120013

STODDART CREEK
(and Tributaries)

MAGNETOMETER SURVEY

Whitehorse Mining District, Yukon Territory
Placer Lease #6663
and
Placer Claims
P23402 to P23419 incl.
P25706 to P25709 incl.
P11723 to P11734 incl.
(Grouping Cert. #329P)

Map N.T.S. 115-I-6

by

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Field work conducted in November & December 1983

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INTRODUCTION

General

Between November 25 and December 5, 1983, myself and three part-time line cutters (Al Green, Ken Wilson and Gord McLeod) conducted a Magnetometer Survey on the upper part of Stoddart Creek, including some of its tributaries. The purpose of the survey was to locate magnetic anomalies which might be related to above background concentrations of magnetically susceptible minerals synonymous with placer gold deposition, possibly in old buried channels.

The area of this report has seen two placer operations within the last decade, in which some coarse gold was reported to have been recovered. The amount recovered and % recovery are unknown.

Also, in December 1982, I conducted a magnetometer survey on Seymour Creek in an area where known commercial deposits of placer gold had been discovered in a trenching program a few months previously. Being in the adjacent valley of that covered by this report, it is important in regard to supporting the viability of magnetometer surveys as a significant tool in placer prospecting in this area. This case history is provided in the appendix.

Placer Lease and Claims

Placer Lease #6663 was granted to Glen Macdonald on March 11, 1983. Placer Claims P23402 to P23419 inclusive, P25706 to P25709 inclusive and P11723 to P11734 inclusive, have an anniversary date of December 15, 1983 or later, and are assigned to Dart Placers Co. Ltd.

Location and Access

The area surveyed is shown on the enclosed Location Map (Page 4). In a straight line it is located approximately 30 miles northwest of Carmacks, Yukon. Access is by a gravel road from Carmacks to Mile 32, and thence via the Silver Tusk road and a bulldozer road to the Stoddart Creek valley. The latter part of the dozer road may need some upgrading before it could be considered reliable access for four wheel drive vehicles.

GEOLOGY

For the most part, the rock types contained in the Stoddart Creek valley bottom as mapped by Bostock (G.S.C.), and compiled by Tempelman-Kluitt (G.S.C.), are: "Hornblende Granodiorite to quartz diorite; generally showing foliation by alignment of mafics"; and "Schist Gneiss: Banded hornblende gneiss, and garnetiferous amphibolite with chlorite quartz schist; minor graphitic schist." The above also shows the geological strike to be 70 to 80° to the general drainage direction of Schist Creek (drains into Stoddart). It is significant to note that the Stoddart Creek valley drains Granite Mountain, Freegold Mountain and Tinta Hill. Both Freegold Mountain and Tinta Hill have hard rock gold showings, including underground workings which have undergone underground exploration work by mining companies within the last decade.

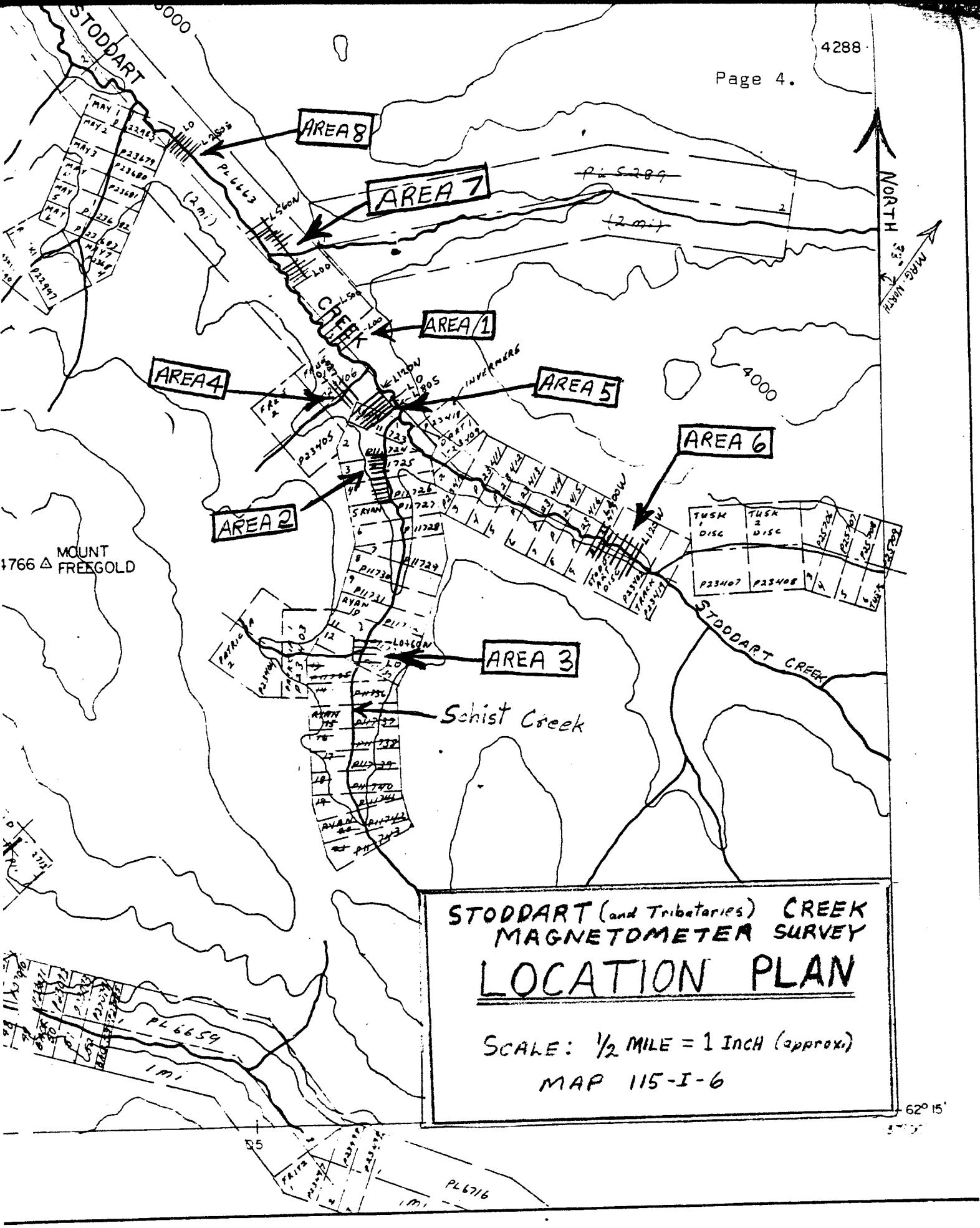
TOPOGRAPHY

The general direction of the Stoddart Creek drainage basin is to the northwest. The area of the survey contains relatively low level, flat lying spruce, buckbrush, alder and poplar benches ranging from a few metres to 100 metres wide. There are also high level bench gravels as far as 300 metres from the creek. The valley is contained by steeply sloped valley walls separating Granite and Freegold Mountains. Two areas have been stripped by past placer operations (See Pocket - Area 1 & 2).

FIELD PROCEDURE

Baselines and grids were established in eight separate areas throughout the area contained on the Location Plan (Page 4). Areas 1 and 2 have lines established at 100 foot intervals while areas 3 to 8 inclusive are at 40 metre intervals. Area 1 has stations at 100 foot intervals while Area 2 is picketed at 30 foot intervals. The remaining Areas (3-8) stations are marked at 20 metre intervals. Both lines and baselines were marked with felt pens on flagging and written on blazed spruce trees or pickets at reasonable intervals, so as to give some permanency to the grid. The magnetic contour maps contained in the pocket show the grids in detail.

A GeoMetrics Proton Magnetometer, Model G816 was used with readings read to one gamma. Check-ins were reasonably reliable and in most instances the survey is considered



STODDART (and Tributaries) CREEK MAGNETOMETER SURVEY

LOCATION PLAN

SCALE: 1/2 MILE = 1 INCH (approx.)

MAP 115-I-6

accurate to 5 gammas. The instrument reads the total component of the earth's magnetic field.

Readings were taken in Areas 1 and 2 at 25 and 15 foot intervals respectively. Readings were taken at 5 metre intervals throughout Areas 3 to 8 inclusive. Visual estimates were made of topographical changes and surface features along the lines with some of these noted on the mag. contour maps (Pocket).

Magnetometer readings were taken along the baseline in short loops and corrected for diurnal. Similarily, each set of two lines was surveyed in a loop checking into the baseline readings for each loop and subsequently corrected. Each Area was tied into its own common base station. However, the mag. readings are only relative to each Area, since they were <u>not</u> corrected to one overall base station due to some of the long distances separating Areas.

INTERPRETATION AND CONCLUSIONS

In conducting a mag. survey, one hopes to deliniate significant concentrations of placer deposited magnetite (and/or accompanying iron minerals) which could be directly associated with economic amounts of placer gold usually on or immediately above bedrock. The case history contained in the appendix demonstrated this quite well. Unfortunately, sometimes both uneconomical surficial placer magnetite deposits and mag. anomalies contained within the bedrock geology cannot always be separated from ones which may be associated with placer gold. With this in mind, constant

revision with regard to interpreting the enclosed mag. data must go "hand in hand" as a test program progresses. In other words, complete anomaly systems could be illuminated with a mere one or two test pits, if say, they were found to be caused by bedrock geology only. The following is a discussion of the individual areas in chronological order.

Area 1

This area was chosen simply because it was stripped by a former placer miner. By examining the mag. contour map, one can see there are two anomalies. The one in the stripped area is assumed to be water deposited because of its low level flat topography relative to the creek bottom. The other is on the hillside which would have a lower priority since the chances of this being caused by rim rock (bedrock) would be greater.

Area 2

By examining the mag. contour map (Pocket), one can see that there is an anomaly system running parallel and to the west of the present creek drainage. The strong anomaly in the central stripped portion of the creek bench should be tested on the baseline just north of L3+00S. It is important to note that for the most part the magnetics are lower on the hill side or rim where bedrock is encountered. This increases the odds of this anomaly system being water deposited placer magnetite especially in view of the fact, the bedrock strike as indicted by G.S.C. maps seems to be running at closer to right angles to the anomaly pattern rather than paralleling it.

Area 3

Here the mag. contour map demonstrates high magnetic contrasts. Being the mouth of a tributary creek, the survey does not cover enough territory for proper interpretation. However, the centre of the mag. highs should be prospected. Since, the high mag. contrasts are over relatively short horizontal distances, their causes should be shallow.

Area 4

A mag. survey was conducted here because of the occurrence of what appears to be an old mining cut (ground sluice?). There are two anomaly systems - one which outlines the area of this mining cut and the other is on the side hill to the southeast. It is interesting to note that the upstream limits of the mag. anomaly end approximately where the old mining cut ended. As will be discussed in Area 5, the anomaly to the southeast of baseline #4 may be an extension of a high level bench channel originating from Schist Creek.

Area 5

As mentioned under Area 4, the anomaly system in Area 5 centred aroung 1+40W could be a high level buried channel originating from the Schist Creek drainage basin. This could be an extension of the anomaly system on the left limit of Schist Creek as mentioned in Area 2. Topographical relief in the area of 1+40W seems to support this, in that the side hill begins to level off here, before steepening into the valley wall to the southwest. Of additional interest an anomaly

system at a lower level centred around 0+55W is partially developed and should be investigated.

Area 6

As seen in the Location Plan, Area 6 is on the upper part of Stoddart Creek. It is immediately downstream from the drainage (to the east) which originates from the Silver Tusk hard rock gold property. Hence, it is of interest from a point of view of a possible source for the deposition of placer gold. There is an anomly system paralleling the low level creek bench which should be checked. The partially developed anomaly system located on the steep valley wall to the northeaast is suspected as being caused by bedrock geology. However, it should be prospected to be sure.

Area 7

This area was chosen for mag. due to the occurrence of high level bench gravels (approximately 100 or so feet in elevation above Stoddart). Dozer trenches excavated in 1980 shown on the map contain washed gravels and the one located between line 4+00N and 4+40N panned colour as reported by Ken Wilson (he excavated the trenches). This area (north part of map) is difficult to interpret due to the extreme bedrock magnetism. However, the bending of the contours on L3+60N centred around station 0+45E is suspected as being caused by these washed gravels. A profile has been plotted on the top left hand corner and the anomaly on L3+60N between 0+20E and 0+60E should be investigated. If this is successful then the anomaly located on L5+20N centred at station 0+50W should be checked. The high level area on the south portion of the map

was surveyed because of the "saddle shaped" topography which may have been an old upper level bench as well. However, no washed gravels have been found here to date, and the bedrock magnetism is too strong for interpretation. There were two shafts sunk to bedrock on a lower level bench (location marked on map) in which the shaft sinker (Ken Wilson) reported only minor "colour" being recovered on and above bedrock. Also, the immediate area of these shafts is not of interest from a magnetic point of view.

Area 8

This area was chosen downstream on Stoddart Creek due to the narrowness of the valley. Because of the high bedrock valley walls the creek would have been confined to a relatively narrow area, thus hopefully encouraging a more concentrated placer deposition. Interpretation is much easier here due to the low magnetism in the bedrock (mag. valves dropped whenever outcrops were read). Therefore, it is assumed that the anomaly system developed here is caused by the deposition of placer magnetite. Hence, these should be tested at locations noted under the recommendations.

RECOMMENDATIONS

Test pits, trenches (bedrock drain) or exploration shafts should be excavated to bedrock and the gravels checked for placer gold at some or all of the following locations:

Priority Locations

Area	Line	Station	Details
2	Base Line	2 + 75 S	Schist Creek-low level bench
5	L0 + 40 N	1 + 40 W	Stoddart-Schist-upper bench
4	L0 + 40 E	0 + 50 S	Possible extension of above
8	L2 + 80 S	0 + 12 E	Stoddart-low level bench
8	L1 + 80 S	0 + 15 W	Stoddart-low level bench
6	Base Line	3 + 35 W	Upper Stoddart-low level bench
6	L2 + 00 W	0 + 15 S	Upper Stoddart-low level bench
7	L3 + 60 N	0 + 38 E	Stoddart-high level bench

General Locations
(Priorities - Decided During Test Program)

Area	Line	Station	Details
1	3 + 00 N	1 + 75 E	Stoddart-low level stripped bench
1	5 + 00 N	4 + 00 E	Stoddart-bedrock?? - prospect
2	L6 + 00 S	0 + 60 W	Schist-above toe of hill
2	L8 + 00 S	0 + 12 E	Schist-low level creek bench
2	L2 + 00 N	0 + 15 W	Schist-low level bench
3	L0 + 60 N	0 + 60 E	Upper Schist-general prospecting at mouth of small tributary
5	L0 + 40 S	0 + 55 W	Stoddard-bench
4	L0 + 40 E	0 + 20 S to 0 + 25 N	Tributary of Stoddart
6	L3 + 60 W	0 + 35 N	Upper Stoddart-bench
6	L2 + 00 W	0 + 10 N	Upper Stoddart-bench
6	L1 + 60 W	0 + 45 S	Upper Stoddart-under fan
7	L5 + 20 N	0 + 52 W	Stoddart-high level bench
8	L0 + 80 S	0 + 20 E	Stoddart-low level bench

Respectfully submitted,

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APPENDIX

CASE HISTORY OF AN ECONOMIC PLACER DEPOSIT IDENTIFIED BY A MAGNETOMETER SURVEY

Case History of an Economic Placer Deposit Identified by a Magnetometer Survey

Introduction

A placer operation successfully mined out a portion of Seymour Creek during the latter part of the 1983 placer season. Seymour Creek is the next major drainage basin to the west of Stoddart Creek. It was here (Seymour) where the Mag. delineated the placer mangetite deposits which as it turned out, were directly or closely associated with an economic placer gold deposit.

Correlation of Mag. Survey with Trenching

Test pitting and sampling was conducted on Seymour Creek approximately one kilometer upstream from the mouth of Bow Creek during the 1982 placer season. A backhoe was used to excavate to bedrock. The location of the pits and/or bedrock drain is shown on the magnetic profiles (Appendix Page III). Commercial quantities of gold closely or directly associated with coarse grained magnetite in significant quantities was encountered in all but one pit. In fact, coarse grained placer magnetite "balls" up to 5 cm. in diameter were actually visible immediately above bedrock in one or two pits. The total depth to bedrock was less than or about two meters. Bedrock consisted of a fractured pink feldspar prophyry which seems to have a low magnetic susceptibility. The best concentrations of placer gold and magnetite occurred within one-half a meter from bedrock.

Two mag. lines (L930 & L980) were established crossing at right angles to the valley so as to intersect the tested area in the best possible manner while at the same time avoiding disturbed ground (spill piles etc.) as much as possible. The magnetic profiles are shown on (Appendix Page III) along with the approximate test pit location. These profiles show an erratic up and down anomalous pattern ranging between 250 and 350 gammas in the area where commercial quantities of placer gold and magnetite association were encountered. Equally as important the pit located upstream of L980 between 0+40S and 0+ 50S encountered no significant gold or placer magnetite which correlates with a rather quiet even mag. response in the 250 gamma range. It is interesting to note that there are anomalies immediately to the south of the baseline and at the north end, half way between the toe of the hill and the Freegold road, which have not as yet been tested. Anyway, the anomalous area between the base line and 0 + 80 meters N was mined out during the fall of 1983 and was found to be economically viable.

CORRELATION OF MAG. SURVEY WITH TRENCHING
SEYMOUR CREEK - MAP 115I6 P. CLAIM P23029
MAGNETIC PROFILES
SCALE: HORIZ - 1cm. = 10 meters / VERTICAL 1cm. = 50γ

MAG RDGS. — GAMMAS

LEGEND
- MAGNETIC PROFILE
- LOCATION OF TRENCH OR TEST PIT CONTAINING GOLD AND PLACER MAGNETITE
- LOCATION OF TEST PIT WITH NO GOLD AND LITTLE OR NO PLACER MAGNETITE

O/S - OFFSET, D/S - DOWNSTREAM
U/S - UPSTREAM
A - APPROXIMATE LOCATION

LINE 980

N70°E

400 350 300 250 200 150 100

HILL SIDE (GRAVEL) — overflow channel — TRAIL → — D/STRM. ℄ CREEK ← — BLACK BRUSH — O/S D/S 25-30m. A — CAT T.R. — STRIPPED — ← BTM. OLD TRENCH → — SPRUCE BENCH 2-3 m. high — TRAIL CHANGE — O/S U/S A — HILL SIDE SPRUCE

1+40N 1+20N 1+00N 0+80N 0+60N 0+40N 0+20N 0+00 0+20S 0+40S 0+60S 0+80S 1+00S 1+20S 1+40S

STATION — METERS B/L

400γ 350γ 300γ 250γ 200γ 150γ 100γ

LINE 930

ROAD TO CARMACKS (FREEGOLD ROAD) — HILL SIDE SPRUCE — Rd. — SPRUCE — O/S D/S 40-50m. A — DOWNSTREAM CRK. — DRAIN — SMALL PILE — BACK CHANNEL 10 metres short — OLD TRENCH RD. → pit — Rd. — Brush & Spruce — overflow channel & Rd. — HILL SIDE SPRUCE — HILL SIDE

400 350 300 250 200 150 100

400γ 350γ 300γ 250γ 200γ 150γ 100γ