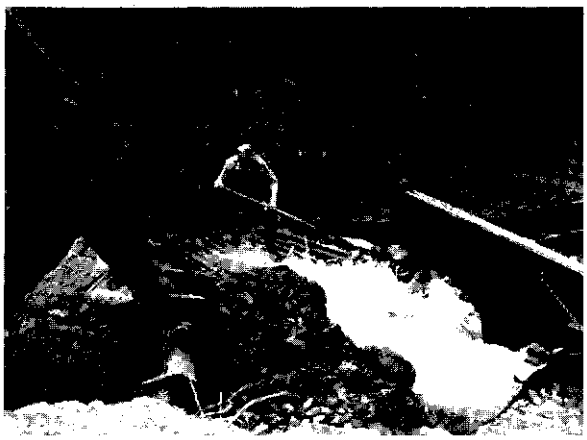
Water Supply and Treatment: Water was pumped from the dredge pond using a 3 inch Flyte pump. Effluent was discharge back into the dredge pond with no discharge to the Stewart River.

Gold: Flower gold, less than 120 mesh size, was recovered.

VAN BIBBER CREEK	**115 P/9**
Peter & Grace Tyerman	**63°39'N 136°22'W**
Water Licence: PM95-075	**1995, 1996, 1997**
Mayo Placer Area	**Site No. 145**

Operation/Location: Peter Tyerman and his family ran this operation on Van Bibber Creek, a tributary of Bear Creek in the McQuesten area. During 1995 and 1996 three miners worked one 12 hour shift per day. The 1997 season saw one miner stripping ground in preparation for mining in 1998.

Equipment/Function: A Komatsu bulldozer was used for stripping and pushing tailings. A JSW 70 excavator fed the box. The excavator and a Komatsu loader were also used for some stripping. A D7 Caterpillar bulldozer moved the sluice plant.



Peter Tyerman clearing rocks off the grizzly of his wash plant on Van Bibber Creek.

Wash Plant: A 20 foot long by 8 foot wide dump box and a wet grizzly fed material to a 2 foot wide by 24 foot long sluice run. Approximately 60 cubic yards of pay was processed per hour.

Ground Description: Depth to bedrock was approximately 65 to 75 feet. The ground consisted of 3 feet of top soil, 10 feet of glacial silt (clay and rock), 58 feet of unsorted gravel and rock overlying schist bedrock. The 12 feet of top soil and glacial silt was considered waste and the 53 to 63 feet of underlying unsorted gravels were sluiced.

Mining Cuts: In 1995 26,000 cubic yards were sluiced and 33,300 cubic yards were stripped. In

1996 10,300 cubic yards were sluiced and 21,800 cubic yards were stripped. In 1997 the ground was stripped in preparation for mining the following season.

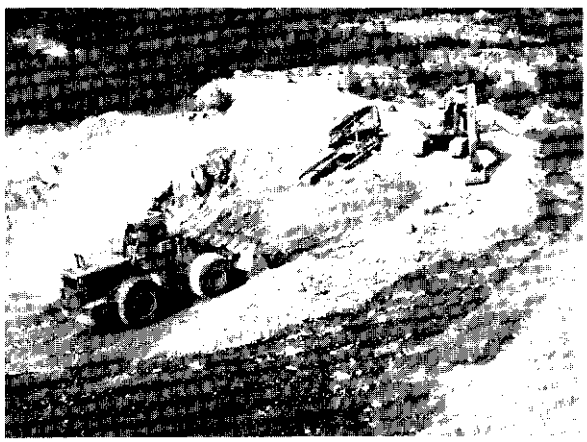
Water Supply and Treatment: Water was supplied from a diversion ditch and effluent was treated in a series of small instream settling ponds

Gold: Seventy percent of the gold recovered was coarse gold. Fineness varied from 840 to 860.

SEATTLE CREEK	**115 P/16**
Dan Klippert	**63 44'N 136 04'W**
Water Licence: PM95-025	**1995, 1996, 1997**
Mayo Placer Area	**Site No. 146**

Operation/Location: Dan Klippert and family continued mining on Seattle Creek, upstream of Morrison Creek, during 1995, 1996 and 1997.

Equipment/Function: Equipment used in the mining operation consisted of two 992 Caterpillar loaders, a 275 Michigan loader, a 235 Caterpillar excavator, a D6 Caterpillar bulldozer and a D8K Caterpillar bulldozer.



A 922 Caterpillar loader operated on Seattle Creek by Dan Klippert

Wash Plant: A 10 square foot grizzly classified material to 4 inch minus. A single run sluice box 3 feet wide by 20 feet long was lined with 18 feet of angle iron riffles.

Mining Cuts: Ground was sluiced during the 1995 and 1996 seasons. No information is available on the mining cuts. The 1997 program consisted of stripping and testing the ground.

Water Supply and Treatment: Water was pumped out of a tributary of Seattle Creek and effluent was settled in out of stream ponds in the Seattle Creek valley.

Gold: Gold recovered consisted of a mixture of coarse and fine.

GOODMAN CREEK	**115 P/16**
Kim Klippert	**63 55'N 136 12'W**
Water Licence: PM94-060	**1995**
Mayo Placer Area	**Site No. 147**

Operation/Location: Kim Klippert and his family tested ground in the Goodman Creek area, approximately two miles upstream from its confluence with the South McQuesten River.

Equipment/Function: A Caterpillar D8H bulldozer with ripper and U-blade was used to strip and push up gravels. A 266 Koering excavator was used to feed the sluice plant. A 275B Michigan loader removed tailings.

Wash Plant: A 4 by 8 foot screen deck classified material to ½ inch minus. Two sluice runs, 3 feet wide by 8 feet long, processed about 70 cubic yards per hour.

Ground Description: Depth to bedrock varied from 4 feet to 16 feet deep. Three to 4 feet of frozen mud lay on top of 4 to 14 feet of coarse gravel.

Mining Cuts: In 1995, 10,000 cubic yards were stripped and 2,500 cubic yards were sluiced for testing purposes.

Water Supply and Treatment: Due to a shortage of water, a recycling system was used. Water was pumped with an 8 by 6 inch Ford pump at a rate of 1000 igpm. Settling was instream.

Gold: Some ¼ ounce gold nuggets were recovered. The gold appears to be coarser at this location than the previous test site downstream. Fineness was 820.

Comments: Hematite and pyrite were found in the concentrate.

MURPHY'S PUP **115 P/16**
Harry Johnson **63°58'N135°02'W**
Water Licence: PM97-008 **1995, 1996, 1997**
Mayo Placer Area **Site No. 148**

Operation/Location: Harry and Albert Johnson mined on Murphy's Pup, a tributary of Haggart Creek.

Equipment/Function: A Hymack 580 excavator fed the plant. A 125 Clark loader with a 4½ yard bucket was used to haul tailings.

Wash Plant: A 36 inch diameter trommel with 1¼ inch openings fed material to a 2 foot by 8 foot sluice with punch plate and hydraulic riffles.

Ground Description: The ground was frozen and consisted of boulders up to 2 feet in diameter, gravel, sand and clay glacial outwash material. All of the material was sluiced to a depth of 30 feet. Bedrock was not reached.

Mining Cuts: One cut was mined in the creek in 1995 and 1000 cubic yards were processed. In 1996 one cut was mined adjacent to the creek and 700 cubic yards were processed. Testing of the ground in various places was done in 1997.

Water Supply and Treatment: In 1995 a recirculation pond was used. In 1996 water was pumped from a reservoir pond which had about 2 hours storage time. Effluent was settled in an out of stream pond 40 feet wide by 60 feet long.

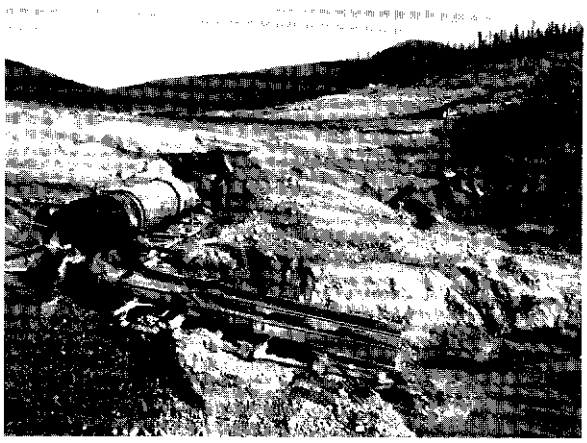
Gold: Fine, less than 100 mesh, and flat gold was recovered. A one gram nugget was also recovered. The fineness is 800 to 900.

HAGGART CREEK **106 D/4**
Dublin Gulch Mining Ltd. **64°02'N 135°51'W**
Water Licence: PM96-054 **1995, 1996, 1997**
Mayo Placer Area **Site No. 149**

Operation/Location: This operation on the lower end of Haggart Creek was run by Ron Holway and his son Fred. Two 10 hour shifts were worked by a crew of six to eight miners. One camp cook was also employed.

Equipment/Function: A D9 Caterpillar bulldozer and a D10 Caterpillar bulldozer were used to strip overburden and stockpile pay. Two 988B Caterpillar loaders fed the wash plant and another was used for removing tailings.

Wash Plant: The wash plant consisted of a wet hopper, a trommel 7 feet in diameter by 40 feet long, and a 30 foot long double run sluice. Material smaller than 1 inch passed through the trommel screen into a distributor box lined with 1½ inch angle iron riffles over Nomad matting which collected most of the gold. The sluice runs were lined with expanded metal and Nomad matting. The processing rate was 120 cubic yards per hour.



View upstream on Haggart Creek looking past the wash plant into the mine cut.

Ground Description: Depth to bedrock was 70 to 75 feet. Overburden consisted of 60 feet of gravel with minor silt and clay layers. The sluiced section consisted of 10 to 15 feet of gravel overlying blocky quartzite bedrock. The ground in this area was frozen.

Mining Cuts: In 1995 an area 700 feet by 300 feet was mined. In 1996 an area 600 feet by 250 feet was mined. In 1997, two cuts totalling approximately 600 feet by 250 feet was mined.

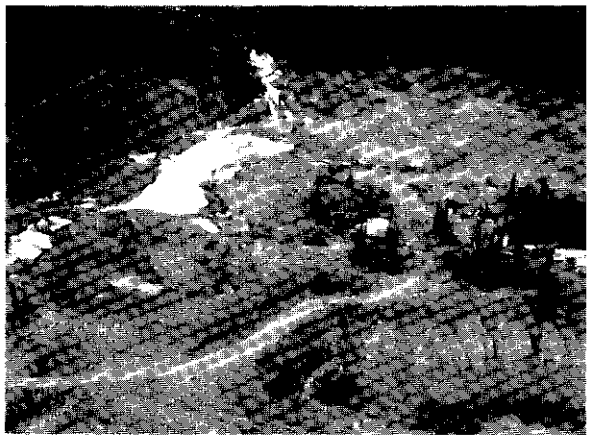
Water Supply and Treatment: A 12 by 12 inch pump, powered by a Caterpillar 3304 engine, was used to supply water from Haggart Creek to the trommel at a rate of 1800 igpm. Two out of stream settling ponds were used to treat the effluent.

Gold: The majority of the gold was fine in nature, with some small nuggets. The purity was 870 fine.

GILL GULCH	**106 D/4**
Ted Takacs	**64°01'N 135°52'W**
Water Licence: PM95-107	**1995, 1996, 1997**
Mayo Placer Area	**Site No. 150**

Operation/Location: Ted Takacs and family tested ground on Gill Gulch during 1997 and mined small cuts on Haggart Creek during 1995 and 1996.

Equipment/Function: A D8 Caterpillar bulldozer was used to push up pay in preparation for sluicing. A Trojan 4000 loader fed the trommel and removed tailings. A UH7 Hitachi excavator with a 5/8 yard bucket was also used to dig pay and feed the wash plant.



Overlooking the Takacs operation on Gill Gulch

Wash Plant: Material was fed to a grizzly and was screened to 2 inch minus. The classified pay was then fed to a 4 foot diameter trommel, 20 feet long. The material was processed in a single sluice run, 2 feet wide by 12 feet long, containing Hungarian riffles.

Ground Description: The ground consisted of gravel with boulders up to 2 feet in size. Bedrock is at a depth of about 8 feet.

Mining Cuts: In 1995 approximately 10,000 cubic yards were sluiced from a small cut in Haggart Creek. The ground in this location was stripped previously. In 1996 another cut was mined from Haggart Creek. Approximately 15,000 cubic yards were sluiced. No stripping was done during 1996. Work during 1997 consisted of a minimal amount of testing on Gill Gulch.

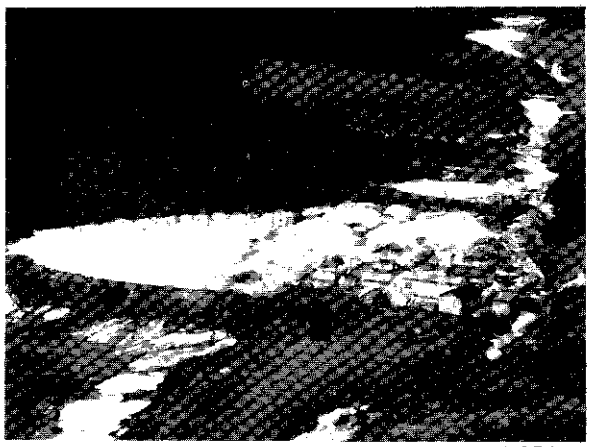
Water Supply and Treatment: Water was pumped from Haggart Creek using a 6 inch pump. Effluent was settled in out of stream settling ponds.

Gold: Gold recovered was fine to very fine.

FISHER GULCH	**106 D/4**
Roddy Ramey	**63°01'N 135°51'W**
Water Licence: PM97-015	**1995, 1996, 1997**
Mayo Placer Area	**Site No. 151**

Operation/Location: Rod Ramey and one helper continued mining Fisher Gulch, a right limit tributary of Haggart Creek upstream of Dublin Gulch.

Equipment/Function: A Caterpillar 225 excavator was used for testing and ditching. A D85A Komatsu bulldozer with ripper was used to strip overburden and stockpile pay. A FR20 Fiat Allis loader fed the wash plant. A Clark 275L loader removed tailings.



Spring of 1996 when ice covered Jack Frank's D85A Komatsu bulldozer (shown above arrow).

Wash Plant: A 6 foot by 5 foot grizzly classified material to 1 inch minus. Material was fed to a 2 foot by 16 foot single run sluice containing one inch angle iron riffles, flat riffles and expanded metal. Forty to 60 cubic yards per hour were processed.

Ground Description: Twelve to 15 feet of frozen glacial till overburden with silt and clay pockets covered 12 to 15 feet of oxidized coarse gravel. In places, depth to bedrock was 40 feet. The gravel and 1 to 4 feet of bedrock were sluiced.

Water Supply and Treatment: Water was gravity fed from an instream reservoir at a rate of 400 ipgm through 500 feet of 10 inch diameter pipe. Effluent was treated in a series of instream ponds averaging 75 feet wide by 120 feet long.

Gold: The gold was coarse; 30 mesh was the smallest size recovered. The fineness was 900.

HIGHET CREEK	**115 P/9**
Wilf's Contracting Ltd.	**63°44'N 136°07'W**
Water Licence: PM95-074	**1996, 1997**
Mayo Placer Area	**Site No. 152**

Operation/Location: Wilf Tuck and one helper ran this operation on the lower portion of Highet Creek, a tributary of Minto Creek. Mining occurred on the left limit bench.

Equipment/Function: A D8K Caterpillar bulldozer with a U-blade was used for stripping and stockpiling pay gravels. A 225 Caterpillar excavator fed the sluice plant.

Wash Plant: A wet hopper fed a grizzly, which fed a sluice run. Material was processed at a rate of 75 loose yards per hour.

Ground Description: Approximately 80 feet of silt, some of it frozen, overly 16 to 18 feet of pay gravels. Very little rock was encountered. Two old drifts were encountered in the bottom of the cut.

Mining Cuts: In 1996 26,000 cubic yards were stripped in preparation for sluicing the following season. In 1997 2000 cubic yards were sluiced from one cut.

Water Supply and Treatment: A Duetz diesel engine powered a 6 by 6 inch Monarch pump that supplied water from Highet Creek directly to the wash plant. An out of stream pond, 90 feet wide by 150 feet long by 20 feet deep, was used for settling effluent. Discharge from the pond was usually only by seepage.

Gold: Fine gold was recovered. Fineness was 800.

Comments: One side of the valley being mined is very steep with about 90 feet of overburden.

HIGHET CREEK	**115 P/9, 115 P/16**
Sasha Mining Ltd.	**63°43'N 136°08'W**
Water Licence: PM95-108	**1995, 1996, 1997**
Mayo Placer Area	**Site No. 153**

Operation/Location: Merrill Powers and his family continued their mining on Highet Creek, upstream of the canyon. Two 12 hour shifts were worked by a crew of five.

Equipment/Function: A D9 Caterpillar bulldozer was used for stripping and pushing up pay. The wash plant was fed by a UH30 Hitachi excavator. Two 769C Caterpillar rock trucks hauled overburden and pay, and a 988B Caterpillar loader removed tailings. The excavator and a 4 yard, 111M Marion dragline were used to dig the drain.

Wash Plant: A wet hopper 8 feet by 8 feet by 4 feet in dimension fed material to a 9 foot diameter trommel with ¾ inch screens. The 8 foot wide by 9 foot long top run of a reversing sluice box was lined with hydraulic riffles over astroturf. The bottom run was 8 feet wide by 24 feet long and was lined with expanded metal over astroturf. The processing rate was 150 cubic yards per hour.

Ground Description: Twenty feet of intermittently frozen black muck overlay 25 feet of mixed gravels and sand. Below this was 10 to 15 feet of pay gravels, consisting of sandy material with large rocks. All of the pay gravels and 4 to 5 feet of bedrock were sluiced.

Water Supply and Treatment: Water was supplied to the wash plant at a rate of 1500 igpm by an 8 by 10 inch Cornell pump powered by a 671 Detroit diesel engine. Effluent was discharged back into the creek and was settled in an instream pond downstream of the canyon.

Gold: Gold was generally fine and flat; 80% was smaller than minus 60 mesh. Fineness is 840.

Comments: The creek was diverted to the left limit to allow the mining to proceed.

HIGHET CREEK	115 P/16
Con and Kim Klippert	63°46'N 136°W
Water Licence: PM95-048	1995, 1996, 1997
Mayo Placer Area	Site No. 154

Operation/Location: Con Klippert and his son Kim mined on Highet Creek immediately downstream of Rudolph Gulch. The water licence for this operation is held by Jean Gordon.

Equipment/Function: Two Caterpillar D8H bulldozers were used for stripping and pushing gravels. A UH16 Hitachi excavator and a UH143 Hitachi excavator were used to fed the screen deck and to dig gravels. A 275B Michigan loader was used to remove tailings.

Wash Plant: A 5 foot by 12 foot double deck screen classified the pay which was then fed to a 8 foot wide by 9 foot long double run sluice box. A 3 foot wide by 40 foot long conveyor took away the oversize fraction from the screen deck.

Ground Description: The average depth to bedrock was 20 feet. The ground consisted of silt and gravel, with boulders up to 4 feet in diameter. Mining occurred in an area mined by oldtimers. The sluiced section included 10 to 12 feet of gravel and 2 to 3 feet of bedrock.

Mining Cuts: In each year approximately 45,000 cubic yards were sluiced and 22,000 cubic yards were stripped.

Water Supply and Treatment: Water was pumped from Highet Creek to the wash plant at a rate of 1500 to 2000 igpm. The effluent was settled out of stream.

Gold: The gold was generally smooth, rounded and bright in colour. Fineness was 820.

Comments: The operators found that with this method of mining the rehabilitation was most economical. Coarse tailings were placed back in the drain and fines were placed on top close to the plant.

HIGHET CREEK	115 P/16
Frank Erl	63°45'N 136°14'W
Water Licence: PM96-038	1995, 1996, 1997
Mayo Placer Area	Site No. 155

Operation/Location: Frank Erl continued mining this instream operation on his own. Mining occurred on a creek deposit on the upper reaches of Highet Creek above the mouth of Rudolph Pup.

Equipment/Function: A 950 Caterpillar loader fed the sluice box and removed tailing. A D8K Caterpillar bulldozer and a D8H Caterpillar bulldozer were used for stripping, pushing up pay gravels and levelling tailings.

Wash Plant: A wet grizzly 4 feet long by 5 feet wide fed three inch minus material to a single run sluice box 20 feet long by 2 feet wide. The sluice box was lined with angle iron riffles spaced 1¼ inches apart, expanded metal, and cocoa matting. The processing rate was 50 cubic yards per hour in 1995 and 1996 and 30 cubic yards per hour in 1997.

Ground Description: The depth to bedrock was generally 16 to 18 feet. The waste section varied from 10 to 12 feet and consisted of slide rock mixed with fine sand below 2 feet of blue clay. Underlying this was 6 feet of pay gravel with coarse boulders. The gravel sat on hard, wavey bedrock. The lower 6 feet of gravel and 2 feet of bedrock were sluiced.

Mining Cuts: One cut was mined each year. In 1995 and 1997 the cuts measured 400 feet long by 20 feet wide. The cut mined in 1996 was 400 feet long by 40 feet wide.

Water Supply and Treatment: A PVC and aluminum pipeline, 200 feet long and 6 inches in diameter, supplied water by gravity to spray bars on the wash plant at a rate of 600 igpm. Effluent was treated in a series of instream ponds. A small pre-settling pond was cleaned out regularly.

Gold: The gold was generally flat and smooth, a small percentage was somewhat angular.

Comments: The current water licence is a renewal of PM93-033.

RUDOLPH GULCH **116 P/16**
Howard and Elizabeth Lone **63°46'N 136°13'W**
Water Licence: PM94-101 **1995, 1996, 1997**
Mayo Placer Area **Site No. 156**

Operation/Location: Howard Lone ran this operation on Rudolph Gulch on claims owned by Jean Gordon. The water licence that this operation worked under is also held by Jean Gordon.

Equipment/Function: A cable operated D7 Caterpillar bulldozer was used to strip and loosen up the pay. A 3000 Trojan loader fed the wash plant and a 55 Michigan loader removed the tailings.

Wash Plant: Material was fed into a 10 by 12 foot dump box with spray bars. A grizzly classified material to 1½ inch minus, which was then fed into a 3 foot wide by 16 foot long sluice run with 2½ inch riffles over expanded metal and cocoa matting. The processing rate was about 50 cubic yards per hour.

Ground Description: The total depth to bedrock was 20 feet, consisting of 12 feet of gravel, and 8 feet of packed black sand and clay with boulders up to 3 feet in diameter. The ground was not frozen. The lower 8 feet was sluiced.

Mining Cuts: In each year an average of 6000 cubic yards were sluiced and 7000 cubic yards were stripped.

Water Supply and Treatment: In 1995 and most of 1996 and 1997 water was gravity fed from Rudolph Gulch with 250 feet of 6 inch lay flat hose reduced to the 4 inch spray bars. A small instream settling pond was cleaned out regularly. Toward the end of the 1996 and 1997 seasons water was recycled from the pond using a 6 inch Morris pump, powered by a 371 Detroit diesel.

Gold: Gold was mostly fine with only a small amount larger than 20 mesh. The purity was 830 fine.

MCINTYRE CREEK **115 P/9**
Martin Brand **63°43'N 136°07'W**
Water Licence: PM95-113 **1995, 1996**
Mayo Placer Area **Site No. 157**

Operation/Location: Martin and Stefan Brand tested an area in preparation for mining on McIntyre Creek, a left limit tributary of Minto Creek. The test area was located 1600 feet upstream from the mouth.

Equipment/Function: A UH172 Hitachi excavator with a ½ yard bucket was used for most of the work.

Wash Plant: Material was fed into a 10 foot by 10 foot hopper. A wet grizzly, 4 feet long by 5 feet wide, classified material to 2 inch minus. A single run sluice, 4 feet by 12 feet, was used to concentrate pay. Hydraulic riffles over Nomad matting were used for the first 6 feet and expanded metal over Nomad matting for the last 6 feet. Material was processed at a rate of 10 loose yards per hour.

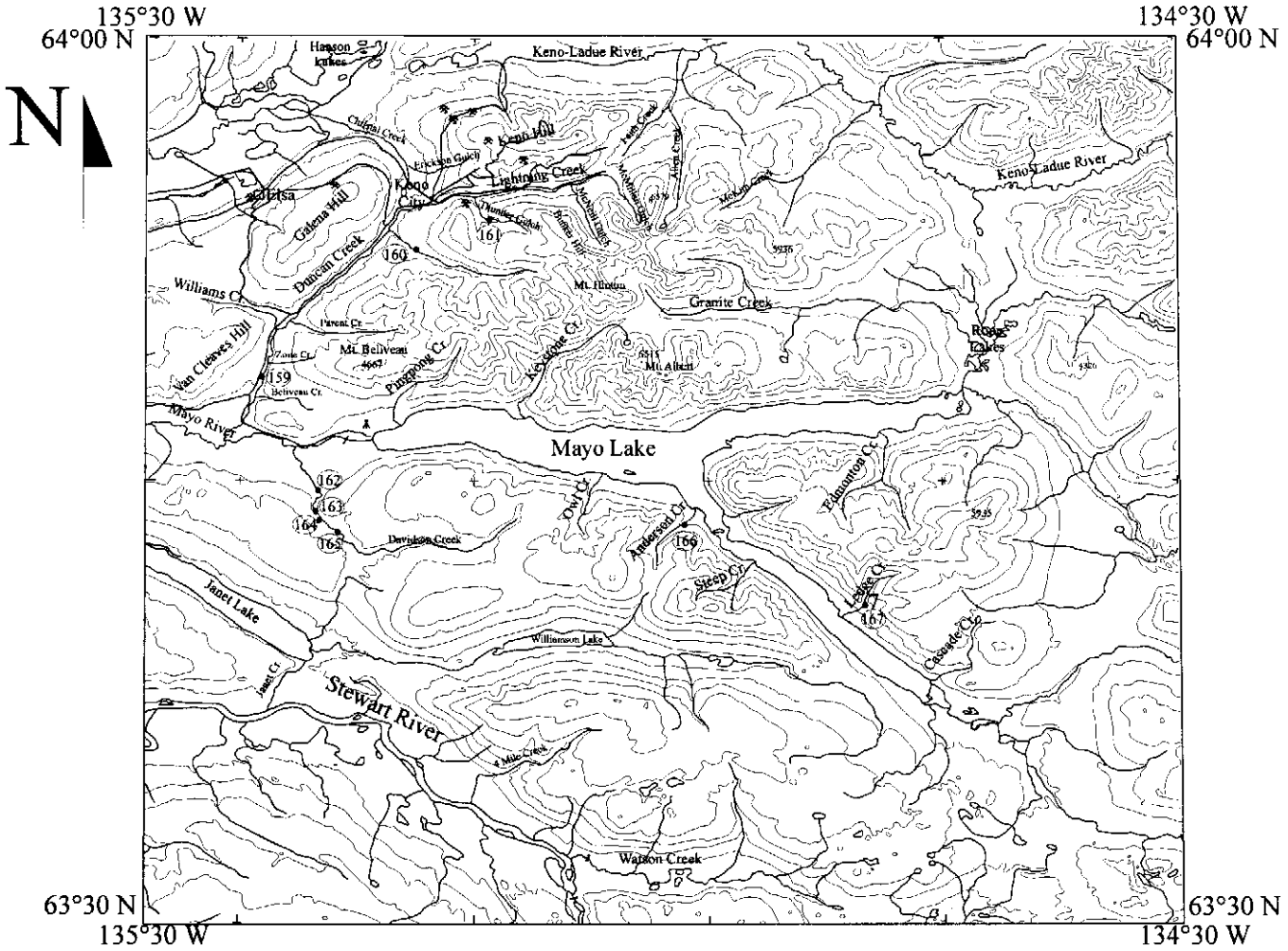
Ground Description: Depth of overburden ranged from 18 to 28 feet. The top 1 foot was black muck. Underlying this was approximately 12 feet of gravel with some thin clay layers and coarse gravels to bedrock. The bedrock surface was generally smooth. The entire stratigraphic section was sluiced for testing purposes.

Mining Cuts: In 1995, 3000 cubic yards were stripped. In 1996, 2000 cubic yards were stripped and 850 cubic yards were tested.

Water Supply and Treatment: Water was pumped from an instream reservoir using a 3 inch Kubota pump. Two out of stream settling ponds were used for the treatment of the effluent prior to it being discharged back into McIntyre Creek.

Gold: Gold was generally fine, flat and smooth.

Comments: The valley was steep and narrow in this vicinity. Mining cuts were back filled and the tailings piles were flattened out in preparation for shut down. No work was done during the winters.



Duncan Creek Placer Area

Yukon Territory

0 km 10

Secondary roads
Major roads

Rivers

Contours

Placer Operations

MINTO CREEK	115 P/9
George Lewans	63°42'N 136°07'W
Water Licence: PM94-056	1995, 1996
Mayo Placer Area	Site No. 158

Operation/Location: George Lewans and a helper ran this operation on the left limit of Minto Creek. One 11 hour shift per day was worked. All mining was done on the bench about 70 feet in elevation above Minto Creek and about 500 feet in distance from the creek.

Equipment/Function: A D8 Caterpillar bulldozer with a U-blade and ripper was used for stripping and pushing up pay. A 966 Caterpillar loader with a 4 yard bucket fed the wash plant and removed tailings.

Wash Plant: A tapered hopper 12 feet wide by 8 feet long provided material to a 5 foot by 7 foot shaker table. Punch plate on the shaker screened material to ½ inch and was fed to a 8 foot wide by 16 foot long sluice run, with a slope of 1½ inches per foot. Hydraulic riffles lined the top 6 feet and expanded metal lined the lower 10 feet, over Nomad matting.

Ground Description: Their was very little stripping that occurred at this operation. The top layer, consisting of sandy material about one foot thick, was pushed off to the side. Below this was 8 to 15 feet of semi-coarse gravels with very few boulders over 1 foot in diameter. Within this layer were pockets of coarse gravels. All of the gravels were sluiced. Broken bedrock was rarely encountered below the gravels but rather more sand. No permafrost was encountered.

Mining Cuts: In 1995 30,000 cubic yards were sluiced and 10,000 cubic yards were stripped. In 1996 13,000 cubic yards were sluiced and 3000 cubic yards were stripped.

Water Supply and Treatment: A 6 inch Cornell pump, powered by a Deutz diesel engine at idle speed, supplied water from Minto Creek at the rate of about 800 igpm. Effluent was discharged into a tailings pond that, due to the porous nature of the material underneath, released no discharge to the creek.

The final restoration work done by George Lewans at his Minto Creek operation.

Gold: Most of the gold was very fine, with only 5% larger than 10 mesh.

Comments: All mining was done on the bench, therefore there was no disturbance to the creek. All tailings piles were contoured and the sandy overburden was spread over the worked area. The areas mined in 1995 and 1996 were seeded with
grass.

DUNCAN CREEK	105M/13, 105M/14
Duncan Creek Golddusters	63°47'N 135°30'W
Water Licence: PM94-093	1995, 1996, 1997
Duncan Creek Placer Area	Site No. 159

Operation/Location: Frank Taylor and his family continued mining this operation located three miles upstream from the mouth of Duncan Creek. One 11½ hour shift was worked by the Taylor's and two to five additional mine workers.

Equipment/Function: The equipment used at the mine consisted of two Hitachi UH30 excavators with 5 yard buckets, a D8H bulldozer with ripper, a 988B Caterpillar loader with a 7 yard bucket and three Caterpillar 769C 35 ton rock trucks. The equipment was used primarily for stripping, hauling and digging paydirt, loading and hauling tailings and buildings settling ponds.

Wash Plant: Material was fed into a modified, wet vibrating grizzly feeder, 4 feet wide by 17 feet long. A flume from the grizzly transported material to the screen deck. A nugget trap was

used for the gravel discharged by the screen deck and only the 5/8 inch minus fraction entered the actual sluicing area. The sluicing area consisted of two 4 foot wide runs with 1 inch angle iron riffles. The material was then distributed to four 4 foot wide sluice runs with expanded metal riffles.

Ground Description: The average total depth to bedrock was 50 feet. Overburden varied from as little as 5 feet thick to as much as 30 feet thick with the average depth around 15 feet. Overburden consisted of seasonally frozen glaciolacustrine clay and till. The sluice section varied from as little as 20 feet thick to as much as 45 feet thick with an average of 25 feet. It comprised thawed gravels with boulders up to 8 feet in diameter. Iron and manganese staining was common. Mining occurred below the creek level. The channel was defined by a sharp relief in the bedrock. The pay channel varied in width from 35 feet to 90 feet. Bedrock was predominantly schist; small quartz veins were common.

Aerial view of the Taylor family's operation looking upstream on Duncan Creek.

Mining Cuts: In 1995 one cut plus a fraction of another were mined for a total of 100,000 cubic yards sluiced. In 1996 one cut was mined for a total of 100,000 cubic yards sluiced. In 1997 one cut was mined and over 100,000 cubic yards were sluiced. The cubic yards measured are bank yards not loose yards. Overburden was stripped off and stockpiled mechanically.

Water Supply and Treatment: A 10 inch by 10 inch Gorman Rupp pump powered by a Caterpillar 3306 engine supplied water to the wash plant at a rate of 2000 igpm. Due to the conditions in the bedrock drain much of the settling occurred prior to the effluent entering the out of stream ponds.

Gold: Generally the gold was thin, flat and fairly smooth. Most of the gold ranged between -10 to +60 mesh size. A few nuggets were recovered. The colour of the gold is usually bright but some of it was stained. The average fineness is 800. The coarser gold tended to have a higher fineness.

Comments: The 1997 cut contained a shaft that was sunk to bedrock. Other oldtimer's shafts are nearby.

UPPER DUNCAN CREEK	**105 M/14**
Bardusan Placers Ltd.	**63°53'N 135°20'W**
Water Licence: PM94-078	**1995, 1996, 1997**
Duncan Creek Placer Area	**Site No. 160**

Operation/Location: Hans Barchen and his son Claus began mining on Upper Duncan Creek in 1995.

Equipment/Function: An Hitachi UH20 excavator with a 2 yard bucket was used for stripping and excavating pay gravels. A D7 Caterpillar bulldozer was also used for stripping. Two Caterpillar loaders, a 980 and a 988, were used to feed the plant and to remove the tailings.

Wash Plant: A 10 foot by 20 foot Derocker fed a 3 foot by 24 foot long, double run sluice box. Eighty to 100 cubic yards of material was processed per hour, using water at a rate of 1100 igpm.

Ground Description: The area mined appears to be an outwash fan parallel to the canyon. The gravels are sandy, contain little clay and are not frozen. Some silt beds are present. Approximately 60% of the gravel is smaller than 2 inches in diameter. Some large boulders are found near the bedrock contact.

Mining Cuts: In 1995 a cut 600 feet long by 110 feet wide was mined for a total of 35,000 cubic yards sluiced and 35,000 cubic yards stripped. In 1996 a cut 450 feet long by 150 feet wide was mined for a total of 40,000 cubic yards sluiced and 52,000 cubic yards stripped. In 1997 a cut

600 feet long by 130 feet wide was mined for a total of 32,000 cubic yards sluiced and 64,000 cubic yards stripped.

Water Supply and Treatment: A diversion brought water from the creek to the pump pond. From this water was supplied to the wash plant by a 6 inch Flygt pump powered by a 70 kW Caterpillar generator. Effluent was treated in a pond 140 feet long by 80 feet wide and, on average, 12 feet deep.

Gold: The gold is generally flat and fine. Approximately 80% was smaller than 12 mesh. Fineness was 810.

THUNDER GULCH/ LIGHTNING CK. 105 M/14
Bardusan Placers Ltd. 63°54'N 135°14'W
Water Licence: PM96-062 1995, 1996, 1997
Duncan Creek Placer Area Site No. 161

Operation/Location: This operation is located on Lightning Creek and its left limit tributary, Thunder Gulch.

View up Tundra Pup towards Mount Hinton overlooking the Barchan family's operation.

Equipment/Function: A D7 Caterpillar was used to perform rehabilitation work in 1996.

Wash Plant: There was no sluicing at this site during 1995, 1996 and 1997.

Ground Description: The ground in this area consists of glacial moraine and slide material of poorly sorted clay, sand, angular stream gravel and stones. Bedrock is poorly fractured massive greenstone and Keno Hill quartzite.

Mining Cuts: No mining activity occurred.

Comments: Water licence PM93-044 was held previously. Bardusan Placers Ltd. moved their operation to Upper Duncan Creek in 1995.

DAVIDSON CREEK 105 M/11
David and Sarah Laurenson 63°43'N 135°25'W
Water Licence: PM95-002 1997
Duncan Creek Placer Area Site No. 162

Operation/Location: During 1997 the Laurensons mined old tailings below the canyon on Davidson Creek. This operation worked under the water use licence held by J. Paul Rivest.

Equipment/Function: A D8 Caterpillar bulldozer was used to push up gravels and a Terex 7251 loader fed the plant.

Wash Plant: Material was fed to a 4 foot by 14 foot double screen deck and then to a three run sluice lined with Hungarian riffles and expanded metal.

Ground Description: Old tailings were being mined.

Gold: Very fine gold was recovered.

DAVIDSON CREEK 105 M/11
J. Paul Rivest 63°43'N 135°25'W
Water Licence: PM95-002 1995, 1996, 1997
Duncan Creek Placer Area Site No. 163

Operation/Location: The Rivest family tested ground on Davidson Creek in 1995. In 1996 and 1997 they mined on the discovery claim above the canyon with Campbell Arkinstall.

Equipment/Function: A Fiat Allis 31 bulldozer with U-blade and ripper was used for stripping and stockpiling the pay gravels. A Hough 120 loader was used to move tailings. A Hy-Hoe 6000TT excavator fed the plant.

Wash Plant: Material was fed into a trommel 7 feet in diameter and 55 feet long. The 1½ to ½ inch material was fed into a 4 by 40 foot sluice run with Hungarian riffles. The ½ inch minus

material was processed in a 16 by 11 foot oscillating sluice run with expanded metal over Nomad matting.

Ground Description: The creek deposit consists of 4 to 6 feet of fine gravels with large boulders overlying rotten schist bedrock or blue-black clay in some areas. The bench deposit consists of 3 to 6 feet of black muck overburden, 2 to 10 feet of clay with some gravels and a layer of fine gravels with large boulders overlying schist bedrock. The last 2 feet of gravels and about 1 to 2 feet of bedrock are processed.

Mining Cuts: The ground was tested in 1995. In 1996, approximately 7500 cubic yards were sluiced and 11,500 cubic yards stripped. In 1997, three cuts were mined; volume not available.

Water Supply and Treatment: A 6 inch Gorman Rupp pump, powered by a Lister diesel, supplied 1500 igpm from an instream pond to the wash plant. The effluent was discharged back into the creek and the creek was diverted through the settling ponds.

Gold: The gold was flat and chunky, roughly oatmeal size. Some nuggets of 3 to 4 grams were recovered. Fineness was 810 to 860.

DAVIDSON CREEK 105 M/11
Brandon Chaffee 63°43'N 135°25'W
Water Licence: PM94-077 1995
Duncan Creek Placer Area Site No. 164

Operation/Location: Brandon Chaffee operated a small suction dredge, a few hours a day, during 1995. This operation was located above the canyon on Davidson Creek.

Wash Plant: The dredge was located in an out of stream pond, with a 3 inch suction hose placed in the creek. A 1 foot by 4 foot single run sluice box washed the creek gravels.

Mining Cuts: Approximately 10 to 20 cubic yards were processed.

Water Supply and Treatment: An existing trench was used for out of stream settling.

DAVIDSON CREEK 105 M/11
Rivest Contracting 63°43'N 135°23'W
Water Licence: PM96-077 1995
Duncan Creek Placer Area Site No. 165

Operation/Location: In 1995 the Rivest family tested the ground above the canyon on Davidson Creek.

Equipment/Function: Testing was done with a Hy-Hoe 6000TT excavator and a D6 Caterpillar bulldozer. Several test holes were dug along the creek.

Wash Plant: A 6 foot by 18 inch test sluice box processed the material.

Ground Description: Coarse gravels 8 to 12 feet thick overly wavy, decomposed schist bedrock. About 1½ feet of bedrock and 1½ feet of overlying gravels were sluiced.

Water Supply and Treatment: A 3 inch Honda pump supplied water from Davidson Creek. Waste was discharged back into pits. The creek was diverted through downstream settling ponds.

Gold: Gold was generally flat, oatmeal size with some nuggets up to ¾ inch.

ANDERSON CREEK 105 M/11
Manfred & Margrit Wozniak 63°43'N 135°03'W
Water Licence: PM97-006 1995, 1996, 1997
Duncan Creek Placer Area Site No. 166

Operation/Location: This operation is located on Anderson Creek, a tributary on the south shore of Mayo Lake. The Wozniak family continued mining the creek channel above the alluvial fan.

Equipment/Function: A D7 Caterpillar bulldozer was used to strip, push up pay, and rip bedrock. A Trojan loader fed the wash plant and stacked the tailings.

Wash Plant: A dump box 10 feet long by 4 feet wide fitted with a dry grizzly with horizontal bars classified material to 2 inch minus. A single run sluice 20 feet long by 3 feet wide was lined with Hungarian riffles and Nomad matting.

Ground Description: The average depth to bedrock was 35 feet. Black muck overburden was consistently about 1 foot thick. Underlying this was a mix of glacial gravels and angular rock with layers of clay.

Mining Cuts: Mining during 1995, 1996 and 1997 advanced about 200 feet upstream.

Water Supply and Treatment: An instream reservoir contained sufficient water to be utilized at the wash plant at a rate of 500 igpm. Excess water from the reservoir was allowed to flow over and between the boulders comprising the dam. Effluent was settled in two out of stream ponds which discharged to the delta fan before entering Mayo Lake.

Gold: The gold was coarse and angular, some with quartz attached. Fineness was 870.

Comments: During the 1997 season Anderson Creek was unstable in an area undisturbed by mining activity. The creek was washing out a clay layer and causing the banks to slump. This caused high levels of clay to be deposited in the creek above the mining activity. The slumping ceased in July of 1997.

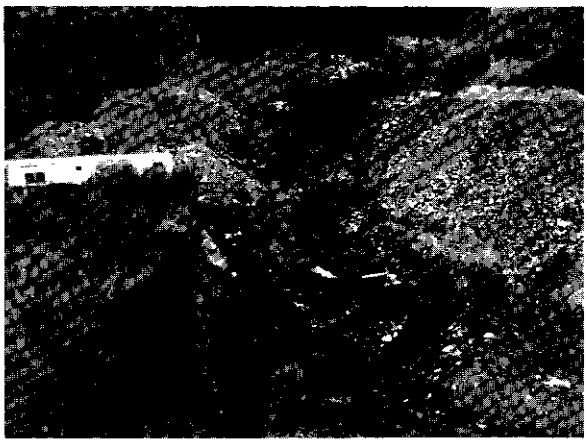
LEDGE CREEK **105 M/10**
B. Liske & R. Barchen **63°42'N 134°47'W**
Water Licence: PM94-069 **1995, 1996, 1997**
Duncan Creek Placer Area **Site No. 167**

Operation/Location: Ralph Barchen mined a left limit bench and old channel deposits at the upper end of the Ledge Creek delta, located on Mayo Lake, on Bert Liske's property.

Equipment/Function: A D9H Caterpillar bulldozer was used for stripping and stockpiling of material. A 988B Caterpillar loader fed the box and removed tailings.

Wash Plant: A Derocker 10 feet wide by 17 feet long fed minus 2 inch material to an under current sluice run 16 feet long by 4 feet wide. The processing rate was 100 to 120 cubic yards per hour.

Ground Description: The bench deposit consisted of 30 feet of coarse gravels overlain by 40 feet of sand and mud. All of the coarse gravels were sluiced. The channel deposit consisted of 15 feet of fine to medium size gravels overlain by 10 feet of slide rock. Approximately 90% of the gravels were processed.



Ralph Barchen mining upstream on Bert Liske's property on Ledge Creek.

Mining Cuts: Approximately 80,000 to 110,000 cubic yards were sluiced in each of the three years and 10,000 to 20,000 cubic yards were stripped.

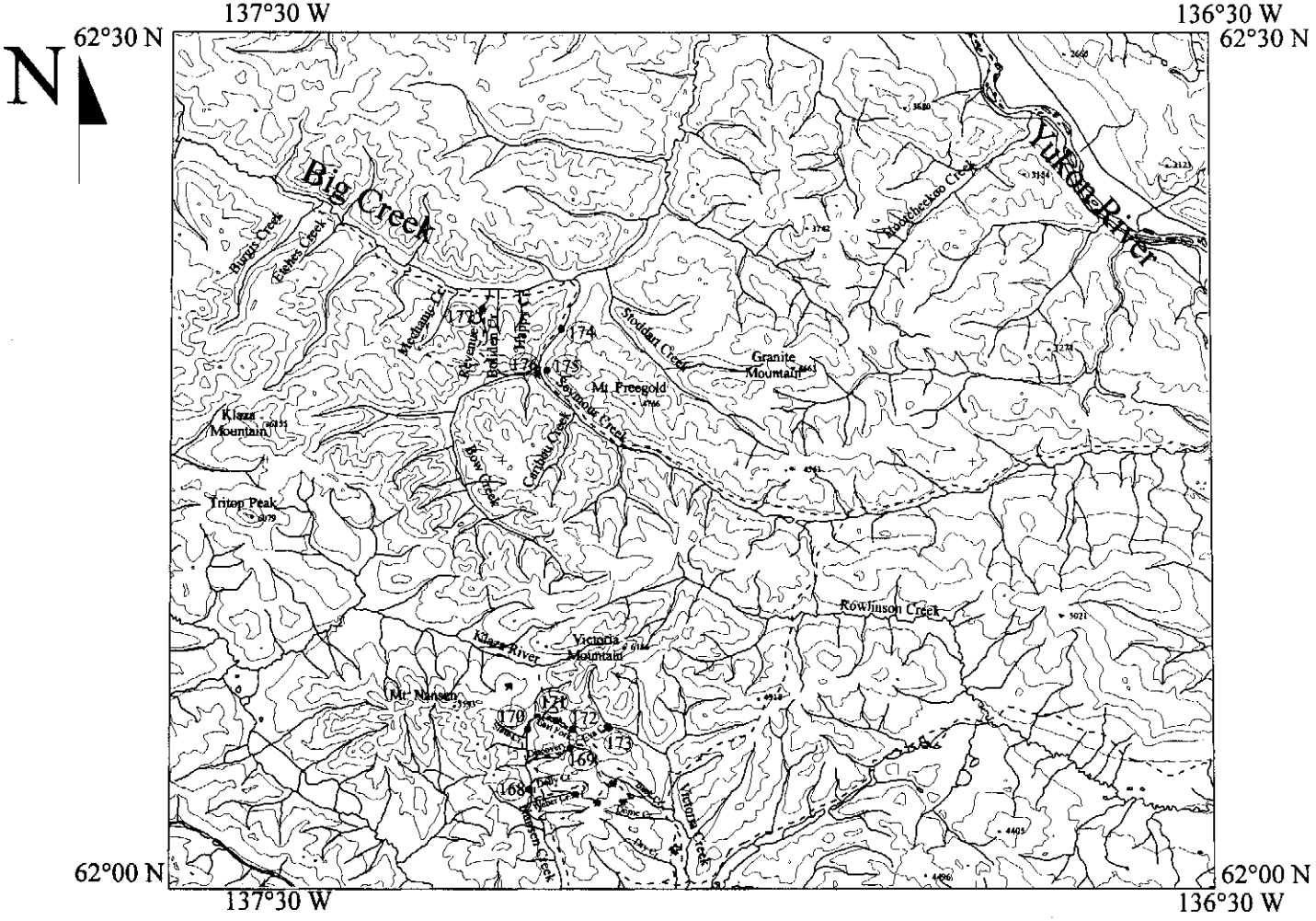
Water Supply and Treatment: An 8 by 8 inch Gorman Rupp trash pump powered by a D311 Caterpillar engine pumped water to the wash plant at a rate of 1000 igpm. A large out of stream settling pond produced no surface discharge.

Gold: Most of the gold from the bench deposit was coarse and rust stained. A 2½ ounce nugget was recovered. Gold from the channel deposit was finer. Fineness ranged from 790 to 800.

NANSEN CREEK **115 I/3**
B. Johnson and L. Johnson **62°04'N 137°14'W**
Water Licence: PM96-073 **1995, 1996, 1997**
Big Creek-Nansen Placer Area **Site No. 168**

Operation/Location: Brian and Loren Johnson took over this area in 1994 from BYG Natural Resources. The operation is located on the left limit of Nansen Creek.

Equipment/Function: A D9H Caterpillar bulldozer was used for stripping and pushing up pay material. A 980C Caterpillar loader and a 966



Big Creek-Nansen Placer Area

Yukon Territory

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Secondary roads
Major roads
Rivers
Contours
Placer Operations

loader were used to stockpile pay at the sluice box and remove tailings.

Wash Plant: Material was fed to the sluice box at a rate of approximately 100 loose cubic yards per hour. Pay entered a 6 foot by 10 foot hopper then continued into a 7 foot by 40 foot trommel lined with large angle iron scrubbers. The classified material entered four sluice runs 3 feet wide.

Ground Description: The ground was found to be frozen for the most part. Approximately 10 feet of overburden was stripped off exposing the pay zone.

Water Supply and Treatment: Water was acquired from Nansen Creek at a rate of up to 900 igpm using a 10 by 12 inch Cornell pump powered by a 3208 Caterpillar engine. The effluent was treated in large out of stream settling ponds before being discharged by way of a long drain into Nansen Creek.

Gold: Most of the gold was in the 40 mesh range. Fineness was 800.

DISCOVERY CREEK **115 I/3**
Bill Trerice **62°05'N 137°11'W**
Water Licence: PM94-070 **1995, 1996, 1997**
Big Creek-Nansen Placer Area **Site No. 169**

Operation/Location: Bill Trerice's operation is located at the confluence of Discovery Creek and Willow Creek. The years of 1995 and 1997 involved two miners operating a single 10 hour shift and 1996 involved three miners.

Equipment/Function: A D355A Komatsu bulldozer was used for stripping and pushing up pay material. A 966 Caterpillar loader was utilized to remove tailings and a 125B Case backhoe was used to feed the sluice plant and dig ditches when required.

Wash Plant: Pay material was fed at a rate of up to 40 loose cubic yards per hour into a 7 foot by 12 foot hopper/grizzly. A screen deck 4 feet wide by 8 feet long fed ½ inch minus material into a single sluice run 4 feet wide by 20 feet long.

Ground Description: Depth of overburden varied from 4 feet to 8 feet over the three mining seasons. The pay layer consisted of approximately 6 to 8 feet of silty gravels which were sluiced along with a thin layer of decomposed bedrock.

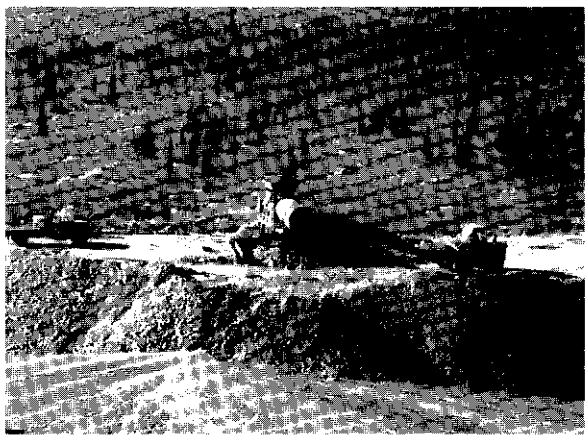
Mining Cuts: In 1995 a single 6 foot by 100 foot cut was mined and in 1996 two mining cuts were processed. The first was 100 feet by 400 feet and the second was 75 feet by 250 feet. The year 1997 marked the final mining cut for this property. A section 40 feet wide by 80 feet long was sluiced.

Water Supply and Treatment: Water was acquired at a rate of 1200 igpm from a recirculation pond, using a 6 by 6 inch Monarch pump powered by an electric motor. The effluent was treated in a series of out of stream settling ponds situated on the left limit of Discovery creek.

Gold: Most of the gold recovered was described as being fine. Fineness of the gold was 825.

NANSEN CREEK **115 I/3**
Ted Tullis **62°06'N 137°13'W**
Water Licence: PM95-056 **1995, 1996, 1997**
Big Creek-Nansen Placer Area **Site No. 170**

Operation/Location: This operation is located on upper Nansen Creek, just below the confluence with the east fork of Nansen Creek. During the years of 1995 and 1996, two miners and one cook shared double shifts and in 1997 there were three miners and one cook.



Cross valley view of Ted Tullis' 6 foot trommel operating on Nansen Creek.

Equipment/Function: A D355A Komatsu bulldozer was used for stripping and stockpiling. A 980B Caterpillar loader fed the sluice box and removed tailings. An R20 Euclid rock truck was also utilized to haul waste material and strippings.

Wash Plant: Pay material was fed at a rate of approximately 35 to 40 loose cubic yards per hour into a trommel 6 feet in diameter by 24 feet long, lined with 6 feet of ½ inch punch plate. The trommel was fed by a 12 cubic foot hopper and track feeder. The classified pay entered a single 4 foot by 8 foot live bottomed box which then dumped into a sluice run 24 inches wide by 16 feet long and lined with expanded metal.

Ground Description: The total depth varied from 15 to 20 feet of frozen ground. An 8 foot layer of black muck covered an 8 foot layer of pay gravels. This lay above approximately 5 feet of barren gravel clay and 1 foot of boulder clay or decomposed bedrock. There was no gold in the boulder clay. The entire section between the black muck and gravel clay was sluiced.

Mining Cuts: In 1995 two cuts were mined totalling approximately 40,000 cubic yards. In 1996 one cut totalling approximately 30,000 cubic yards was mined and in 1997, 55,000 cubic yards were mined from a single cut.

Water Supply and Treatment: Water was acquired from an instream reservoir on Nansen Creek utilizing a 6 by 6 inch, 20 horsepower electric pump delivering up to 600 igpm. Effluent was treated in out of stream settling ponds on the left limit within the mined out cuts.

Gold: Mesh sizes of the gold mined were 1% +10, 19% -30 and 80% +30. Fineness was 790.

NANSEN CREEK **115 I/3**
Jack Coghlin **62°06'N 137°12'W**
Water Licence: PM94-068 **1995, 1996, 1997**
Big Creek-Nansen Placer Area **Site No. 171**

Operation/Location: This operation is run by Jack Coghlin and Beryl Potter on the east fork of Nansen Creek. The operators have been mining this area since 1995. Personal on site included two miners and three persons in camp. Workers operated on a 10 hour shift.

Equipment/Function: The operators utilized a D7 and a D9 Caterpillar bulldozer to perform various functions while mining. A Michigan 4 yard loader and a Trojan 6 yard loader was use to remove tailings and feed the sluice box. A JCB 805B excavator was also used to feed the sluice hopper as well as clean out the settling ponds and construct bypass channels.

A D9 bulldozer pushing up pay material while a JCB excavator feeds the trommel at Jack Coghlins' operation.

Wash Plant: A 6 foot by 24 foot trommel fitted with a ¾ inch screen was used to process the pay gravels. The classified gravels entered a single sluice run utilizing pulsating riffles. Feed rate was in the order of 40 loose yards per hour.

Ground Description: The stratigraphic section of the mining area varied considerably. On average the overburden depth was from 4 to 6 feet overlaying a pay section of gravels which were approximately 100 feet wide and on average 4 feet deep.

Mining Cuts: Several mining cuts were made over the three years. The amount of pay material processed averaged approximately 18,000 to 20,000 cubic yards per year.

Water Supply and Treatment: Water was supplied to the sluice from an instream polishing pond using a 6 inch Flygt hydraulic pump. Waste water was treated utilizing one presettling pond, one main settling pond and a polishing pond for insurance.

Gold: Almost all the gold was very fine and the miners encountered no nuggets. Fineness was 860.

DISCOVERY CREEK 115 I/3
Rick Anderson 62°05'N 137°10'W
Water Licence: PM95-007 1996, 1997
Big Creek-Nansen Placer Area Site No. 172

Operation/Location: Rick Anderson was mining at the headwaters of Discovery Creek during 1996 and 1997.

Ground Description: The average width of the valley is approximately 200 metres. Depth of the black muck varies but is generally 1 metre overlying approximately 2 to 3 metres of silty gravel. Beneath this is the layer of pay gravels (thickness is not available).

Water Supply and Treatment: Water was acquired from Discovery Creek and effluent was treated in a series of out of stream settling ponds. Discovery Creek was diverted around the ponds during high water events.

VICTORIA CREEK 115 I/3
John Trout 60°05'N 137°08'W
Water Licence: PM94-102 1995, 1996, 1997
Big Creek-Nansen Placer Area Site No. 173

Operation/Location: John Trout's operation is located on the right limit of Victoria Creek at its confluence with Eva Creek. During the last three mining seasons there were up to two miners working a single 10 hour shift.

Equipment/Function: A D8H Caterpillar bulldozer was used to strip and push up pay material. A 966C Caterpillar loader fed the sluice box and removed coarse tailings.

Wash Plant: A Honda motor powered a small shaker wash plant. Pay material was fed into a hopper at a rate of up to 25 cubic yards per hour. It then crossed a shaking table 30 inches wide by 8 feet long lined with 1 inch punch plate before entering an 18 foot long sluice run. The first 3 feet of the run was lined with 2 inch riffles, followed by 3 feet of 1 inch riffles. Four feet of slick plate widened the run from 2 to 4 feet and was followed by 8 feet of 1 inch expanded metal. In 1996 a horizontal screening deck was added in order to increase the yardage throughput.

Ground Description: Approximately 10 feet of black muck lay over a pay streak roughly 4 to 6 feet thick. In places it was necessary to remove approximately 3 feet of gravel waste material. The pay section contained brown clay and washed boulders. The material beneath this layer contained no gold and the operator did not probe to bedrock.

Mining Cuts: In 1997, two and a half cuts were mined, the largest being approximately 250 feet long by 50 feet wide.

Water Supply and Treatment: Water was acquired from an instream reservoir on Victoria Creek. It was pumped to the wash plant at a rate of 400 igpm by a Berkeley pump powered by a 4-cylinder Allis Chalmers gasoline engine. Waste water was treated in several out of stream settling ponds.

Gold: Approximately 85 % of the gold was less than 14 mesh, the remaining 15% contained a few nuggets some of which contained quartz. Fineness was 770.

SEYMOUR CREEK 115 I/6
George Lewans 62°20'N 137°11'W
Water Licence: PM96-026 1997
Big Creek-Nansen Placer Area Site No. 174

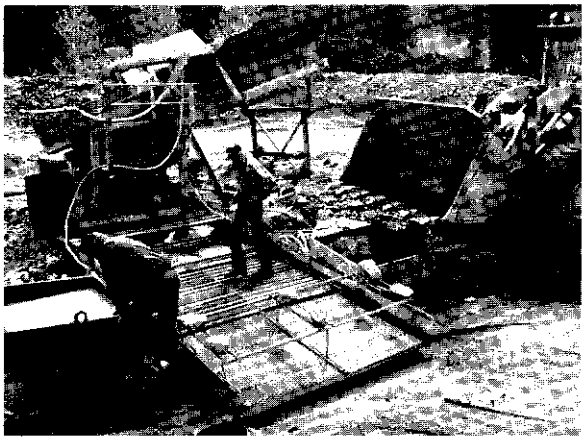
Operation/Location: George Lewans set up on the left limit of Seymour Creek, about three kilometres below Bow Creek. Two people worked a single shift in 1997.

Equipment/Function: A D8 Caterpillar bulldozer with U-blade and ripper was used to remove overburden, stockpile pay material and level tailings. A 966 Caterpillar loader equipped with a 4 cubic yard bucket fed the washplant and removed tailings.

Wash Plant: A dump hopper fed a sloped shaker screen 4 feet wide by 7 feet long, lined with ½ inch punch plate. The classified material entered a sluice run 8 feet wide by 16 feet long. Two feet of slick plate was followed by a 9 inch catch trough 3 inches deep, followed by 2 feet of slick plate and another catch trough. Each trough

contained two water pipes with holes bored on the underside to lightly lift and loosen the washed material. Below this was 5 feet of "Australian" hydraulic riffles consisting of 1 inch square tubing on edge every 4 inches, with a 1 inch upright flat bar between each tube. A 5 foot section of expanded metal over Nomad carpet completed the sluice run. The processing rate was roughly 40 cubic yards per hour.

Ground Description: Roughly 3 feet of black muck covered a thin layer of white ash and about 10 feet of mixed fine and coarse gravel over bedrock. The bedrock was muddy and decomposed. The lower 3 feet of gravel and 6 inches of bedrock were sluiced.



A clean-up at George Lewans' on Seymour Creek.

Mining Cuts: About 12,000 cubic yards of material was stripped from one large cut, and 24,700 yards were sluiced. Some stripping also took place on a left limit bench.

Water Supply and Treatment: Roughly 400 igpm was delivered from an out of stream sump using a 4 inch pump powered by a 28 horsepower diesel engine. Waste water was treated in a long series of out of stream settling ponds.

Gold: Most of the gold was very fine, bright and rounded. Five percent was greater than 12 mesh, tarnished, and had quartz attached. The fineness was 840.

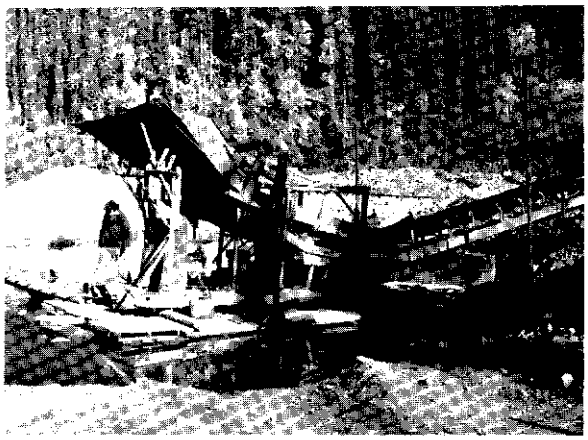
Comments: The cut mined in 1997 was reclaimed by levelling the tailings, and spreading fine and organic material over the re-contoured base.

SEYMOUR CREEK **115 I/6**
Martin Brand **62°18'N 137°13'W**
Water Licence: PM96-046 **1997**
Big Creek-Nansen Placer Area **Site No. 175**

Operation/Location: This operation was located on the right limit of Seymour Creek, just upstream of the confluence with Bow Creek. Martin and Stephan Brand worked single shifts in 1997.

Equipment/Function: An Hitachi UH172 excavator with a 1.2 cubic yard bucket was used to feed the wash plant and mechanically clean the dredge pond. A D8H Caterpillar bulldozer was hired to strip the mining cuts.

Wash Plant: The operators constructed a raft from barrels and logs to float their shaker wash plant. A hopper narrowing from 11 feet to 6 feet fed a 10 foot by 6 foot screen deck constructed from ¾ inch punch plate. Material was processed at a rate of 25 cubic yards per hour. The classified material was channelled into a sluice run 8 feet wide by 9 feet long. Two feet of slick plate was followed by a boil box, 1½ feet of slick plate, another boil box, and 2 feet of hydraulic riffles. A 13 horsepower gas engine powered the shaker and a 12 kilowatt generator powered the conveyor/stacker assembly.



Martin and Stephan Brand set up on Seymour Creek in 1997.

Ground Description: Roughly 2 feet of black muck overlay 1 foot of silt and sand. Underlying this was 2 feet of gravel which covered about 10 feet of gravel with boulders up to 5 feet in diameter. Underlying the gravels was both solid and broken

bedrock. The pay section consisted of the 10 feet of boulder-laden gravels.

Mining Cuts: Overburden was stripped from a site on the left limit of Seymour Creek about one kilometre downstream of Bow Creek, but persistent frost prevented the excavation of pay material. A cut was then stripped above Bow Creek on the right limit of the broad valley, where the ground was unfrozen. A dredge pond was excavated and a limited amount of material was processed as the operators set up for their first season of operation.

Water Supply and Treatment: Initially a gasoline engine powered a 4 inch pump which delivered 400 igpm of water. A 3 inch pump was added to increase the supply to about 500 igpm. No discharge was visible from the out of stream dredge pond.

Gold: The gold was flat, flaky, and bright, and larger pieces had quartz attached. Seventy-five percent of the gold was less than 16 mesh. Purity ranged from 850 to 870 fine.

SEYMOUR CREEK	**115 I/6**
Daryle Duncan	**62°17'N 137°10'W**
Water Licence: PM93-047	**1995, 1996**
Big Creek-Nansen Placer Area	**Site No. 176**

Operation/Location: This operation was located on the left limit of Seymour Creek just upstream from the confluence with Bow Creek. Neil Duncan and Park Southwick worked single shifts during both seasons.

Equipment/Function: A D9H Caterpillar bulldozer was used for stripping and for re-contouring work. An Hitachi EX200LC excavator fed the sluice box and dug drains.

Wash Plant: A 10 foot by 10 foot dump box with hydraulic grizzly fed pay at a rate of 60 loose cubic yards per hour into a shaker screen deck 5 feet wide by 8 feet long. Oversize material was carried away by a side mounted conveyor and the classified pay funnelled into a 6 inch by 6 inch Ash slurry pump. It was pumped directly onto a distributor that fed two sluice runs 4 feet wide by 20 feet long. Material up to 1 inch entered one run, and ½ inch minus entered the other. Each run was lined with matting and expanded metal. A 3306 Caterpillar engine ran the 125 KVA generator that provided power for the slurry pump and plant hydraulics.

Neil Duncan and Park Southwick mining on Seymour Creek in 1995.

Ground Description: The total depth to bedrock was 14 feet in mineable areas, but drilling revealed that it plunged to 80 feet in part of the cut. The ground was only frozen near the surface. Two to 3 feet of top soil covered about 11 feet of washed gravel over bedrock. The top 4 feet was wasted and the remaining 10 feet of gravel was sluiced with 2 feet of bedrock.

Mining Cuts: In 1995 about 15,000 cubic yards of material was processed from a mining cut on the left limit of Seymour Creek, opposite the camp. In 1996, 12,000 cubic yards were mined on the right limit, about 400 metres above the camp.

Water Supply and Treatment: Water was acquired from an instream reservoir on Seymour Creek at a rate of 700 igpm, or by seepage. A U.S. electric motor powered by the 125 KVA generator ran a Gould 6 inch by 4 inch pump. Waste water was treated in out of stream settling ponds.

Gold: The gold was generally flat, smooth, and well-travelled. Most of the gold was fine. The purity ranged from 850 to 870 fine.

REVENUE CREEK **115 I/6**
Right Fork Mining **62°20'N 137°17'W**
Water Licence: PM95-069 **1995, 1996, 1997**
Big Creek-Nansen Placer Area **Site No. 177**

Operation/Location: Revenue Creek is a right limit tributary of Big Creek, in the Mt. Freegold area. John, Buddy and Diane Gow worked single shifts in 1995, 1996 and 1997.

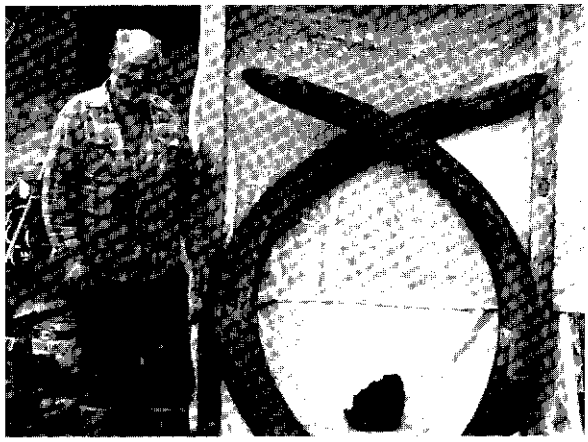
Diane and John Gow carefully extracted this mammoth tusk from the frozen right limit valley wall on Revenue Creek.

Equipment/Function: An American 35 excavator with a 1⅞ cubic yard bucket was used to feed the sluice plant, dig trenches and clean out settling ponds. In 1997 an 890 John Deere excavator with a 1½ cubic yard digging bucket was used to dig trenches, clean settling ponds and strip overburden. A 966 Caterpillar loader removed tailings. In 1995 and 1996 a D155 Komatsu bulldozer was used for preparatory work, stripping and re-contouring tailings. In 1996 and 1997 a D9L Caterpillar with a U-blade was used for stripping and re-contouring tailings.

Wash Plant: Pay material fed at a rate of 50 cubic yards per hour into a 4 cubic yard hopper reached a vibrating screen deck 4 feet wide by 10 feet long. Material passed through a 4 inch screen, a 2 inch screen, and a ½ inch screen before entering a triple run sluice 10 feet wide by 20 feet long. The first 10 feet were lined with 6 pound expanded metal and the bottom 8 feet held 1½ inch Hungarian riffles. Nomad matting lined the entire sluice run. The expanded metal portion of the sluice run had a 1¾ inch per foot slope, and the riffle section was sloped at 3 inches to the foot. A 20 kilowatt generator powered by a Perkins diesel ran the screening plant.

Ground Description: The total depth of ground where Revenue Creek enters the Big Creek valley was 60 feet of frozen material. In 1995 silts, sand, and fine gravel were layered in the top 50 to 55 feet, and the bottom 5 to 10 feet contained a combination of silt, fine gravel, and large rock up to 3 feet in diameter. A 6 inch layer of clay lined the bedrock. In 1996 the top 40 to 45 feet was layered black muck, sand, silt, and fine gravel. This covered 15 to 20 feet of the same material mixed with large quantities of rock ranging from 1 to 3 feet in diameter, with a clay layer on bedrock. In 1997 the upper layers were the same as those found in 1996, while the bottom 10 to 15 feet contained approximately 30% less large rock. Fine gold was found in all layers up to 5 feet from the surface. The bottom 30 to 40 feet was sluiced.

Mining Cuts: In 1995, 11,000 cubic yards of pay material was sluiced from one continuous cut 100 feet wide by 200 feet long. In 1996, 13,690 cubic yards was sluiced from a continuous cut 40 feet wide by 250 feet long, and 23,000 cubic yards was sluiced from a cut 100 feet wide by 250 feet long in 1997.



John Gow poses with the matching mammoth tusks uncovered on Revenue Creek.

Water Supply and Treatment: Water was acquired from settling/recirculation ponds at a rate of 800 igpm using a 6 inch by 6 inch Gorman Rupp trash pump. The effluent was treated in the

settling/recirculation ponds. During periods of higher flow water was acquired directly from Revenue Creek, and treated effluent discharged back into Revenue Creek.

Gold: The gold varied from coarse and wiry, to beady round balls up to 6 grams in weight, to conglomerate type nuggets. Three percent was larger than 12 mesh, 10% was 20 to 40 mesh, 40% was 40 mesh, 15% was 50 mesh, 25% was 60 to 80 mesh, and 7% was 100 mesh and smaller. Purity was 890 fine.

Comments: A 70 foot drift was dug by hand on lower Revenue Creek during the 1995 winter season. Material thawed by monitoring with warm water was taken by wheelbarrow to a heated building and sluiced. A variety of bones have been found on Revenue Creek including small horse, bison, and woolly mammoth. In 1997 a matching set of mammoth tusks were found along with a matching set of teeth.

QUILL CREEK	**115 G/6**
Willi Pfisterer	**61°29'N 139°25'W**
Water Licence: PM96-033	**1995,1996,1997**
Kluane Placer Area	**Site No. 178**

Operation/Location: This operation was located just below a canyon a Quill Creek, where the valley widens.

Equipment/Function: A Case 580 backhoe/loader was used to feed the sluice. A Case 850 track loader with four way bucket was used to strip overburden and push up pay.

Wash Plant: A typical 4 foot by 8 foot grizzly with spray bar over a single run sluice was used to process 10 loose cubic yards of material per hour.

Ground Description: Over the three mining seasons an average depth to bedrock was 12 feet. A 1 foot layer of clay with mixed washed gravel overlies a 1 foot layer of fine clay and a 6 inch layer of frozen vegetation and wood. Eight feet of gravel consisting of mixed gravel and sand were found beneath the vegetation layer. A 1 to 2 foot layer of gray gravels were found next over yellow homogenized clay. The bottom layer of gravels to bedrock comprised the pay zone.

Mining Cuts: Small selective cuts, in close proximity to each other, were mined over a three year period.

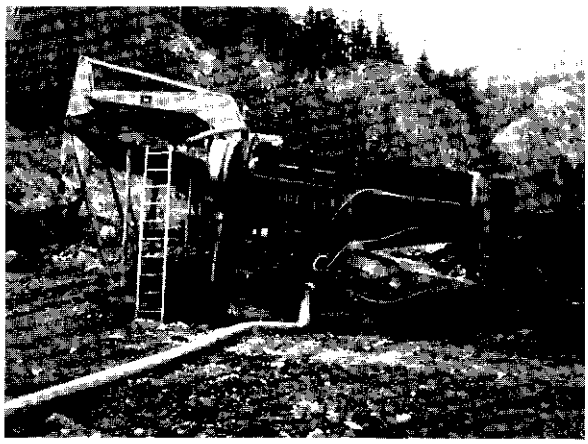
Water Supply and Treatment: The wash plant that Mr. Pfisterer used was supplied with water by a 3 inch Honda pump which delivered 400 igpm. Four out of stream settling ponds were used to treat the effluent prior to discharge back into Quill Creek.

Gold: The gold was flat and smooth with 90% fine and 10% coarse. Fineness was 870.

Comments: Mr. Pfisterer has been systematically restoring the previously mined areas.

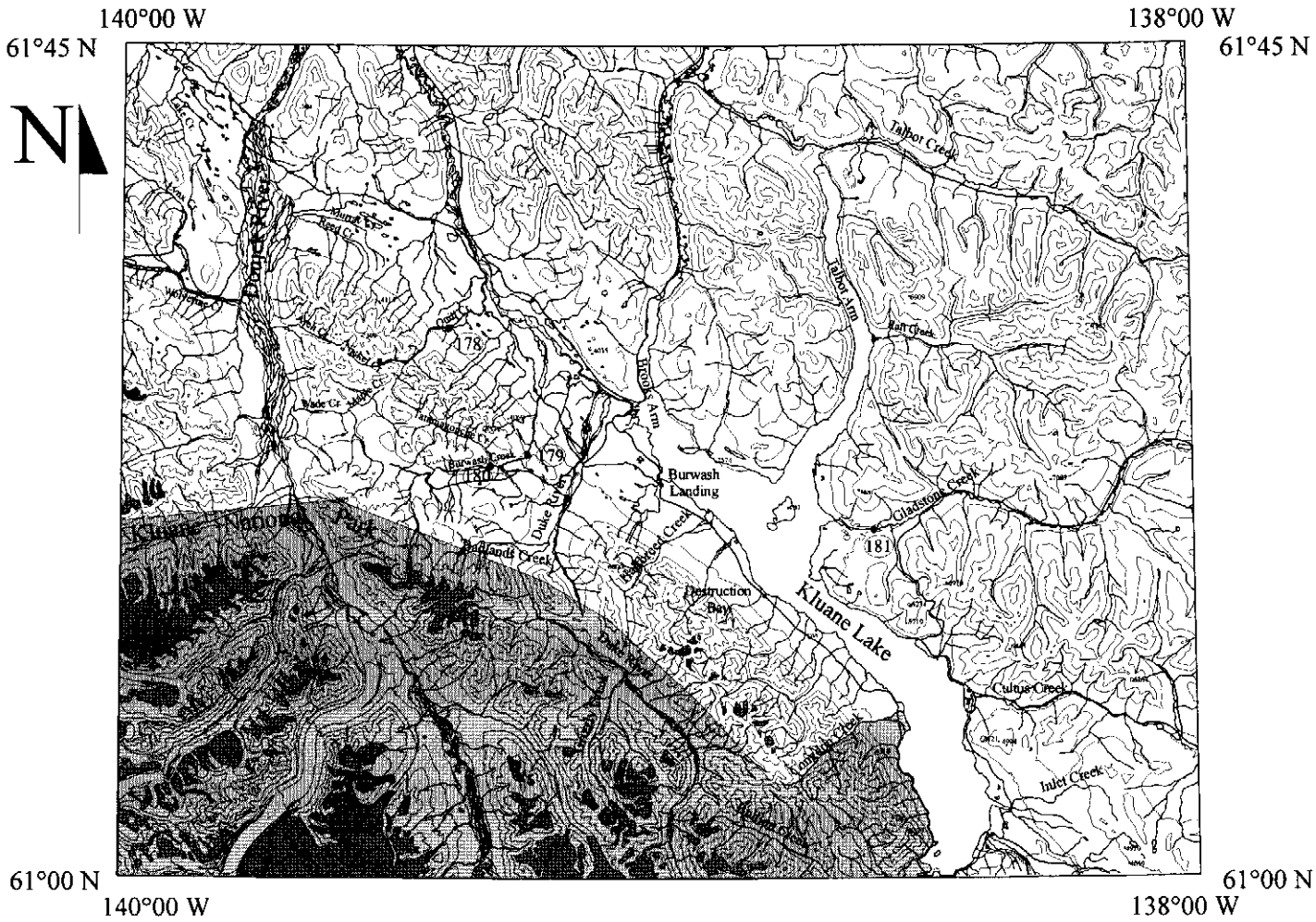
BURWASH CREEK	**115 G/11**
Oliver Leckie	**61°22'N 139°21'W**
Water Licence: PM95-020	**1995,1996,1997**
Kluane Placer Area	**Site No. 179**

Operation/Location: Oliver and Colleen Leckie's operation in 1995 was located upstream of Tatamagouche Creek, a left limit tributary of Burwash Creek. The 1996 and 1997 seasons saw the Leckie's mining downstream of their previous location in the canyon, approximately five miles upstream from the Alaska highway.



Oliver Leckie beside his trommel wash plant on Burwash Creek.

Equipment/Function: A 690 John Deere backhoe was used to dig drains and feed the trommel wash plant. A D8H Caterpillar bulldozer was used foroverburden removal and pushing up pay



Kluane Placer Area

Yukon Territory

0 km 25

Secondary roads
Major roads

Rivers

Contours

Placer Operations

gravels. A 920 Caterpillar loader was used for clean-ups and tailings removal.

Wash Plant: A 25 cubic yard per hour wash plant with an 8 foot by 6 foot wide hopper with a 12 inch by 8 foot wide nugget trap incorporated within the hopper, was used to feed a 44 inch wide by 20 foot long trommel. The material was screened to ⅜ inch minus and ½ inch minus respectively. The pay gravels then proceeded into a 22 inch by 8 foot long sluice run, with 1 inch angle iron riffles.

Ground Description: The top 8 feet of organic material overlaid 7 feet of large boulders mixed in with a dark brown clay-like material over top of decomposed bedrock.

Mining Cuts: One continuous cut 30 feet wide by 300 feet long was mined in 1996. 1997 saw a 25 foot wide by 300 foot continuous cut mined. The black muck was found to be frozen in parts but the pay gravels were thawed.

Water Supply and Treatment: A 6 by 6 inch Thompson pump powered by a 635 Perkins diesel was used to supply 500 igpm from an instream reservoir. The effluent discharged into two out of stream settling ponds.

Gold: The gold was 60% fine with the rest being coarse. Fineness was 865.

BURWASH CREEK	**115 G/6**
Steve Johnson	**61°22'N 139°19'W**
Water Licence: PM94-119	**1995,1996,1997**
Kluane Placer Area	**Site No. 180**

Operation/Location: Steve Johnson mined this site on Burwash Creek upstream of Tatamagouche Creek. The valley is approximately 75 metres wide with a gentle slope. A crew of three miners worked 10 hour days.

Equipment/Function: A P&H excavator with a 1¼ yard bucket fed the wash plant. A 977L Caterpillar track loader was used to remove tailings. A ¾ yard Drott backhoe dug ditches.

Wash Plant: A 5 yard dump box hydraulically fed material onto a shaker type classifying table which screened 1 inch minus gravels into a 16 foot sluice run. The sluice run was lined with 4 feet of 1 inch riffles, 4 feet of hydraulic riffles, 4 feet of 1 inch riffles and 4 feet of large expanded metal.

Ground Description: The area mined over the three seasons had very little black muck, with mostly 3 to 6 feet of overburden over a 6 foot average pay zone to bedrock. The creek bottom gravels were mostly thawed. The underlying bedrock was decomposed.

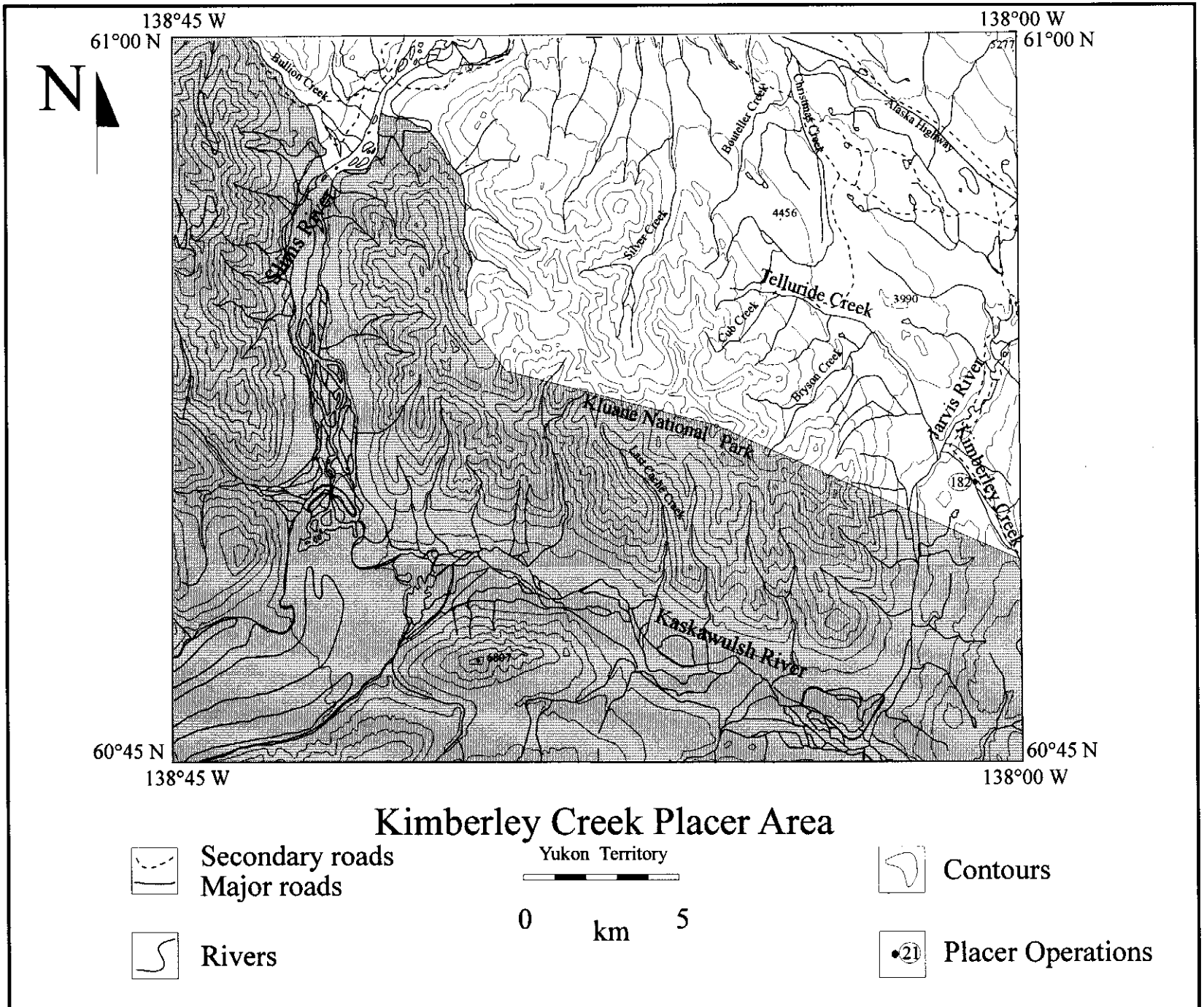
Mining Cuts: In 1995 eight small cuts were mined with a total of 16,000 cubic yards sluiced. One continuous cut 80 feet wide by 200 feet long was processed in 1996. Five cuts 40 feet wide by 150 feet long were sluiced along with one 40 foot by 200 foot long cut in 1997.

Water Supply and Treatment: Water for sluicing was obtained from an instream reservoir before being delivered to the sluice plant. A 6 inch by 6 inch Valley pump powered by a Lister diesel provided the 2000 igpm needed to process 60 loose yards per hour. The effluent was treated in two out of stream settling ponds and one polishing pond before discharge back to Burwash Creek.

Gold: A wide variety of gold came out of the ground for the three mining seasons from coarse solid gold in 1995 to all fine and flaky in 1996 with pounded flat and fine in 1997. Fineness was 850 to 860.

GLADSTONE CREEK	**115 G/7, 115 G/8**
Alan R. Dendys	**61°18'N 138°32'W**
Water Licence: PM96-065	**1995, 1996, 1997**
Kluane Placer Area	**Site No. 181**

Operation/Location: Gladstone Creek runs into the east side of Kluane Lake. The lower reaches of the creek flow through a low, broad valley, with braiding and side channels occurring near the mouth. In 1995, 1996, and 1997 Al Dendys operated a floating trommel plant on each side of the creek. One camp employee supported five miners working two 10 hour shifts. Water Use Licenses PM93-055 and PM94-121 applied to this site in 1995 and 1996. In 1995 a third floating trommel operated under these licenses. John Fischer and Brent Stentiford worked double shifts


138°45 W
61°00 N
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N
Bullion Creek
Bonnetter Creek
Christmas Creek
Alaska Highway
Silver Creek
4456
Jelluride Creek
3990
Cub Creek
Bryson Creek
Jarvis River
Kimberley Creek
182
Kluane National Park
Lost Cache Creek
Kaskawulsh River
6667
60°45 N
138°45 W
60°45 N
138°00 W
Kimberley Creek Placer Area
Secondary roads
Major roads
Rivers
Yukon Territory
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km
5
Contours
21
Placer Operations

downstream from Mr. Dendys, mining cuts on each side of the stream.

Equipment/Function: Mr. Dendys used two D9H Caterpillar bulldozers for site preparation and reclamation work. A Caterpillar 330 excavator with a 2½ cubic yard bucket and a 350 excavator with a 2¾ yard bucket fed the sluice plants. Mr. Fischer and Mr. Stentiford fed their plant with an excavator equipped with a 1 cubic metre bucket, and hired Mr. Dendys' D9H bulldozer for reclamation work.

One of Al Dendys' floating trommels in the foreground, and his progressive reclamation work in the background.

Wash Plant: Forty cubic yards per hour of pay material was fed into Mr. Dendys' 5 foot diameter trommel and screened to ⅝ inch minus, and about 80 yards per hour were fed to his 6 foot trommel and screened to 1¼ inch minus. Each trommel was equipped with hydraulic riffles followed by 2 inch flat bar riffles over Nomad matting. Mr. Fischer and Mr. Stentiford used a trommel lined with punch plate that was 6 feet in diameter and processed about 100 cubic yards per hour. The classified material entered two sluice runs 8 feet wide by 6 feet long. On each table 2 feet of hydraulic riffles were followed by 4 feet of 1¼ inch angle iron riffles.

Ground Description: The valley floor was thawed and the banks were permafrost. Four to 20 feet of coarse gravels have been deposited by glacial movement on top of a wavy (false) clay bedrock. All the gravel and about 2 feet of clay bedrock were sluiced.

Mining Cuts: Two cuts approximately 1500 feet long by 200 feet wide by 10 feet deep were mined in 1997. A similar volume of material was mined further downstream in 1995 and 1996.

Water Supply and Treatment: Make-up water was acquired for the dredge ponds on each side of Gladstone Creek by gravity ditch. The process water was filtered through several hundred metres of tailings before discharging by seepage into Gladstone Creek.

Gold: The gold varied from flat and round to chucky and rough. Five percent was greater than 10 mesh, 35% between 10 and 60 mesh, and 60% was finer than 60 mesh. Purity was 830 fine.

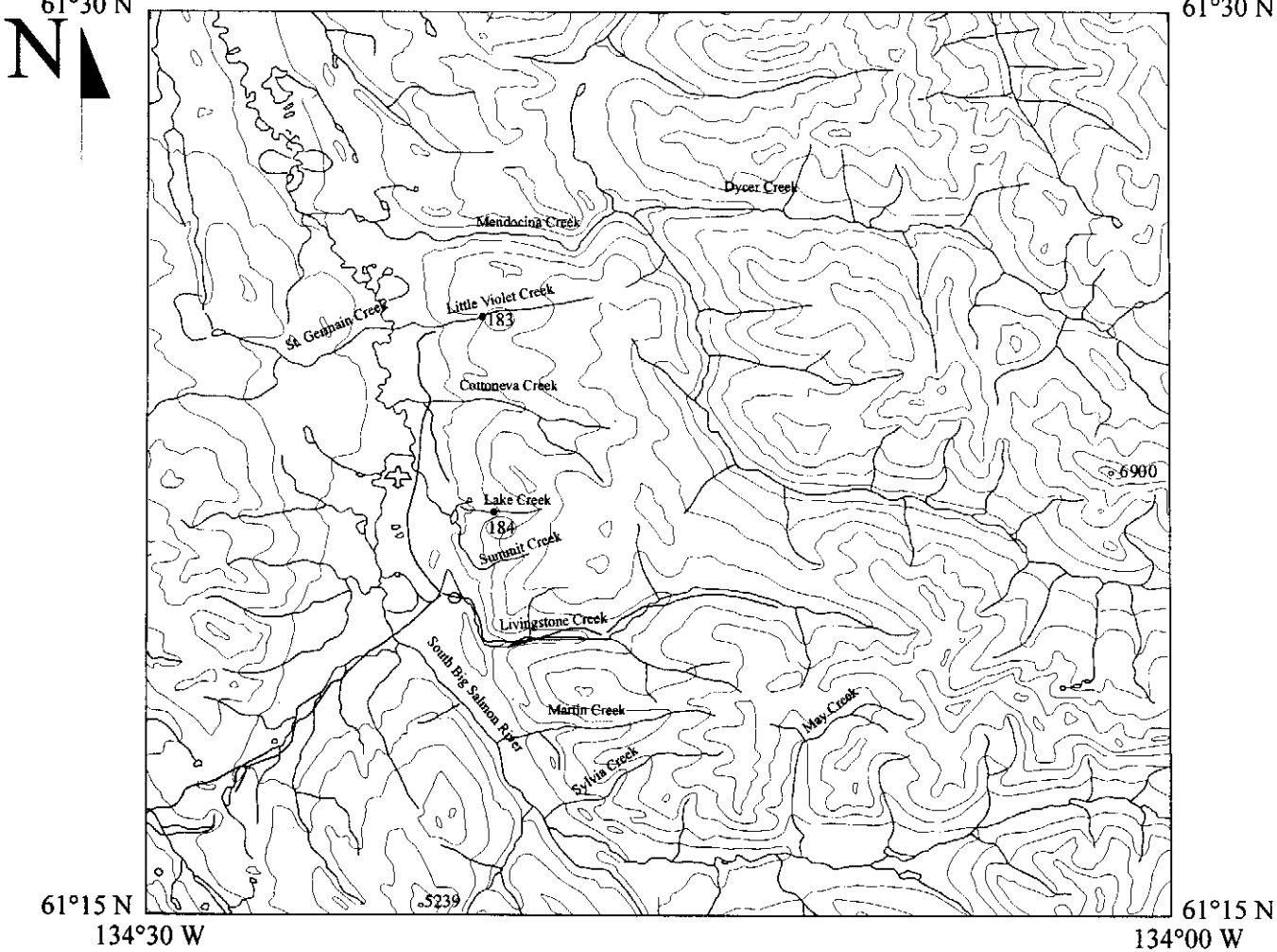
Comments: Extensive restoration work has been done at this location. The clearing, stripping and restoration work usually occurred in the winter months. Construction of a 2000 metre long diversion channel has been underway for the last two seasons. Three oldtimers' shafts have been found on the left limit of Gladstone Creek.

KIMBERLEY CREEK **115 B16**
Clair and Pat Sawyer **60°50'N 138°04'W**
Water Licence: PM96-063 **1995, 1996, 1997**
Kimberley Creek Placer Area **Site No. 182**

Operation/Location: Clair and Pat Sawyer mined approximately two miles upstream from the confluence of Kimberley Creek and the Jarvis River. Single shifts were worked.

Equipment/Function: A Drott Cruiz Air 40 rubber tired excavator with a ½ cubic yard bucket fed the trommel. A D6 Caterpillar bulldozer with a straight blade was used to stockpile pay and waste material, remove tailings and build settling ponds.

Wash Plant: The trommel is 4 feet in diameter and is 14 feet long consisting of a 4 foot scrubber section. In 1995 and 1967, 4 feet of ½ inch screening was used and was later increased in 1997 to ¾ inches. The washed material entered a 2 foot by 6 foot jig. The excavator, operated by Pat Sawyer, fed a 6 by 8 foot hopper at a typical rate of 16 cubic yards per hour. Oversized material dropped onto a 3 foot by 25 foot stacker.



Livingstone Placer Area

Yukon Territory

0 km 5

Secondary roads
Major roads

Rivers

Contours

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The entire system is powered by hydraulics. The hydraulic pump and motors are powered by a 9 horsepower Hatz diesel engine.

Clair and Pat Sawyer posing with their wash plant on Kimberley Creek.

Ground Description: Generally there was a 4 to 14 foot gravel/boulder layer overlaying 1 to 4 feet of pay. The pay material had a fairly high clay content. Higher gold values were found in areas of highest clay content. The bedrock consisted of 1 to 2 feet of fractured conglomerate and decomposed bedrock.

Mining Cuts: In 1997 two cuts were mined. The first was approximately 20 feet wide, 10 feet deep and 40 feet long. The second cut was approximately 8 feet wide, 12 feet deep and 150 feet long.

Water Supply and Treatment: Water was acquired from Kimberley Creek. An Allis Chalmers 4 by 5 inch gas powered pump delivered 350 igpm of water to the washplant. Effluent was discharged into mined out areas. There was no discharge into Kimberley Creek.

Gold: The gold was mostly rough and chunky in nature. Approximately 20% was fine and the remaining 80% nuggets. Fineness was 850.

Comments: The Sawyer's are currently looking for a larger bulldozer.

LITTLE VIOLET CREEK **105 E/8**
5813 Yukon Ltd. **61°25'N 134°21'W**
Water Licence: PM92-041 **1995,1996,1997**
Livingstone Placer Area **Site No. 183**

Operation/Location: Wilf Phillips and two miners worked 12 hour days on Little Violet Creek.

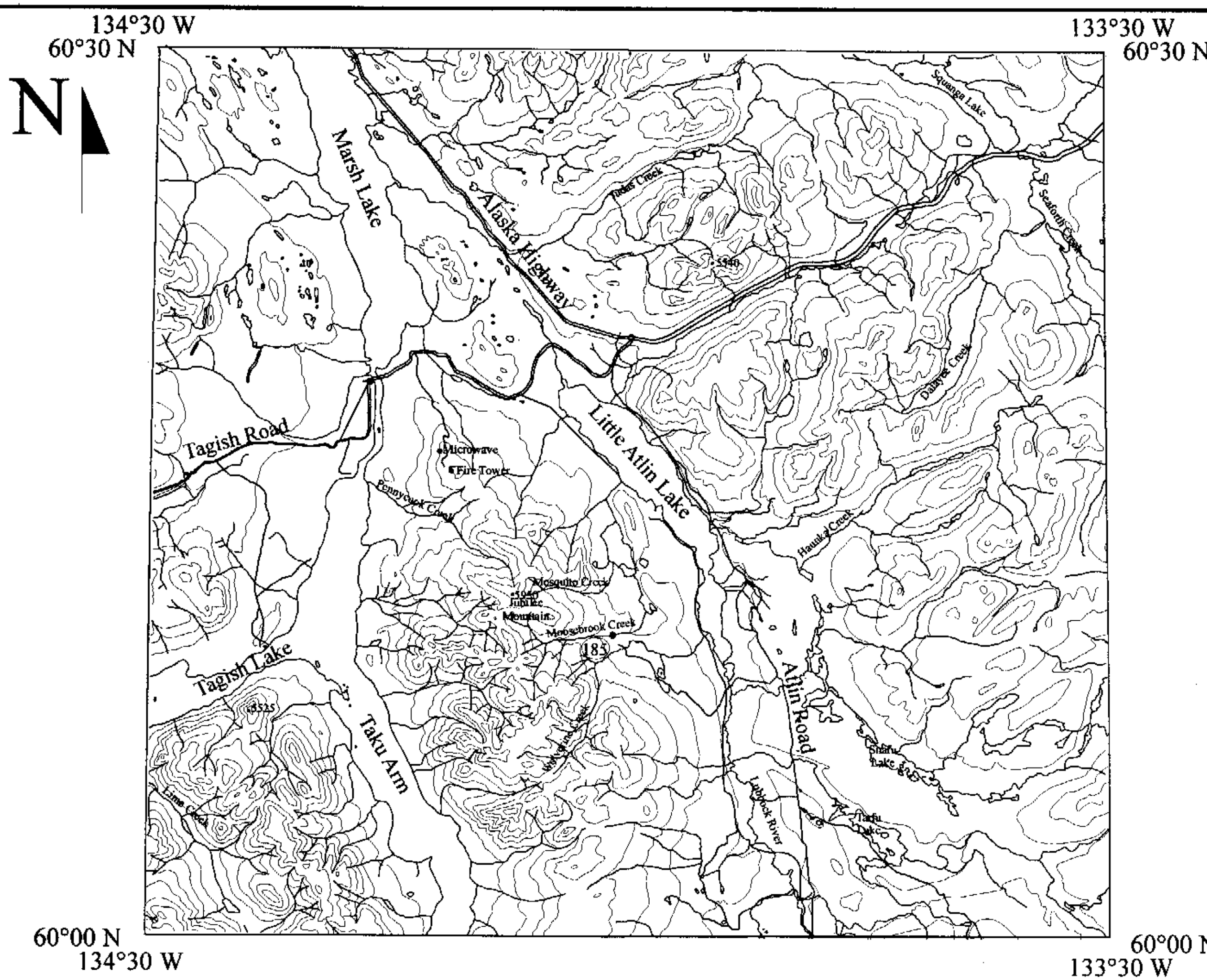
Equipment/Function: One D8K Caterpillar bulldozer was used to strip overburden and push up pay gravels. A Hitachi 181 excavator was used to load a Volvo 861 haul truck which hauled the pay material to the sluice plant. A 966 Caterpillar loader fed the sluice plant and a 950 Caterpillar loader hauled tailings away.

Wash Plant: A Torgerson screening plant was used to screen material from 2 inch down to ¼ inch minus. The classified pay then travelled through a 20 inch Knelson concentrator. The material was then washed in a 2 foot wide by 40 foot long sluice lined with 2 inch and 1 inch riffles.

An aerial view of 5813 Yukon Ltd.'s operation on Little Violet Creek.

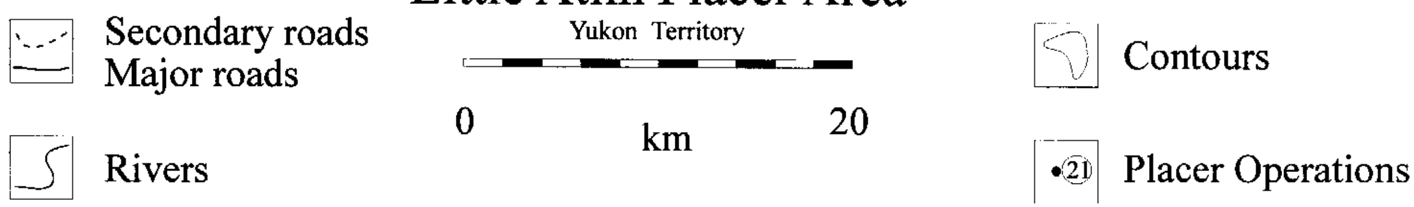
Ground Description: The total depth to bedrock was approximately 60 feet. Approximately 25 feet of white glacial till mixed with clay covered 35 feet of tertiary gravels to bedrock.

Mining Cuts: In three mining seasons one continuous cut 40 feet by 100 feet was mined.



Little Atlin Placer Area

Yukon Territory



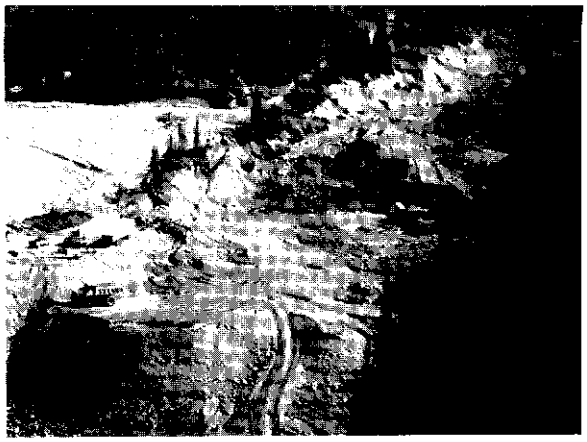
Water Supply and Treatment: Water to the wash plant was supplied by a 6 inch gravity pipeline. Several settling ponds were used in conjunction with natural out of stream "sinkholes". No effluent discharges into the South Big Salmon River.

Gold: Coarse gold is predominant on this creek with a fineness of 866.

Comments: The 1995 mining season was spent on repairs to machinery and the wash plant. In 1996 stratigraphic layers were tested to determine values and cut off levels. Only 6 to 10 feet of gravels and 2 to 3 feet of bedrock was processed.

LAKE CREEK **105E/8**
Ed Kosmenko **61°22'N 134°18'W**
Water Licence: PM95-099 **1996, 1997**
Livingstone Placer Area **Site No. 184**

Operation/Location: Lake Creek is a tributary of the South Big Salmon River, in the Livingstone area. Max Fuerstner began preparing the ground in 1996, and production commenced in 1997.



Aerial view of Max Fuerstner's operation (Ed Kosmenko's License) on Lake Creek.

Equipment/Function: An Hitachi excavator with a 7 cubic yard bucket was used to strip off overburden and dig for pay material. Two Terex bulldozers assisted in site preparation. The excavator loaded the pay into Terex 33-09 rock trucks, which transported it to the wash plant. A Terex 72-61 loader fed the box and removed tailings.

Wash Plant: Pay material was fed at a rate of 100 to 150 cubic yards per hour into a Derocker with a 20 foot deck powered by a 2-cylinder Detroit engine. The classified material entered a sluice run 4 feet wide by 20 feet long, lined with 8 feet of punch plate and 2 inch angle iron riffles.

Water Supply and Treatment: Water was acquired from an instream reservoir on Lake Creek. It was pumped to the plant by an 8 by 10 inch Cornel pump powered by a 1271 General Motors diesel engine at a rate of 1500 igpm. The effluent was diverted to Hazel Lake, which drains by way of Summit Creek into the South Big Salmon River.

Gold: The gold was generally coarse and rough, and not well-travelled. Some nuggets had quartz attached. No further information was provided.

MOOSE BROOK CREEK **105 D/08**
G & D Mining **60°10'N 134°00'W**
Water Licence: PM95-087 **1997**
Little Atlin Placer Area **Site No. 185**

Operation/Location: Moose Brook Creek is a tributary of Little Atlin Lake.

Equipment/Function: A D8H Caterpillar bulldozer with angle blade was used for overburden removal. A Komatsu 220 excavator was used to feed the wash plant. A 966C Caterpillar loader was used for handling tailings.

Wash Plant: A 70 cubic yard per hour Beaver Trommel with a 4 foot by 24 foot barrel and 6 cubic yard hopper were used to feed a 4 foot by 24 foot sluice run lined with astro turf matting and expanded metal, on 1 to 1½ degree slope.

Ground Description: The top 6 feet of organic material overlaid 14 feet of mixed gravels with 2 layers of clay 3 to 4 feet thick; the bottom 8 feet were of red gravels.

Mining Cuts: Two mining cuts were taken for a total of 21,666 cubic yards.

Water Supply and Treatment: A Groman 6 inch by 6 inch diesel pump was used to acquire water from an instream reservoir at a rate 1200 igpm.

Effluent discharged to an instream settling pond approximately 400 feet by 150 feet in size.

Gold: The gold recovered was fine to very fine; most was -10 to +60 mesh size. Fineness was 830.

Comments: The very steep "V" valley made this site very difficult to work.

CONVERSIONS AND EQUIVALENTS

LENGTH

1 centimetre (cm)	= 0.394 inch (in)
1 metre (m)	= 39.4 inches
	= 1.094 yards (yd)
1 kilometre (km)	= 0.6214 (⅝) mile
1 inch (in)	= 2.54 centimetres (cm)
1 foot (ft)	= 30.48 centimetres
1 yard (yd)	= 0.914 metre (m)
	= 3 feet
1 mile	= 1.609 kilometres (km)
	= 1760 yards

AREA

1 hectare	= 2.471 acres
1 acre	= 0.405 hectare
	= 4840 sq yards
1 square yard	= 0.836 sq metre

VOLUME

1 litre (l)	= 1,000 millilitres (ml)
	= 1,000 Litres
	= 0.21998 Gallon (Imp.)
	= 0.26417 Gallon (US)
1 gallon (Imp.)	= 4.5459 litres
1 gallon (US)	= 3.785 litres
1 cubic yard	= 0.764 cubic metres

WEIGHT

1 troy pound	= 12 troy ounce
1 troy ounce	= 31.1035 grams
	= 20 pennyweights
	= 480 grains
1 pennyweight	= 24 grains
1 grain	= 0.06479 grams
1 gram	= 15.43 grains
1 avoirdupois pound	= 16 avoirdupois ounces
	= 0.454 kilograms
1 avoirdupois ounce	= 28.35 grams
1 kilogram	= 32.15 troy ounce
	= 1,000 grams
	= 2.205 pounds
1 long ton	= 2240 pounds
1 short ton	= 2000 pounds
1 tonne	= 1.102 short tons
	= 2204.62 pounds

WEIGHT PER VOLUME CONVERSION

1 ounce/cubic yard	= 40.68grams/m^3
1 ounce/ton	= 34.2848 grams/tonne

GOLD PURITY

pure gold	= 24 karats	= 1000 fine
91.6%	= 22 karats	= 916 fine
90%	= 21.6 karats	= 900 fine
75%	= 18 karats	= 750 fine
58.3%	= 14 karats	= 583 fine
41.6%	= 10 karats	= 416 fine

GRAIN SIZE

Particles	***Average diameter in mm***
Boulders	greater than 256 mm
Cobbles	64 mm to 256 mm
Pebbles	4 mm to 64 mm
Gravel	greater than 2 mm
Sand	2 mm to 1/16 mm
Silt	1/16 mm to 1/256 mm
Clay	less than 1/256 mm

TEMPERATURE

°C = (°F - 32) x .555 °F = (°C x 1.8) + 32

MISCELLANEOUS

The following measures are not absolute values but are used by many miners to make working estimates:

1 standard gold pan = 16" diameter top, 10" diameter bottom, 2.5" depth, holds 0.007 cubic yards, or 0.005 cubic metres, and weighs approximately 21 lbs (ordinary gravel)

1 cubic yard = approximately 143 standard gold pans

Weight of ordinary gravel in place = 2500 to 3000 lbs/cubic yard

Specific gravity of ordinary gravel in place = 1.48 to 1.78 g/cm^3

Specific gravity of	gold	=15.6 to 19.3
	garnet	= 3.56 to 4.32
	magnetite	= 4.9 to 5.2
	pyrite	= 4.0 to 5.2
	quartz	= 2.6

1 ounce gold/ton ordinary gravel = 1.25 to 1.50 ounces/cubic yard
1 gram gold/tonne ordinary gravel = 1.48 to 1.78 grams/cubic metre

Swell factor of ordinary gravels = 20 to 30% increase in volume


DIEU ET MON DROIT
HONI SOIT QUI MAL Y PENSE