

Yukon Placer Database Operations Report



Field Name: Tamarack Inc., 1983-1986, 1989-1999

Last Update: 11-Jan-2005

Status: Recent Producer 1978-present

Stream: Paradise Hill: a tributary of Hunker

Map Sheet(s): 1150/14, 1150/3, 116B/3

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Operators

Name	From (Date)	To (Date)	Comment
Frank Short	1989/01/01	1999/12/31	
Frank Short	1983/01/01	1986/12/31	

Owners

Name	From (Date)	To (Date)	Comment
Frank Short	1989/01/01	1999/12/31	
Tamarack Inc.	1989/01/01	2003/12/31	
Frank Short	1983/01/01	1986/12/31	
Tamarack Inc.	1983/01/01	1986/12/31	

General Location

In 1983, one property was situated along the left limit of Hunker Creek, at the foot of Paradise Hill. The second property was located on Paradise Hill, just downstream from Hester Creek. In 1984, the property was located on 80 Pup, a left limit tributary of Hunker Creek, approximately 1,500 feet upstream from its confluence with Hunker Creek. The following year, the operation was located approximately 2,000 feet upstream of the Hunker Creek Valley. In 1991, this operation was located back on Paradise Hill on a left limit bench 300 feet above Hunker Creek.

Location Details

Date:	Latitude Deg : Min : Sec			Longitude Deg : Min : Sec			Elevation (feet)	Distance from Mouth (feet)
2003/01/01	63	59	59	139	4	8		
1999/01/02	63	52	0	139	4	0		
1999/01/01	64	0	0	139	4	0		
1998/01/01	64	0	0	139	5	0		
1994/01/01	63	0	14	139	4	48	2,000	
1993/01/01	64	0	0	139	5	0		
1991/01/01	64	0	0	139	5	0		
1985/01/01	64	0	1	139	5	0		2,000
1983/01/01	63	59	0	139	3	0		

Water Licence(s)

Number	Comments
PM97-029	Expired: May 1, 2003
PM02-296	
PM95-053	
PM89-003	
PM89-103	
PM92-010	

Work History

Tamarack Inc. began work on the property at the base of Paradise Hill in 1983. They mined two cuts, each of which were approximately 24,000 square feet. The following year, the company continued mining at the base of Paradise Hill, and an area of approximately 45,000 square feet was mined. The property was located on 80 Pup in 1985, and a cut 150 by 730 by 76 feet deep was excavated. Stripping volume was calculated to be 355,000 cubic yards, representing 900 D9H Cat bulldozer hours and 500 pump hours. A total of 9,000 cubic yards of material were sluiced, at a rate of 60 cubic yards per hour. The operator reported evidence of old underground workings on the property; within the cut area were found 37 vertical shafts and a series of eight support cogs. The cogs, each measuring 8 feet square, were constructed from green logs and were 4 feet high. The series of 8 cogs, or support cribs, ran up the valley centre for 72 feet. The cogs were likely used to support the ceilings during summer drifting and were spaced 1 foot apart. Generally a 30 foot centre cut, the length of the valley was taken. During 1986, a cut measuring 1,120 feet long by an average of 207 feet (250 feet wide for the lower 800 feet and 100 feet wide for the upper 320 feet, by an average of 92.5 feet deep. Stripping totalled 614,000 cubic yards, which represented 1,200 D9H Caterpillar bulldozer hours, and a total of 6,000 cubic yards of material was sluiced. Between 1989-1990, property manager Frank Short and 12 employees worked the property on a double shift. A single cut measuring 500 feet wide by 900 feet long for approximately 600,000 to 700,000 cubic yards was mined in 1989, and a similar cut plus a rim cut was mined the following year. In 1991 and 1992, a crew of 11 ran the mine on a double shift. Two cuts were stripped and processed in 1991; 250 by 700 feet, and 400 by 600 feet respectively. A 500 by 1400 by 50 feet deep cut was stripped in 1992 for processing in 1993. In 1994, a crew of 13 (including property manager Frank Short and camp staff) ran the operation. One cut was mined totalling 670,000 cubic yards sluiced. Tamarack had a similar season in 1993. Tamarack continued to operate on a large scale in 1995, with a crew of 11 miners and one camp person running the operation. A total of 1,200,000 cubic yards were stripped and 560,000 cubic yards were sluiced. The following season, production increased to 1,300,000 cubic yards stripped and 620,000 cubic yards sluiced. In 1997, 1,300,000 cubic yards stripped and 315,000 cubic yards were sluiced. By 1998, a crew of 13 miners and 2 camp staff ran the mine. Four cuts were mined measuring roughly 900 by 300 feet, 1,200 by 180 feet, 300 by 200 feet, and 150 by 80 feet respectively. Activity at this location was put in temporary closure after 1998, and part of the operation was moved to the Indian River in 1999.

Production

Year	Stripped	Sluiced
1997	1300000 cubic yards	315000 cubic yards
1996	1300000 cubic yards	620000 cubic yards
1995	1200000 cubic yards	560000 cubic yards
1994	Unknown	670000 cubic yards
1993	Unknown	670000 cubic yards
1990	Unknown	650000 cubic yards
1989	Unknown	650000 cubic yards
1986	614000 cubic yards	6000 cubic yards
1985	355000 cubic yards	9000 cubic yards
1984	Unknown	45000 square feet
1983	Unknown	24000 square feet

Equipment

In 1983, a D9H Caterpillar bulldozer was used to strip the cut along with one Caterpillar 627 scraper with a capacity of 21 cubic yards. The scraper was also used to feed material to a hopper for sluicing plant, and to remove tailings. A dragline was used to dig a drainage sump to handle seepage in the cut. At the property located

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at the base of Paradise Hill, gravel and as much as 15 feet of bedrock were washed in a three run Pearson "Rock" box, which used 3,500 igpm of water. The water was pumped from Hunker Creek with an 8 by 10 Morris pump powered by a Caterpillar 3306 diesel engine. At the property located on Paradise Hill, the washing plant consisted of a vibrating screening unit made up of a hopper, a conveyor belt, a screening deck, and two sluice runs. The hopper, which was 12 feet square at the top and funneled down to 5 by 2 feet, sat on track rollers and was capable of shunting towards the conveyor belt under power of a hydraulic ram. From the hopper the material was fed onto a wet conveyor belt 34 inches wide and 30 feet long, which in turn fed the decks of the screening unit. The unit was equipped to handle two screening trays, although only one screen was used. Oversized material went off the screening deck to tailings. Material less than 1 inch in diameter was divided between two sluice runs. The sluice runs were 36 inches wide and 30 feet long, and were set up with a variety of gold saving devices. The first 3 feet were lined with 1 1/4 inch Hungarian riffles and astroturf, and were followed by 12 feet lined with 1 1/4 inch pulsating riffles. The next 4 feet were lined with widely spaced 1 1/4 inch riffles, while the last 10 feet were lined with expanded metal over matting. A sand screw was added in 1984. After screening and sluicing, the material entered the screw, where it was dewatered and fed to another single sluice run. That sluice run was 36 inches wide and 40 feet long, and was lined with 1-inch riffles over expanded metal and Nomad matting. It was set at a gradient of 1 1/2 inches to the foot. Electric power was supplied to the plant by a generator driven by a Caterpillar 3306 4 cylinder diesel engine. The plant was capable of processing 100 cubic yards per hour. Approximately 1,000 igpm of water were pumped to the screening unit, and an additional 500 igpm were pumped to the sluice run added in 1984. Sluice water was totally recirculated on the bench level from a horseshoe shaped pond 100 feet wide and 400 feet long. The pump sat at one end, while the effluent entered the other. A new pond was built from the 1984 season. As the ponds built up with silt, they were enlarged rather than cleaned. The recirculation pump used in 1983 was a 6-inch Barnes trash pump driven by a Lister 4 cylinder diesel engine. In 1984, a 5 by 8 Cornell & Deutz diesel pump was used. A 14 by 16 Dominion pump powered by a Caterpillar D398 V12 diesel engine pumped make-up water from Hunker Creek.

In 1984, equipment used included one Caterpillar D9H bulldozer, one Caterpillar 966 loader with a 4 cubic yard bucket to feed the loader, one Hough 100 loader with a 5 1/2 cubic yard bucket used at times instead of the 966 loader, and one Caterpillar D7E bulldozer used to trip ridges in the cut, and to dress down the slopes. The operators found that ripping with a double shank on the bulldozer was preferable to ripping with a single shank, as the resulting blocks of muck were smaller, and allowed quicker thawing. Thawed muck was carried by water to Hunker Creek, where it was settled. For monitoring, 3,500 igpm of water were used at a 115-foot head, while for sluicing, 2,000 igpm of water were used. An 8 by 10 Morris trash pump, powered by a Caterpillar 3306 diesel engine, was used to provide water for both jobs. The sluice plant was the one used by Mr. Ragauth in 1983. It was operated at a rate of 70 cubic yards per hour.

In 1985, heavy equipment included one D9H Caterpillar bulldozer, used to rip and push the frozen muck to the artificial stream, one Hough 100 loader, used to feed the plant, and one Caterpillar 966 loader, used to haul tailings. The bulldozer was equipped with a triple shank ripper outfitted with a standard D9 curved shank in the center slot and straight D8 shanks on the outer ends. A preference was stated for having the material ripped to chunks small enough in size to promote optimum thawing. Two new pieces of equipment were placed on the property in 1986; a Koehring model 505, 1.5 cubic yard capacity hoe, used to feed the plant at a rate of 60 cubic yards per hour, and a 4 foot diameter by 24 foot scrubber, used to prewash the sluice material before entering the Pearson box.

In 1989 and 1990, equipment included several Caterpillar bulldozers including a D10, two D9s, and a D7. Two Caterpillar 966C loaders, an International 560 loader, a Bantam 1.5 cubic yard dragline, a mobile auger drill and a churn drill were also used on the property. The D10 stripped the cuts while the D9's were used for sluicing. The D7 pulled the drills, and the 966 loaders were used to feed the sluice plant and move tailings. The two drills were used to map the pay streak prior to stripping. The sluice plant consisted of an 80 cubic yard apron feeder, which dropped the pay gravels onto a variable speed conveyor. The conveyor fed an 8-foot by 60-foot scrubber trommel, which classified the material through minus 3/4-inch punch plate in the last 6 feet. The classified pay was distributed over six 3 foot wide by 20 foot long suspended oscillating sluice runs, which were lined with Nomad

matting and expanded metal. Between 180 and 225 cubic yards per hour were sluiced with 2500 igpm water. Water was lifted 400 feet from an instream pump pond on Hunker Creek to the wash plant by an 8 inch by 10-inch high pressure Demming pump powered by a D398 Cat diesel engine. The effluent was settled in three large out-of-stream settling ponds beside Hunker Creek upstream of the pumping pond.

A 6-cylinder Deutz engine powered the scrubber, and a John Deere 185 KW power plant powered the light system, the conveyor, and the eccentric flywheel on the oscillating sluice.

In 1993, a D10L Caterpillar bulldozer was used for stripping, and two D9H bulldozers fed the sluice plant. Four 657 and four 641 Caterpillar scrapers were used to strip and haul pay to sluice plant, and a D9G bulldozer pushed the loaded scrapers. A 560 International loader and two 966 Caterpillar loaders were also available. Tamarack defined the pay zone on Paradise Hill with a mobile auger drill and a churn drill. A 90 cubic yard hopper with a 4-foot by 16-foot apron feeder loaded pay gravel onto a variable speed conveyor 4 feet wide by 50 feet long. The conveyor fed a trommel 8 feet in diameter by 60 feet long. The last six feet of the trommel classified the pay to 3/4 inch minus. The classified pay ran down a 2 foot wide by 45 foot long shoot to a distributor that divided the slurry into six oscillating sluice runs 3 feet wide by 20 feet long. Expanded metal and Nomad matting lined the runs, which were sloped at 1.5 inches per foot. An 8 by 10 inch Crane Demming pump powered by a D398 Caterpillar engine lifted water 350 feet onto Paradise Hill for sluicing. Approximately 3000 igpm was required to process 350 cubic yards per hour. Water was pumped onto Paradise Hill for sluicing from a huge out-of-stream settling pond system located in the Hunker Valley. The water returned to the settling pond upstream of the pump pond and was recycled. Discharge occurred through dredge tailings to the ground only.

In 1995, a total of 10 - 657 Caterpillar scrapers and three 641 Caterpillar scrapers were available for stripping and stockpiling the pay gravels. Six D9 Caterpillars 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. 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 3/4 inch minus. The classified pay ran down a 2 foot wide by 45-foot long chute to a distributor that divided the slurry into 6 oscillating runs 3 feet wide by 20 feet long. Expanded metal and Nomad matting lined the runs, and 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, with water pumped from an instream reservoir on Hunker. The effluent and oversize gravels were dumped over the rim and onto the out-of-stream settling complex, which was located along the left limit of Hunker Creek. The treated effluent re-entered Hunker Creek by both direct and seepage discharge above the pump pond and was then largely recycled.

In 1998, the property was stripped and sluiced using a fleet of five Caterpillar D9 bulldozers and eight Caterpillar scrapers. Two Caterpillar 966 loaders and miscellaneous other equipment was also available when needed. A mobile auger drill has been widely used for proving pay values on this property. The same wash plant was used as in 1995. Water for sluicing was pumped from an instream reservoir on Hunker Creek up onto Paradise Hill for sluicing. The pay gravels were sluiced over the rim into an out of stream settling complex which was located along the left limit of Hunker Creek. The treated effluent re-entered Hunker Creek by both direct and seepage discharge above the pump pond and was then largely recycled.

Landforms

Landform	Comments
Alluvial Terrace	

Surficial Geology

In 1983, at the property situated at the foot of Paradise Hill, White Channel gravel deposits were approximately 100 feet deep. Approximately 65 feet of waste gravel was stripped off and the remaining 35 feet of gravel was sluiced. Reefs and domes in the bedrock resulted in considerable variation in the depth over the years. At the

property situated on Paradise Hill, deposits cover a wide area, but this operation was near both the rims of the Hunker and Hester Creek Valleys. Deposits on the hill were unfrozen and approximately 42 feet thick, and consist of approximately 4 feet of reddish brown gravel. A discontinuous layer 2 feet thick of blue clay is present in places between the silt and the gravel. The gravel and the uppermost 2 feet of bedrock were sluiced. Gold values were apparently higher in the upper half of the gravel section than in the section immediately overlying the bedrock. In 1985, on the 80 Pup property, the section consisted of one foot of gravel overlain by 68 to 84 feet of black muck. All the gravel plus 4 feet of bedrock was sluiced. During 1989, the section consisted of 5 feet of overburden on top of 5 to 40 feet of red gravels, and between 40 and 85 feet of White Channel gravels. The following year, the section consisted of a thin organic layer covering 50 feet of Klondike Wash gravels and 35 to 60 feet of White Channel Gravel. Roughly 35 to 40 feet of the White Channel gravel with no bedrock was sluiced in 1989 and 1990. In 1991, the White Channel gravel on Paradise Hill averaged 85 feet deep; a 3-foot layer of muck overlay 20 feet of Klondike Wash gravels. An average of 62 feet of White Channel Gravel was found above bedrock. Intermittent seams of sand and silt as thick as 6 feet were found in the White Channel Gravel. The pay zone varied widely; in some areas 15 feet of the gravel was sluiced and in some areas up to 30 feet of gravel was sluiced, although the gold did not extend into bedrock. Paradise Hill is a large White Channel deposit, and in 1995, a 25-foot deep layer of vegetation, black muck and clay/gumbo overlaid 80 feet of White Channel gravels. Generally the lower 20 feet of gravels were sluiced. 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, and pay values typically increased dramatically in the depressions. In 1998, the ground varied in depth from 120 feet to 140 feet. Domes and depressions in the bedrock have continued to provide great variation in the over all depth. A layer of overburden 80 feet deep was found overlying 10 feet of mud and an average of 40 feet of gravel. All of the gravel was sluiced.

Bedrock Geology

Bedrock was decomposed, fractured schist, and contained very little gold.

Gold Comments

In 1983, the gold was round and rough with 3% larger than 10 mesh, and 97% between 10 and 60 mesh. It was brightly coloured, with few nuggets, and the purity ranged from 810 to 840 fine. From the property located on Paradise Hill, the gold recovered was quite angular, with the majority of it less than 1/60 inch (40 mesh) in diameter. Between 1989-1991, the gold was primarily fine-grained and flat, although some granular gold was recovered. Quartz was common, and some crystalline and dendritic gold was found; fineness ranged from 830 to 850. In 1993, the gold was similar as in 1983, and in 1995-1998, the gold was reported to be bright yellow, round and rough with 99% -12 to +80 mesh, and a purity of 810 fine.

References

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References

van Kalsbeek L.P. Yukon Placer Mining Industry 1993-1994. Whitehorse: DIAND, 1996.: p. 45-46

Pictures

Title: Taramack Inc. on Hunker Creek

Notes:

Taramack Inc. continued to operate a large-scale mine on Paradise Hill, a left limit bench of Hunker Creek upstream of 80 Pup through the 1998 season.

