

**2000 GEOLOGICAL and GEOCHEMICAL
ASSESSMENT REPORT
ON THE SPROGGE PROPERTY**

Quartz Claims

Justin 1-4	YB59913-916
Justin 5-25	YB70809-829
Snow 26-101	YB90799-874
Sprogge 1-10	YB85182-191
Sprogge 11-54	YB85338-381
Sprogge 55-74	YB85781-800
Sprogge 75-158	YB90875-958
Sprogge 159-202	YB91350-393

094225

23 April 2001

Watson Lake Mining District
NTS Sheet 105H/9

Latitude: 61°42' North
Longitude: 128°10' West

Owner: NovaGold Resources Inc.

Authors: Doug Brownlee and Greg Johnson

Date of Work: August - October, 2000



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& RESOURCES LIBRARY**
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This report has been examined by
the Geological Evaluation Unit
under Section 53 (4) Yukon Quartz
Mining Act and is allowed as
representation work in the amount
of \$ 281,722.00.

M. B. L.
Regional Manager, Exploration and
Geological Services for Commissioner
of Yukon Territory.

Yukon Geological Survey
Geological Services for Commissioner
of Yukon Territory

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SUMMARY

The Sprogge Property, jointly held by NovaGold Resources (75%) and Battle Mountain Canada Ltd (25%), is located 175 kilometres north of Watson Lake within the Tintina Gold Belt of the Yukon Territory. The property consists of 303 Yukon quartz mining claims covering 15,635 acres (6327 hectares) that are accessible from the Nahanni Range road (Yukon Highway 10). On September 14th, 2000 NovaGold Resources entered into an agreement with Kennecott Exploration on the Sprogge Gold Property to earn up to a 70% interest in the property through exploration expenditures and/or completion of a feasibility study and making a decision to bring the property into commercial production.

The objective of the year 2000 NovaGold/Kennecott Sprogge exploration program was to complete a first stage, four hole, 762 m (2500 ft) drill program to test the potential for a multi-million ounce, near surface, structurally and stratigraphically controlled gold target associated with the three square-kilometre Sugar Bowl Alteration Zone. The Sugar Bowl Alteration Zone is defined by a 2400 meter by 1200 meter gold, bismuth, arsenic, and antimony surface anomaly coincident with iron oxidation, clay alteration, bleaching and stockwork quartz veining. Within this zone, there is a core area that contains gold in soil values up to 10.3 g/t and averages over 200 ppb gold. Rock chip samples taken along the 2.5 kilometre ridge bisecting the target area contain multi-gram gold with values as high as 34.8 g/t (1.01 oz/ton), and include values of 6.9 g/t Au over 12.0 meters and 9.6 g/t Au over 4.0 meters. Mineralization is associated with intensely altered and locally quartz veined conglomeratic sandstones, siltstone, shale and silty limestone of the Hyland Formation along the hinge of a broad antiformal fold structure. Within the target area, the antiform has been disrupted further by a series of cross cutting east-west and northeast faults.

The results from these first four widely spaced holes showed considerable hydrothermal alteration including silicification, argillic alteration and disseminated sulfides, however, the geochemical results for gold and the more mobile pathfinder elements including arsenic, antimony and bismuth were significantly lower than those observed in the majority of the surface sampling on the main anomaly. Due to the late fall start of the drill program, along with persistent and heavy snowfall the siting of drill holes were limited primarily to the lowest elevation targets along the northern part of the surface anomaly. These restrictions meant that the first drill holes tested only a small portion of the total surface anomaly at the Sugar Bowl Zone. The primary target of these holes was to test the potential for a multi-million ounce target hosted within a series of ENE trending NNW dipping high-angle high-grade (5 to 30 g/t) stockwork vein zones. Based on the results of the drilling and further mapping in the area it is now thought that the high-grade surface samples of stockwork vein material collected along the northern part of the anomaly may either be related to a package of low-angle stockwork zones missed by the drilling or that the stockwork and vein zones in that area are simply too discontinuous for a multi-million ounce bulk tonnage target. In addition to several untested high-priority targets on the main Sugar Bowl Zone, numerous other potential geochemical targets exist along the 10 kilometre long mineralized trend between the Sugar Bowl and the Justin area.

It is recommended that future exploration programs begin significantly earlier in the field season and emphasize an integration of the underlying structural controls in conjunction with the surface geochemistry to refine and prioritize drill targets. Such a program would likely need to include a focus on detailed geologic/structural mapping combined with ground and/or airborne geophysics to develop a better understanding of the geologic controls to these large systems.

Chapter 1: Introduction

1.1 Introductory Statement

The Sprogge property consists of 303 contiguous Yukon quartz-mining claims jointly held by NovaGold Resources Inc. (75%) and Battle Mountain Gold Ltd. (25%). This report is a summary of results obtained from the 1995 through 2000 field projects. Exploration on the property has progressed from regional reconnaissance that identified a series of significant new mineralized areas, to systematic geological and geochemical sampling programs over a large part of the property, and finally the four diamond drill holes in the 2000 exploration program.

The project has received a full 5 year Class III exploration permit, allowing for unlimited drilling and trenching of the property. A corridor of quartz claims extends to the Nahanni Range Road to the northwest, eliminating the need for other land use permits for access.

1.2 Location and Access (Figure 1)

The Sprogge Project is located roughly 175 kilometres north of Watson lake, Yukon Territory, centred at 61°42' North, 128° 10' West. The Nahanni Range Road (Yukon Highway 10) is a good seasonal highway. Access to the majority of the property is by helicopter, with the camp and staging facilities located at the road. (Figure 1).

1.3 Physiography and Vegetation

The property is covered by fairly rugged glaciated terrain typical of the Selwyn Mountains with elevations ranging from 1,200 to 2,000 metres. A prominent ridge extends along most of the property, with deep WNW trending valleys and somewhat more shallow north trending glacial valleys. Most of the property above the timber line hosts good outcrop and rubblecrop exposure, with lower, timbered areas largely covered by glacial till with lesser outcrop exposure.

Lower elevations are covered by sub-alpine fir forests; mid-elevation areas are commonly covered by thick buckbrush and scrub vegetation. Higher elevations host alpine vegetation or are barren.

1.4: Regional Exploration History and Competitor Activity

The Sprogge Project lies along the southern margin of the area, which underwent extensive regional exploration for tungsten in the late 1970s and early 1980s. Intermittent property exploration has occurred nearby, mostly by Carbide Exploration in 1981 and later by Noranda Exploration and Crysi Exploration. These programs identified vein, stockwork and breccia-hosted molybdenite, chalcopyrite, pyrite, bismuthinite, scheelite, pyrrhotite and arsenopyrite associated with a mid-Cretaceous quartz-monzonite stock. Claims from this period of exploration have lapsed.

In 1996 Westmin Resources staked the FER claims covering several RGS silt anomalies roughly 25 kilometres to the northwest. Later that year Phelps-Dodge of Canada tied on the HY claims to the northwest.

In 1997 Hudson Bay Exploration and Development staked the HIT 1 – 32 claims just west of the Little Hyland River, 2.5 kilometres northwest of the Sprogge property boundary. Hudson Bay added the HIT 33 – 60 and 3 ACE 1-60 Claims in 1998, extending their claim block to adjoin the Sprogge claims. Late in 1998 Hudson Bay added the HAB 1-113 Claims (101 valid claims) to the northwest. Hudson Bay drilled four diamond drill holes in 1999, achieving promising results from one hole. Surface sampling returned values to 115 gpt Au.

1.5 Property Exploration History (Table 1, Figure 2)

In 1988, a joint venture between Vista Resources, Conquest Exploration and Vancliff Resources, completed a 389 m four drill hole program focused on a small outcropping zone of stratigraphically controlled high-grade copper-gold skarn mineralization known as the "Main Skarn" in the Justin area. The drill holes intercepted some anomalous mineralization that included grades to 1 g/t Au and 1% Cu. No further work was completed on the property and the Sun/Rain claims were allowed to lapse.

In 1995, the Justin 1-4 claims were staked by Bernard Kreft over the area of previous work. That same year Hemlo acquired the Justin 1-4 claims from Kreft and staked the Justin 5-25 claims. In 1996, Hemlo conducted a regional geochemical sampling program and identified additional prospective areas to the northwest with the return of widespread high gold values from rock chip sampling in the Sugar Bowl Area. The Sprogge 1-74 claims were staked during 1996 just prior to Hemlo's merger with Battle Mountain Gold Ltd; the resultant company retained the latter name.

Table 1: Status of Sprogge Project claims after 1999 filing

Claim Name	Grant Number	No. of Units	New Expiry Date
JUSTIN 001-004	YB59913-916	4	24-Oct-2010
JUSTIN 005-025	YB70809-829	21	24-Oct-2010
SPROGGE 001, 002, 005, 007-010	YB85182, 183, 186, 188-191	7	24-Oct-2010
SPROGGE 003	YB85184	1	24-Oct-2010
SPROGGE 004, 006	YB85185, 187	2	24-Oct-2011
SPROGGE 011-012, 019	YB85338-339, YB85346	3	24-Oct-2009
SPROGGE 013-018, 020-054	YB85340-381	42	24-Oct-2009
SPROGGE 055-074	YB85781-800	20	24-Oct-2009
SPROGGE 075-080, 082, 099-158	YB90875-880, 882, 90899-958	67	24-Oct-2002
SPROGGE 081, 083-098	YB90881, 883-898	17	24-Oct-2003
SNOW 026, 029-040, 053, 055-058, 067	YB90799, 802-813, 826, 828-831, 840	19	24-Oct-2002
SNOW 090-092, 094, 096, 098, 100	YB90863-865, 867, 869, 871, 873	7	24-Oct-2002
SNOW 027, 028, 041-052, 054, 059-066	YB90800, 801, 814-825, 827, 832-839	23	24-Oct-2003
SNOW 068-089, 093, 095, 097, 099, 101	YB90841-862, 866, 868, 870, 872, 874	27	24-Oct-2003
SPROGGE 159-202	YB91350-393	44	24-Oct-2003
		303	

In 1997, Viceroy entered into an option agreement with Battle Mountain Gold regarding both properties, and staked the Sprogge 75 - 158 claims and Snow 26 - 101 claims consolidating the properties into a contiguous claim block. In 1998, the Sprogge 159 – 202 claims were staked to provide an access corridor

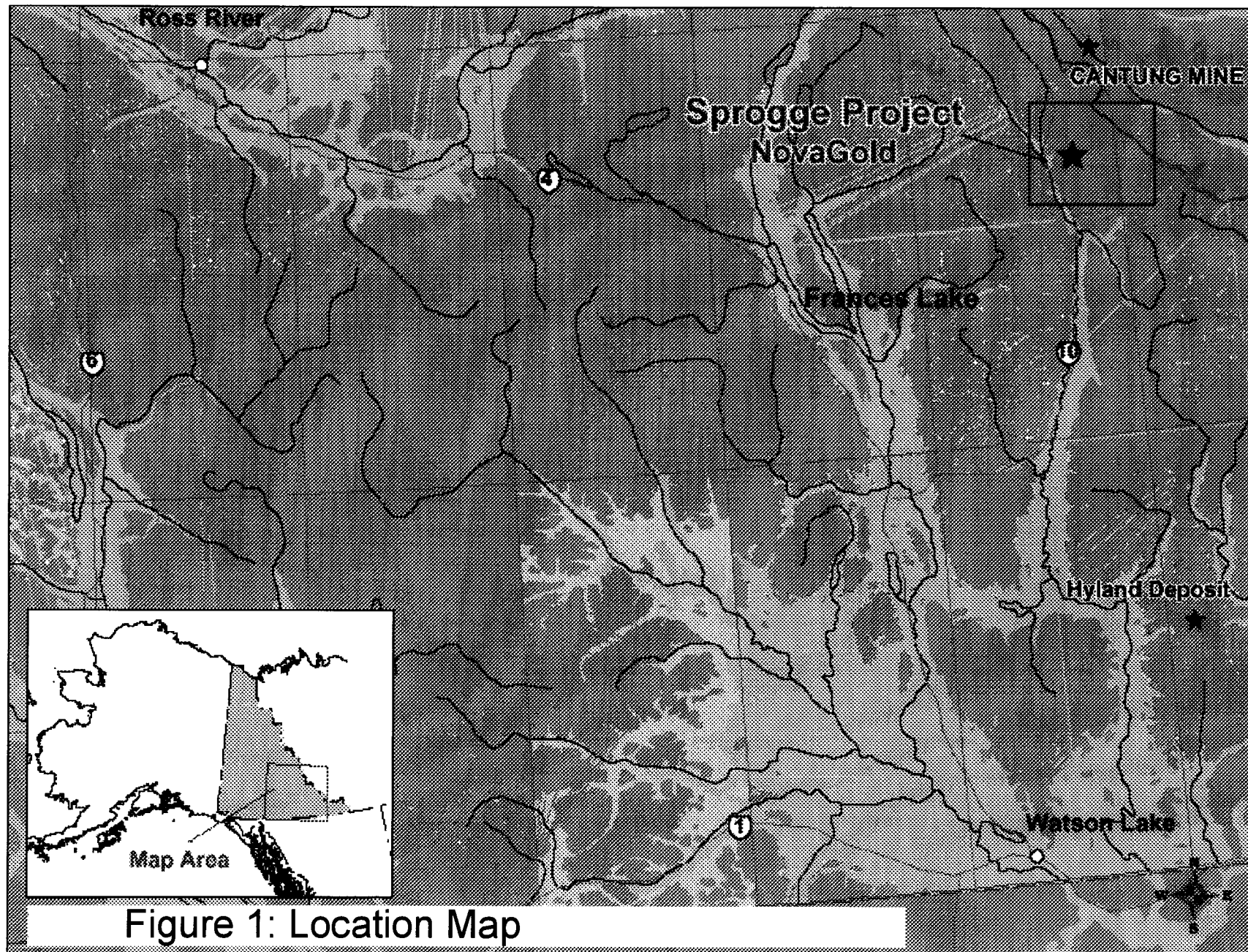


Figure 1: Location Map

from the main block of claims to the Nahanni Range Road (Yukon Highway 10). After expending in excess of C\$500,000 on the property by the end of 1998 Viceroy earned a 60 percent interest in the property.

In 1999, NovaGold Resources Inc. acquired 100% interest in the property. NovaGold completed an exploration program in 1999 to compile all of the previous surface work and to develop an exploration strategy to advance the property. Sampling and prospecting was focused on the most prospective areas of the property to determine the style and intensity of alteration and the potential extent of the mineralization. Soil and rock sampling confirmed the results from previous sampling, as well as, defined some new areas for follow-up. In 1999, NovaGold completed a total of approximately C\$75,000 dollars in direct exploration expenditures on the property.

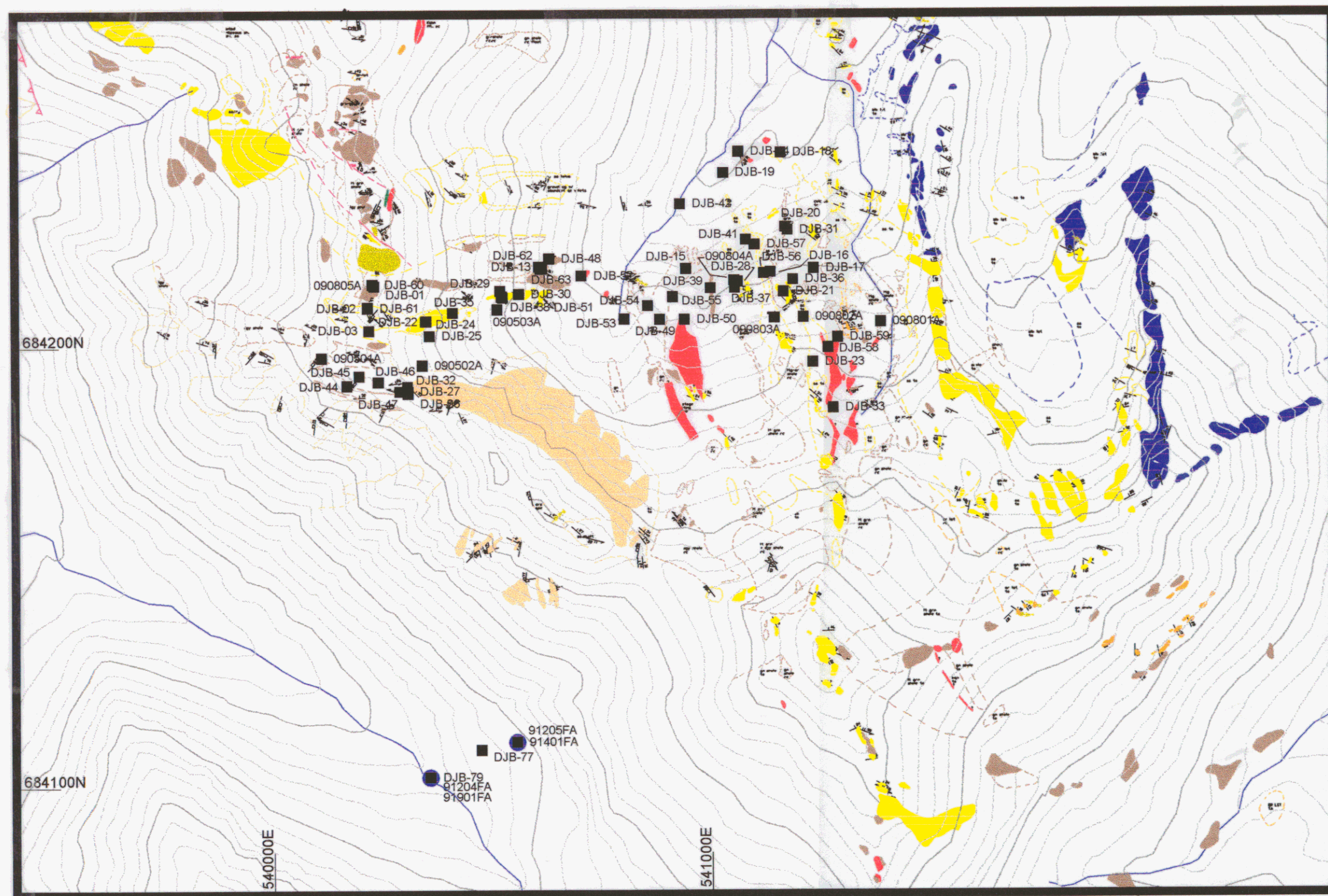
1.6 2000 Work Program (Table 2; Figures 5, 6, 7, 8, 9 & 10; Appendix A)

In 2000, NovaGold Resources and Kennecott Exploration completed a first stage, widely spaced four hole Diamond Drill Program on the northern part of the Sugar Bowl Zone (Chapter 5; Figures 7, 8, 9 & 10).

Work was also carried out on the other major targets to further tie-in the previous mapping and sampling work. This was necessary as the original programs were conducted using enlarged topographical map sheets, with all data then being digitized. These original maps were in the North American Datum 1927 (NAD 27). When the program was completely digitized during the 1999 field season, a digital base map was purchased from NRCAN (Natural Resources Canada), which was in NAD 83. The original data was transferred to the new base by using a best fit visual shifting approach. This has caused a significant portion of all data location information to be suspect (as map locations and database coordinates do not always match. During the Diamond Drill Program, as many grid locations and original sample sites were located and recorded using a Garmin 1200XL GPS (Global Positioning System) instruments. These new coordinates were recorded in UTM NAD 83 projection to correspond to the digital topography base purchased in 1999 (Table 2, Figures 5 & 6).

Additionally, as much of the original 1988 drill core was located on the Justin property and transported back to Whitehorse for storage and to be relogged and sampled.

A total of approximately C\$282,000 was expended during the August-September drill program.



LEGEND

Rock Types

- | | |
|---|--------------------------------|
|  | Quartz Monzonite (dykes) |
|  | Limestone |
|  | Orange Limestone |
|  | Quartz Pebble Conglomerate |
|  | Shale |
|  | Sandstone |
|  | Satan Fingers Sandstone |
|  | Mafic Dykes |
|  | Mapped as Structural Interbeds |

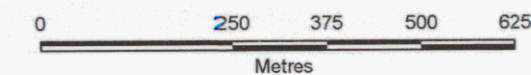
Structure

- | | |
|--|----------------|
| | Joint |
| | Bedding |
| | Foliation |
| | Fault Inferred |
| | Fault Reverse |
| | Fault Normal |
| | Anticline |
| | Syncline |

■ DJB-01 Station and Station ID



SCALE



Projection: North American Datum (NAD)83 Zone 9

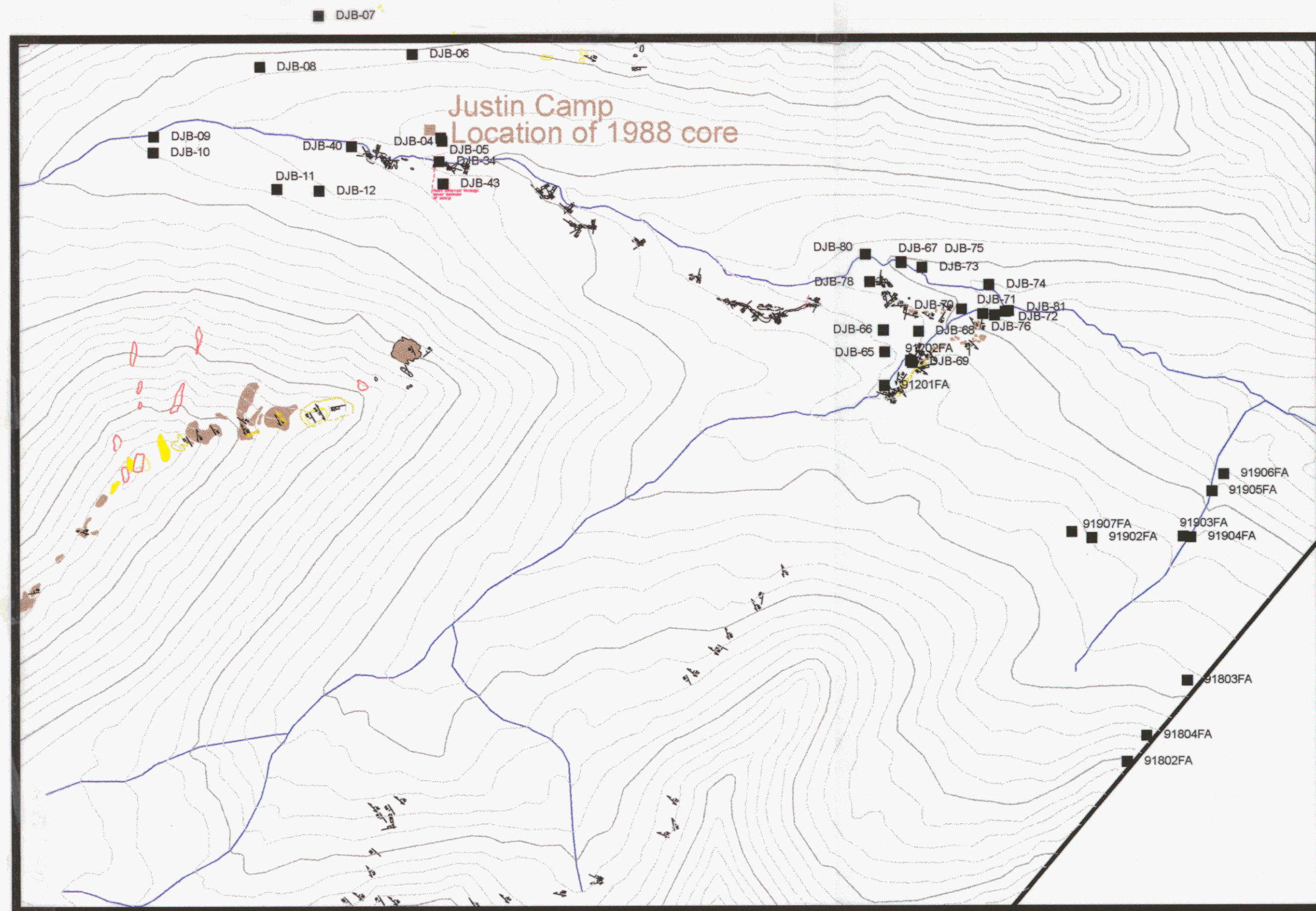
NOVAGOLD RESOURCES INC.

**Outcrop and Structural Geology
Station Locations
Sugar Bowl Area**

Sprogge Project

DRWN BY: DJB
DATE: 18/04/200

NTS: 105H09
Figure: 5



LEGEND

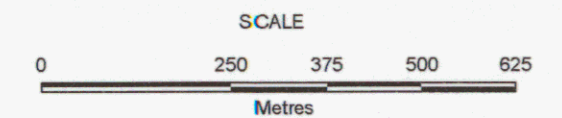
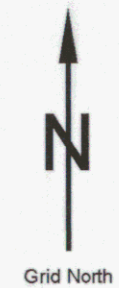
Rock Types

■	Quartz Monzanite (dykes)
■	Limestone
■	Orange Limestone
■	Quartz Pebble Conglomerate
■	Shale
■	Sandstone
■	Satan Fingers Sandstone
■	Mafic Dykes
■	Mapped as Structural Interbeds

Structure

	Joint
	Bedding
	Foliation
	Fault Inferred
	Fault Reverse
	Fault Normal
	Anticline
	Syncline

■ DJB-01 Station and Station ID



Projection: North American Datum (NAD)83 Zone 9

NOVAGOLD RESOURCES INC.

Outcrop and Structural Geology
Station Locations
Justin Area

Sprogge Project

DRWN BY: DJB

NTS: 105H09

DATE: 18/04/2001

Figure: 6

TABLE 3: STATIONS SURVEYED BY GPS

StationID	Collector	Date	NAD83		Notes
			Easting	Northing	
090501A	FA	09/05/2000	540114	6841976	Arsenopyrite vein 180/60-65SW; old sample M389416R
090502A	FA	09/05/2000	540345	6841959	old samples: M389456-458R
090503A	FA	09/05/2000	540515	6842086	Old sample: 168275
090801A	FA	09/08/2000	541391	6842057	old samples: M389275, 202851, 202764-766
090802A	FA	09/08/2000	541214	6842068	10175 E 9600N
090803A	FA	09/08/2000	541147	6842067	9700N 10100E
090804A	FA	09/08/2000	541055	6842152	old samples: m519781R
090805A	FA	09/08/2000	540235	6842139	retrenching of Meadows Zone
91201FA	FA	09/12/2000	548446	6836776	bedding 115 28, foliation 037 18
91202FA	FA	09/12/2000	548507	6836833	old samples: M686081 - 89 & 388481; bedding 098 25, fol 048, 18, jnts 256 90, 178 70, 207 02
91203FA	FA	09/12/2000	543863	6837071	BL 10000N 6800E; bedding 096 26; fol 148 25
91204FA	FA	09/12/2000	540359	6841023	Base of Falls, Ferkle Showing; jnts 206 24, 158 88, 168 84
91205FA	FA	09/12/2000	540557	6841103	talus slope above Ferkle showing with similar mineralization, 1998 soil line
91801FA	FA	09/18/2000	541274	6842986	rusty talus slope, unable to land due to weather
91802FA	FA	09/18/2000	549001	6835912	Snow 89 post 1; tags YB98061 & 62; noted white pcpt (silica) in creek
91803FA	FA	09/18/2000	549139	6836098	confluence of white pcpt & yellow pcpt creeks, also noted ferricrete
91804FA	FA	09/18/2000	549046	6835972	start of "yellow" creek; fol 230 28, jnts 000 93, 068 67
91901FA	FA	09/19/2000	540359	6841023	Ferkle dimensions 20mX24m; falls 6m X 5m high
91902FA	FA	09/19/2000	548922	6836426	9000N 11450E
91903FA	FA	09/19/2000	549130	6836429	9000N 11650E
91904FA	FA	09/19/2000	549148	6836427	o/c silty arg, 20m downstream yellow brn wthrg; bedding 143 45; bd/clv lineation 291 21; fol 180 18
91905FA	FA	09/19/2000	549197	6836533	two pictures of falls showing structure on "white creek", fault 132 32
91906FA	FA	09/19/2000	549224	6836572	siliceous sandstone with diss py and py & FeOx on fractures
91907FA	FA	09/19/2000	548876	6836440	9000N 11400E
DJB-01	DJB	08/25/2000	540235	6842139	Meadows Zone
DJB-02	DJB	08/25/2000	540220	6842091	collar SP0001
DJB-03	DJB	08/25/2000	540223	6842038	trenches south of Meadows Zone?
DJB-04	DJB	08/28/2000	547426	6837346	10000N 10000E BL SUN
DJB-05	DJB	08/28/2000	547429	6837339	YB59916 POST1
DJB-06	DJB	08/28/2000	547361	6837538	10200N 9450E

DJB-07	DJB	08/28/2000	547146	6837627	10300N 9750E
DJB-08	DJB	08/28/2000	547010	6837509	10200N 9600E
DJB-09	DJB	08/28/2000	546764	6837350	10050N 9350E
DJB-10	DJB	08/28/2000	546763	6837313	10000N 9350E
DJB-11	DJB	08/28/2000	547049	6837229	UNKNOWN SOUTH OF BL
DJB-12	DJB	08/28/2000	547146	6837225	9900N 9700E
DJB-13	DJB	09/05/2000	540614	6842178	unknown
DJB-14	DJB	09/07/2000	541066	6842444	unknown
DJB-15	DJB	09/07/2000	540945	6842178	15200N 3900E
DJB-16	DJB	09/08/2000	541138	6842171	15200N 4100E
DJB-17	DJB	09/08/2000	541238	6842179	15200N 4200E
DJB-18	DJB	09/07/2000	541163	6842442	10000N 10120E
DJB-19	DJB	09/08/2000	541031	6842396	10000N 9950E
DJB-20	DJB	09/08/2000	541172	6842273	old sample or location; 202756
DJB-21	DJB	09/08/2000	541168	6842126	old sample or location; 202768
DJB-22	DJB	09/05/2000	540354	6842060	old sample or location; 202853
DJB-23	DJB	09/08/2000	541235	6841966	old sample or location; 202854
DJB-24	DJB	09/05/2000	540353	6842059	old sample or location; 202860
DJB-25	DJB	09/05/2000	540361	6842026	old sample or location; 25M
DJB-26	DJB	09/05/2000	540312	6841895	old sample or location; 389454
DJB-27	DJB	09/05/2000	540312	6841900	old sample or location; 518744
DJB-28	DJB	09/08/2000	541063	6842149	old sample or location; 609407
DJB-29	DJB	09/05/2000	540522	6842128	old sample or location; 689186
DJB-30	DJB	09/05/2000	540565	6842121	old sample or location; 689188
DJB-31	DJB	09/08/2000	541178	6842266	old sample or location; 690670
DJB-32	DJB	09/05/2000	540311	6841911	YB85182 post 1
DJB-33	DJB	09/08/2000	541281	6841862	YB85344 post 1
DJB-34	DJB	08/28/2000	547422	6837292	9150N 10000E
DJB-35	DJB	09/05/2000	540414	6842079	9300N 9350E
DJB-36	DJB	09/08/2000	541190	6842154	9700N 10150E
DJB-37	DJB	09/08/2000	541056	6842135	9700N 10000E
DJB-38	DJB	09/05/2000	540526	6842115	9700N 9450E
DJB-39	DJB	09/07/2000	541001	6842134	9700N 9950E
DJB-40	DJB	08/28/2000	547221	6837327	9800E 10000N
DJB-41	DJB	09/08/2000	541082	6842244	9800N 10000E
DJB-42	DJB	09/07/2000	540932	6842325	9900E ?N
DJB-43	DJB	08/28/2000	547431	6837241	9900N 10000E
DJB-44	DJB	09/05/2000	540172	6841913	Sandstone/shale below; J0 009 85, bd 282 42, fol 291 35, thickness 2-3 m
DJB-45	DJB	09/05/2000	540200	6841935	Sandstone/Shale contact
DJB-46	DJB	09/05/2000	540244	6841921	Sandstone/Shale contact
DJB-47	DJB	09/05/2000	540293	6841900	Sandstone/Shale contact
DJB-48	DJB	09/05/2000	540634	6842201	top of "middle" sandstone unit and shale
DJB-49	DJB	09/07/2000	540885	6842063	old sample or location; LN-
DJB-50	DJB	09/07/2000	540941	6842063	old sample or location; LN0-
DJB-51	DJB	09/05/2000	540528	6842113	old sample or location; MSM788
DJB-52	DJB	09/06/2000	540707	6842162	possible drill site
DJB-53	DJB	09/07/2000	540804	6842064	possible drill site
DJB-54	DJB	09/07/2000	540858	6842094	possible drill site
DJB-55	DJB	09/07/2000	540915	6842114	possible drill site
DJB-56	DJB	09/08/2000	541123	6842168	possible drill site
DJB-57	DJB	09/08/2000	541102	6842233	possible drill site
DJB-58	DJB	09/08/2000	541270	6841999	possible drill site
DJB-59	DJB	09/08/2000	541292	6842022	possible drill site

DJB-60	DJB	09/05/2000	540231	6842143	collar SP0002 incorrect
DJB-61	DJB	09/06/2000	540220	6842089	collar SP0002 correct
DJB-62	DJB	09/05/2000	540611	6842183	trenches in middle sandstone, below contact
DJB-63	DJB	09/05/2000	540617	6842179	trenches in middle sandstone, below contact
DJB-64	DJB	09/12/2000	537695	6846653	CORE SHACK
DJB-65	DJB	09/12/2000	548447	6836853	11000E 9450N TL
DJB-66	DJB	09/12/2000	548444	6836903	11000E 9500N TL
DJB-67	DJB	09/12/2000	548485	6837060	Newmont rock sample?
DJB-68	DJB	09/12/2000	548525	6836900	old sample or location; 380264
DJB-69	DJB	09/12/2000	548511	6836829	old sample or location; 686086
DJB-70	DJB	09/12/2000	548625	6836951	old sample or location; 686102
DJB-71	DJB	09/12/2000	548701	6836937	old sample or location; 686108
DJB-72	DJB	09/12/2000	548726	6836945	old sample or location; 686109
DJB-73	DJB	09/12/2000	548534	6837047	old sample or location; 686113
DJB-74	DJB	09/12/2000	548688	6837007	old sample or location; 68612?
DJB-75	DJB	09/12/2000	548486	6837058	old sample or location; 686241
DJB-76	DJB	09/12/2000	548674	6836940	old sample or location; 688107
DJB-77	DJB	09/12/2000	540476	6841085	8600N 9400E
DJB-78	DJB	09/12/2000	548413	6837014	9600N 10950E
DJB-79	DJB	09/12/2000	540359	6841023	Base of Falls, Ferkle Showing
DJB-80	DJB	09/12/2000	548403	6837077	Newmont silt sample?
DJB-81	DJB	09/12/2000	548733	6836947	old rock sample, confluence area
Grid_1	FA	09/12/2000	548394	6386812	9400N 10950E

1.6.1 Sample Preparation and Assay Procedure

All 1995 – 1998 and 2000 samples were sent to Chemex Labs in North Vancouver. Core samples and rock sample preparation consisted of crushing the sample to > 70% -10 mesh, followed by gold fire assaying of a 30 gram subsumable and 32-element ICP analysis of a 10 gram subsumable. ICP analysis was done using a standard aqua regia digestion of all elements except mercury. Soil sample preparation involved screening of a 100 gram sub-sample of -80 mesh material. Rock sample taken in 1999 were sent to NAL Laboratories of Whitehorse for gold fire assay analysis, then sent to IPL Laboratories in Vancouver for 30-element ICP analysis.

All rock, soil and silt sampling was quantifiably recorded in the field to ensure a high degree of quality control, and entered into standardized spreadsheet programs. Criteria for each sample included: sample type, width of chip sampling, lithology, alteration and mineralization, and “UTM” location

CHAPTER 2: GEOLOGY

2.1 Regional Geology

The Sprogge Project lies within the Selwyn Mountains and is underlain by a thick sequence of Selwyn Basin stratigraphy comprised primarily of shallow marine shelf to off-shelf sedimentary rock derived from the ancient North American Platform. The project area occurs along the eastern portion of the Tombstone-Tungsten Plutonic Suite, consisting of Late Cretaceous quartz monzonitic stocks and plutons. The Tombstone Suite extends from central Alaska to the southeastern portion of the Yukon – Northwest Territories border and is collectively referred to as the Tintina Belt. Several Tombstone Suite stocks

occur in the area, and control much of the region's mineral emplacement, including a tungsten skarn 30 km. to the north that hosts the Cantung Mine.

The Sprogge Project area is underlain by Late Precambrian Hyland Group coarse clastic conglomeratic "grits", sandstone, siltstone, phyllite, calcareous phyllite and lesser limestone. This represents a shallow marine depositional environment, with coarse clastic members possibly representing deltaic or submarine channel emplacement. The Hyland Group package is separated from a broad unit of thin to medium bedded limestone of the Cambro-Ordovician Rabbitkettle Formation to the north by a pronounced northwest trending transcurrent fault.

2.2 Property Geology (Table 2; Figures 3 & 4)

The Sprogge Project covers a broad package of Hyland Group, Yusezyu Formation sedimentary rocks, with the extreme eastern areas underlain by Rabbitkettle Formation limestone. Seven members have been identified, including three of quartz-pebble conglomeratic grits and sandstone occurring as thick units across the property. The uppermost member consists of a thick sequence of interbedded sandstone to siltstone, calcareous sandstone, shale and limestone underlying most of the Justin – Snow area. Strata on either side of the fault separating Hyland Group and Rabbitkettle Formation sediments has undergone intense structural deformation. Several NNW trending structurally controlled Tombstone Suite quartz-monzonite to quartz-biotite-monzonite dikes have intruded the sedimentary rocks, most notable in the Justin area.

Northeast trending and east-west trending structural fabrics have resulted in a high degree of structural preparation across the property. The sedimentary rocks are broadly folded along a district-scale antiformal structure with the axis extending roughly along Dayo Creek south of the Sugar Bowl. A major NNW trending lineament in the central area bisects the property; structural mapping to the southeast in the Justin Area suggests multiple NW – SE trending antiformal structures.

Alteration is widespread across the property, and is pronounced in the Sugar Bowl and Justin areas. Pervasive argillic alteration of feldspar to clay minerals has occurred within the coarse clastic members, along with oxidation of fine sulfides resulting in a strong limonitic staining. Silicification is pronounced along high angle quartz-arsenopyrite vein and breccia zones, and occurs sporadically elsewhere, resulting in localized near-chalcedonic textures. "Liesegang Banding" occurs in numerous locations within coarse clastics in the Sugar Bowl area. Stratigraphically controlled copper-gold skarn alteration and mineralization is abundant in the Justin Zone and Kangas Zone areas.

TABLE 3: SPROGGE PROJECT STRATIGRAPHIC COLUMNS**Regional Stratigraphic Column (Modified after Gordey and Andersen, 1993)**

Age	Group	Formation (Lithology)	Unit Designation	Description
Mid-Late Cretaceous (95-89Ma)	Tombstone-Tungsten Plutonic Suite	Diorite through Granite (Most commonly Quartz-Monzonite)	Kqm, Kg, Kdr	Felsic to intermediate, dioritic to granitic intrusives, most commonly monzonitic, quartz monzonitic to quartz dioritic. Frequently quartz-feldspar to feldspar porphyritic within upper emplacement levels and dykes. Tungsten Suite along Yukon - NWT border is now believed to be part of Tombstone Suite.
Cambrian -Early Ordovician		Rabbitkettle Formation	Cor	Buff - tan weathering, thin - medium bedded limestone, lesser slate, quartzite, phyllite, limestone, local basalt flows, tuffs, breccias. Maroon, brown, black to green thin bedded argillite, phyllite, siltstone. Lesser light brown weathering "grit" and sandstone.
Late Precambrian to Early Cambrian	Hyland Group	Narchilla Formation	Can (PrCh)	Maroon, brown, black to green thin bedded argillite, phyllite, siltstone. Lesser light brown weathering "grit" and sandstone. Minor limestone to sandy limestone. Variably calcareous siltstone, sandstone, conglomerate, locally calcareous "grits". Also, abundant members comprised of phyllite,
Late Precambrian to Early Cambrian	Hyland Group	Yusezyu Formation	Py (PrCh)	Variably calcareous siltstone, sandstone, conglomerate, locally calcareous "grits". Also, abundant members comprised of phyllite, argillite, shale, lesser limestone.

Property Specific Stratigraphic Column

Formation	Unit	Thickness	Lithology	Lithology Description	Contacts	Comments
	KQM		QM	Medium grained roughly equigranular quartz monzonitic dikes related to Tombstone intrusive suite. Hypogene argillic, phyllitic, and limonitic alteration common within dikes underlying Sugar Bowl area; weak pervasive silicification within dikes underlying Justin Claims.	Sharp contacts with host rocks.	Most of the quartz monzonite dykes have intruded the host rocks along tensional fracturing trending NNW.
Rabbitkettle	Cor	>100m	LST	Med gy to gy-bn micritic ls; locally rexld. Strongly folded near contact w/ pChy7.	Lower contact w/ pChy7 is a thrust fault.	Neither top nor bottom of unit are exposed on the property
Yusezyu	pChy7	>400m	LSS	Med to dk gy ls; gy, bn and rare black calc ss, slt, sh; noncalc sh, ss, and qtz pebble cong.	Lower contact w/ pChy6 is gradational, apparently erratic, though not well exposed in most areas.	Coarse clastic portions of this unit dominate the Justin area.
	pChy6	250-310m	QPC	Qtz-fspar pebble cong and coarse grained ss to gravel grit	Lower contact w/ pChy5 is locally gradational, including some calc ss beds; elsewhere contact is sharp.	
	PChy5	100-150 m	LST	Black micritic to finely xln ls; med bedded to massive. Locally fetid.	Lower contact w/ pChy4 is sharp, probably representing a significant hiatus.	
	PChy4	100-120m	SST, QPC, SHL, SLT	Lt bn, tan and grey, med to thick bedded ss and qtz±fspar±lithic pebble cong with lesser interbedded shale and siltstone.	Lower contact gradational w/ pChy3; placed at the top of thick gy phyllite and at next occurrence of coarser clastic beds.	
	PChy3	125-160m	SHL, LSS, LST, SST	Lt gy, gy-gn, and tan, fine to med interbedded sh, calc ss/slt, ls and ss.	Lower contact gradational w/ pChy2; distinction made on the basis of higher silt content in pChy2, somewhat reduced nature of lower pChy3 sh (green phyllite) and the first occurrence of carbonate in the lower pChy3 gn phyllite.	
	pChy2	150-200m	SHL, SST, QPC	Dk gy to black and med gy shales and tan to bn ss to cong.	Lower contact placed at first occurrence of relatively thick shale (phyllite) unit of the pChy2 alternating shale and ss-cong sequence.	Alternating sh-cong sequence and grading of coarse clastic portions of unit suggests periodic clastic debris influx characteristic of turbidite deposits.
	chy1	>150m	SST, QPC, SHL, SLT	Tan, lt bn and gy, med bedded to massive ss, gravel and qtz±fspar±lithic pebble cong. Overall, unit is strongly qtz dominant. Minor interbedded dk bn to bk sh, rare siltstone.	Lower contact not exposed.	Characteristic iron stain. Jointing and poorly developed foliation create unstable spires and spalling outcrops in the Sugar Bowl area.

LST: Limestone; LSS: Calcareous Sandstone; LST: Calcareous Siltstone; SST: Sandstone; SHL: Shale; SLT: Siltstone; QPC: Quartz Pebble conglomerate; QM: Quartz Monzonite

CHAPTER 3: MINERALIZATION

3.1 Introduction (Figure 4)

Three major mineralized areas have been delineated along the 10 kilometre long mineralized trend. The three square-kilometre Sugar Bowl Zone is the best defined to date, followed by the Justin Zone, located approximately 6 kilometres to the southeast, and the Dayo Zone, 1.5 kilometres to the northwest of the Sugar Bowl. Several styles of mineralization have been recognized, including: retrograde skarn assemblages and chalcedonic veining and stockwork in the Justin Zone; and quartz-arsenopyrite vein and stringer mineralization and fine, fracture controlled oxidized sulfides in the Sugar Bowl area. The varying styles of mineralization reflect local structural and lithological controls. The styles of mineralization combined with the geology and overall geochemical zonation indicated by the surface results suggests a district-scale zoning pattern around an intrusive center underlying the Justin area.

3.2 Characteristics of Mineralized Zones

3.2.1 Sugar Bowl Area

The Sugar Bowl area is expressed topographically as a NW trending ridge and a broad north-facing valley. The ridge is largely comprised of a thick package of NNW trending altered and limonitic coarse clastic sedimentary rocks within a major antiformal structure. The Sugar Bowl area has a highly anomalous gold and associated pathfinder element geochemical signature measuring 2400 by 1200 meters. Within this, a 1,200 by 600 meter core area averages more than 200 ppb Au in soils with values as high as 10.3 g/t Au in soils associated with the altered coarse clastic sediments. This geochemical anomaly is strongest at lower elevations along both flanks of the ridge, with sharp increases of grade at discreet elevations along the south flank.

The coarse clastic sediments, primarily quartz-pebble conglomeratic grits, also host high-grade quartz-arsenopyrite veining and brecciated structural zones that often exceed 20 g/t Au in rock sampling. A value of 6.79 g/t Au was obtained in 1999 from a grab sample of silicified vuggy sedimentary breccia along the northern flank of the Sugar Bowl ridge. Abundant fine NNE and ENE trending fractures coated with strongly limonitic stains occur throughout the area. A value of 1.09 g/t Au over 4.0 m was returned from non-veined material hosting similar limonitic fissures near the base of the north flank.

A zone of abundant brittle fracture-controlled quartz-arsenopyrite vein and gouge material within altered, limonitic phyllite and Liesegang banding occurs in the northern most part of the Sugar Bowl Zone in an area referred to as the Meadows area. Early rock chip sampling returned a value of **6.9 g/t Au over 12.0 meters**. Sampling of the interstitial phyllite and avoiding silica material returned values of 0.63 g/t Au from brecciated host rock with traces of scorodite. Select sampling of the vein material returned values to 25.4 g/t Au. Sampling of vein and silicified host rock further west returned additional values up to 26.5 g/t Au over 1.5 meters. Grab sampling of abundant arsenical quartz vein float in this part of the Sugar Bowl returned other values as high as 34.8 g/t Au.

To the northeast of the central ridge, abundant quartz-arsenopyrite structures contain multi-gram values in rock chips with composite grab samples returning values as high as 15.0 g/t Au. Strongly altered limonitic dikes and altered coarse clastic and phyllitic members occur in this area. South of this area, along the south flank of the ridge, values to 9.55 g/t Au over 4.0 meters from quartz-arsenopyrite veining and associated wall rock were returned, with composite grab samples returning up to 11.6 g/t Au.

Abundant arsenical mineralization returning multi-gram gold values, occurs outside of the major zones across the entire area.

3.2.2 Dayo Zone

At the northern end of the mineralized trend, the Dayo Zone, located 1.5 kilometres northwest of the Sugar Bowl area, was discovered in 1998 through reconnaissance soil sampling. Several anomalies comprise this zone with the largest being a 800 by 200 meter area with values to 500 ppb Au, averaging just under 100 ppb Au. This is associated with limonitic, altered coarse clastic sediments, possibly the north-west extension of the Sugar Bowl Ridge Zone, and is open to the west and north. Limited rock chip sampling returned anomalous geochemical values. Follow-up sampling will be required to further define the extent of the Dayo Zone anomaly.

3.2.3 Justin Zone

At the southern end of the mineralized trend, the Justin Zone is located approximately 6 kilometres southeast of the Sugar Bowl zone. The Justin Zone is defined by a three-kilometre long highly anomalous bismuth, gold and arsenic surface anomaly. This area hosts the original discovery area referred to as the "Main Skarn", where an area of outcropping stratigraphically controlled gold-bismuth-copper mineralization occurs along the south flank of a prominent east-west trending ridge. In 1988, a diamond drilling program of four short holes totalling 389 meters, targeted this zone of stratigraphically controlled copper-gold mineralization and returned values to 1.0% copper, 1 g/t Au and +1000 ppm Bi. Chip sampling across this exposed zone within the creek returned values to **2.38 g/t Au over 22.5 meters**, with values to 5.1 g/t Au from dike material. Additional sampling in 1999 returned values to 4.0 g/t Au from strongly pyritic sedimentary rock.

Although the Justin Zone area is poorly exposed, due to abundant glacial cover, surface geochemical exploration has identified a broad, three kilometre long highly anomalous area of bismuth and arsenic with an anomalous though more variable gold signature in soil and rock sampling. The eastern portion of this consists of weakly pyritic, silicified and argillically altered quartz-pebble conglomerate with abundant chalcedonic veining across an area of 600 by 500 meters. Quartz-arsenopyrite vein and vein breccia zones are common, and rock sampling has returned anomalous values across the entire area. The highest value to date was 8.16 g/t Au quartz-arsenopyrite vein and vein breccia material.

Trench sampling across moderately chalcedonic coarse clastic sediments in the south-eastern part of the Justin Zone returned a value of **4.24 g/t Au over 4.5 meters**, open to the west. These high values were somewhat surprising due to the relatively subtle alteration of the host rocks. Additional sampling in the area of this trench in 1999, returned values of up to 5.1 g/t Au over 2.0 meters.

In the northern part of the Justin Zone, referred to as the Kangas area, areas of stratigraphically controlled copper-gold skarn and replacement style mineralization within calcareous siltstone and minor limestone have been noted. Replacement-style arsenopyrite mineralization, returning values to 1.6 g/t Au over 1.5 meters, are common, as are auriferous quartz-arsenopyrite veins. An anomalous gold-arsenic-antimony geochemical signature determined from rock and soil sampling, measuring 1200 meters by 400 meters, extends westward from the skarn zone. Sampling in 1998 returned values to 1.38 g/t Au over 3.5 meters, open to the east; grab sampling returned values to 3.46 g/t Au. Sampling of coarse clastic sediments and dike material to the west of the skarn also returned anomalous values.

CHAPTER 4: 2000 DRILL PROGRAM

4.1 Drill Program (Figures 7, 8, 9 & 10; Appendix B & C)

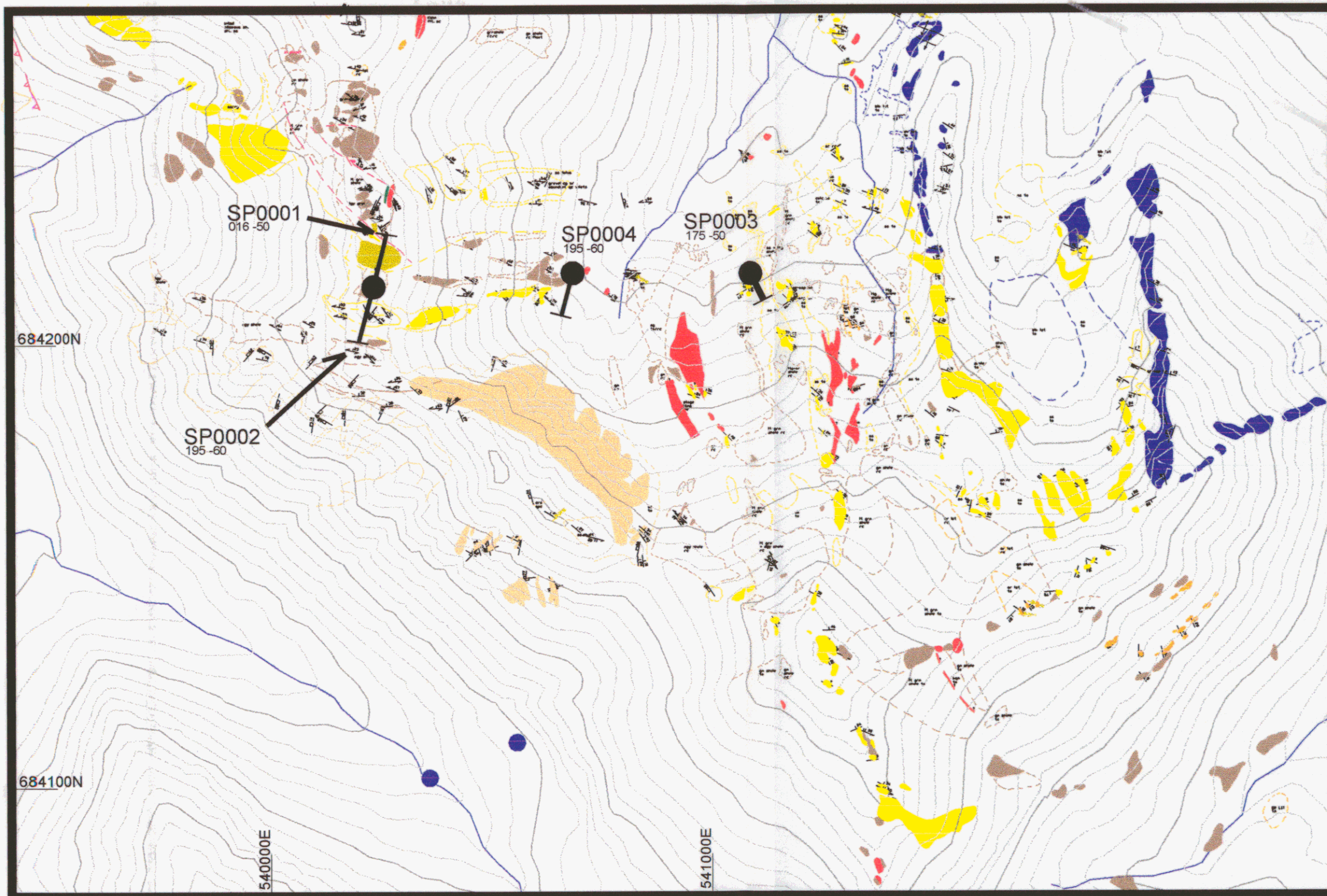
The Sprogge program camp was located on the Sprogge claim block north of the Hyland airstrip along Yukon Highway 10. No additional permits were required for the camp beyond the existing Class III land use permits. Camp construction for the Sprogge Project began August 23rd, the first of four diamond drill holes was started on August 28th and the last was finished September 19th. Persistent and heavy early snowfall hampered the movement of drills and personnel, restricting the siting of the drill holes primary to the lowest elevation targets along the northern part of the Sugar Bowl surface anomaly. The drill, equipment, and camp were demobilized on September 20th to Whitehorse. The drill core and samples were shipped to Whitehorse with the logging and sampling completed utilizing the Yukon Territorial Government core facility.

The total drilling for the project was 776 meters (2550 feet) in four HQ diamond drill holes on the Sugar Bowl Alteration Zone. The holes were located on three panels roughly 500 meters apart covering approximately 1000 meters of strike length. The first core hole was drilled oriented to the north at a 50 degree dip and the last three holes were drilled oriented to the south at a 60 degree dip. Sprogge Hole 1 and 2 were drilled on the same panel with holes 4 and 3 an additional 500 and 1000 meters to the east respectively. The drill holes were designed to sample beneath areas of higher-grade gold surface sampling to test the potential for a multi-million ounce target hosted within a series of ENE trending NNW dipping high-angle high-grade (5 to 30 g/t) stockwork vein zones along the northern part of the 3 square-kilometre Sugar Bowl Alteration Zone.

Sprogge Drill Hole 1 was completed to a total depth of 187.5 meters (615 feet) (see attached map). It was oriented at 015 Azimuth and -50 degrees angle. The objective of the first drill hole was to test an ENE trending high-grade structural zone approximately 100 meters down dip beneath the Meadows Zone hand-trench intercept of 6 g/t over 12 m. This hole was designed to test the orientation, width and intensity of the intersection of this high-grade structural zone in the lower sandstones, and siltstones. Due to the restrictions of the topography, this hole had to be drilled sub-parallel to stratigraphy and did not intersect the projected major stockwork vein structure as targeted. Two large cataclastically deformed fault zones were encountered as well as several quartz veins, but no high sulfide stockwork vein mineralization as exposed in trenches in the Meadow Zone. The only significant geochemical result was from the last sample in the hole at 187.5 meters, which contained 705 ppb Au in an interval containing brecciated quartz with a hematitic matrix and clots of pyrite and arsenopyrite.

Sprogge Drill Hole 2 was completed to a total depth of 259 meters (850 feet) at the same site as Hole 1. It was oriented at 195 Azimuth and -60 degrees angle. This hole was designed to intersect additional high-grade structures in the meadows area while testing more of the northeast dipping stratigraphy. A package of mixed sandstone and shale sequences was intersected in the hole with several intervals described as pervasively silicified with moderate to strong argillic alteration and 1/2% to 1% fine grained disseminated sulfide pyrite, arsenopyrite and pyrrhotite. The most intense mineralization and veining (1-2 veins/veinlets per meter) were described within the sandstone units. No significant geochemical results were intersected with the highest values ranging from 90-140 ppb Au in association with some veining and disseminated pyrite.

Sprogge Drill Hole 3 was completed to a total depth of 133 meters (436 feet). It was oriented at 175 Azimuth and -60 degrees angle. The objective of this drill hole was to test an ENE trending structural zone within the sandstones, siltstones and shales associated with a series of mineralized felsic porphyry dikes and quartz stockwork zones in rubble crop. Hole 3 encountered a package of interbedded, weakly to moderately altered, siltstone and conglomeratic sandstone units. Lithologies were described as locally



LEGEND

Rock Types

■	Quartz Monzanite (dykes)
■	Limestone
■	Orange Limestone
■	Quartz Pebble Conglomerate
■	Shale
■	Sandstone
■	Satan Fingers Sandstone
■	Mafic Dykes
■	Mapped as Structural Interbeds

Structure

	Joint
	Bedding
	Foliation
	Fault Inferred
	Fault Reverse
	Fault Normal
	Anticline
	Syncline

SP0003
175-50 DDH Location, ID and orientation

Grid North

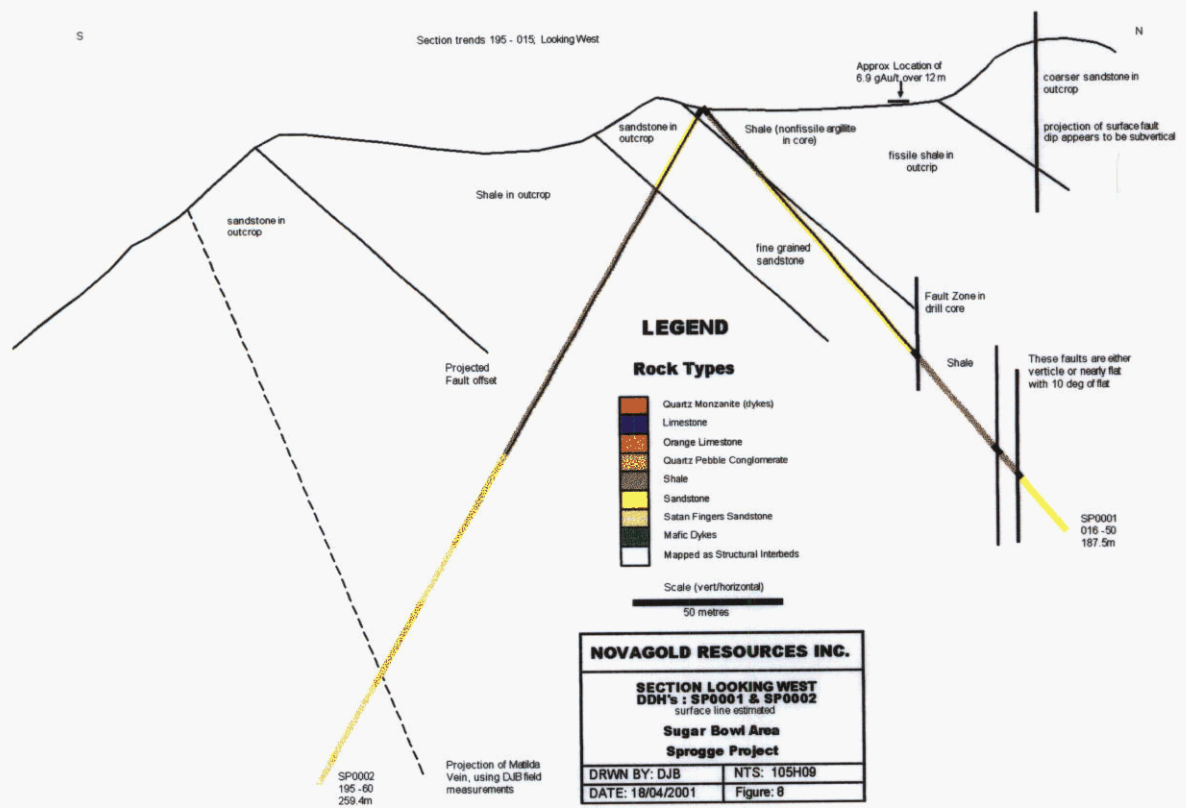
SCALE
0 250 375 500 625
Metres

Projection: North American Datum (NAD)83 Zone 9

NOVAGOLD RESOURCES INC.

**Outcrop and Structural Geology
Drill Hole Locations
Sugar Bowl Area
Sprogge Project**

DRWN BY: DJB	NTS: 105H09
DATE: 18/04/2001	Figure: 7



S

Section trends 175 - 355, Looking West South West

N

LEGEND**Rock Types**

	Quartz Monzonite (dikes)
	Limestone
	Orange Limestone
	Quartz Pebble Conglomerate
	Shale
	Sandstone
	Satan Fingers Sandstone
	Mafic Dikes
	Mapped as Structural Interbeds

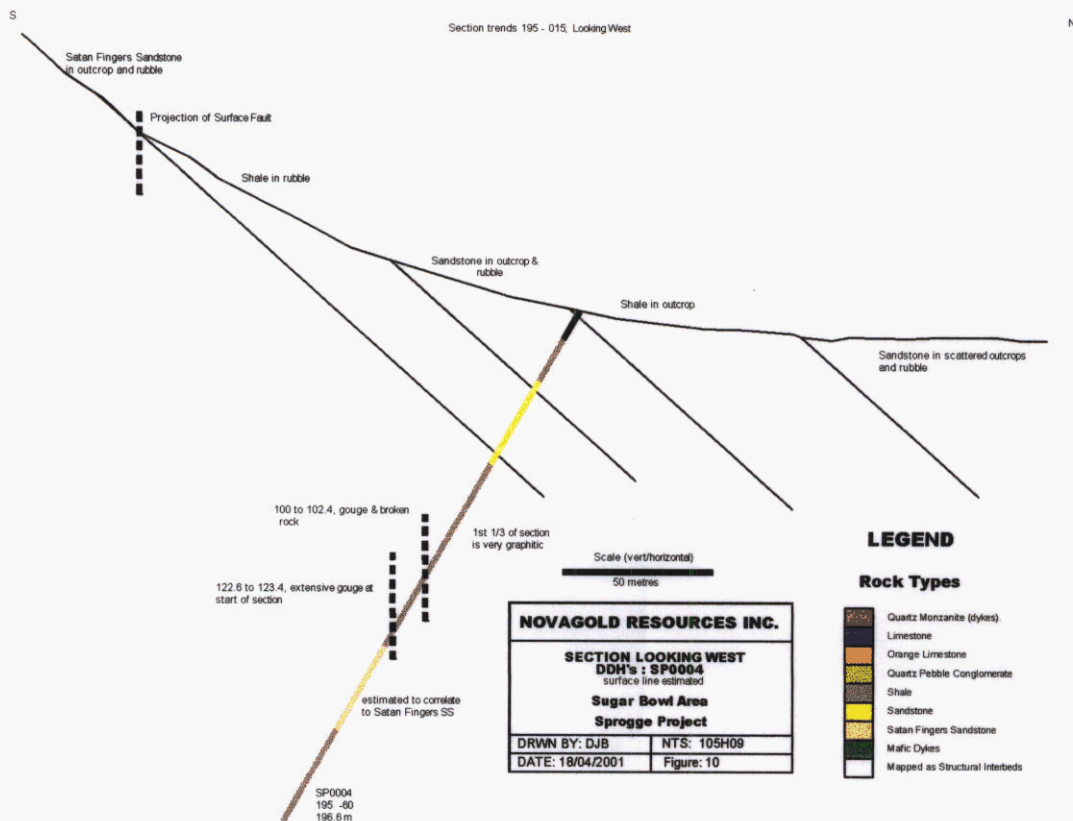
Location of several quartz arsenopyrite
veins, generally at shale/sandstone contacts
trends tend to be around 260 deg

NOVAGOLD RESOURCES INC.	
SECTION LOOKING WEST	
DDH: SP0063	
surface line estimated	
Sugar Bowl Area	
Sproge Project	
DRWN BY: DJB	NTS: 105H09
DATE: 18/04/2001	Figure: 9

Scale (vertical/horizontal)
50 metres

Fault zone from 44.5 to 50.0m
50% gouge and broken rock
orientation unknown

Surface is comprised of shale and
sandstone rubble, outcrops of both
occur on both sides of section trace



being pervasively sericitically altered with a pronounced greenish colour with weak to moderate argillic alteration and 1/2% to 1% disseminated pyrite, pyrrhotite. Two roughly 10 m wide zones of mineralization and alteration were encountered with some moderate quartz stockwork and fracture related mineralization and up to 3% disseminated pyrite, pyrrhotite and arsenopyrite. No large stockwork zones or felsic porphyries, as seen at surface, were encountered. No significant geochemical results were encountered.

Sprogge Drill Hole 4 was completed to a total depth of 196.5 meters (645 feet). It was oriented at 195 Azimuth and -60 degrees angle. The objective of this hole was to test an ENE trending high-grade structural zone at a significantly lower topographic elevation and another +500 meters east from Site holes 1 and 2. This hole was also designed to test as much of the north dipping stratigraphy as possible, targeting the an eastern extension of the ENE trending structural zone that includes the high-grade Meadows Zone within the lower sandstones, siltstones and shales. It should be noted that due to extensive talus cover, this hole was collared significantly further north than originally planned. Hole 4 encountered two packages of argillites with intervening fine to medium grained sandstone separated by cataclastic structures. Several roughly 10+ meter wide zones were encountered that were described as yellow stained, moderately to strongly argillized, fine to medium grained conglomeratic sandstone with 1% gray fine grained sulfides and stockwork veining. The two packages of argillite appear to indicate a greater level of structural complexity in the Sugar Bowl area than expected. The only significant geochemical results were a 26.5 meter interval of intense argillic alteration with fine disseminated pyrite and arsenopyrite associated with moderate quartz stockwork and along foliation. This interval was from 135 to 156.5 meters depth and contained values up to 120 ppb Au.

CHAPTER 6: CONCLUSION and RECOMMENDATIONS

The objective of the year 2000 NovaGold/Kennecott Sprogge exploration program was to complete a first stage, four hole, 762 m (2500 ft) drill program to test the potential for a multi-million ounce target hosted within a series of ENE trending NNW dipping high-angle high-grade (5 to 30 g/t) stockwork vein zones located on the northern part of the Sugar Bowl target area. The results from these first four widely spaced holes showed considerable hydrothermal alteration including silicification, argillic alteration and disseminated sulfides, however, the geochemical results for gold and the more mobile pathfinder elements including arsenic, antimony and bismuth were significantly lower than those observed in the majority of the surface sampling on the main anomaly. It should be noted that these first drill holes tested only a small portion of the overall surface anomaly at the Sugar Bowl Zone. In addition to several untested high-priority targets on the main Sugar Bowl Zone, numerous other potential geochemical targets exist along the 10 kilometre long mineralized trend between the Sugar Bowl and the Justin area. It is recommended that future exploration programs begin significantly earlier in the field season and emphasize an integration of the underlying structural controls in conjunction with the surface geochemistry to refine and prioritize drill targets. Such a program would likely need to include a focus on detailed geologic/structural mapping combined with ground and/or airborne geophysics to develop a better understanding of the geologic controls to these large systems.

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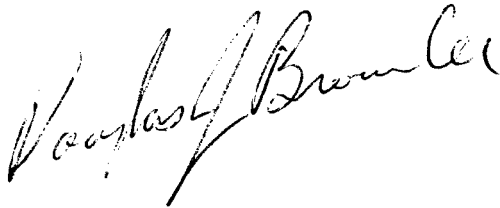
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Schulze, C. 2000: 1999 Geological and Geochemical Assessment Report on the Sprogge Property, NovaGold Resources Inc.

STATEMENT OF QUALIFICATIONS
Douglas J. Brownlee

I, Douglas J. Brownlee, do hereby certify that:

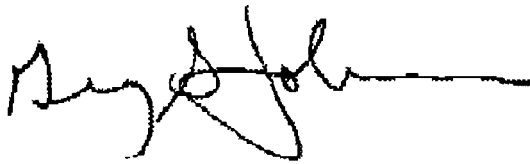
1. I am a geologist residing at 47 12th Ave, Whitehorse, Yukon.
2. I am a graduate in Geology Specialization from the University of Alberta (1980).
3. I have practised my profession in British Columbia and Yukon since January, 1980.
4. I am a Professional Geologist, registered with the Association of Professional Engineers, Geologist and Geophysicists of Alberta.
5. I am a fellow of the Geological Association of Canada.
6. This report is based on fieldwork personally supervised and/or conducted during August and September 2000
7. I hold no interest, nor do I expect to receive any, in the Sprogge property.

A handwritten signature in cursive script, reading "Douglas J. Brownlee". The signature is written in dark ink and is positioned below the numbered list of qualifications.

STATEMENT OF QUALIFICATIONS
Greg Johnson

I, Greg Johnson, of the City of Corralitos, California, USA, do hereby certify that:

- 1) I held the position of Regional Exploration Manager with NovaGold Resources Inc. during the exploration program described in this report, and currently act as an agent for NovaGold Resources Inc.
- 2) I graduated from Western Washington University with a Bachelor of Science Degree with Honors Degree in Geology in 1989.
- 3) I have been continually active in mineral exploration since 1989.
- 4) I supervised the exploration program and performed part of the work described in this report.



Greg S. Johnson
Regional Exploration Manager
NovaGold Resources Inc.

APPENDIX A**APPLICABLE EXPENDITURES FOR ASSESSMENT CREDITS****Project Expenditure Summary**

Project expenditures from August 1, 2000 to November 30th 2000 are summarized as follows:

Second Stage Program:

Diamond Drilling (2550 ft/776m):	\$109,463
Helicopter/Air Services:	\$56,748
Project Support/Camp:	\$55,440
Geology:	\$51,135
<u>Geochemistry:</u>	<u>\$8,936</u>
Drill Program Total:	C\$281,722

Though the project began late in the season and faced some challenging logistical conditions, the program was quite cost efficient, especially for a remote, helicopter based program with a total all-in cost of C\$110/foot (US\$75/foot).

APPENDIX B

Sprogge 2000 Diamond Drill Program Database

Sprogge Project: DDH Control Sheet

DDH_ID	Region	Location	Azimuth Planned	Azimuth Actual	Dip Planned	Dip Actual	Depth	Eastng NAD83	Northing NAD83	Location Notes	Contractor	Foreman	Drill Type	Casing
SP0001	Sugar Bowl	Meadow Zone	15	16	-50	-50	187.5	540220	6842089	X,Y by GPS, elevation estimated from GPS & 1:50,000 scale topos	Advanced Diamond Drilling	Joe Mclean	Boyles 25A	HW
SP0002	Sugar Bowl	Meadow Zone	195	195	-60	-60	259.4	540220	6842089	X,Y by GPS, elevation estimated from GPS & 1:50,000 scale topos	Advanced Diamond Drilling	Joe Mclean	Boyles 25A	HW
SP0003	Sugar Bowl	Sugar Bowl	175	175	-50	-50	135.94	541102	6842233	X,Y by GPS, elevation estimated from GPS & 1:50,000 scale topos	Advanced Diamond Drilling	Joe Mclean	Boyles 25A	HW
SP0004	Sugar Bowl	Sugar Bowl	195	195	-60	-60	196.6	540707	6842162	X,Y by GPS, elevation estimated from GPS & 1:50,000 scale topos	Advanced Diamond Drilling	Joe Mclean	Boyles 25A	HW
DDH_ID	Casing From	Casing To	Core Size	Core From	Core To	Drilling Notes	Start Date	Completion Date	Geologist					
SP0001	0	3	HQ	3	183.4	Casing removed, post enplaced	08/28/00	09/02/00	DJB/FA					
SP0002	0	3.05	HQ	3.05	259.4	Casing removed, post enplaced	09/02/00	09/09/00	DJB/FA					
SP0003	0	8.53	HQ	8.53	135.94	Casing removed, post enplaced	09/11/00	09/15/00	DJB/FA					
SP0004	0	10.57	HQ	10.57	193.7	Casing removed, post enplaced	09/15/00	09/19/00	DJB/FA					

Sprogge Project: DDH Survey Sheet						
DDH_ID	Method	Depth	Orientation	Dip	Taken By	Notes
SP0001	SR	0	16	-50	DJB	drillers did a good job of setting up
SP0001	AT	187.5	16	-47	DJB	taken by drillers; read by DJB
SP0002	SR	0	195	-60	DJB	set by drillers, checked by DJB
SP0002	AT	259.4	195	-52	DJB	taken by drillers; read by DJB
SP0003	SR	0	175	-50	DJB	set by drillers, checked by DJB
SP0003	AT	135.94	175	-40	DJB	taken by drillers; read by DJB
SP0004	SR	0	195	-60	DJB	set by drillers, checked by DJB
SP0004	AT	196.6	195	-56	DJB	taken by drillers; read by DJB
SR: Silva Ranger Compass AT: Acid Test						

SR: Silva Ranger Compass AT: Acid Test

Sprogge Project: DDH Lithology Sheet

DDH_ID	From	To	Level	Code	Modifier	Colour	Quartz	Feldspar	Lithic	Notes
SP0001	0	3	0	OVb						Casing overburden
SP0001	3	29.3	0	ARGL	Fb	BL GY				a well banded medium blue grey argillite non fissile in core on surface is fissile and called shale. 1 - 6+cm beds of dark blue argillite noncalcareous. At approx 24m the beds begin to become sandier (up to 5% sand frags contact appears to be interfingers over a 10 cm thickness; a very minor # of <1mm pyrite cubes noted
SP0001	29.3	52.5	0	SNDS	M	WT GY	1	0	0	a whitish grey sandstone, massive, fragments 70-90% rounded clear to cloudy quartz, 10% well rounded argillically altered feldspar frags, first metre has up to 30% lithic (argillite frags) in some cases stretched, all fragments .1 to 2mm in size with a few 4mm, overall well sorted a few minor argillite beds at start of section
SP0001	30.5	31.5	1	ARGL	Sd Fb	WT GY BL				sandy FeOx banded argillite band max 10 cm true thickness
SP0001	34.6	35.7	1	ARGL	Fb	BL GY				banded lght drk blue grey argillite
SP0001	40.6	42.2	1	ARGL	Fb	BL GY				banded/bedded (1 cm avg bed thickness) lght drk blue argillite
SP0001	52.5	57.8	0	SNDS	M	OL GR			1	a sandstone at start of section is a lght olive green bleached argillite grading through to fine grained sandstone distinguishing item are stretched & flattened argillite blebs (up to 1 cm thick [avg 2-3mm] by up to 5 cm [avg 1-2 cm] long orientated along foliation they comprise up to 5% of sandstone
SP0001	57.8	107.1	0	SNDS	Mg M	WT TN	1	0	0	med grained sandstone as per 29.3-52.5 initial portion shows some contortion & brecciated
SP0001	57.8	58	1	ARGL		BL GY				thin argillite band
SP0001	60.1	60.5	1	ARGL		BL GY				thin argillite band partly contorted
SP0001	66.1	69.9	1	ARGL		BL GY				thin (<5cm?) band of argillite running sub// to core axis @71.8 another small sliver of argillite
SP0001	98.2	98.7	1	ARGL		BL GY				argillite band

SP0001	98.7	99.8	1	SNDS		WT TN			0	sandstone/stretched argillite blebs up to 0.5cm X 4 cm orientated along fol? Up to 5% of content decreasing down section
SP0001	107.1	172.6	0	ARGL	Fb	BL GY				varialby banded light to dark blue grey argillite, bands/beds avg 1 cm thick up to 10-15cm, some sandier beds which generally show a brownish colour
SP0001	118.7	119.1	1	SNDS		WT TN				sandstone unit
SP0001	126.6	127.3	1	SNDS	Fb	WT TN				sandstone band / interbedded argillite, contorted at start / qtz vns
SP0001	172.6	187.5	0	SNDS	Mg	WT TN				med grained sandstone bedding poorly defined qtz feldspar matrix strong fracturing throughout core partially healed by silica, argillite/siltstone beds 3-30 cm thick ~ 4m apart
SP0001	182.4	183.4	1	SLTS		BF GY				buff grey siltstone bed with brecciated qtz vn healed by hematite alterered sand matrix.
SP0001	185.9	187.1	1	ARGL	Sd	BL GY				sandy argillite bed 30cm true thickness
SP0002	0	3.05	0	OVB						
SP0002	3.05	31.06	0	SNDS	Mb Mg Gu	GY	5	2		95% med grained sandstone 5% interbedded siltstone & argillite; Arg/silt bds generally <15cm thick, red brown (hem) to orange brown (FeOx) partially colouration is due to weathering, sandstone matrix 40% grey qtz & 50% cloudy to pale greenish white feldspar (sericite alt); <10% grey to white qtz Fs clasts; 1-3mm in size, pervasive fracturing is strongly oxidized.
SP0002	11.12	11.79	1	SLTS	Fb Gu	GY				
SP0002	15	25	1	SNDS	Mg Vg	GY	5	2	0	
SP0002	31.06	47	0	ARGL	Fb Sh Gu	DK GY				
SP0002	47	65.1	0	SLTS	Fb St C	GY				
SP0002	65.1	88.7	0	SLTS	Mb Sh Gu	DK GY				
SP0002	66	66.4	1	SNDS	Cg	WT	5			
SP0002	84.3	84.4	1	ARGL						
SP0002	87.6	88.45	1	ARGL	Fb St					
SP0002	88.7	106.8	0	ARGL	Mb St	DK GY				
SP0002	99	106.8	1	ARGL	Mb					
SP0002	106.8	112.1	0	SLTS	Fb Sh Sd Gu	DK GY				
SP0002	112.1	132.4	0	ARGL	Fb St	BK				
SP0002	132.4	168	0	PCGM	M Cg	GY	3	4	0	

SP0002	134.9	137.4	1	PCGM	M	TN GY	4	3		
SP0002	139.5	140	1	SNDS	Cg					
SP0002	140.8	143.4	1	SNDS	Cg Mb					
SP0002	147.7	148.8	1	ARGL	Sd Tb	BK				
SP0002	148.8	150.9	1	SNDS	Cg	BN				
SP0002	152.8	153.6	1	SLTS	Sd Sh Cg Mb	GY				
SP0002	153.6	156.3	1	PCGM	M	TN	4	3		
SP0002	156.3	156.5	1	SLTS	Mb Gd	BN				
SP0002	156.5	157.2	1	PCGM	M	TN	4	3		
SP0002	157.2	157.6	1	PCGM	M	YW BN	4	3		
SP0002	166.4	168	1	PCGM	M Sh	TN	4	3		
SP0002	168	188.8	0	SNDS		GR	4	2	0	
SP0002	188.8	221.3	0	PCGM	Tb	GR	3	3	0	
SP0002	196.5	196.9	1	ARGL						
SP0002	197.7	200.2	1	SNDS	M Cg	GR	4	2		
SP0002	202.7	204.7	1	ARGL	Mb St	BK				
SP0002	210.3	211.1	1	SLTS	Sh	DK GY				
SP0002	213.55	213.9	1	SLTS	Sh Tb	BK				
SP0002	215.45	216.6	1	SNDS	Cg M	Gr	4			
SP0002	221.3	247.4	0	SNDS	Mg Mb	DK GY	4		2	
SP0002	223.3	224.8	1	ARGL	St	BK				
SP0002	225.5	225.8	1	ARGL		BK				
SP0002	226.9	228.5	1	ARGL	Tb	DK GY				
SP0002	230.3	230.5	1	SLTS	Sh					
SP0002	231	231.3	1	ARGL		DK GY				
SP0002	231.6	232.8	1	SLTS	Sd	DK GY				
SP0002	235.9	236.9	1	PCGM		Gr				
SP0002	236.85	237.7	1	SLTS	Sd	GY GR				
SP0002	237.7	239.2	1	SNDS	Mg	GR GY	3	3	0	
SP0002	239.2	239.6	1	ARGL		BK				
SP0002	240.7	241.4	1	PCGM		TN	4	3		
SP0002	241.4	247.4	1	SNDS	Gu Tb	GR GY	4	3		
SP0002	247.4	250.3	0	PCGM	M	TN	4	3	0	

SP0002	250.3	253.8	0	SLTS	Mb Gu	GY	4	2		
SP0002	253.8	256.3	0	SNDS	Tb Gu	GY	4	2		
SP0002	256.3	259.4	0	SNDS	Mg	GR GY				
SP0003	0	8.53	0	OVB						Casing & overburden
SP0003	8.53	80.2	0	ARGL	Fb St Fs	GY OL GN				a pale bluish grey olive green silty argillite, fine banded 1-10 mm beds of silty argillite to siltstone/ minor 1 mm beds of blue grey argillite, fissile (well foliated) but not phyllitic or slatey. Beds are rhythmic and in part graded, but not definable.
SP0003	80.2	89	0	SNDS	M Mg Sd	WT TN	5	1	1	a fine to medium grained quartzite/ minor feldspar and lithic clasts - rounded to subrounded, matrix siliceous/sand
SP0003	89	106.2	0	ARGL	Fb St Fs	GY OL GN				as for 8.53 to 80.2
SP0003	106.2	108.6	0	SNDS	M Mg Sd	WT TN	5	1	1	siliceous quartzite as for 80.2 to 89
SP0003	108.55	135.9	0	ARGL	Fb St Fs	GY OL GN				as for 8.53 to 80.2
SP0004	0	10.97	0	OVB						
SP0004	10.97	27.1	0	ARGL	Fb Fs	GY BK				a fine grained greyish blue black fissile fine banded argillite
SP0004	27.1	59.1	0	SNDS	M Tb Vg	TN WT	5	2	0	a fine grained relatively clean sandstone/minor argillite & siltstone interbeds generally only 0.05 to 0.3m thick minor argillite fragments scattered throughout minor grading seen
SP0004	43	46.58	1	ARGL	Fb Fs Gr	GY BL BK				as for 10.97 to 27.1 definite increase in graphitic content
SP0004	59.1	86.25	0	ARGL	Tb Gr Fb Fs	BK				a dark blue black graphitic argillite very fissile and generally ductile overall fine banded/ thick bands of a grey black FB less graphitic argillite
SP0004	64	65.8	1	ARGL	Fb	GY BK				see 10.97 to 27.1
SP0004	74.4	77.2	1	ARGL	Fb	GY BK				see 10.97 to 27.1
SP0004	86.25	129.1	0	ARGL	Fb	GY BK				see 10.97 to 27.1, non fissile several more fissile and graphitic enriched zones starting @ 98.03 - increase in graphite also shows more deformation
SP0004	129.1	161.1	0	SNDS	M Cg Gu Gd	WT TN	3	3	1	a coarse grained sandstone/rounded clasts of quartz and feldspar +/- lithic frags in a quartz/feldspar matrix/minor Mg Fg bands some evidence of graded beds; 2 small 0.1m bands of pebble conglomerate in last 2.5 metres of section
SP0004	161.1	168.2	0	ARGL	Fb	GY BL BK				see 86.25 to 129.1 no enriched graphitic sections

SP0004	168.2	196.6	0	SNDS	M Cg	WT TN	3	3	1	see 129.1 to 161.1, more variability in core, several 0.1 to 0.3 ARGL sections in first 5 metres - becomes Mg for last 3 metres
SP0004	190.3	192.9	1	PCGM	Mb	GY WT	4	3	1	qtz flooded quartz pebble conglomerate with minor argillite bands, qtz feldspar matrix
SP0004	192.9	193.7	1	SNDS	M Gr St	BL BK	3	3	3	bluish black quartz feldspar pebble conglomerate/argillite matrix, sub foliated

[illegible][illegible]

SP0001	119.2	119.2	BQ	0.04	50	ARGL	5								broken bull qtz vn
SP0001	137.4	138.4	VQ	0.02		ARGL	5					0			pinch and swell very vuggy extensive FeOx
SP0001	141	143.8	BQ		10	ARGL	5								
SP0001	144.1	145.5	BQ		9	ARGL	5				0				qtz stockwork in FeOx selvage trace py
SP0001	146.7	148.7	BQ		5	ARGL	5				0				brecciated qtz
SP0001	150.5	150.8	BQ	0.05	50	ARGL	5								brecciated qtz vn/15% FeOx selvage fracture filling
SP0001	161	161.2	BQ	0.01		ARGL	5					0			qtz & FeOx filled fractures broken by fault
SP0001	162.5	162.6	BQ	0.02		ARGL	5					0			qtz & FeOx filled fractures broken by fault
SP0001	163.8	163.9	BQ	0.02		ARGL	5					0			qtz & FeOx filled fractures broken by fault
SP0001	173.6	173.7	BQ	0.02	40	SNDS	5					0			qtz vn rotted by fracturing coated in oxide
SP0001	174.2	174.3	BQ	0.09	36	SNDS	5				0	0	0		rotted / fractures, FeOx & a trace of soft platy metallic lustre silver colour, dull black streak
SP0001	176.1	176.2	VQ	0.1	63	SNDS	5	2				0			vuggy qtz vn
SP0001	178.4	178.8	VQ	0.03	36	SNDS	5				0		0		vuggy & fractures
SP0001	180.3	180.4	BQ	0.2	47	SNDS	5					0			bull qtz vn fractured
SP0001	180.8	181.4	BQ	0.2		SNDS	5					1			bull qtz vn fractured, rubble at start
SP0001	181.9	182	BQ	0.03	61	SNDS	5				0		0		bull qtz
SP0001	182.4	182.6	VQ	0.03	65	SNDS	5				0		0		3 quartz vns, bull strong fracturing, sulphide in last vn @ contact with narrow siltstone bed
SP0001	182.9	183.2	BQ		31	SLST	5	1			0		0		dk brown oxide fracturing veinlets, trace py, some feldspar
SP0001	183.7	184	BQ			SLST	5				0		0		brecciated qtz vn by pervasive fracturing
SP0001	184.3	184.4	BQ		67	SNDS	5						0		bull qtz displaced by fracturing
SP0001	184.7	184.8	BQ	0.05	65	SNDS	5						0		bull qtz, fractured
SP0001	185	185.1	VQ		67	SNDS	5						0		white vuggy qtz, oxide pits
SP0001	187.2	187.5	BQ		17	SNDS	5				0	0	1		brecciated qtz vn/ FeOx matrix
SP0002	3.05	31.06	IX			SNDS	4			3	0	0	10		
SP0002	3.8	3.9	BQ	0.015	17	SNDS	5				1		5		
SP0002	4.2	4.3	VQ	0.08		SNDS	5								
SP0002	4.6	4.61	BQ	0.015	65	SNDS	5				0		0		
SP0002	5.35	5.45	IQ	0.01	65	SNDS	5				1		2		
SP0002	5.81	5.82	BQ	0.01	41	SNDS	5				0		1		
SP0002	5.86	5.87	BQ	0.01	47	SNDS	5				0		1		
SP0002	5.96	5.97	BQ	0.015	38	SNDS	5				0		1		
SP0002	7.8	7.81	VQ	0.015	25	SNDS	5				0	0	3		
SP0002	8.6	9.2	SQ	0.6		SNDS	5				0	0	3		
SP0002	9.7	9.71	BQ	0.01	53	SNDS	5				0	0	10		
SP0002	9.75	9.76	BQ	0.005	61	SNDS	5				0	0	2		

SP0002	11.02	11.03	BQ	0.03	80	SNDS	5				0	0	0			
SP0002	11.3	11.31	VQ	0.03	80	SLST	5				0	0	2			
SP0002	12	12.35	VQ	0.08	38	SNDS	5				0	0	0			
SP0002	13.5	13.51	BQ	0.01	52	SNDS					0	0	0			
SP0002	15.2	15.25	CQ	0.02	36	SNDS					0	0	0			
SP0002	16	17	XX		16	SNDS	5				0	0	10			
SP0002	19	19.01	BQ	0.01	45	SNDS	5				0	0	0			
SP0002	21.63	21.64	BQ	0.005	45	SNDS	5				0	0	0			
SP0002	27.65	27.66	BQ	0.01	35	SNDS	5				0	0	1			
SP0002	28.19	28.32	VQ	0.01	12	SNDS	5				0	0	3			
SP0002	28.34	28.44	VQ	0.025	51	SNDS	5				0	0	2			
SP0002	28.6	28.79	VQ	0.14	65	SNDS	5				0	0	2			
SP0002	29.8	29.6	SQ			SNDS	5				0	0	1			
SP0002	29.85	29.86	XQ	0.015	75	SNDS	5				0	0	10			
SP0002	39	39.01	IX	0.005	25	SLST	5						5			
SP0002	40.1	40.11	BX	0.01	30	SLST	5						3			
SP0002	45.55	45.75	SQ	0.005		ARGL	5			1			0			
SP0002	54.9	35.75	SQ			SLST	5	1		1	1		0			
SP0002	57	57.15	BQ	0.01	18	ARGL	5			1						
SP0002	57.45	57.46	BQ	0.01	35	ARGL	5	0		0						
SP0002	57.6	57.61	BQ	0.01	62	ARGL	5	1								
SP0002	58.2	59.1	SQ			SLST	5	1		1	0					
SP0002	64.7	65	IQ	0.005	38	SLST	2	4		1	0					
SP0002	74	74.01	BQ	0.02	20	SLST	5									
SP0002	75.7	75.71	NQ	0.005	45	SLST	5						1			
SP0002	75.8	75.81	BX	0.005	28	SLST	5				0		25			
SP0002	76.5	76.51	BF	0.005	22	ARGL	4			2			2			
SP0002	79.45	81.7	SX	0.01	47	ARGL	5				40		30			
SP0002	87.65	87.8	BQ	0.21	70	ARGL	5			0	0		0			
SP0002	88	88.1	BQ	0.08	70	ARGL	5				1		1			
SP0002	92.8	92.95	BQ	0.13	35	ARGL	5				0					
SP0002	93.6	93.61	BQ	0.025	80	ARGL	5				0					
SP0002	93.65	93.66	BQ	0.005	80	ARGL	5				0					
SP0002	94.15	94.45	BQ	0.06	35	ARGL	5			0	0.5					
SP0002	105.3	106.3	BQ			ARGL	5				0		0			
SP0002	108.2	108.3	BQ	0.055	65	ARGL	5									
SP0002	110.2	110.5	BQ	0.01	45	ARGL	4									
SP0002	118.9	120.5	IX	0.005	20	SLST	4			2	0					

SP0002	122.5	122.5	BQ	0.005	30	SLST	5			0	0					
SP0002	123.1	123.1	BF	0.005	30	SLST	4			2						
SP0002	124.6	124.9	BF	0.005	20	SLST	4			2	0.05					
SP0002	139.5	140.7	VQ	0.15	17	SNDS	5				1		1			
SP0002	142.7	142.7	VQ	0.01	55	SNDS	5									
SP0002	142.9	142.9	VQ	0.02	20	SNDS	5									
SP0002	143.3	143.3	BQ	0.05	25	SNDS	5									
SP0002	144.6	144.6	BQ	0.04	60	ARGL	5									
SP0002	148	148.5	BF	0.01		ARGL	4			2						
SP0002	148.9	150.6	VQ	0.015	5	SNDS	5						1			
SP0002	153.5	153.5	VQ	0.02	80	ARGL	5						1			
SP0002	153.9	154.2	VQ	0.02	25	PCGM	5									
SP0002	154.4	154.7	VQ	0.045	25	SNDS	5			0						
SP0002	155.2	155.4	VQ	0.04	15	SNDS	5						0			
SP0002	155.9	156.1	VQ	0.05	30	PCGM	5									
SP0002	156.6	156.8	VQ	0.04	40	SNDS	5									
SP0002	156.8	157	BQ	0.01	20	SNDS	5									
SP0002	157.2	157.3	BQ	0.06	60	PCGM	5						0			
SP0002	158.3	158.3	BQ	0.01	60	SNDS	5						0			
SP0002	158.7	158.7	VQ	0.01	60	SNDS	5						0			
SP0002	159	159.2	BQ	0.01	25	SNDS	5						0			
SP0002	159.2	160.1	VQ	0.11	15	SNDS	5						1			
SP0002	160.2	160.3	VQ	0.01	40	SNDS	5									
SP0002	161.5	161.8	VQ	0.005	50	SNDS	5									
SP0002	161.7	161.9	VQ	0.02	45	SNDS	5							Gn	0	
SP0002	162.2	162.3	BQ	0.035	40	SNDS	5									
SP0002	163.4	163.4	VQ	0.005	25	SNDS	5						0			
SP0002	164.3	164.9	VQ	0.02	5	SNDS	5									
SP0002	165	165	VQ	0.003	30	SNDS	5						15			
SP0002	165.1	165.1	BQ	0.01	30	SNDS	5									
SP0002	165.2	165.2	BQ	0.005	35	SNDS	5									
SP0002	167.2	167.2	BQ	0.005	5	PCGM	5									
SP0002	167.5	167.6	BQ	0.005	5	PCGM	5									
SP0002	167.7	167.8	BQ	0.02	60	PCGM	5									
SP0002	168.3	168.9	VQ	0.03	5	SNDS	5									
SP0002	169.5	170.4	KQ	0.01		SNDS	5			0						
SP0002	172.6	172.7	VQ	0.03	50	ARGL	5		1				1			
SP0002	173.6	173.8	VQ	0.005	40	SNDS	5						15			

SP0002	252.5	252.7	VQ	0.025	55	SLST										
SP0002	257.5	258.5	BQ	0.01		SNDS										
SP0002	258.5	259	VQ			SNDS										
SP0003	26.1	26.21	BQ	0.1	40	ARGL	4		2							bull qtz vn, minor FeOx on fractures, no sulphide noted
SP0003	49.5	49.51	BQ	0.01	40	ARGL	5									angl to CA poor
SP0003	49.65	49.68	BQ	0.03		ARGL	5									sub // to CA
SP0003	54.2	54.21	BQ	0.01	40	ARGL	4		2							associated / fault
SP0003	56.68	56.7	BQ	0.02	30	ARGL	4		2							near small gouge seam
SP0003	56.8	56.81	BQ	0.01	40	ARGL	5									granular texture
SP0003	57.55	57.56	BQ	0.01	50	ARGL	5									discontinuous
SP0003	76.2	72.7	BQ	0.1	30	ARGL	5		1	1						discontinuous
SP0003	81	81.1	BQ	0.01	80	ARGL	5				0					
SP0003	86.1	87.2	BQ	1.1		SNDS	4		2		0					2 vnls <0.01/minor py
SP0003	87.7	87.85	BQ	0.15	85	SNDS	5		0		0					multiple vns or one contorted / pyrite
SP0003	88.3	88.6	BQ	0.3	30	SNDS	5		0		0					
SP0003	88.9	89	BQ	0.1	70	SNDS	5		0		0					contorted
SP0003	92.6	92.61	BQ	0.01	80	ARGL	5									at base of SNDS
SP0003	93.4	93.41	BQ	0.01	50	ARGL	5		0		0					
SP0003	94	94.02	BQ	0.02	60	ARGL	5		0		0					
SP0003	106.4	106.4	BQ	0.01	55	SNDS	5				0					discontinuous
SP0003	110.6	110.6	BQ	0.01	80	ARGL	5			0	0					
SP0003	119.6	119.7	BQ	0.1	60	ARGL	5		0	0	0					argillic/sericite alteration up to 0.5% very fine grained grey silver sulphide - 2 veins 3 - 5 cm
SP0003	135.5	135.5	BQ	0.01	45	ARGL	5				0					opposite So
SP0004	25.5	25.51	BQ	0.05	50	ARGL	5		0		0					2 0.01 vns 0.1m apart may be sweats
SP0004	26.3	26.35	BQ	0.05	60	ARGL	5		0		0					may be a sweat
SP0004	27.6	27.61	BQ	0.02	50	SNDS	5									
SP0004	42.9	42.92	VQ	0.02	50	SNDS	3		3		0					lithic portion totally oxidized
SP0004	46.67	42.68	VQ	0.01	70	SNDS	5									
SP0004	49.1	49.9	VQ	0.05	5	SNDS	5		0							sub// to CA
SP0004	67.5	67.6	BQ	0.1	60	ARGL	5		0		1					several vns sub // to fol & crosscutting
SP0004	72.4	72.5	BQ	0.1	60	ARGL	5		0		0					
SP0004	72.9	73.2	BQ	0.1	50	ARGL	3		3		1					numerous vns 0.01 to 0.05 thick
SP0004	77.17	77.18	BQ	0.01	30	ARGL	5		0		0					crossing bedding
SP0004	81.7	81.71	BQ	0.01	45	ARGL	5		0	0	0					
SP0004	84.15	84.16	BQ	0.01	70	ARGL	5		0	0						sweat?
SP0004	110.1	110.1	BQ	0.02	50	ARGL	5		0							

SP0004	110.2	110.2	BQ	0.01	45	ARGL	5		0							
SP0004	115	115.4	KQ	0.05		ARGL	5		0							may be deformed sweats
SP0004	116.3	119.6	KQ	0.08		ARGL	5		0							may be deformed sweats, most sub// to fol
SP0004	120.2	120.3	BQ	0.05	60	ARGL	4		3							adjacent to fault
SP0004	122.7	123.2	KQ	0.08		ARGL	5		1							may be deformed sweats associated with fault
SP0004	124.9	125	BQ	0.05	65	ARGL	4		1		0					
SP0004	125.2	125.4	KQ	0.05		ARGL	5		1							deformed sweats
SP0004	125.7	126.5	KQ	0.08		ARGL	5		1							deformed sweats
SP0004	127.3	127.6	KQ	0.08		ARGL	5		1							deformed sweats
SP0004	128.1	128.6	KQ			ARGL	5		1							qtz in fault zone
SP0004	128.8	128.8	BF	0.03	70	ARGL	4		1							
SP0004	129	129.1	BQ	0.05		ARGL	5		1		3					
SP0004	143	143.6	X	0.6	70	SNDS	5		5				3			FeOx is matrix
SP0004	154.9	154.9	BQ	0.01	40	SNDS	5				0					
SP0004	155.1	155.2	BQ	0.03	70	SNDS	5				0					in part vuggy
SP0004	155.8	155.8	BQ	0.02	55	SNDS	5				0					
SP0004	157.4	157.4	BQ	0.01	30	SNDS	5									
SP0004	157.8	158	BQ	0.2	25	SNDS	5									
SP0004	159.7	160	BQ	0.1	15	SNDS	5									
SP0004	160.4	160.4	BQ	0.01	20	SNDS	5									
SP0004	163.7	163.7	BQ	0.04	60	ARGL	5		1							
SP0004	170.6	170.6	BQ	0.01	80	SNDS	5									in part vuggy
SP0004	170.8	170.8	VQ	0.01	60	SNDS	5									
SP0004	172.3	172.4	BQ	0.05	50	SNDS	5									
SP0004	173	173.7	BQ	0.03	15	SNDS	5									wavy
SP0004	174.1	174.4	BQ	0.01	15	SNDS	5									
SP0004	189.5	189.5	BQ	0.01	40	SNDS	5									
SP0004	189.7	189.7	BQ	0.01	40	SNDS	5				2					
SP0004	196.1	196.1	BQ	0.02	80	SNDS	4		1		1					base of argillite bed 3 cm

Sprogge Project: DDH Alteration Sheet

DDH_ID	from	to	type	FeOx	Hematite	Argillic	Chloritic	Silica	Sericite	Notes
SP0001	3	29.2	P			2				weak but pervasive argillic alteration intensity up to 4 and down to <1 in some beds
SP0001	24.7	26.7	V	7						sandy argillite flanking a 0.25cm bull qtz vn FeOx envelope of 1-3m
SP0001	29.2	31.9	F	7						med to heavy FeOx preferentially withing sandstone, controlled by bedding and fractures, up to 3 stages of weathering
SP0001	29.2	107.1	P			4				matrix of sandstone moderately argillic altered, alt feldspars frags, FeOx weathering
SP0001	32.3	32.4	F	8						envelopes a fracture with 2 to 3 halos
SP0001	33	33.7	F	5						variable FeOx weathering with increased intensity around fracture & veins (numerous halos) FeOx weak to nonexistent in argillite zones
SP0001	33.7	33.71	F	7						envelopes a fracture with 2 to 3 halos
SP0001	33.71	52.5	F	5						continuation of 33 to 33.7
SP0001	56.3	61.8	F P	5						starts as envelopes around fractures and becomes nearly pervasive
SP0001	58.3	59.4	D		4					amorphous start and end to hematite section, overprinted by FeOx around fractures,
SP0001	61.8	107.1	F	3						low level FeOx generally a light orange brown around fractures 50% of fractures have good manganese development
SP0001	72.2	73.2	D		4					covers ~60% of core, partly away from fractures, decreases down hole
SP0001	81.3	88.5	P D		5					starts as 100% of core and decreases to 50% for last metre of section & is patchy & decreases to intensity 4
SP0001	98.7	100.5	D						2	starts @ ~3 decreasing to 0 through section
SP0001	107.1	134.9	F	0						FeOx alt +/- manganese basically restricted to fractures/joints/veins as well as the sandy interbeds and small sandstone units
SP0001	134.9	135.4	P	8						short zone of high intensity FeOx alteration shale siltstone
SP0001	134.9	148.5	D	1						below the above section, FeOx intensity is 2 decreasing to 1

SP0001	148.5	172.6	V	0						Fault zone FeOx intensity drops significantly
SP0001	172.6	182.4	P	3						pervasive FeOx , manganese coating of fractures
SP0001	174	187.5	V					2		hairline qtz vnlt, cause moderate silicification
SP0001	182.4	187.5	P	2	5	0				pervasive hematite alteration
SP0002	3.05	15	F D	1	0				1	
SP0002	15	16.6	C	0				1	1	
SP0002	16.6	17.8	V	2						
SP0002	17.8	22	F D	0						
SP0002	22	25	P M	0				1	1	
SP0002	25	28.66	P D	0					2	
SP0002	28.66	31.06	P M					1	1	
SP0002	30.66	31.06	P	4						
SP0002	31.06	36.26	M	1					0	
SP0002	36.26	39	M	4	2					
SP0002	39	44.3	M	1	0				1	
SP0002	44.3	51	F	0						
SP0002	45.7	46	D						2	
SP0002	51	51.6	P	0					1	
SP0002	51.6	52.3	P F	1					2	
SP0002	54.9	55.6	P					0	2	
SP0002	58.15	59.2	P					0	2	
SP0002	61	64.5	F	0						
SP0002	66	66.4	M	0		0				
SP0002	68.15	70.92	M P	1					2	
SP0002	73.7	77.7	M				0		1	
SP0002	79.3	82.06	P	0					3	
SP0002	99.23	99.89	F	0			3		2	
SP0002	99.89	106.8	V D				1		1	
SP0002	122.6	126.4	F	0						
SP0002	126.4	132.4	M	2	0					
SP0002	132.4	136.2	D M	1		1			1	
SP0002	136.6	150.5	M	1	0					
SP0002	139	140.8	V							

SP0002	139	170.2	M			1			1	
SP0002	146.9	147.7	C	2						
SP0002	149.8	151.6	M	2						
SP0002	153.6	157.6	F	1						
SP0002	158.4	170.2	M	1						
SP0002	170.2	183.4	D M	1					2	
SP0002	183.4	187.5	P F	2					3	
SP0002	187.5	196.4	V M	2					2	
SP0002	197.3	215.4	P						3	
SP0002	205.8	207.2	F	1						
SP0002	211.3	212.1	F	2						
SP0002	215.3	216.6	F	1					2	
	5									
SP0002	216.6	220.4	F	1		1				
SP0002	221.4	221.6	V	0					2	
SP0002	221.6	228.5	M				0		1	
SP0002	228.5	259.4	M F	1	0				2	
SP0002	228.5	238.2	M							
SP0002	231.2	232.8	V							
SP0002	234.5	237.8	V							
SP0002	237.8	240.7	F	0						
SP0002	240.7	241.9	D	2						
SP0002	241.9	247.2	F	0						
SP0002	247.2	249.4	F	2	0					
SP0002	250.3	253.8	F	1	0					
SP0002	254.4	254.7	P	0						
SP0002	254.7	259.1	D	1						
SP0003	8.53	78	P			0			2	a overall consistant light olive green colour to the core, most likely due to moderate sericite alteration, trace argillic alteration noted in silty bands, the fine grained blue grey argillite beds (<1mm) do not appear to be altered
SP0003	8.53	100	F	0						minor FeOx on majority of well developed fractures, generally associated with minor manganese, decreasing down hole

SP0003	78	81.2	P			0		4	increase in sericite by twice and argillic just before the sandstone unit
SP0003	81.2	89	P			1		1	decrease in sericite and increase in argillic (feldspar and lithic)
SP0003	89	94	P			0		4	as for 78 - 81.2
SP0003	94	106.2	P			0		2	as for 8.53 - 78
SP0003	106.2	108.6	P			1		2	as for 81.2 - 89
SP0003	108.6	110.8	P			0		4	as for 78 - 81.2
SP0003	110.8	135.9	P			0		1	as for 8.53 - 78, except amount decreases down hole
SP0004	10.97	50	F	0					starts as ~ 2-3% and drops to very trace by 50 metres
SP0004	10.97	27.1	D			0	0	0	mainly associated / foliation planes and some quartz veins
SP0004	27.1	43	P			0		0	sericite gives very slight greenish tinge, argillic confined to feldspars (100%) and some of matrix, does not occur in argillite beds; silicification iffy
SP0004	43	46.58	D			0	0	0	see 10.97 to 27.1
SP0004	46.58	59.1	P			0		0	see 27.1 to 43
SP0004	59.1	107.1	P			0	0	0	see 10.97 to 27.1, definitely decreases below 87.5 m; the argillic alteration can form selvages up to 1-2 cm around some zones of more intense foliation
SP0004	107.1 3	108.8	P	0		4			associated with mineralization
SP0004	108.8	129.1	P			0	0	0	
SP0004	129.1	161.1	F	1					with some manganese
SP0004	129.1	134.7	P			2		0	feldspars totally altered, some alteration of quartz
SP0004	134.7	139.2	P			2		0	as for previous section, except good FeOx staining decreases to 0 by end of section
SP0004	139.2	153.6	P D		0	2		0	very intensive almost 50% in 1st metre, then in zones; basically P for argillic, discontinuous for FeOx and patchy for hematite
SP0004	153.6	161.1	P			1		0	as for 129.1 to 134.7, rare hematite
SP0004	161.1	166.3	P			0		0	
SP0004	166.3	168.2	P D	1	0	0		0	hematite is discontinuous
SP0004	168.2	196.6	F	1					
SP0004	168.2	196.6	P			1		0	Feldspars totally altered, trace sericite and very trace FeOx & hematite

Sprogge Project: DDH Mineralization Sheet

DDH_ID	from	to	Level	type	pyrite	Arseno pyrite	Min1	Min1 %	Min2	Min2 %	Notes
SP0001	32.1	33.7	0	I	0	0					pyrite +/- arseno (bluish black sulphide/black streak) initially occurs as tension gash fillers 1cmX.2-.3cm & blebby accumulations up to 1 cm, down section the "tension gash" infills dissappear almost immediately & the blebs decrease in size to 1 mm overall content <0.5%
SP0001	33.7	44.3	0	B							scattered rusty spots & vugs (<1mm) that may be remnant of sulphide
SP0001	44.3	50	0	B F	0						disseminated blebs of pyrite (<1mm) & a silvery black sulphide (arseno?) also occurs as gash fracture fillings & along "normal" fractures
SP0001	58.2	66.1	0	B F	0						as for 44.3 to 50, up to 61.8 sandstone oxidized / only minor pyrite remaining, after pyrite increases as FeOx decreases, fracture infillings of pyrite & silvery mineral also disseminated
SP0001	69.9	73.1	0	D F	0						discernable disseminated pyrite & fracture coatings, trace silver mineral
SP0001	73.1	107.1	0	F V D	0						mainly associated with fractures & viens, is most evident by FeOx after sulphide, scattered disseminated pyrite
SP0001	107.1	134.7	0	B	0	0					Fe Ox bands through core pervasive & unable to ID original minerals
SP0001	134.7	140.4	0	D	0	0					1% mm dk brwn spectrs, oxidized py? Within grey silt beds not in shales
SP0001	140.4	148.5	0	D	0	0					trace mm fresh silver py with qv trac black specks
SP0001	172.6	176.4	0	B D	0						trace pyrite blebs & grains in qv
SP0001	176.4	182.4	0	D	0						occasional pyrite cubes to 1mm size
SP0001	181.3	181.4	0	F	0						pyrite in fractures
SP0001	182.4	185.8	0	B D V	2						disseminated through core as grains and blebs and in qv's

SP0001	187.1	187.5	0	B D V	2	0					py as in 182.4 to 185.8, also minor clots of arsenopyrite
SP0002	3.05	31.06	0	F	1	0	FeOx	30			
SP0002	3.05	4.8	1	D	0						
SP0002	7.8	7.81	1	B		0					
SP0002	8.48	8.9	1	F	0	0	FeOx	10			
SP0002	9.5	11.12	1	B	1						
SP0002	11.12	22	1								
SP0002	22	31.06	1	F	0						
SP0002	31.06	54.9	0	V	0						
SP0002	51.9	55.75	1	V	1						
SP0002	58.2	59.1	0	V	0						
SP0002	64.2	64.21	0	D	1						
SP0002	64.7	65	0	V	0						
SP0002	67.1	68	0	D	0						
SP0002	68	69.57	0	I R	1						
SP0002	70.8	70.81	0	V	85						
SP0002	71.6	88.4	0	D	1						
SP0002	71.64	71.67	1	R	30						
SP0002	74.3	74.9	1	I R D	3						
SP0002	74.9	75.6	1	D	0						
SP0002	75.6	79.3	1	V D	2						
SP0002	79.3	81.9	1	V	5						
SP0002	85.78	86.1	1	R	0						
SP0002	86.6	87.4	1	V	1						
SP0002	87.6	88.4	1	R	1						
SP0002	88.4	95	0	F	0						
SP0002	92.75	92.95	1	V F	1		Cp	0.5	Gn	0	possible mo/au
SP0002	93.6	93.61	1	V	0		Cp	0	Gn	0	
SP0002	94.16	94.46	1	V B	0						
SP0002	100.1	100.1	0	V S	0	0					
SP0002	100.7	100.7	0	V F	0		Cp	0	Gn	0	
SP0002	101.7	101.7	0	I R	5						
SP0002	105.3	106.3	0	S	0						

SP0002	108	110	0	F	0						
SP0002	118	132.4	0	D I	0						
SP0002	132.4	139.5	0	D	0						
SP0002	139.5	140.7	0	V	1						
SP0002	145	145.7	0	D	0						
SP0002	145.7	147.7	0	D	0						
SP0002	147.7	148.8	0	V	0						
SP0002	148.8	152.8	0	D	0						
SP0002	154.4	157.6	0	B	0						
SP0002	161.7	161.9	0	V				Gn	0		
SP0002	162.3	164.9	0	I R	0						
SP0002	164.9	166.4	0	F	0						
SP0002	166.4	170.2	0	D	2						
SP0002	173.6	175	0	F D	2			Po	0		
SP0002	175	182.7	0	I D	3			Po	0		
SP0002	182.7	184.8	0	V	3			Po	1		
SP0002	184.8	188.8	0	D V	3			Po	0		
SP0002	188.8	211	0	D	0						
SP0002	208.4	208.4	1	V	100						
SP0002	211	215.4	0	D	0			Po	0		
SP0002	215.3	221.6	0	F	2						
	5										
SP0002	221.6	224.3	0	F	0						
SP0002	226.9	228.5	0	F	1						
SP0002	231	232.7	0	V	1			Po	0		
SP0002	234.5	235.6	0	I	0			Po	0		
SP0002	236.5	237.7	0	V	0			Po	0		
SP0002	240.7	246	0	F	1			Po	2		
SP0002	246	250.3	0	D I	2			Po	0		
SP0002	250.3	253.8	0	B	2						
SP0002	254.4	259.2	0	F	2						
SP0003	45	81.2	0	B	0						fine grained pyrite occurs intermitantly & appears to be confined to either foliation or bedding planes - primary, secondary or remobilized - unable to determine

SP0003	81.2	89	0	B	1						patches & blebs of pyrite up to 1-2mm in size along with minor blue grey siliver mineralization - too fine grained to identify - all partly remobilized by numerous discontinuous quartz veins
SP0003	89	106.2	0	B	0						see 45 to 81.2
SP0003	106.2	108.6	0	B	1						see 81.2 to 89
SP0003	108.5 5	115.5	0	B	0						as for 45 yo 81.2, but decreases dramatically past 112 m to end of section
SP0004	35	43	0	B	0.5						small blebs & disseminations up to 2-3mm some associated / qtz vnls & possibly foliation
SP0004	43	46.58	0	F	0.5						pyrite generally occurring as fine disseminations along foliation, sometime bedding & minor qtz sweats
SP0004	46.58	59.1	0	B	0.5						as for 35 to 43, but starts as 2-3% in 1st 1 - 2 metres decreasing to trace by end of section, fair amount associated / discontinuous small vuggy qtz vns
SP0004	59.1	86.25	0	F	2						discontinuous and generally associated / more graphitic sections, majority sub// to fol or bedding (as for 43 to 46.58) minor amounts associated with qtz veins: not able to determine wether pyrite is primary or secondary
SP0004	105.5	108.8	0	F B	0.5						mainly associated / foliation planes, but some blebby fine grained aggregates
SP0004	129.1	135	0	F B	3						some of the pyrite associated / fractions could be called vns as they are up to 1cm thick & show brecciation of the SNDS, possible trace pyrrhotite and a silver grey very fine grained mineral
SP0004	138	139.2	0	B	0.5						as for 35 -43
SP0004	143.2	146.2	0	B	1						blebby fine grained pyrite / minor very fine grained silver grey mineral/yellowish oxidation
SP0004	147.8	153	0	B	0.25						as for 143.2 to 146.2 except less- may be due to oxidation
SP0004	154	155.6	0	B	2						fine grained disseminations
SP0004	155.6	157	0	B	0.5						
SP0004	160.2	161.1	0	B	0.5						
SP0004	187.7	190.9	0	B V	0.25						mainly associated with quartz veins

Sprogge Project: DDH Faults Sheet						
DDH_ID	from	to	Code	Struc Dip	Lith Code	Notes
SP0001	16.4	16.8	Fx		ARGL	brocken rock / gouge on bedding
SP0001	24.6	24.61	Fx	15	ARGL	broken rock/minor gouge
SP0001	45.2	45.21	Fd	40	SNDS	quartz rubble
SP0001	52.4	52.41	Fdh	50	SNDS	ground rock self healed
SP0001	56.5	56.51	Fg	90	SNDS	1cm mud seam
SP0001	69.5	69.51	Fbh	60	SNDS	5cm breccia vein fault
SP0001	107.1	111.3	Fx	35	ARGL	most intense gouge is from 107.8 to 109, dip is poor
SP0001	115.8	116.6	Fx	10	ARGL	gouge and rock along fol
SP0001	122.7	123.4	Fx		ARGL	crushed rock and gouge
SP0001	126.3	126.31	Fx	30	ARGL	
SP0001	126.4	126.5	Fx	50	ARGL	brecciated host rock in part in a gouge matrix
SP0001	140	140.01	Fh	36	ARGL	hairline fracture shows bed offset <1cm
SP0001	140.7	140.71	Fv	30	ARGL	qtz healed fracture offsets bed 1cm
SP0001	148.5	172.6	Fx		ARGL	gouge zones in short <1cm intervals
SP0002	16	17.75	Fbv		SNDS	
SP0002	39.6	39.65	Fg	55	SLST	
SP0002	50.9	50.91	Fg	65	SLST	
SP0002	60	60.01	Fg	72	ARGL	
SP0002	64.3	64.7	Fd	50	SLST	
SP0002	66	66.4	Fr		SNDS	
SP0002	84.2	84.3	Fx		ARGL	
SP0002	84.3	84.5	Fg	75	ARGL	
SP0002	84.5	85.3	Fx		ARGL	
SP0002	87.6	88.3	Fx	70	SLST	
SP0002	104.15	104.16	Fg	30	ARGL	
SP0002	110.6	110.61	Fg	68	SLST	
SP0003	10.8	11.9	Fx		ARGL	Several crushed gouge zones in first 14 metres - drill induced
SP0003	12	12.5	Fx		ARGL	
SP0003	12.7	13.8	Fr		ARGL	
SP0003	16.3	16.31	Fg	20	ARGL	5mm gouge along fracture
SP0003	18.3	19	Fd		ARGL	
SP0003	20	20.01	Fg	45	ARGL	2cm narrows to 0.5cm across core
SP0003	20.1	23.2	Fd		ARGL	
SP0003	26.2	27.4	Fx	90	ARGL	several zones separated by ~ 0.3m
SP0003	29.5	29.51	Fg	15	ARGL	2mm gouge on fracture
SP0003	35.8	35.81	Fg	5	ARGL	1mm gouge on fracture
SP0003	36.2	36.4	Fx	65	ARGL	
SP0003	37.3	37.4	Fd		ARGL	
SP0003	38	38.1	Fd		ARGL	
SP0003	38.5	38.6	Fx	55	ARGL	2 1cm & 0.5cm zones
SP0003	41.2	41.23	Fg	45	ARGL	3cm gouge & crush

SP0003	44.5	50	Fx		ARGL	50% gouge & rock frags
SP0003	44.7	45	Fx	50	ARGL	
SP0003	48	48.01	Fx	60	ARGL	
SP0003	55	55.4	Fx	60	ARGL	
SP0003	58.8	58.81	Fx		ARGL	
SP0003	60.1	60.15	Fx	80	ARGL	
SP0003	61	61.01	Fx	60	ARGL	
SP0003	61.1	61.15	Fg		ARGL	
SP0003	63.8	63.9	Fd		ARGL	
SP0003	66.1	68.5	Fg		ARGL	extensive core loss ~ 80% +
SP0003	69.5	69.51	Fg	70	ARGL	1cm gouge
SP0003	69.8	69.81	Fx	70	ARGL	2cm gouge
SP0003	70	70.01	Fx	70	ARGL	1.5 cm gouge
SP0003	71.6	71.9	Fx		ARGL	
SP0003	72.1	72.2	Fx	60	ARGL	
SP0003	79.1	79.2	Fx		ARGL	
SP0003	92.7	92.8	Fx	80	ARGL	
SP0003	93.7	93.72	Fx	60	ARGL	
SP0003	96.3	96.4	Fx	60	ARGL	
SP0003	99.6	99.61	Fx	60	ARGL	2cm rock minor gouge
SP0003	101.1	101.2	Fx	80	ARGL	
SP0003	104.7	104.7	Fx	35	ARGL	1.5cm gouge
		1				
SP0003	116.3	116.3	Fx	30	ARGL	
		4				
SP0003	119.6	119.6	Fx	50	ARGL	
		1				
SP0003	131.6	131.6	Fx	65	ARGL	1cm gouge
		1				
SP0004	18	18.1	Fx	60	ARGL	core above all broken, near surface
SP0004	19.2	19.5	Fx	45	ARGL	cross cuts bedding/comprises 2 - 3 zones
SP0004	29.9	30	Fx	70	SNDS	heavily oxidized
SP0004	49.1	49.3	Fx	50	SNDS	associated / qtz vn
SP0004	59.1	60.2	Fx		ARGL	several gouge zones associated with contact
SP0004	74.8	75.6	Fx		ARGL	extensive large core loss
SP0004	77.8	78	Fx		ARGL	core loss
SP0004	82.5	83.5	Fx		ARGL	core loss
SP0004	85.2	85.25	Fx	60	ARGL	gouge
SP0004	85.9	86	Fx	60	ARGL	gouge swelling movement along bedding/fol
SP0004	86.7	86.71	Fx	70	ARGL	1cm gouge & rock
SP0004	88	88.1	Fx	50	ARGL	gouge and rock
SP0004	91.8	91.81	Fx	80	ARGL	gouge & rock
SP0004	95	95.2	Fx	65	ARGL	gouge rock & quartz
SP0004	100	102.4	Fx		ARGL	core loss & minor gouge
SP0004	109.4	109.6	Fx	80	ARGL	some ground qtz vns
SP0004	115.5	115.6	Fx	50	ARGL	
		5				
SP0004	118.5	119.1	Fx	70	ARGL	broken qtz rock minor gouge
SP0004	122.6	123.2	Fx		ARGL	most gouge at start
SP0004	128.3	128.7	Fx	25	ARGL	qtz rubble C/A at end of section

Sprogge Project: DDH Structure Sheet

DDH_ID	Depth	Code	Ref_Struc	Ref_Dip	Struc Sym	Struc Omt	Struc Dip	Lith Code	Notes
SP0001	4.2	Vnq					20	ARGL	
SP0001	4.3	J1					40	ARGL	
SP0001	4.31	So					5	ARGL	
SP0001	6.8	So	Sc1	0		150	10	ARGL	
SP0001	6.9	J0	Sc1	0		30	60	ARGL	
SP0001	9.5	So	Sc1	5		340	10	ARGL	
SP0001	11.5	J0					40	ARGL	~1cm offset of bedding
SP0001	11.51	So					15	ARGL	
SP0001	14.4	So					15	ARGL	
SP0001	14.7	J0					40	ARGL	
SP0001	14.71	So					15	ARGL	So&J0 form an X
SP0001	17.5	So	Sc1	15		55	20	ARGL	
SP0001	18.4	Vnq	Sc1	5			40	ARGL	
SP0001	20.9	So	Sc1	5			10	ARGL	
SP0001	21.5	So					15	ARGL	
SP0001	22.5	Sc2					80	ARGL	
SP0001	22.51	So					10	ARGL	
SP0001	23.3	So	Sc1	20		10	15	ARGL	
SP0001	25.9	Vnq					5	ARGL	
SP0001	28.4	J0					40	ARGL	
SP0001	28.41	So					20	ARGL	
SP0001	30.3	So	Sc1	5		45	10	SNDS	very poor Sc1
SP0001	30.5	So					5	SNDS	
SP0001	31.5	Vnq					20	SNDS	
SP0001	31.7	Vnq					65	SNDS	
SP0001	32.3	J0					40	SNDS	
SP0001	33.9	J1					40	SNDS	
SP0001	34	Sc1					5	SNDS	
SP0001	34.2	J1					80	SNDS	
SP0001	34.5	So					10	SNDS	
SP0001	35.39	Sc1					1	SNDS	
SP0001	35.4	Sc2					25	SNDS	see notes
SP0001	35.41	So					5	SNDS	
SP0001	36.4	J0					30	SNDS	
SP0001	37.8	Vnq					50	SNDS	.5cm vn
SP0001	38.6	J1					35	SNDS	
SP0001	38.7	Vnq					30	SNDS	opposite J1 above .25cm
SP0001	39.3	Vnq					70	SNDS	.4cm bull qtz vn
SP0001	39.8	Sc?					20	SNDS	
SP0001	40.5	Sc1					5	SNDS	see notes
SP0001	40.51	So					5	SNDS	see notes
SP0001	44	J0					40	SNDS	
SP0001	44.01	J1					40	SNDS	fracture opposite to J1 @ 44
SP0001	45.8	Sc2					20	SNDS	
SP0001	47.4	Sc1					1	SNDS	
SP0001	47.41	So					5	SNDS	see notes

SP0001	48.2	J0					40	SNDS	
SP0001	49.8	So					10	SNDS	suspect
SP0001	50.4	So					10	SNDS	
SP0001	50.6	Vnq					30	SNDS	see notes
SP0001	50.7	Sc1					5	SNDS	
SP0001	50.71	Sc2					40	SNDS	see notes
SP0001	51	Vnq					60	SNDS	
SP0001	51.7	J0					40	SNDS	
SP0001	52.3	J0					55	SNDS	partly sulphide filled?
SP0001	52.7	J0					45	SNDS	3 joints/vns
SP0001	52.71	So	Sc1	5		20	5	SNDS	
SP0001	53.4	J0					50	SNDS	
SP0001	54.4	J0					50	SNDS	
SP0001	54.41	So					5	SNDS	
SP0001	57.8	J0					40	SNDS	
SP0001	57.81	So					10	SNDS	
SP0001	58	Sc1					5	SNDS	see notes
SP0001	59.5	J0					60	SNDS	
SP0001	61	J0					45	SNDS	
SP0001	61.8	Vnq					70	SNDS	10 cm
SP0001	62	Vnq					30	SNDS	1cm bull qtz
SP0001	62.2	Sc1					10	SNDS	
SP0001	62.9	J1					80	SNDS	
SP0001	62.91	Vnq					40	SNDS	10 cm qtz vn bull
SP0001	63.3	Vnq					40	SNDS	10cm
SP0001	63.9	Vnq					45	SNDS	5cm
SP0001	64.3	Vnq					70	SNDS	1cm
SP0001	64.7	Vnq					80	SNDS	1.5cm
SP0001	65.3	J0					40	SNDS	
SP0001	65.8	J0					30	SNDS	
SP0001	66.4	So					3	SNDS	
SP0001	67.3	J0					45	SNDS	
SP0001	67.31	Vnq					5	SNDS	.5cm qtz vn bull along fol?
SP0001	68	Vnq					70	SNDS	8cm
SP0001	68.6	Sc1					5	SNDS	see notes
SP0001	68.61	So					5	SNDS	see notes
SP0001	70.2	J0					70	SNDS	2 mm qtz vn on joint adjacent joint extensive pyrite coating
SP0001	70.9	Vbq					30	SNDS	brecciated qtz vn healed/ FeOx, box work after FeOx, greenish yellowish stain, manganese fract coating
SP0001	71.59	J0					30	SNDS	
SP0001	71.6	Vbq					30	SNDS	as above
SP0001	72.2	Sc2					40	SNDS	poor foliation
SP0001	72.5	Vnq					60	SNDS	1cm
SP0001	74	Sc1					5	SNDS	qtz infills along fol
SP0001	74.01	So					5	SNDS	see notes
SP0001	75.8	Vnq					40	SNDS	1cm
SP0001	76.1	J0					40	SNDS	
SP0001	79.4	Sc1					10	SNDS	
SP0001	81.2	Vnq					15	SNDS	.5 cm
SP0001	83	J0					40	SNDS	

SP0001	83.01	Sc1					10	SNDS	fol fractures manganese coated
SP0001	85	Vnq					50	SNDS	2 1cm qtz vn 10 cm apart
SP0001	86.5	J0					40	SNDS	evidence of water flow along fracture
SP0001	87.5	Vnq					30	SNDS	.8cm
SP0001	88.3	Vnq					40	SNDS	as for 87.5
SP0001	88.9	J0					40	SNDS	
SP0001	88.91	Sc1					20	SNDS	
SP0001	91.5	J0					35	SNDS	
SP0001	91.51	Sc1					15	SNDS	
SP0001	93	J0					40	SNDS	see notes
SP0001	96.5	J0					50	SNDS	
SP0001	96.6	J0					45	SNDS	
SP0001	96.61	Sc1					10	SNDS	manganese coated
SP0001	97.7	J0					40	SNDS	
SP0001	97.71	Sc1					10	SNDS	
SP0001	98.2	So					20	SNDS	contact
SP0001	98.7	So					5	SNDS	
SP0001	100.7	Vnq					70	SNDS	2cm
SP0001	101	Sc1					10	SNDS	
SP0001	103.8	J0					40	SNDS	
SP0001	104.9	Sc1					5	SNDS	
SP0001	107.1	So					10	ARGL	contact ss/shale fault
SP0001	113	Sc1					10	ARGL	bedding contorted
SP0001	113.6	Sc1					15	ARGL	
SP0001	113.61	So					30	ARGL	
SP0001	117	J0					30	ARGL	filled/1mm qtz
SP0001	117.01	So					20	ARGL	
SP0001	117.3	Vnq					50	ARGL	2cm
SP0001	118.2	Scq					10	ARGL	
SP0001	118.5	Vnq					30	ARGL	
SP0001	119.2	So					15	ARGL	
SP0001	119.21	Vnq					50	ARGL	1-2cm broken qtz vn
SP0001	120.4	So					15	ARGL	
SP0001	121.5	Sc1					15	ARGL	
SP0001	121.51	So					0	ARGL	
SP0001	123.5	So					55	ARGL	
SP0001	124.4	Sc1					15	ARGL	
SP0001	124.41	So					30	ARGL	
SP0001	127.6	J0					50	ARGL	
SP0001	127.61	So					20	ARGL	
SP0001	128.5	So	Sc1	17		310	22	ARGL	
SP0001	128.6	Sc1					17	ARGL	
SP0001	130.7	J0				185	28	ARGL	healed by qtz & FeOx
SP0001	133	So	Sc1	13	E	340	15	ARGL	
SP0001	134	Lc	Sc1	9		290	50	ARGL	
SP0001	135.7	So	Sc1	16	E	288	26	ARGL	
SP0001	135.8	Sc1					12	ARGL	
SP0001	135.9	Sc2					46	ARGL	
SP0001	138	So	Sc1	10		300	7	ARGL	convoluted bedding, harder beds ribboned softer beds kinked

SP0001	139.1	So	Sc1	11		325	45	ARGL	bedding intersection in C/A changing foliation poorly defined
SP0001	139.6	J0	Sc1	25		100	41	ARGL	clay & FeOx healed, spaced 1.5cm apart; same orientation as vn @138.4
SP0001	140	Fh	So	48		180	36	ARGL	hairline fracture shows bed offset <1cm
SP0001	140.7	Fv	Sc1	4		93	30	ARGL	qtz healed fracture offsets bed 1cm
SP0001	140.8	So	Sc1	4		30	32	ARGL	
SP0001	141	Vbq	Sc1	13		90	10	ARGL	brecciated vein / gouge/FeOx
SP0001	143.3	So	Sc1	9		20	5	ARGL	possible hinge zone of anticline @139, reversal of bedding in relation to Sc1
SP0001	144.1	Vnq	Sc1	14		55	9	ARGL	vein stwk, all veins <1cm FeOx selvages, trace py
SP0001	144.6	So	Sc1	9		21	5	ARGL	
SP0001	144.7	Lc	Sc1	14		16	21	ARGL	bedding/foliation intersection
SP0001	147.8	Vbq	So	18		47	5	ARGL	brecciated vein/ fresh py
SP0001	150.5	Vbq	Sc1	15		85	50	ARGL	
SP0001	153.2	So					17	ARGL	
SP0001	173.6	Vnq	Sc1	13		245	40	SNDS	
SP0001	173.9	So					16	ARGL	
SP0001	174.2	Vnq	Sc1	18		245	36	SNDS	
SP0001	174.5	J2	Sc1	12		95	25	SNDS	
SP0001	174.6	J1	Sc1	12		80	27	SNDS	
SP0001	175.7	Sc1					13	SNDS	
SP0001	176.1	Vvq	Sc1	10		348	63	SNDS	
SP0001	176.3	So					23	ARGL	bedding // to foliation
SP0001	178.4	Vvq	Sc1	11		328	36	SNDS	
SP0001	180	So					10	SNDS	foliation not apparent or // to bddng
SP0001	180.3	Vnq	So	14		150	47	SNDS	
SP0001	180.75	Vnq						SNDS	attitude not possible due to broken core
SP0001	181.9	Vnq	So	11		90	61	SNDS	
SP0001	182.4	Vnq	So	12		160	65	SNDS	
SP0001	182.8	So	Sc1	17		328	18	ARGL	foliation obvious in argillite
SP0001	182.9	Vbq	Sc1	9		335	31	SLTS	
SP0001	183.1	So	Sc1	9		25	17	SLTS	
SP0001	184	J1	Sc1	16		27	27	SNDS	
SP0001	184.3	Vnq	Sc1	9		182	67	SNDS	
SP0001	184.7	Vnq	Sc1	17		81	65	SNDS	
SP0001	184.8	So	Sc1	17		159	10	SNDS	
SP0001	185	Vvq	Sc1	17		325	67	SNDS	
SP0001	186.3	So	Sc1	20		340	9	ARGL	
SP0001	187.2	Vbq					17	SNDS	brecciated sandstone with veining
SP0002	3.5	Sc1					65	SNDS	3.05 to 35
SP0002	5	Lc	Sc1	65		340	72	SNDS	5 to 31.06
SP0002	6.9	So	Sc1	65		296	75	ARGL	
SP0002	8	So	Sc1	65		326	80	SNDS	3.05 to 11
SP0002	10	Sf					65	SNDS	4.2 to 31.06
SP0002	12	Vq	Sc1	65		112	38	SNDS	
SP0002	14.1	Vq	Sc1	65		290	45	SNDS	
SP0002	15	Vcq	Sc1	65		0	65	SNDS	
SP0002	18	Sc2	Sc1	65		304	80	SNDS	3.05 to 35
SP0002	21.6	Vnq	Sc1	65		40	56	SNDS	
SP0002	23.2	So	Sc1	65		314	55	SNDS	

SP0002	26.9	So	Sc1	80		332	78	ARGL	
SP0002	28.6	Vq	Sc1	60		265	65	SNDS	
SP0002	30.5	So	Sc2	70		35	68	ARGL	
SP0002	34.8	Sc2	Sc1	70		304	80	ARGL	
SP0002	34.9	So	Sc1	80		290	76	ARGL	
SP0002	36.1	So	Sc1	80		340	72	ARGL	
SP0002	36.2	Sc2	Sc1	80		210	44	ARGL	
SP0002	38.7	Sf	So	78		35	24	ARGL	
SP0002	39	Sf	So	80		280	28	SLST	
SP0002	39.5	Sf	Sc1	80		115	35	SLST	
SP0002	39.6	Fg	Sc1	80		310	55	SLST	
SP0002	44.6	So	Sc1	60		350	70	ARGL	
SP0002	51.15	So	Sc1	65		320	65	SLST	
SP0002	51.2	Sc2	Sc1	65		170	80	SLST	
SP0002	54.5	Sc2	Sc1	80		305	75	ARGL	
SP0002	54.9	So	Sc1	80		280	65	ARGL	
SP0002	57.9	So	Sc1	65		36	70	SLST	
SP0002	58	Sc2	Sc1	65		325	60	ARGL	
SP0002	64.2	So	Sc1	75		340	80	ARGL	
SP0002	67.7	So	Sc1	70		335	75	SLST	
SP0002	69	Sf	So	80		150	15	SLST	
SP0002	71	So	Sc1	80		350	75	SLST	
SP0002	71.6	So					80	SLST	71.6 to 76.2
SP0002	75.1	Sf	So	70		170	30	SLST	
SP0002	75.8	Vbf	So	80		180	20	SLST	
SP0002	76.2	Vf	So	80		265	55	ARGL	
SP0002	76.6	Sc1	So	80		340	70	SLST	
SP0002	76.8	So	Sc1	70		350	85	SLST	
SP0002	76.9	Sc2	Sc1	70		170	75	SLST	
SP0002	79.5	Vsx	So	80		190	40	SLST	
SP0002	80.1	Vsx	So	75		200	40	SLST	
SP0002	80.7	Vsx	Sc1	70		200	55	SLST	
SP0002	80.8	So	Sc1	70		315	75	SLST	
SP0002	81.7	Sc1	So	65		30	65	SLST	
SP0002	82.9	Sf						SLST	
SP0002	84.3	Fg	So	65		170	75	ARGL	
SP0002	87.6	Fx	Sc1	60		325	70	SLST	
SP0002	87.86	Sf						ARGL	
SP0002	89.6	So	Sc1	70		340	75	ARGL	
SP0002	93.6	Sc2	Sc1	70		30	80	SLST	
SP0002	93.7	So	Sc1	70		310	75	SLST	
SP0002	97.6	So	Sc1	65		295	55	SLST	
SP0002	100.2	Sc2	Sc1	70		80	45	ARGL	
SP0002	100.6	So	Sc1	85		330	80	SLST	
SP0002	103.3	Sc2	Sc1	65		320	35	ARGL	
SP0002	103.9	Sc2	Sc1	65		10	35	ARGL	
SP0002	104.1	Sc2	Sc1	68		355	30	ARGL	
SP0002	104.15	Fg	Sc2	30		0	30	ARGL	
SP0002	108.7	Sc1					75	SLST	
SP0002	110.2	Vbf	Sc1	68		0	68	SLST	

SP0002	110.45	So	Sc1	68		355	73	SLST	
SP0002	110.6	Fg	Sc1	68		0	68	SLST	
SP0002	112.1	Vbf	So	73		255	25	SLST	
SP0002	115.9	So	Sc1	75		355	70	SLST	
SP0002	119.2	So	Sc1	70		325	72	SLST	
SP0002	122.4	Sc2	Sc1	72		170	60	ARGL	
SP0002	122.6	So	Sc1	72		10	66	ARGL	
SP0002	124.3	So	Sc2	75		200	80	SLST	
SP0002	124.4	Sc1	Sc2	75		180	80	SLST	
SP0002	125	So	Sc2	70		165	85	SLST	
SP0002	125.1	Sc2					70	ARGL	
SP0002	130	Vif	Sc2			160	55	ARGL	
SP0002	130.1	Sc1	Sc2			180	60	ARGL	
SP0002	132.8	Sf					25	SNDS	
SP0002	139.3	Sf	S?	50		180	15	SNDS	
SP0002	140.6	So	S?	50			90	SNDS	
SP0002	141.5	So	Sc1	55		350	70	SNDS	
SP0002	141.6	Sc2	Sc1	55		85	40	SNDS	
SP0002	142.4	So					65	SNDS	
SP0002	142.6	Vq	So	65		105	35	SNDS	
SP0002	142.9	Vq	S0	65		105	25	SNDS	
SP0002	144.85	Sc2	Sc1	70		260	50	ARGL	
SP0002	144.9	So	Sc1	70		350	45	ARGL	
SP0002	148.9	So	So	70		345	65	ARGL	
SP0002	152	So	Sc1	80		255	70	SLST	
SP0002	152.1	Sc2	Sc1	80		235	70	SLST	
SP0002	152.8	Sc2	Sc1	75		310	75	ARGL	
SP0002	152.81	So	Sc1	75		265	75	ARGL	
SP0002	153.4	So	Sc1	75		310	65	ARGL	
SP0002	153.5	Sc2	Sc1			330	70	ARGL	
SP0002	153.5	Vq	Sc1	75		280	85	ARGL	
SP0002	153.9	Vq	Sc1			155	25	SNDS	
SP0002	154.4	Vq	Sc1			85	25	SNDS	
SP0002	155.2	Vq	Sc1			320	15	SNDS	
SP0002	156	Vq	Sc1	70		235	30	PCGM	
SP0002	156.3	Sc2	Sc1	60		325	65	SLST	
SP0002	156.4	So	Sc1	60		260	70	SLST	
SP0002	156.5	Sf	Sc1	70		280	30	SNDS	
SP0002	156.6	Vq	Sc1			110	40	SNDS	
SP0002	157.2	Vbq	Sc1	65		70	60	PCGM	
SP0002	157.6	So	Sc1	60		240	70	SNDS	
SP0002	158.8	Sc2	Sc1			300	75	SNDS	
SP0002	158.9	So	Sc1			260	70	SLST	
SP0002	159.2	Vq	Sc1	50		150	15	SNDS	
SP0002	160.2	Vq	Sc1	50		95	40	SNDS	
SP0002	161.7	Vq	Sc1	55		100	45	SNDS	
SP0002	162.1	Vbq	Sc1	40		305	40	SNDS	
SP0002	163.4	So	Sc1	45		125	65	SNDS	
SP0002	164.3	Vq	Sc1	45		350	5	SNDS	
SP0002	165.1	Vbq	Sc1	50		60	30	SNDS	

SP0002	165.4	Sc2	Sc1	50		125	40	SNDS	
SP0002	166.8	So	Sc1	60		70	70	ARGL	
SP0002	167	Sc2	Sc1	55		130	45	PCGM	
SP0002	170.1	So					65	ARGL	
SP0002	172.9	So	Sc1	55		295	60	SNDS	
SP0002	173.9	Vq	So			70	25	SNDS	
SP0002	174.7	Sf	So			95	50	SNDS	
SP0002	180	Sf					50	SNDS	
SP0002	181	Vbq	Sf	50		330	50	SNDS	
SP0002	183.7	Vq	Sf			120	30	SNDS	
SP0002	183.8	Vq	Sf			335	30	SNDS	
SP0002	184.85	Vq	Sf	55		315	20	SNDS	
SP0002	185	Sf					40	SNDS	185 to 188.8
SP0002	185.95	Vq	Sf	40		75	35	SNDS	
SP0002	186.3	Vq	Sf	40		95	50	SNDS	
SP0002	188.8	So	Sc1	60		255	75	SNDS	
SP0002	190.3	So					65	SNDS	
SP0002	191.1	Sc1					50	SNDS	
SP0002	193	So	Sc1	45		280	75	SNDS	
SP0002	196.5	So	Sc1	40		335	55	ARGL	
SP0002	201.9	Sc1					45	PCGM	
SP0002	205.7	So	Sc1	45		285	50	ARGL	
SP0002	207.3	Vbq	Sc1	55		75	40	PCGM	
SP0002	208.4	Vix	Sc1	45		0		PCGM	
SP0002	208.5	Vbq	Sc1	45		345	40	PCGM	
SP0002	210.3	So	Sc1	55		335	65	PCGM	
SP0002	210.7	So	Sc1	55		340	65	PCGM	
SP0002	215.35	Sf	Sc1	50		20	7	SNDS	
SP0002	217.6	Sf	Sc1			100	30	PCGM	
SP0002	218.7	Vbq	Sc1	55		20	75	PCGM	
SP0002	219.3	Vix	Sc1			10	20	PCGM	
SP0002	221.9	So	Sc1	65		275	70	SNDS	
SP0002	222.5	Sc1					70	ARGL	222.5 to 224.8
SP0002	226.2	Sc1					70	SNDS	
SP0002	227.4	Sc1					70	SLST	
SP0002	227.8	So	Sc1	70		280	60	ARGL	
SP0002	231.2	Vkx	Sc1	70		95	25	SLST	
SP0002	235.5	Vsx	Sc1	60		40	20	SNDS	
SP0002	236.8	Vbx	Sc1	65		0	45	SLST	
SP0002	238	Vbq	Sc1	60		275	20	SNDS	
SP0002	239.8	Vbq	Sc1	50		345	15	SNDS	
SP0002	240.7	So	Sc1	60		265	75	ARGL	
SP0002	241.4	Sf1	Sc1	60		10	25	SNDS	241.4 to 250.3
SP0002	244.8	Vq	Sc1	50		320	15	SNDS	244.8 to 248.8
SP0002	250.3	Sf2						SLST	250.3 to 253.4
SP0002	254.4	So	Sc1	55		275	70	SLST	
SP0002	254.6	Sf1	Sc1	50		0	25	SNDS	254.6 to 259
SP0002	255	Sf2	Sc1			100	15	PCGM	255 to 257
SP0002	258.4	Vix	Sc1	45		350	20	SNDS	
SP0003	12	So	Sc1	25		5	40	ARGL	

SP0003	12.01	Sc2	Sc1	25		350	20	ARGL	
SP0003	16.5	So					30	ARGL	
SP0003	16.8	So					35	ARGL	
SP0003	17.1	So	Sc1	25		20	25	ARGL	
SP0003	18.2	Sc2	Sc1	35			50	ARGL	
SP0003	20.05	Sc2	Sc1	35			50	ARGL	
SP0003	25	Sc2					35	ARGL	
SP0003	25.01	So					40	ARGL	
SP0003	27.6	Sc2					35	ARGL	
SP0003	27.61	So					50	ARGL	
SP0003	30.01	Sc1					45	ARGL	?
SP0003	30.02	Sc2					30	ARGL	?
SP0003	30	So					50	ARGL	
SP0003	33.7	So					60	ARGL	
SP0003	33.75	Sc1					50	ARGL	?
SP0003	35.6	Sc1					55	ARGL	?
SP0003	35.61	So					50	ARGL	
SP0003	38.9	So					60	ARGL	
SP0003	39	Sc1					50	ARGL	>
SP0003	40.9	Sf					15	ARGL	
SP0003	41	So					60	ARGL	
SP0003	42.5	Sf					70	ARGL	opposite bedding
SP0003	42.51	So					50	ARGL	
SP0003	44	So					60	ARGL	
SP0003	45.7	Sc1					50	ARGL	
SP0003	45.71	So					50	ARGL	
SP0003	48.4	Sf					30	ARGL	fracture
SP0003	49	Sf					60	ARGL	
SP0003	49.1	So					60	ARGL	
SP0003	52.8	So					60	ARGL	
SP0003	54.5	So					50	ARGL	
SP0003	56	So					50	ARGL	
SP0003	56.05	Sc1					35	ARGL	
SP0003	56.1	Sc2					80	ARGL	
SP0003	59.7	So					60	ARGL	
SP0003	60.9	Sc1					70	ARGL	
SP0003	60.91	Sc2					50	ARGL	opposite to Sc1
SP0003	63.95	So					60	ARGL	
SP0003	65.9	Sc2					30	ARGL	
SP0003	65.91	So					60	ARGL	
SP0003	69	So					70	ARGL	
SP0003	71.8	Sf					15	ARGL	
SP0003	73.6	Sc1					50	ARGL	
SP0003	75.1	Sc1					50	ARGL	
SP0003	76	So					75	ARGL	poor
SP0003	76.1	Sc1					50	ARGL	
SP0003	78.9	So					75	ARGL	
SP0003	79.8	So					70	ARGL	
SP0003	79.9	Sc1					50	ARGL	
SP0003	81.2	So					75	SNDS	

SP0003	90	So					70	ARGL	
SP0003	92	So					55	ARGL	
SP0003	92.2	So					50	ARGL	
SP0003	93.2	So					60	ARGL	
SP0003	95.6	So					70	ARGL	
SP0003	96	So					70	ARGL	
SP0003	97.3	So					60	ARGL	
SP0003	98	So					60	ARGL	
SP0003	100.1	So					60	ARGL	
SP0003	104.7	Sc2					5	ARGL	poor
SP0003	105.6	So					50	ARGL	
SP0003	109	Sc2					35	ARGL	
SP0003	111	Sc1					60	ARGL	
SP0003	113.2	So					65	ARGL	
SP0003	113.3	Sc1					45	ARGL	
SP0003	114.5	So					60	ARGL	
SP0003	114.6	Sc1					45	ARGL	
SP0003	118	So					70	ARGL	
SP0003	122.5	So					50	ARGL	
SP0003	123.7	So					50	ARGL	
SP0003	123.8	Sc1					50	ARGL	
SP0003	126.5	So					55	ARGL	
SP0003	127.5	So					60	ARGL	
SP0003	130	So					60	ARGL	
SP0003	133.5	So					60	ARGL	
SP0003	135.6	So					60	ARGL	
SP0004	19	So					40	ARGL	
SP0004	19.1	Sc1					40	ARGL	
SP0004	20.5	So					60	ARGL	
SP0004	20.6	Sc1					50	ARGL	sub// to So
SP0004	23.6	Sc1					50	ARGL	sub// to So
SP0004	23.7	So					60	ARGL	
SP0004	25.6	So					60	ARGL	
SP0004	25.7	Sc2					25	ARGL	
SP0004	27.4	So					70	SNDS	
SP0004	27.9	Sc1					60	SNDS	sub// to So
SP0004	28	So					70	SNDS	
SP0004	31.3	So	Sc1	40		325	60	SNDS	
SP0004	32	So					80	SNDS	
SP0004	33.9	So	Sc1	40		320	80	SNDS	
SP0004	37.2	So	Sc1	50		320	80	SNDS	
SP0004	40.3	So	Sc1	50			80	SNDS	
SP0004	48.8	So	Sc1	50		90	85	SNDS	
SP0004	53.7	So	Sc1	45		100	80	SNDS	
SP0004	59.1	So	Sc1	50			80	SNDS	through SNDS section Sc1=Sc2?
SP0004	62.8	So					60	ARGL	
SP0004	64.7	So					80	ARGL	
SP0004	67.2	So					60	ARGL	
SP0004	76	So					75	ARGL	
SP0004	78.5	So					60	ARGL	

SP0004	82	So					70	ARGL	
SP0004	86	So					70	ARGL	
SP0004	87.2	So					70	ARGL	
SP0004	89.5	So					55	ARGL	
SP0004	90.9	So					60	ARGL	
SP0004	91	Sc2					70	ARGL	cross cuts So
SP0004	93.2	Sc1					60	ARGL	
SP0004	95.7	So					75	ARGL	
SP0004	98	So					70	ARGL	
SP0004	104	Sc2					70	ARGL	opposite Sc1
SP0004	104.1	Sc1					40	ARGL	
SP0004	104.2	So					60	ARGL	
SP0004	108.7	Sc1					45	ARGL	
SP0004	108.8	So					60	ARGL	
SP0004	110.2	So					60	ARGL	
SP0004	110.25	Sc1					45	ARGL	
SP0004	110.3	Sc2					70	ARGL	opposite Sc1
SP0004	113.2	Sc2					30	ARGL	opposite Sc1
SP0004	113.3	So					65	ARGL	
SP0004	113.35	Sc1					45	ARGL	
SP0004	114	Sc2					50	ARGL	Sc1 is axial planar and at this point is a fold nose in the argillite, below this section is a dramatic increase in disruption of bedding & quartz veins & increase in faulting & qtz veins
SP0004	116.3	So					60	ARGL	
SP0004	116.35	Sc1					45	ARGL	
SP0004	121.2	So					80	ARGL	
SP0004	121.25	Sc1					60	ARGL	?
SP0004	122.4	So					80	ARGL	
SP0004	122.42	Sc1					50	ARGL	?
SP0004	122.45	Sc2					20	ARGL	?
SP0004	123.7	So					50	ARGL	
SP0004	124.2	So					30	ARGL	
SP0004	124.3	Sc2					20	ARGL	
SP0004	125.4	So					30	ARGL	folded by Sc2
SP0004	125.5	Sc2					15	ARGL	
SP0004	159.6	So					85	SNDS	
SP0004	162.4	Sc1					70	ARGL	
SP0004	162.4	So					80	ARGL	
SP0004	165	So					70	ARGL	
SP0004	165.6	Sc1					35	ARGL	?
SP0004	167.9	So					75	ARGL	
SP0004	167.95	Sc1					65	ARGL	
SP0004	168	Sc2					70	ARGL	opposite Sc1
SP0004	171.5	So					85	SNDS	
SP0004	177.8	So					80	SNDS	
SP0004	183.4	So					80	SNDS	
SP0004	187.8	Sc?					20	SNDS	
SP0004	187.85	Sc2					10	SNDS	
SP0004	189	So					85	SNDS	

SP0004	192.5	So					65	SNDS	
SP0004	192.6	Sc1					50	SNDS	

Sprogge Project: DDH Assay Sheet

DDH_ID	Sample ID	from	to	length	recovery	% recovery	Lith Code	Sampled By	Sample	Au ppb
SP0001	140101	3	4.6	1.6	1.04	65.0	ARGL	K.Chapu/DJB	140101	<5
SP0001	140102	4.6	6.1	1.5	1.55	103.3	ARGL	K.Chapu/DJB	140102	<5
SP0001	140103	6.1	7.5	1.4	1.43	102.1	ARGL	K.Chapu/DJB	140103	<5
SP0001	140104	7.5	9	1.5	1.55	103.3	ARGL	K.Chapu/DJB	140104	<5
SP0001	140105	9	10.5	1.5	1.48	98.7	ARGL	K.Chapu/DJB	140105	<5
SP0001	140106	10.5	12	1.5	1.52	101.3	ARGL	K.Chapu/DJB	140106	<5
SP0001	140107	12	13.5	1.5	1.48	98.7	ARGL	K.Chapu/DJB	140107	<5
SP0001	140108	13.5	15	1.5	1.47	98.0	ARGL	K.Chapu/DJB	140108	<5
SP0001	140109	15	16.6	1.6	1.57	98.1	ARGL	K.Chapu/DJB	140109	<5
SP0001	140110	16.6	18	1.4	1.48	105.7	ARGL	K.Chapu/DJB	140110	<5
SP0001	140111	18	19.5	1.5	1.35	90.0	ARGL	K.Chapu/DJB	140111	<5
SP0001	140112	19.5	21	1.5	1.5	100.0	ARGL	K.Chapu/DJB	140112	<5
SP0001	140113	21	22.5	1.5	1.48	98.7	ARGL	K.Chapu/DJB	140113	<5
SP0001	140114	22.5	24	1.5	1.54	102.7	ARGL	K.Chapu/DJB	140114	<5
SP0001	140115	24	24.7	0.7	0.71	101.4	ARGL	K.Chapu/DJB	140115	<5
SP0001	140116	24.7	26.2	1.5	1.35	90.0	ARGL	K.Chapu/DJB	140116	<5
SP0001	140117	26.2	27.8	1.6	1.63	101.9	ARGL	K.Chapu/DJB	140117	<5
SP0001	140118	27.8	29.3	1.5	1.37	91.3	SNDS	K.Chapu/DJB	140118	<5
SP0001	140119	29.3	30.3	1	1.1	110.0	SNDS	K.Chapu/DJB	140119	<5
SP0001	140120	30.3	31.4	1.1	1.05	95.5	SNDS	K.Chapu/DJB	140120	<5
SP0001	140121	31.4	32.1	0.7	0.8	114.3	SNDS	K.Chapu/DJB	140121	<5
SP0001	140122	32.1	32.9	0.8	0.88	110.0	SNDS	K.Chapu/DJB	140122	<5
SP0001	140123	32.9	33.7	0.8	0.84	105.0	SNDS	K.Chapu/DJB	140123	<5
SP0001	140124	33.7	35	1.3	0.92	70.8	SNDS	K.Chapu/DJB	140124	<5
SP0001	140125	35	36.5	1.5	1.35	90.0	SNDS	K.Chapu/DJB	140125	<5
SP0001	140126	36.5	38	1.5	1.8	120.0	SNDS	K.Chapu/DJB	140126	<5
SP0001	140127	38	39.5	1.5	1.45	96.7	SNDS	K.Chapu/DJB	140127	<5
SP0001	140128	39.5	40.5	1	1	100.0	SNDS	K.Chapu/DJB	140128	<5
SP0001	140129	40.5	42.1	1.6	1.48	92.5	SNDS	K.Chapu/DJB	140129	<5
SP0001	140130	42.1	43.5	1.4	1.4	100.0	SNDS	K.Chapu/DJB	140130	<5
SP0001	140131	43.5	44.5	1	0.99	99.0	SNDS	K.Chapu/DJB	140131	<5
SP0001	140132	44.5	45.5	1	1.04	104.0	SNDS	K.Chapu/DJB	140132	95
SP0001	140133	45.5	46.5	1	0.94	94.0	SNDS	K.Chapu/DJB	140133	5
SP0001	140134	46.5	47.5	1	0.96	96.0	SNDS	K.Chapu/DJB	140134	<5
SP0001	140135	47.5	48.5	1	0.99	99.0	SNDS	K.Chapu/DJB	140135	<5
SP0001	140136	48.5	49.5	1	0.82	82.0	SNDS	K.Chapu/DJB	140136	<5
SP0001	140137	49.5	50.6	1.1	1	90.9	SNDS	K.Chapu/DJB	140137	<5
SP0001	140138	50.6	51.2	0.6	0.6	100.0	SNDS	K.Chapu/DJB	140138	<5
SP0001	140139	51.2	52.5	1.3	1.21	93.1	SNDS	K.Chapu/DJB	140139	<5
SP0001	140140	52.5	53	0.5	0.76	152.0	SNDS	K.Chapu/DJB	140140	<5
SP0001	140141	53	54.5	1.5	1.46	97.3	SNDS	K.Chapu/DJB	140141	<5
SP0001	140142	54.5	56.2	1.7	1.5	88.2	SNDS	K.Chapu/DJB	140142	<5
SP0001	140143	56.2	57.8	1.6	1.5	93.8	SNDS	K.Chapu/DJB	140143	<5
SP0001	140144	57.8	58.4	0.6	0.73	121.7	SNDS	K.Chapu/DJB	140144	<5
SP0001	140145	58.4	59.4	1	0.96	96.0	SNDS	K.Chapu/DJB	140145	<5
SP0001	140146	59.4	60	0.6	0.55	91.7	SNDS	K.Chapu/DJB	140146	<5

SP0001	140147	60	60.5	0.5	0.46	92.0	SNDS	K.Chapu/DJB	140147	<5
SP0001	140148	60.5	61.8	1.3	1.22	93.8	SNDS	K.Chapu/DJB	140148	<5
SP0001	140149	61.8	62.3	0.5	0.52	104.0	SNDS	K.Chapu/DJB	140149	<5
SP0001	140150	62.3	62.8	0.5	0.52	104.0	SNDS	K.Chapu/DJB	140150	<5
SP0001	140051	62.8	63.4	0.6	0.6	100.0	SNDS	K.Chapu/DJB	140051	<5
SP0001	140052	63.4	63.9	0.5	0.47	94.0	SNDS	K.Chapu/DJB	140052	<5
SP0001	140053	63.9	64.4	0.5	0.53	106.0	SNDS	K.Chapu/DJB	140053	<5
SP0001	140054	64.4	64.9	0.5	0.49	98.0	SNDS	K.Chapu/DJB	140054	<5
SP0001	140055	64.9	65.4	0.5	0.55	110.0	SNDS	K.Chapu/DJB	140055	<5
SP0001	140056	65.4	66.1	0.7	0.75	107.1	SNDS	K.Chapu/DJB	140056	20
SP0001	140057	66.1	67.4	1.3	1.31	100.8	SNDS	K.Chapu/DJB	140057	<5
SP0001	140058	67.4	68.4	1	1.02	102.0	SNDS	K.Chapu/DJB	140058	<5
SP0001	140059	68.4	69.4	1	1.05	105.0	SNDS	K.Chapu/DJB	140059	<5
SP0001	140060	69.4	70.4	1	1.02	102.0	SNDS	K.Chapu/DJB	140060	<5
SP0001	140061	70.4	71.4	1	0.94	94.0	SNDS	K.Chapu/DJB	140061	10
SP0001	140062	71.4	72.2	0.8	1.05	131.3	SNDS	K.Chapu/DJB	140062	5
SP0001	140063	72.2	73.1	0.9	0.89	98.9	SNDS	K.Chapu/DJB	140063	<5
SP0001	140064	73.1	74.6	1.5	1.42	94.7	SNDS	K.Chapu/DJB	140064	<5
SP0001	140065	74.6	76	1.4	1.29	92.1	SNDS	K.Chapu/DJB	140065	<5
SP0001	140066	76	77.5	1.5	1.59	106.0	SNDS	K.Chapu/DJB	140066	<5
SP0001	140067	77.5	79	1.5	1.38	92.0	SNDS	K.Chapu/DJB	140067	<5
SP0001	140068	79	80.5	1.5	1.24	82.7	SNDS	K.Chapu/DJB	140068	<5
SP0001	140069	80.5	81.4	0.9	0.87	96.7	SNDS	K.Chapu/DJB	140069	<5
SP0001	140070	81.4	83	1.6	1.7	106.3	SNDS	K.Chapu/DJB	140070	<5
SP0001	140071	83	84.5	1.5	1.61	107.3	SNDS	K.Chapu/DJB	140071	<5
SP0001	140072	84.5	86	1.5	1.54	102.7	SNDS	K.Chapu/DJB	140072	<5
SP0001	140073	86	87.5	1.5	1.27	84.7	SNDS	K.Chapu/DJB	140073	<5
SP0001	140074	87.5	89	1.5	1.66	110.7	SNDS	K.Chapu/DJB	140074	<5
SP0001	140075	89	90.5	1.5	1.82	121.3	SNDS	K.Chapu/DJB	140075	<5
SP0001	140076	90.5	92	1.5	1.57	104.7	SNDS	K.Chapu/DJB	140076	<5
SP0001	140077	92	93.5	1.5	1.42	94.7	SNDS	K.Chapu/DJB	140077	<5
SP0001	140078	93.5	95	1.5	1.56	104.0	SNDS	K.Chapu/DJB	140078	<5
SP0001	140079	95	96.5	1.5	1.55	103.3	SNDS	K.Chapu/DJB	140079	<5
SP0001	140080	96.5	98.2	1.7	1.55	91.2	SNDS	K.Chapu/DJB	140080	<5
SP0001	140081	98.2	98.7	0.5	0.55	110.0	ARGL	K.Chapu/DJB	140081	<5
SP0001	140082	98.7	99.9	1.2	1.27	105.8	SNDS	K.Chapu/DJB	140082	<5
SP0001	140083	99.9	101.4	1.5	1.5	100.0	SNDS	K.Chapu/DJB	140083	<5
SP0001	140084	101.4	102.9	1.5	1.41	94.0	SNDS	K.Chapu/DJB	140084	<5
SP0001	140085	102.9	104.4	1.5	1.58	105.3	SNDS	K.Chapu/DJB	140085	<5
SP0001	140086	104.4	105.9	1.5	1.41	94.0	SNDS	K.Chapu/DJB	140086	<5
SP0001	140087	105.9	107.1	1.2	0.85	70.8	SNDS	K.Chapu/DJB	140087	<5
SP0001	140088	107.1	109	1.9	1.47	77.4	SNDS	K.Chapu/DJB	140088	<5
SP0001	140089	109	111	2	0.79	39.5	SNDS	K.Chapu/DJB	140089	<5
SP0001	140090	111	113	2	1.14	57.0	SNDS	K.Chapu/DJB	140090	<5
SP0001	140091	113	115	2	1.29	64.5	ARGL	K.Chapu/DJB	140091	<5
SP0001	140092	115	117	2	2.1	105.0	ARGL	K.Chapu/DJB	140092	<5
SP0001	140093	117	119	2	1.15	57.5	ARGL	K.Chapu/DJB	140093	<5
SP0001	140094	119	121	2	1.5	75.0	ARGL	K.Chapu/DJB	140094	<5
SP0001	140095	121	123	2	1.95	97.5	SNDS	K.Chapu/DJB	140095	<5
SP0001	140096	123	125	2	1.85	92.5	SNDS	K.Chapu/DJB	140096	<5

SP0001	140097	125	127	2	1.97	98.5	SNDS	K.Chapu/DJB	140097	<5
SP0001	140098	127	129	2	2.3	115.0	SNDS	K.Chapu/DJB	140098	<5
SP0001	140956	129	131	2	1.25	62.5	ARGL	K.Chapu/DJB		
SP0001	140959	131	133	2	1.92	96.0	ARGL	K.Chapu/DJB		
SP0001	140951	133	134.9	1.9	1.96	103.2	ARGL	K.Chapu/DJB		
SP0001	140957	134.9	135.4	0.5	0.62	124.0	ARGL	K.Chapu/DJB		
SP0001	140960	135.4	137.4	2	2.13	106.5	ARGL	K.Chapu/DJB		
SP0001	140952	137.4	138.7	1.3	1.42	109.2	ARGL	K.Chapu/DJB		
SP0001	140950	138.7	140.7	2	1.9	95.0	ARGL	K.Chapu/DJB		
SP0001	140961	140.7	142.7	2	2.04	102.0	ARGL	K.Chapu/DJB		
SP0001	140953	142.7	144.7	2	2	100.0	ARGL	K.Chapu/DJB		
SP0001	140962	144.7	146.7	2	2.25	112.5	ARGL	K.Chapu/DJB		
SP0001	140963	146.7	148.7	2	1.6	80.0	ARGL	K.Chapu/DJB		
SP0001	140954	148.7	150.7	2	2.14	107.0	ARGL	K.Chapu/DJB		
SP0001	140964	150.7	152.2	1.5	1.1	73.3	ARGL	K.Chapu/DJB		
SP0001	140965	152.2	154.2	2	2.1	105.0	ARGL	K.Chapu/DJB		
SP0001	140955	154.2	156.2	2	1.64	82.0	ARGL	K.Chapu/DJB		
SP0001	140966	156.2	158.2	2	0.92	46.0	ARGL	K.Chapu/DJB		
SP0001	140967	158.2	160.2	2	0.88	44.0	ARGL	K.Chapu/DJB		
SP0001	140968	160.2	162.2	2	1.17	58.5	ARGL	K.Chapu/DJB		
SP0001	140969	162.2	164.7	2.5	1.3	52.0	ARGL	K.Chapu/DJB		
SP0001	140970	164.7	167.2	2.5	0.96	38.4	ARGL	K.Chapu/DJB		
SP0001	140971	167.2	170	2.8	0.95	33.9	ARGL	K.Chapu/DJB		
SP0001	140972	170	172.5	2.5	0.82	32.8	ARGL	K.Chapu/DJB		
SP0001	140973	172.5	174.5	2	1.75	87.5	SNDS	K.Chapu/DJB		
SP0001	140974	174.5	176.4	1.9	2.08	109.5	SNDS	K.Chapu/DJB		
SP0001	140975	176.4	178.4	2	2.11	105.5	SNDS	K.Chapu/DJB		
SP0001	140976	178.4	180.4	2	2.11	105.5	SNDS	K.Chapu/DJB		
SP0001	140977	180.4	182.4	2	1.75	87.5	SNDS	K.Chapu/DJB		
SP0001	140978	182.4	183.4	1	0.97	97.0	SNDS	K.Chapu/DJB		
SP0001	140979	183.4	184.7	1.3	1.38	106.2	SNDS	K.Chapu/DJB		
SP0001	140980	184.7	185.8	1.1	1.17	106.4	SNDS	K.Chapu/DJB		
SP0001	140981	185.8	187.2	1.4	1.22	87.1	ARGL	K.Chapu/DJB		
SP0001	140982	187.2	187.5	0.3	0.35	116.7	SNDS	K.Chapu/DJB		
SP0002	140983	3	5.5	2.5	1.58	63.2	SNDS	C.Sam/DJB		
SP0002	140984	5.5	7.5	2	1.8	90.0	SNDS	C.Sam/DJB		
SP0002	140985	7.5	9.5	2	2.38	119.0	SNDS	C.Sam/DJB		
SP0002	140986	9.5	11.8	2.3	1.85	80.4	SNDS	C.Sam/DJB		
SP0002	140987	11.8	13	1.2	1.15	95.8	SNDS	C.Sam/DJB		
SP0002	140988	13	15	2	2.02	101.0	SNDS	C.Sam/DJB		
SP0002	140989	15	16	1	1.01	101.0	SNDS	C.Sam/DJB		
SP0002	140990	16	17	1	0.95	95.0	SNDS	C.Sam/DJB		
SP0002	140991	17	18	1	0.96	96.0	SNDS	C.Sam/DJB		
SP0002	140992	18	20	2	1.97	98.5	SNDS	C.Sam/DJB		
SP0002	140993	20	22	2	2.05	102.5	SNDS	C.Sam/DJB		
SP0002	140994	22	23.5	1.5	1.46	97.3	SNDS	C.Sam/DJB		
SP0002	140995	23.5	25	1.5	1.2	80.0	SNDS	C.Sam/DJB		
SP0002	140996	25	26.8	1.8	1.75	97.2	SNDS	C.Sam/DJB		
SP0002	140601	26.8	28.7	1.9	1.75	92.1	SNDS	C.Sam/DJB	140601	<5
SP0002	140602	28.7	30.5	1.8	1.78	98.9	SNDS	C.Sam/DJB	140602	<5

SP0002	140603	30.5	31.1	0.6	0.6	100.0	SNDS	C.Sam/DJB	140603	<5
SP0002	140604	31.1	32	0.9	0.92	102.2	SNDS	C.Sam/DJB	140604	<5
SP0002	140605	32	34	2	1.87	93.5	ARGL	C.Sam/DJB	140605	10
SP0002	140606	34	36	2	2	100.0	ARGL	C.Sam/DJB	140606	<5
SP0002	140607	36	38	2	1.95	97.5	ARGL	C.Sam/DJB	140607	<5
SP0002	140608	38	40	2	1.94	97.0	ARGL	C.Sam/DJB	140608	<5
SP0002	140609	40	42	2	1.98	99.0	ARGL	C.Sam/DJB	140609	<5
SP0002	140610	42	44	2	1.94	97.0	ARGL	C.Sam/DJB	140610	<5
SP0002	140611	44	46	2	2	100.0	ARGL	C.Sam/DJB	140611	<5
SP0002	140612	46	47	1	0.95	95.0	ARGL	C.Sam/DJB	140612	<5
SP0002	140613	47	49	2	1.94	97.0	ARGL	C.Sam/DJB	140613	<5
SP0002	140614	49	51	2	1.47	73.5	ARGL	C.Sam/DJB	140614	<5
SP0002	140615	51	53	2	1.7	85.0	ARGL	C.Sam/DJB	140615	<5
SP0002	140616	53	54.9	1.9	1.65	86.8	ARGL	C.Sam/DJB	140616	<5
SP0002	140617	54.9	56	1.1	1.04	94.5	SLST	C.Sam/DJB	140617	<5
SP0002	140618	56	58.2	2.2	2.24	101.8	SLST	C.Sam/DJB	140618	<5
SP0002	140619	58.2	59.2	1	0.99	99.0	SLST	C.Sam/DJB	140619	<5
SP0002	140620	59.2	61.2	2	1.83	91.5	ARGL	C.Sam/DJB	140620	<5
SP0002	140621	61.2	63.2	2	1.42	71.0	SLST	C.Sam/DJB	140621	<5
SP0002	140622	63.2	65.1	1.9	1.56	82.1	SLST	C.Sam/DJB	140622	<5
SP0002	140623	65.1	67.1	2	1.65	82.5	SLST	C.Sam/DJB	140623	<5
SP0002	140624	67.1	68	0.9	0.98	108.9	SLST	C.Sam/DJB	140624	<5
SP0002	140625	68	69.7	1.7	1.7	100.0	SLST	C.Sam/DJB	140625	10
SP0002	140626	69.7	71.6	1.9	1.9	100.0	SLST	C.Sam/DJB	140626	90
SP0002	140627	71.6	73.6	2	2	100.0	SLST	C.Sam/DJB	140627	<5
SP0002	140628	73.6	75.6	2	2.09	104.5	SLST	C.Sam/DJB	140628	<5
SP0002	140629	75.6	77.6	2	2.15	107.5	SLST	C.Sam/DJB	140629	<5
SP0002	140630	77.6	79.3	1.7	1.6	94.1	ARGL	C.Sam/DJB	140630	<5
SP0002	140631	79.3	80.6	1.3	1.24	95.4	SLST	C.Sam/DJB	140631	25
SP0002	140632	80.6	81.9	1.3	1.3	100.0	SLST	C.Sam/DJB	140632	15
SP0002	140633	81.9	83.9	2	1.93	96.5	SLST	C.Sam/DJB	140633	<5
SP0002	140634	83.9	85.8	1.9	1.93	101.6	SLST	C.Sam/DJB	140634	<5
SP0002	140635	85.8	87.8	2	2.15	107.5	SLST	C.Sam/DJB	140635	<5
SP0002	140636	87.8	88.4	0.6	0.55	91.7	SLST	C.Sam/DJB	140636	<5
SP0002	140637	88.4	90.4	2	1.8	90.0	ARGL	C.Sam/DJB	140637	<5
SP0002	140638	90.4	91.7	1.3	1.47	113.1	ARGL	C.Sam/DJB	140638	<5
SP0002	140639	91.7	92.7	1	1	100.0	ARGL	C.Sam/DJB	140639	<5
SP0002	140640	92.7	93	0.3	0.33	110.0	ARGL	C.Sam/DJB	140640	<5
SP0002	140641	93	94	1	0.88	88.0	ARGL	C.Sam/DJB	140641	<5
SP0002	140642	94	96	2	2.18	109.0	ARGL	C.Sam/DJB	140642	<5
SP0002	140643	96	98	2	1.95	97.5	ARGL	C.Sam/DJB	140643	<5
SP0002	140644	98	100	2	2.04	102.0	ARGL	C.Sam/DJB	140644	<5
SP0002	140645	100	101	1	0.98	98.0	SLST	C.Sam/DJB	140645	<5
SP0002	140658	101	102.5	1.5	1.54	102.7	SLST	C.Sam/DJB	140658	<5
SP0002	140646	102.5	104	1.5	1.45	96.7	ARGL	C.Sam/DJB	140646	<5
SP0002	140647	104	106	2	2.04	102.0	ARGL	C.Sam/DJB	140647	<5
SP0002	140648	106	108	2	1.9	95.0	SLST	C.Sam/DJB	140648	<5
SP0002	140649	108	110.1	2.1	2.13	101.4	SLST	C.Sam/DJB	140649	<5
SP0002	140650	110.1	112.1	2	1.99	99.5	SLST	C.Sam/DJB	140650	<5
SP0002	140651	112.1	114.6	2.5	2.5	100.0	ARGL	C.Sam/DJB	140651	<5

SP0002	140652	114.6	116.6	2	2.02	101.0	ARGL	C.Sam/DJB	140652	<5
SP0002	140653	116.6	118.6	2	2	100.0	ARGL	C.Sam/DJB	140653	<5
SP0002	140654	118.6	120.6	2	2	100.0	ARGL	C.Sam/DJB	140654	<5
SP0002	140655	120.6	122.6	2	1.96	98.0	ARGL	C.Sam/DJB	140655	<5
SP0002	140656	122.6	124.6	2	1.94	97.0	ARGL	C.Sam/DJB	140656	<5
SP0002	140657	124.6	126.8	2.2	2.09	95.0	ARGL	C.Sam/DJB	140657	110
SP0002	140659	126.8	129.3	2.5	1.55	62.0	ARGL	C.Sam/DJB	140659	<5
SP0002	140660	129.3	131.3	2	1.46	73.0	ARGL	C.Sam/DJB	140660	<5
SP0002	140661	131.3	132.4	1.1	0.84	76.4	ARGL	C.Sam/DJB	140661	<5
SP0002	140662	132.4	133.4	1	0.93	93.0	PCGM	C.Sam/DJB	140662	<5
SP0002	140663	133.4	134.9	1.5	1.55	103.3	PCGM	C.Sam/DJB	140663	<5
SP0002	140664	134.9	137.4	2.5	2.28	91.2	PCGM	C.Sam/DJB	140664	<5
SP0002	140665	137.4	139.5	2.1	2.31	110.0	PCGM	C.Sam/DJB		
SP0002	140666	139.5	140.7	1.2	1.4	116.7	SNDS	C.Sam/DJB		
SP0002	140667	140.7	142.4	1.7	1.67	98.2	SNDS	C.Sam/DJB		
SP0002	140668	142.4	143.4	1	0.93	93.0	SNDS	C.Sam/DJB		
SP0002	140669	143.4	145.7	2.3	2.3	100.0	PCGM	C.Sam/DJB		
SP0002	140670	145.7	147.7	2	2	100.0	SNDS	C.Sam/DJB		
SP0002	140671	147.7	148.8	1.1	1.06	96.4	ARGL	C.Sam/DJB		
SP0002	140672	148.8	150.8	2	1.91	95.5	SNDS	C.Sam/DJB		
SP0002	140673	150.8	152.8	2	2.05	102.5	SNDS	C.Sam/DJB		
SP0002	140674	152.8	153.6	0.8	0.82	102.5	ARGL	C.Sam/DJB		
SP0002	140675	153.6	155.6	2	1.88	94.0	SNDS	C.Sam/DJB		
SP0002	140676	155.6	157.6	2	2.02	101.0	SNDS	C.Sam/DJB		
SP0002	140677	157.6	159.1	1.5	1.53	102.0	SNDS	C.Sam/DJB		
SP0002	140678	159.1	161.1	2	1.84	92.0	SNDS	C.Sam/DJB		
SP0002	140679	161.1	162.3	1.2	1.09	90.8	SNDS	C.Sam/DJB		
SP0002	140680	162.3	164.3	2	1.97	98.5	SNDS	C.Sam/DJB		
SP0002	140681	164.3	166.4	2.1	2.11	100.5	SNDS	C.Sam/DJB		
SP0002	140682	166.4	168.4	2	2.03	101.5	SNDS	C.Sam/DJB		
SP0002	140683	168.4	170.2	1.8	2.08	115.6	SNDS	C.Sam/DJB		
SP0002	140684	170.2	172.2	2	1.7	85.0	SNDS	C.Sam/DJB		
SP0002	140685	172.2	173.6	1.4	1.3	92.9	SNDS	C.Sam/DJB		
SP0002	140686	173.6	175	1.4	1.3	92.9	SNDS	C.Sam/DJB		
SP0002	140687	175	176.5	1.5	1.6	106.7	SNDS	C.Sam/DJB		
SP0002	140688	176.5	178	1.5	1.5	100.0	SNDS	C.Sam/DJB		
SP0002	140689	178	179.5	1.5	0.6	40.0	SNDS	C.Sam/DJB		
SP0002	140690	179.5	181	1.5	1.53	102.0	SNDS	C.Sam/DJB		
SP0002	140691	181	182.5	1.5	1.52	101.3	SNDS	C.Sam/DJB		
SP0002	140692	182.5	183.7	1.2	1.1	91.7	SNDS	C.Sam/DJB		
SP0002	140693	183.7	185	1.3	1.56	120.0	SNDS	C.Sam/DJB		
SP0002	140694	185	186.1	1.1	1	90.9	SNDS	C.Sam/DJB		
SP0002	140695	186.1	187.2	1.1	1.12	101.8	SNDS	C.Sam/DJB		
SP0002	140696	187.2	188.8	1.6	1.39	86.9	SNDS	C.Sam/DJB		
SP0002	140697	188.8	190.8	2	2.3	115.0	SNDS	C.Sam/DJB		
SP0002	140698	190.8	192.8	2	1.85	92.5	SNDS	C.Sam/DJB		
SP0002	140699	192.8	194.7	1.9	2.06	108.4	SNDS	C.Sam/DJB		
SP0002	140700	194.7	196.6	1.9	1.71	90.0	PCGM	C.Sam/DJB		
SP0002	140701	196.6	198.9	2.3	2.5	108.7	SNDS	C.Sam/DJB		
SP0002	140702	198.9	200.6	1.7	1.45	85.3	SNDS	C.Sam/DJB		

SP0002	140703	200.6	202.6	2	1.96	98.0	PCGM	C.Sam/DJB		
SP0002	140704	202.6	204.6	2	1.93	96.5	PCGM	C.Sam/DJB		
SP0002	140705	204.6	205.8	1.2	1.37	114.2	PCGM	C.Sam/DJB		
SP0002	140706	205.8	207.8	2	1.8	90.0	PCGM	C.Sam/DJB		
SP0002	140707	207.8	209.5	1.7	1.67	98.2	PCGM	C.Sam/DJB		
SP0002	140708	209.5	211	1.5	1.67	111.3	PCGM	C.Sam/DJB		
SP0002	140709	211	213	2	1.97	98.5	PCGM	C.Sam/DJB		
SP0002	140710	213	214.4	1.4	1.41	100.7	PCGM	C.Sam/DJB		
SP0002	140711	214.4	215.4	1	0.96	96.0	PCGM	C.Sam/DJB		
SP0002	140712	215.4	216.4	1	1.03	103.0	SNDS	C.Sam/DJB		
SP0002	140713	216.4	217.4	1	1.09	109.0	PCGM	C.Sam/DJB		
SP0002	140714	217.4	218.4	1	1.04	104.0	PCGM	C.Sam/DJB		
SP0002	140715	218.4	219.4	1	1.09	109.0	PCGM	C.Sam/DJB		
SP0002	140716	219.4	221.4	2	1.72	86.0	PCGM	C.Sam/DJB		
SP0002	140717	221.4	223.4	2	1.97	98.5	SNDS	C.Sam/DJB		
SP0002	140718	223.4	225.4	2	1.9	95.0	ARGL	C.Sam/DJB		
SP0002	140719	225.4	227.6	2.2	2.2	100.0	SNDS	C.Sam/DJB		
SP0002	140720	227.6	229.7	2.1	2.06	98.1	SNDS	C.Sam/DJB		
SP0002	140721	229.7	231.2	1.5	1.56	104.0	SNDS	C.Sam/DJB		
SP0002	140722	231.2	232.7	1.5	1.55	103.3	SNDS	C.Sam/DJB		
SP0002	140723	232.7	234.2	1.5	1.33	88.7	SNDS	C.Sam/DJB		
SP0002	140724	234.2	235.7	1.5	1.61	107.3	SNDS	C.Sam/DJB		
SP0002	140725	235.7	237.2	1.5	1.51	100.7	PCGM	C.Sam/DJB		
SP0002	140726	237.2	239.2	2	2	100.0	SNDS	C.Sam/DJB		
SP0002	140727	239.2	240.7	1.5	1.57	104.7	SNDS	C.Sam/DJB		
SP0002	140728	240.7	242.2	1.5	1.56	104.0	SNDS	C.Sam/DJB		
SP0002	140729	242.2	243.7	1.5	1.54	102.7	SNDS	C.Sam/DJB		
SP0002	140730	243.7	245.4	1.7	1.72	101.2	SNDS	C.Sam/DJB		
SP0002	140731	245.4	247.2	1.8	1.88	104.4	SNDS	C.Sam/DJB		
SP0002	140732	247.2	248.7	1.5	1.6	106.7	PCGM	C.Sam/DJB		
SP0002	140733	248.7	250.3	1.6	1.52	95.0	PCGM	C.Sam/DJB		
SP0002	140734	250.3	251.8	1.5	1.47	98.0	SLST	C.Sam/DJB		
SP0002	140735	251.8	253.4	1.6	1.51	94.4	SLST	C.Sam/DJB		
SP0002	140736	253.4	254.4	1	0.96	96.0	SNDS	C.Sam/DJB		
SP0002	140737	254.4	255.2	0.8	0.76	95.0	SNDS	C.Sam/DJB		
SP0002	140738	255.2	256.4	1.2	1.27	105.8	PCGM	C.Sam/DJB		
SP0002	140739	256.4	257.9	1.5	1.62	108.0	SNDS	C.Sam/DJB		
SP0002	140740	257.9	259.4	1.5	1.48	98.7	SNDS	C.Sam/DJB		
SP0003	140751	8.53	12	3.47	1.6	46.1	ARGL	C.Sam/F. Anderson		
SP0003	140752	12	15.3	3.3	1.4	42.4	ARGL	C.Sam/F. Anderson		
SP0003	140753	15.3	17.06	1.76	1.7	96.6	ARGL	C.Sam/F. Anderson		
SP0003	140754	17.06	18.65	1.59	1.59	100.0	ARGL	C.Sam/F. Anderson		
SP0003	140755	18.65	23.34	4.69	1.3	27.7	ARGL	C.Sam/F. Anderson		
SP0003	140756	23.34	26.1	2.76	1.5	54.3	ARGL	C.Sam/F. Anderson		
SP0003	140757	26.1	26.2	0.1	0.1	100.0	ARGL	C.Sam/F. Anderson		
SP0003	140758	26.2	29.26	3.06	2.9	94.8	ARGL	C.Sam/F. Anderson		
SP0003	140759	29.26	32.36	3.1	2.9	93.5	ARGL	C.Sam/F. Anderson		
SP0003	140760	32.36	35.36	3	2.8	93.3	ARGL	C.Sam/F. Anderson		
SP0003	140761	35.36	38.48	3.12	3	96.2	ARGL	C.Sam/F. Anderson		
SP0003	140762	38.48	41.25	2.77	2.77	100.0	ARGL	C.Sam/F. Anderson		

SP0003	140741	41.25	45	3.75	3.75	100.0	ARGL	C.Sam/F. Anderson	
SP0003	140742	45	48.5	3.5	3.5	100.0	ARGL	C.Sam/F. Anderson	
SP0003	140743	48.5	52.3	3.8	2.8	73.7	ARGL	C.Sam/F. Anderson	
SP0003	140744	52.3	56	3.7	3.7	100.0	ARGL	C.Sam/F. Anderson	
SP0003	140745	56	59.1	3.1	3.1	100.0	ARGL	C.Sam/F. Anderson	
SP0003	140746	59.1	62.3	3.2	3	93.8	ARGL	C.Sam/F. Anderson	
SP0003	140747	62.3	66.06	3.76	2.5	66.5	ARGL	C.Sam/F. Anderson	
SP0003	140748	66.06	68.5	2.44	0.5	20.5	ARGL	C.Sam/F. Anderson	
SP0003	140749	68.5	71.17	2.67	2.5	93.6	ARGL	C.Sam/F. Anderson	
SP0003	140750	71.17	74.5	3.33	2.4	72.1	ARGL	C.Sam/F. Anderson	
SP0003	140763	74.5	78.11	3.61	3.2	88.6	ARGL	C.Sam/F. Anderson	
SP0003	140764	78.11	81.2	3.09	2.6	84.1	ARGL	C.Sam/F. Anderson	
SP0003	140765	81.2	84	2.8	1.2	42.9	SNDS	C.Sam/F. Anderson	
SP0003	140766	84	85.5	1.5	1.3	86.7	SNDS	C.Sam/F. Anderson	
SP0003	140767	85.5	87	1.5	1.4	93.3	SNDS	C.Sam/F. Anderson	
SP0003	140768	87	89	2	2	100.0	SNDS	C.Sam/F. Anderson	
SP0003	140769	89	92.16	3.16	3.16	100.0	ARGL	C.Sam/F. Anderson	
SP0003	140770	92.16	95	2.84	2.84	100.0	ARGL	C.Sam/F. Anderson	
SP0003	140771	95	97.98	2.98	2.98	100.0	ARGL	C.Sam/F. Anderson	
SP0003	140772	97.98	101.2	3.22	3.22	100.0	ARGL	C.Sam/F. Anderson	
SP0003	140773	101.2	104	2.8	2.8	100.0	ARGL	C.Sam/F. Anderson	
SP0003	140774	104	106.2	2.2	2.2	100.0	ARGL	C.Sam/F. Anderson	
SP0003	140775	106.2	108.6	2.4	2.4	100.0	SNDS	C.Sam/F. Anderson	
SP0003	140776	108.6	110.8	2.2	2.2	100.0	ARGL	C.Sam/F. Anderson	
SP0003	140777	110.8	114	3.2	1.8	56.3	ARGL	C.Sam/F. Anderson	
SP0003	140778	114	117	3	3.2	106.7	ARGL	C.Sam/F. Anderson	
SP0003	140779	117	118.6	1.6	1.6	100.0	ARGL	C.Sam/F. Anderson	
SP0003	140780	118.6	120.5	1.9	0.5	26.3	ARGL	C.Sam/F. Anderson	
SP0003	140781	120.5	124	3.5	3.4	97.1	ARGL	C.Sam/F. Anderson	
SP0003	140782	124	127	3	3	100.0	ARGL	C.Sam/F. Anderson	
SP0003	140784	127	130	3	3	100.0	ARGL	C.Sam/F. Anderson	
SP0003	140785	130	133	3	2	66.7	ARGL	C.Sam/F. Anderson	
SP0003	140786	133	135.94	2.94	2.94	100.0	ARGL	C.Sam/F. Anderson	
SP0004	140901	14	17.62	3.62	3	82.9	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140902	17.62	21	3.38	3.38	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140903	21	24	3	3	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140904	24	27.1	3.1	3.1	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140905	27.1	30	2.9	2.9	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140906	30	32	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140907	32	34	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140908	34	36	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140909	36	38	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140910	38	40	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140911	40	41.5	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140913	41.5	43	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140914	43	46.58	3.58	3.58	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140915	46.58	48	1.42	1.42	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140916	48	49.5	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140917	49.5	51	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140918	51	53	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	

SP0004	140919	53	55	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140920	55	57	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140921	57	59.1	2.1	2.1	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140922	59.1	62	2.9	2.9	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140923	62	65	3	3	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140924	65	68	3	3	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140925	68	72	4	3	75.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140926	72	75	3	3	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140927	75	78	3	2.6	86.7	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140928	78	81	3	2.7	90.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140929	81	85	4	2.2	55.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140930	85	86.25	1.25	1.25	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140931	86.25	89.5	3.25	3.25	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140932	89.5	92.5	3	3	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140933	92.5	95	2.5	2.5	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140934	95	98	3	1.9	63.3	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140935	98	99.5	1.5	1.4	93.3	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140936	99.5	102.4	2.9	1.1	37.9	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140937	102.4	104	1.6	1.5	93.8	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140938	104	106	2	2	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140939	106	107.5	1.5	1.5	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140940	107.5	109	1.5	1.3	86.7	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140941	109	112	3	3	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140942	112	115	3	3	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140943	115	118	3	3	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140944	118	121	3	3	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140945	121	124	3	3	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140946	124	127	3	3	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140947	127	129.1	2.1	2.1	100.0	ARGL	C.Sam/F. Anderson/DJB	
SP0004	140948	129.1	130.5	1.4	1.4	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140949	130.5	132	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140950	132	133.5	1.5	1.3	86.7	SNDS	C.Sam/F. Anderson/DJB	
SP0004	140251	133.5	135	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	140251 <5
SP0004	140252	135	136.5	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	140252 15
SP0004	140253	136.5	138	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	140253 25
SP0004	140254	138	139.4	1.4	1.4	100.0	SNDS	C.Sam/F. Anderson/DJB	140254 40
SP0004	140255	139.4	141	1.6	1.6	100.0	SNDS	C.Sam/F. Anderson/DJB	140255 35
SP0004	140256	141	142.5	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	140256 40
SP0004	140257	142.5	144	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	140257 40
SP0004	140258	144	144.5	0.5	1.5	300.0	SNDS	C.Sam/F. Anderson/DJB	140258 10
SP0004	140259	144.5	146.6	2.1	1.1	52.4	SNDS	C.Sam/F. Anderson/DJB	140259 5
SP0004	140260	146.6	147	0.4	0.3	75.0	SNDS	C.Sam/F. Anderson/DJB	140260 55
SP0004	140261	147	148.5	1.5	1.45	96.7	SNDS	C.Sam/F. Anderson/DJB	140261 10
SP0004	140262	148.5	150	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	140262 10
SP0004	140263	150	151.5	1.5	1.5	100.0	SNDS	C.Sam/F.	140263 20

								Anderson/DJB		
SP0004	140264	151.5	153	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	140264	<5
SP0004	140265	153	154.2	1.2	1.2	100.0	SNDS	C.Sam/F. Anderson/DJB	140265	10
SP0004	140266	154.2	155	0.8	0.8	100.0	SNDS	C.Sam/F. Anderson/DJB	140266	30
SP0004	140267	155	156.5	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	140267	120
SP0004	140268	156.5	158	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	140268	<5
SP0004	140269	158	159.5	1.5	1.5	100.0	SNDS	C.Sam/F. Anderson/DJB	140269	<5
SP0004	140270	159.5	161.2	1.7	1.6	94.1	SNDS	C.Sam/F. Anderson/DJB	140270	<5
SP0004	140271	161.2	164	2.8	2.8	100.0	ARGL	C.Sam/F. Anderson/DJB	140271	<5
SP0004	140272	164	166.2	2.2	2.2	100.0	ARGL	C.Sam/F. Anderson/DJB	140272	<5
SP0004	140273	166.2	168.2	2	2	100.0	ARGL	C.Sam/F. Anderson/DJB	140273	<5
SP0004	140274	168.2	170	1.8	1.8	100.0	SNDS	C.Sam/F. Anderson/DJB	140274	25
SP0004	140275	170	172	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	140275	<5
SP0004	140276	172	174	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	140276	<5
SP0004	140277	174	176	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	140277	<5
SP0004	140278	176	178	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	140278	<5
SP0004	140279	178	180	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	140279	<5
SP0004	140280	180	182	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	140280	<5
SP0004	140281	182	184	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	140281	<5
SP0004	140282	184	186	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	140282	<5
SP0004	140283	186	187.8	1.8	1.8	100.0	SNDS	C.Sam/F. Anderson/DJB	140283	70
SP0004	140284	187.8	189.8	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	140284	<5
SP0004	140285	189.8	191.8	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	140285	10
SP0004	140286	191.8	193.8	2	2	100.0	SNDS	C.Sam/F. Anderson/DJB	140286	<5
SP0004	140287	193.8	195.2	1.4	1.4	100.0	SNDS	C.Sam/F. Anderson/DJB	140287	5
SP0004	140288	195.2	196.6	1.4	1.4	100.0	SNDS	C.Sam/F. Anderson/DJB	140288	<5

Sprogge Project: DDH Geotech Sheet

DDH_ID	from	to	length	recovery	% recovery	# of pieces	RQD length	RQD
SP0001	3	4.6	1.6	1	62.5	3	0.55	34.4
SP0001	4.6	7.6	3	3	100.0	4	1.2	40.0
SP0001	7.6	10.7	3.1	3.1	100.0	6	1.66	53.5
SP0001	10.7	13.7	3	3	100.0	8	2.1	70.0
SP0001	13.7	16.8	3.1	2.95	95.2	5	1.1	35.5
SP0001	16.8	19.8	3	3	100.0	5	1.72	57.3
SP0001	19.8	22.9	3.1	3.1	100.0	5	1.5	48.4
SP0001	22.9	25.9	3	2.9	96.7	6	1.72	57.3
SP0001	25.9	29	3.1	3.1	100.0	7	1.7	54.8
SP0001	29	32	3	3	100.0	6	1.73	57.7
SP0001	32	35.1	3.1	2.8	90.3	9	2.22	71.6
SP0001	35.1	38.1	3	3.2	106.7	7	2.02	67.3
SP0001	38.1	41.1	3	3	100.0	7	2.32	77.3
SP0001	41.1	44.2	3.1	3.1	100.0	7	1.8	58.1
SP0001	44.2	47.2	3	3	100.0	10	2.19	73.0
SP0001	47.2	50.3	3.1	3.1	100.0	6	2.08	67.1
SP0001	50.3	53.3	3	3	100.0	12	2.15	71.7
SP0001	53.3	56.4	3.1	2.8	90.3	6	2.24	72.3
SP0001	56.4	59.4	3	3	100.0	8	2.38	79.3
SP0001	59.4	62.5	3.1	3.1	100.0	7	1.65	53.2
SP0001	62.5	65.5	3	3	100.0	12	2.37	79.0
SP0001	65.5	68.6	3.1	3.1	100.0	6	2	64.5
SP0001	68.6	71.6	3	3	100.0	7	1.36	45.3
SP0001	71.6	74.7	3.1	3.1	100.0	11	2.77	89.4
SP0001	74.7	77.7	3	3	100.0	9	1.61	53.7
SP0001	77.7	80.8	3.1	2.9	93.5	9	2.47	79.7
SP0001	80.8	83.8	3	3	100.0	8	1.76	58.7
SP0001	83.8	86.9	3.1	3.1	100.0	7	2.14	69.0
SP0001	86.9	89.9	3	3	100.0	7	1.1	36.7
SP0001	89.9	93	3.1	3.1	100.0	8	2.19	70.6
SP0001	93	96	3	3	100.0	9	2.52	84.0
SP0001	96	99.1	3.1	3.1	100.0	8	1.64	52.9
SP0001	99.1	102.1	3	3	100.0	4	2.7	90.0
SP0001	102.1	105.2	3.1	3.1	100.0	5	1.75	56.5
SP0001	105.2	108.2	3	2.7	90.0	5	1.34	44.7
SP0001	108.2	111.3	3.1	2.9	93.5	2	0.31	10.0
SP0001	111.3	114.3	3	2.7	90.0	4	0.56	18.7
SP0001	114.3	117.3	3	3	100.0	0	0	0.0
SP0001	117.3	120.4	3.1	2.9	93.5	1	0.4	12.9
SP0001	120.4	123.4	3	2.9	96.7	5	1.31	43.7
SP0001	123.4	126.5	3.1	2.9	93.5	6	1.6	51.6
SP0001	126.5	129.5	3	2.94	98.0	3	0.49	16.3
SP0001	129.5	132.5	3	2.85	95.0	6	1.53	51.0
SP0001	132.5	135.6	3.1	3.02	97.4	8	1.42	45.8
SP0001	135.6	138.7	3.1	2.9	93.5	5	1.45	46.8
SP0001	138.7	141.7	3	3.05	101.7	4	1.45	48.3
SP0001	141.7	144.8	3.1	2.98	96.1	8	2.48	80.0

SP0001	144.8	147.8	3	2.93	97.7	6	1.58	52.7
SP0001	147.8	150.9	3.1	3.05	98.4	7	1.4	45.2
SP0001	150.9	153.9	3	2.35	78.3	1	0.14	4.7
SP0001	153.9	157	3.1	2.32	74.8	5	1.07	34.5
SP0001	157	160	3	1.34	44.7	1	0.27	9.0
SP0001	160	161.5	1.5	1.28	85.3	3	0.48	32.0
SP0001	161.5	163.1	1.6	0.72	45.0	5	0.67	41.9
SP0001	163.1	166.1	3	1.09	36.3	1	0.19	6.3
SP0001	166.1	169.2	3.1	0.6	19.4	0	0	0.0
SP0001	169.2	170.7	1.5	0.45	30.0	0	0	0.0
SP0001	170.7	172.7	2	0.45	22.5	0	0	0.0
SP0001	172.7	173.7	1	1.13	113.0	2	0.24	24.0
SP0001	173.7	175.3	1.6	1.53	95.6	5	0.85	53.1
SP0001	175.3	178.3	3	3.2	106.7	9	1.51	50.3
SP0001	178.3	181.4	3.1	2.79	90.0	8	1.3	41.9
SP0001	181.4	184.4	3	2.97	99.0	7	1.22	40.7
SP0001	184.4	187.5	3.1	2.92	94.2	7	1.22	39.4
SP0002	3.05	4.9	1.85	0.95	51.4	3	0.58	31.4
SP0002	4.9	6.4	1.5	1.39	92.7	3	1.13	75.3
SP0002	6.4	7.92	1.52	1.4	92.1	4	0.73	48.0
SP0002	7.92	9.45	1.53	1.75	114.4	6	1.02	66.7
SP0002	9.45	10.97	1.52	0.99	65.1	2	0.33	21.7
SP0002	10.97	14.02	3.05	3.04	99.7	9	2.31	75.7
SP0002	14.02	17.07	3.05	2.96	97.0	7	1.67	54.8
SP0002	17.07	20.12	3.05	2.97	97.4	10	2.25	73.8
SP0002	20.12	23.16	3.04	2.82	92.8	6	1.02	33.6
SP0002	23.16	26.21	3.05	2.54	83.3	4	0.71	23.3
SP0002	26.21	29.26	3.05	3	98.4	8	1.9	62.3
SP0002	29.26	32.31	3.05	2.91	95.4	8	1.76	57.7
SP0002	32.31	35.36	3.05	2.94	96.4	3	0.38	12.5
SP0002	35.36	38.4	3.04	2.95	97.0	9	1.47	48.4
SP0002	38.4	41.45	3.05	3.2	104.9	6	0.75	24.6
SP0002	41.45	44.5	3.05	3.04	99.7	7	0.85	27.9
SP0002	44.5	47.55	3.05	2.9	95.1	6	0.91	29.8
SP0002	47.55	50.6	3.05	2.55	83.6	0	0	0.0
SP0002	50.6	53.64	3.04	2.87	94.4	7	0.8	26.3
SP0002	53.64	56.69	3.05	2.51	82.3	10	1.63	53.4
SP0002	56.69	58.22	1.53	1.59	103.9	6	1.01	66.0
SP0002	58.22	59.74	1.52	1.41	92.8	4	0.58	38.2
SP0002	59.74	62.79	3.05	2.45	80.3	3	0.32	10.5
SP0002	62.79	64.31	1.52	1.18	77.6	1	0.12	7.9
SP0002	64.31	65.84	1.53	1.31	85.6	1	0.11	7.2
SP0002	65.84	68.88	3.04	2.65	87.2	0	0	0.0
SP0002	68.88	71.93	3.05	2.98	97.7	9	1.39	45.6
SP0002	71.93	74.98	3.05	3.03	99.3	9	1.32	43.3
SP0002	74.98	76.5	1.52	1.54	101.3	1	0.17	11.2
SP0002	76.5	78.03	1.53	1.45	94.8	4	0.5	32.7
SP0002	78.03	81.08	3.05	2.89	94.8	9	1.33	43.6
SP0002	81.08	84.12	3.04	2.98	98.0	5	0.94	30.9
SP0002	84.12	87.17	3.05	2.92	95.7	4	0.54	17.7

SP0002	87.17	90.22	3.05	2.85	93.4	2	0.23	7.5
SP0002	90.22	93.27	3.05	3.11	102.0	11	1.69	55.4
SP0002	93.27	96.32	3.05	2.98	97.7	8	1.28	42.0
SP0002	96.32	99.36	3.04	3.03	99.7	10	1.66	54.6
SP0002	99.36	102.41	3.05	3.06	100.3	15	2.6	85.2
SP0002	102.41	105.46	3.05	2.88	94.4	7	0.88	28.9
SP0002	105.46	108.51	3.05	3	98.4	10	1.65	54.1
SP0002	108.51	111.56	3.05	3.03	99.3	14	2.2	72.1
SP0002	111.56	114.6	3.04	3.05	100.3	11	1.79	58.9
SP0002	114.6	117.65	3.05	2.97	97.4	9	1.35	44.3
SP0002	117.65	120.7	3.05	3	98.4	12	2.32	76.1
SP0002	120.7	123.75	3.05	3.05	100.0	13	2.5	82.0
SP0002	123.75	125.27	1.52	1.45	95.4	4	1.29	84.9
SP0002	125.27	126.8	1.53	1.4	91.5	5	1.12	73.2
SP0002	126.8	129.84	3.04	1.7	55.9	4	0.5	16.4
SP0002	129.84	132.89	3.05	2.7	88.5	7	1.19	39.0
SP0002	132.89	135.94	3.05	2.99	98.0	8	1.8	59.0
SP0002	135.94	138.99	3.05	3.02	99.0	10	2.59	84.9
SP0002	138.99	142.04	3.05	3.06	100.3	9	2.21	72.5
SP0002	142.04	145.08	3.04	3.04	100.0	12	2.19	72.0
SP0002	145.08	148.13	3.05	3.02	99.0	12	2.22	72.8
SP0002	148.13	151.18	3.05	3.03	99.3	8	1.88	61.6
SP0002	151.18	154.23	3.05	3.05	100.0	9	2.28	74.8
SP0002	154.23	157.28	3.05	3.05	100.0	9	2.38	78.0
SP0002	157.28	158.8	1.52	1.58	103.9	4	1.24	81.6
SP0002	158.8	160.32	1.52	1.35	88.8	3	0.65	42.8
SP0002	160.32	161.85	1.53	2.05	134.0	4	0.98	64.1
SP0002	161.85	163.37	1.52	1.1	72.4	4	0.99	65.1
SP0002	163.37	164.9	1.53	1.39	90.8	3	0.94	61.4
SP0002	164.9	166.42	1.52	1.53	100.7	6	0.9	59.2
SP0002	166.42	167.45	1.03	1.6	155.3	5	1.24	120.4
SP0002	167.45	169.42	1.97	1.83	92.9	3	1.25	63.5
SP0002	169.42	172.52	3.1	2.68	86.5	8	1.64	52.9
SP0002	172.52	174.04	1.52	1.53	100.7	5	0.93	61.2
SP0002	174.04	175.56	1.52	1.46	96.1	3	0.75	49.3
SP0002	175.56	177.09	1.53	1.42	92.8	4	0.84	54.9
SP0002	177.09	178.61	1.52	1.72	113.2	4	1.6	105.3
SP0002	178.61	180.14	1.53	1.25	81.7	3	0.54	35.3
SP0002	180.14	181.7	1.56	1.8	115.4	9	1.3	83.3
SP0002	181.7	183.18	1.48	1.3	87.8	4	0.81	54.7
SP0002	183.18	184.71	1.53	1.42	92.8	3	0.96	62.7
SP0002	184.71	186.23	1.52	1.93	127.0	3	1.07	70.4
SP0002	186.23	187.76	1.53	1.53	100.0	5	1.32	86.3
SP0002	187.76	189.28	1.52	1.55	102.0	5	1.32	86.8
SP0002	189.28	190.8	1.52	1.57	103.3	4	0.74	48.7
SP0002	190.8	192.32	1.52	1.48	97.4	4	1.26	82.9
SP0002	192.32	193.85	1.53	1.59	103.9	5	1.43	93.5
SP0002	193.85	196.9	3.05	3.15	103.3	9	1.9	62.3
SP0002	196.9	199.95	3.05	2.72	89.2	7	1.98	64.9
SP0002	199.95	203	3.05	3.08	101.0	11	2.74	89.8

SP0002	203	206	3	3.12	104.0	9	2.95	98.3
SP0002	206	209.1	3.1	3.13	101.0	8	3.04	98.1
SP0002	209.1	212.14	3.04	1.09	35.9	3	0.85	28.0
SP0002	212.14	215.14	3	3.15	105.0	10	2.21	73.7
SP0002	215.14	218.24	3.1	3.15	101.6	5	1.45	46.8
SP0002	218.24	221.28	3.04	2.89	95.1	5	1.8	59.2
SP0002	221.28	224.33	3.05	2.89	94.8	9	2.45	80.3
SP0002	224.33	227.8	3.47	3.55	102.3	13	3.15	90.8
SP0002	227.8	230.43	2.63	2.56	97.3	8	1.36	51.7
SP0002	230.43	233.48	3.05	3.13	102.6	8	1.44	47.2
SP0002	233.48	236.52	3.04	2.93	96.4	12	2.29	75.3
SP0002	236.52	237.05	0.53	0.53	100.0	1	0.32	60.4
SP0002	237.05	237.13	0.08	0.08	100.0	0	0	0.0
SP0002	237.13	239.57	2.44	2.4	98.4	7	1.74	71.3
SP0002	239.57	242.62	3.05	3.06	100.3	8	1.49	48.9
SP0002	242.62	245.67	3.05	2.99	98.0	8	1.87	61.3
SP0002	245.67	248.72	3.05	3.1	101.6	8	2.91	95.4
SP0002	248.72	251.76	3.04	2.58	84.9	10	2.1	69.1
SP0002	251.76	254.81	3.05	2.96	97.0	8	2.61	85.6
SP0002	254.81	257.86	3.05	3.13	102.6	8	1.87	61.3
SP0002	257.86	259.38	1.52	1.57	103.3	5	1.01	66.4
SP0003	8.53	10.98	2.45	0.09	3.7	0	0	0.0
SP0003	10.98	12	1.02	0.5	49.0	0	0	0.0
SP0003	12	14.02	2.02	0.89	44.1	0	0	0.0
SP0003	14.02	17.06	3.04	1.69	55.6	1	0.1	3.3
SP0003	17.06	23.16	6.1	2.69	44.1	0	0	0.0
SP0003	23.16	26.21	3.05	2.18	71.5	0	0	0.0
SP0003	26.21	29.26	3.05	2.9	95.1	3	0.32	10.5
SP0003	29.26	32.31	3.05	2.54	83.3	2	0.22	7.2
SP0003	32.31	35.36	3.05	2.8	91.8	2	0.5	16.4
SP0003	35.36	38.45	3.09	3.05	98.7	3	0.8	25.9
SP0003	38.45	41.76	3.31	2.13	64.4	0	0	0.0
SP0003	41.76	44.5	2.74	3.01	109.9	6	1.06	38.7
SP0003	44.5	47.55	3.05	2.54	83.3	3	0.75	24.6
SP0003	47.55	49.38	1.83	2.88	157.4	4	0.6	32.8
SP0003	49.38	53.04	3.66	2.35	64.2	1	0.1	2.7
SP0003	53.04	55.17	2.13	2.34	109.9	6	0.68	31.9
SP0003	55.17	57.25	2.08	1.76	84.6	0	0	0.0
SP0003	57.25	59.74	2.49	1.86	74.7	5	0.64	25.7
SP0003	59.74	62.79	3.05	1.61	52.8	0	0	0.0
SP0003	62.79	65.44	2.65	2.25	84.9	1	0.12	4.5
SP0003	65.44	68.88	3.44	1.17	34.0	2	0.24	7.0
SP0003	68.88	71.93	3.05	2.3	75.4	2	0.38	12.5
SP0003	71.93	74.98	3.05	2.72	89.2	2	0.22	7.2
SP0003	74.98	78.03	3.05	1.8	59.0	4	0.6	19.7
SP0003	78.03	81.08	3.05	1.53	50.2	2	0.34	11.1
SP0003	81.08	84.42	3.34	1.32	39.5	3	0.3	9.0
SP0003	84.42	87.17	2.75	2.75	100.0	1	0.13	4.7
SP0003	87.17	90.22	3.05	3.05	100.0	8	1.68	55.1
SP0003	90.22	93.27	3.05	3.13	102.6	8	2.19	71.8

SP0003	93.27	95.71	2.44	2.38	97.5	8	0.91	37.3
SP0003	95.71	99.36	3.65	3.57	97.8	11	1.9	52.1
SP0003	99.36	102.41	3.05	2.98	97.7	8	1.57	51.5
SP0003	102.41	105.46	3.05	2.97	97.4	8	1.38	45.2
SP0003	105.46	108.51	3.05	3.16	103.6	9	1.69	55.4
SP0003	108.51	111.56	3.05	2.48	81.3	7	1.13	37.0
SP0003	111.56	114.6	3.04	3.12	102.6	8	2.18	71.7
SP0003	114.6	117.65	3.05	2.68	87.9	6	1.76	57.7
SP0003	117.65	120.7	3.05	2.84	93.1	9	1.99	65.2
SP0003	120.7	123.75	3.05	2.47	81.0	5	0.93	30.5
SP0003	123.75	126.8	3.05	3.05	100.0	1	0.17	5.6
SP0003	126.8	129.84	3.04	2.95	97.0	6	1.34	44.1
SP0003	129.84	132.89	3.05	2.52	82.6	7	1	32.8
SP0003	132.89	135.94	3.05	3.07	100.7	3	0.33	10.8
SP0004	10.97	14.05	3.08	1.1	35.7	2	0.32	10.4
SP0004	14.05	17.07	3.02	1.07	35.4	0	0	0.0
SP0004	17.07	20.12	3.05	2.3	75.4	3	0.33	10.8
SP0004	20.12	23.16	3.04	2.63	86.5	5	0.85	28.0
SP0004	23.16	26.01	2.85	3	105.3	9	1.54	54.0
SP0004	26.01	29.26	3.25	2.89	88.9	7	1.42	43.7
SP0004	29.26	32.21	2.95	2.86	96.9	11	2.22	75.3
SP0004	32.21	35.36	3.15	3.05	96.8	8	1.8	57.1
SP0004	35.36	38.4	3.04	2.97	97.7	7	1.35	44.4
SP0004	38.4	41.45	3.05	3	98.4	10	2.45	80.3
SP0004	41.45	44.5	3.05	3.03	99.3	9	1.98	64.9
SP0004	44.5	47.55	3.05	3.1	101.6	8	2	65.6
SP0004	47.55	50.6	3.05	2.95	96.7	9	2.01	65.9
SP0004	50.6	53.64	3.04	3.07	101.0	9	2.57	84.5
SP0004	53.64	56.69	3.05	3.2	104.9	8	1.77	58.0
SP0004	56.69	59.74	3.05	2.98	97.7	7	1.08	35.4
SP0004	59.74	62.79	3.05	2.53	83.0	7	1.04	34.1
SP0004	62.79	65.84	3.05	3	98.4	9	1.78	58.4
SP0004	65.84	68.88	3.04	2.98	98.0	8	1.12	36.8
SP0004	68.88	70.71	1.83	1.83	100.0	3	0.56	30.6
SP0004	70.71	73.76	3.05	2.89	94.8	6	1.42	46.6
SP0004	73.76	74.98	1.22	1.11	91.0	3	0.81	66.4
SP0004	74.98	78.02	3.04	3.02	99.3	9	1.42	46.7
SP0004	78.02	81.08	3.06	3	98.0	7	0.97	31.7
SP0004	81.08	84.12	3.04	2.85	93.7	8	1.29	42.4
SP0004	84.12	87.17	3.05	2.84	93.1	4	0.9	29.5
SP0004	87.17	90.22	3.05	3.05	100.0	6	1.07	35.1
SP0004	90.22	93.27	3.05	3	98.4	8	1.29	42.3
SP0004	93.27	96.31	3.04	2.16	71.1	6	1.29	42.4
SP0004	96.31	99.36	3.05	2.03	66.6	0	0	0.0
SP0004	99.36	102.41	3.05	1.23	40.3	0	0	0.0
SP0004	102.41	105.46	3.05	3.02	99.0	11	1.68	55.1
SP0004	105.46	108.51	3.05	3	98.4	7	1.3	42.6
SP0004	108.51	111.56	3.05	2.7	88.5	4	1.08	35.4
SP0004	111.56	114.6	3.04	3.12	102.6	9	2.12	69.7
SP0004	114.6	117.65	3.05	2.96	97.0	8	2.03	66.6

SP0004	117.65	120.7	3.05	3.13	102.6	11	1.59	52.1
SP0004	120.7	123.75	3.05	3.05	100.0	10	1.56	51.1
SP0004	123.75	126.8	3.05	3.05	100.0	9	1.77	58.0
SP0004	126.8	129.84	3.04	2.94	96.7	7	1.17	38.5
SP0004	129.84	132.89	3.05	2.91	95.4	9	1.87	61.3
SP0004	132.89	135.94	3.05	3.02	99.0	9	2.49	81.6
SP0004	135.94	138.99	3.05	3.04	99.7	7	1.57	51.5
SP0004	138.99	142.04	3.05	4.7	154.1	8	2.14	70.2
SP0004	142.04	146.91	4.87	3.18	65.3	12	3	61.6
SP0004	146.91	148.13	1.22	1.3	106.6	1	0.26	21.3
SP0004	148.13	150.57	2.44	2.03	83.2	3	0.87	35.7
SP0004	150.57	153.62	3.05	3.05	100.0	11	1.53	50.2
SP0004	153.62	156.67	3.05	2.97	97.4	6	1.72	56.4
SP0004	156.67	158.5	1.83	1.3	71.0	3	0.57	31.1
SP0004	158.5	160.32	1.82	2.18	119.8	2	0.48	26.4
SP0004	160.32	163.37	3.05	2.91	95.4	7	1.94	63.6
SP0004	163.37	166.42	3.05	3.1	101.6	10	1.92	63.0
SP0004	166.42	170.38	3.96	2.95	74.5	8	1.36	34.3

APPENDIX C

Sprogge 2000 Diamond Drill Manual

BLACKFOX MINERALS LTD.

Geological Procedures Manual

NovaGold Resources Inc.

Srogge Project

September 2, 2000

Blackfox Minerals Ltd.
Consulting Geologists

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Diamond Drill Setups

Surface

Drill Layouts

Diamond drill holes are to be laid out on a standard surface layout sheet (layout 1)

Each layout should clearly show or state:

- the proposed drill hole clearly labeled,
- the dip, azimuth & length of the proposed hole,
- the grid co-ordinates of the hole,
- a small portion of the drill grid,
- the location of any nearby workings and landmarks,
- the target of the hole, and
- any other holes to be drilled from the same setup.

All diamond drill layouts are to be approved by the Senior Site Geologist.

Spotting of Drill Holes

Surface drill holes are to be spotted by the geologist using the following procedure:

1. The collar location is to be chained in from the nearest surveyed point (or grid lines if surveyed points are not available).
2. The collar picket is to be clearly marked with the hole number, azimuth, dip and projected length of the hole.
3. A minimum of two foresites and 1 backsite are to be placed to line up the hole (2 backsites & 1 foresite can be used). Pickets are to be spray painted and clearly labeled as to foresite and backsite and a minimum of 10 to 15 metres apart.
4. foresites and backsites to be located using a compass set to the proper declination.

Lining up the drill and Setting the Head

It is the geologists responsibility to ensure that the drill is properly lined up and drilling at the prescribed dip. The following procedure only is to be used in lining up the drill.

1. Ensure the drill is level. This is done by measuring the tower by placing your Brunton on the hydraulic cylinders that drive the head and ensuring that they are vertical (figure 1).
2. Ensure that the drill is on line by placing a core tube along the hydraulic cylinders that drive the head and sighting along the foresites and backsight. Close is not good enough (figure 2).
3. Once the drill is level and on line, set the head by measuring the dip on the hydraulic cylinders with your Brunton.

Control of Diamond Drilling

While diamond drilling is being conducted, whether on surface or underground, the geologist must keep a detailed log book of visits to the drill. There will be one log book for every drill on the property. Each visit by the geologist to the drill must be recorded in the log book and contain the following information:

- drill hole #,
- date, time and shift of visit,
- drillers name,
- depth of hole at time of visit,
- note of drilling fluid being used and reason for,
- note of drilling and ground conditions,
- any other comments of the driller, and
- comments of the geologist pertaining to the drilling and anything which could affect the drilling.

Diamond Drill Hole Logging Manual

Introduction

The geological, geochemical and geotechnical information collected during exploration and development diamond drilling is done at great expense and investment of time. This information is stored in a computerized diamond drill hole management system. This computerized diamond drill hole management system allows access to the data for numerous purposes (geological search routines, geostatistics, compositing, graphical output, ect.).

In order to assist this computerized management system, the diamond drill hole log is recorded using standardized forms. The diamond drill hole log is comprised of numerous forms, which can include control, survey, lithology, vein, assay, structure and geotechnical.

The geologist and geological technicians must take care to record all information properly and legibly. Otherwise, the geologist, geological technician and data entry clerk will have to spend further time clarifying, editing, reentering and plotting of the data; time which could be used much more constructively.

NB: All diamond drill logs and percussion drill logs are keyed using the following fields:

Mine/Region; DDH ID#; Level; From; To; and for Assays the Sample # field

For the keying to work the group of key fields for each record of a database must be unique. Therefore, for each level where there is two or more identical sets of From and To's, offset the From or To by 0.05m. This is most likely to occur in the Structural Log where two different types of structures may be described for the same section of core.

Flow Chart

Diamond Drilling:

- Surface/Underground layout sheet produced
- Approval of drill hole
- Relevant persons notified
- Drill hole collar located
- Drill lined up and head set
- Drilling control log book being maintained
- Drill shutdown
- Down hole survey completed
- All core transferred to logging shed
- Drill site cleaned up
- Drill hole collar surveyed
- Drill hole logging forms completed
 - control sheet
 - survey log
 - lithology log
 - vein log
 - alteration log
 - mineralization log
 - structure log
 - geotechnical log
 - assay log
- Core photographed
- Core sampled
- Samples transferred to preparation lab
- Core transferred to storage racks
- All logs entered into the computer
- Samples shipped for analyses
- Drill hole data transferred to master section in AutoCAD
- Analyses results received
- Analyses entered into computer
- Analyses transferred to master section in AutoCAD
- Update drill hole sample control sheet

And so on!!!!

Diamond Drill Hole Forms

Control Sheet

Header

DDH ID#: Maximum 10 characters; format - XXXZ99__
XXX ➡ Mine Code
Three characters that describes location

Z ➡ Type of drill hole
D Diamond drill hole
P Percussion
R Reverse Circulation

99 ➡ year of drilling (eg 87, 94 etc.)

__ ➡ drill hole number (done sequentially as drilled)

Planning Reference ID#: Maximum 10 characters; format - PXXXZ99AA
P ➡ Signifies that it is a planned drill hole

XXX ➡ Mine Code (see above)

Z ➡ Type of drill hole (see above)

99 ➡ year of drilling (eg 87, 94 etc.)

AA ➡ _A, _B up to ZZ to denote individual planned holes

General Information

Date Started: format mm/dd/yy eg October 3, 1994 is 10/03/94
Date Finished: format mm/dd/yy as above
Geologist: geologists name, maximum 15 characters
Planned depth: in decimal metres
Final depth: in decimal metres
of pages: total # of pages used in logging the hole

Reference Fabric: (ref. Cypress Anvil Mining Corporation, Field Logging Manual by L.C. Pigage)

The reference fabric element (RFE) is defined as the planar element which is developed throughout the core for a particular area, mine and DDH and **has a constant dip line azimuth (dip direction) in the area**. As it is assumed to have a constant dip direction, the RFE should ideally be the axial plane cleavage for the latest deformation phase observed in the drill core.

General Notes:

Notes to explain the purpose of the hole and any other significant items relevant to the hole.

Location

Mine/Region:	Maximum 20 characters Descriptive name of Mine/Region
Location:	Maximum 20 characters for underground, use designation of ramp, drift, raise etc. for surface, use designation of drill grid name, clarifying geographical note etc.
Planned Azimuth:	0 to 360°
Planned Dip:	+ 90 to -90° + 90 denotes vertically upwards 0 denotes horizontal -90 denotes vertically downwards
Actual Azimuth:	Actual azimuth of the hole at the collar as determined by the surveyor.
Actual Dip:	Actual dip of the hole at the collar as determined by the surveyor.
Drill Hole Grid:	Easting and Northing of the local drill grid
Planned location:	Easting and Northing, (in decimal metres)
Actual location:	Easting and Northing, (in decimal metres)

Drilling Information

Drilling Contractor:	Maximum 20 characters, eg Advanced
Type of Drill:	Maximum 20 characters, eg Super 38
Drill Foreman:	Maximum 15 characters, name of drill foreman
Sludge collected:	Yes/No, denotes whether sludge was collected
Interval:	standard interval each sludge sample collected over, in metres

	Size	From	To
Casing		decimal metre	decimal metre
Core	PQ, HQ, NQ, NQU etc.	decimal metre	decimal metre
Reduced to	HQ, NQ, NQU etc.	decimal metre	decimal metre
Reduced to	NQ, NQU, BQ etc.	decimal metre	decimal metre
Cemented	Yes/No	decimal metre	decimal metre

Notes: any significant observations of the drillers

Control Information

By: Maximum 15 characters, is the name of the person who
completed/conducted the indicated job/exercise
Date: format mm/dd/yy; date job/exercise completed

Shipment/Lab #: reference/PO/WO etc number

Table 1

Wireline Drilling Sizes

Size	Nominal core diameter		Nominal core volume		Nominal hole diameter		Nominal hole volume		
	(inch)	(mm)	per ft length (cu in)	per m length (m ³ X10 ⁻³)	(inch)	(mm)	per ft length (cu in)	(imp gal)	per m Length (litre)
AQ, AQU	1.062	27.0	10.6	0.57	1.890	48.0	33.7	0.121	1.81
BQ, BQU	1.433	36.5	19.3	1.04	2.360	60.0	52.5	0.189	2.82
NQ, NQU	1.875	47.6	33.1	1.78	2.980	75.8	83.7	0.302	4.50
HQ	2.500	63.5	58.9	3.17	3.783	96.1	134.9	0.486	7.25
PQ	3.345	85.0	105.4	5.67	4.828	122.6	219.7	0.792	4.50
BQ3	1.320	33.5	16.4	0.88	2.360	59.9	52.5	0.189	2.82
NQ3	1.775	45.1	29.7	1.60	2.980	75.7	83.7	0.302	4.50
HQ3	2.406	61.1	54.6	2.93	3.783	96.1	134.9	0.486	1.81
PQ3	3.270	83.1	100.8	5.42	4.828	122.6	219.7	0.792	1.81
B18DT	1.565	39.8	23.1	1.24	2.360	59.9	52.5	0.189	2.82
B18TT	1.500	38.1	21.2	1.14	2.360	59.9	52.5	0.189	2.82
N18DT	2.095	53.2	41.4	2.22	2.980	75.7	83.7	0.302	4.50
N18TT	2.045	51.9	39.4	2.12	2.980	75.7	83.7	0.302	4.50
H18DT	2.500	63.5	58.9	3.17	3.783	96.1	134.9	0.486	7.25
H18TT	2.406	61.1	54.6	2.93	3.783	96.1	134.9	0.486	7.25

The nominal core diameter is the manufacturers standard bit inside diameter, and the nominal hole diameter is the manufacturers standard reamer shell outside diameter - supplied by Mindrill limited. Table after the *Field Geologists' Manual*.

Survey Log

DDH ID: As for the DDH ID# in the header section of the Control Sheet.

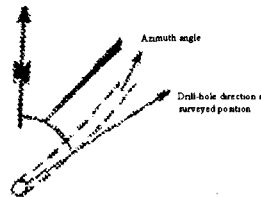
This DDH ID must be consistent on all forms, as the DDH ID is the only reference/key linking all diamond drill forms/databases

Distance: distance down the hole the survey was conducted, in decimal feet

Method: denotes the system used to conduct the survey

eg LL light log
 SS Sperry Sun (single shot)
 MS Sperry Sun (multi shot)
 BN Brunton
 SR Silva Ranger
 AT Acid Tube

Orientation: 0 to 360°, relative to due north



PLAN VIEW A-A

Figure 4

Dip: +90 to -90°,
 +90 vertically upwards
 0 horizontal
 -90 vertically downwards
all angles in decimal degrees

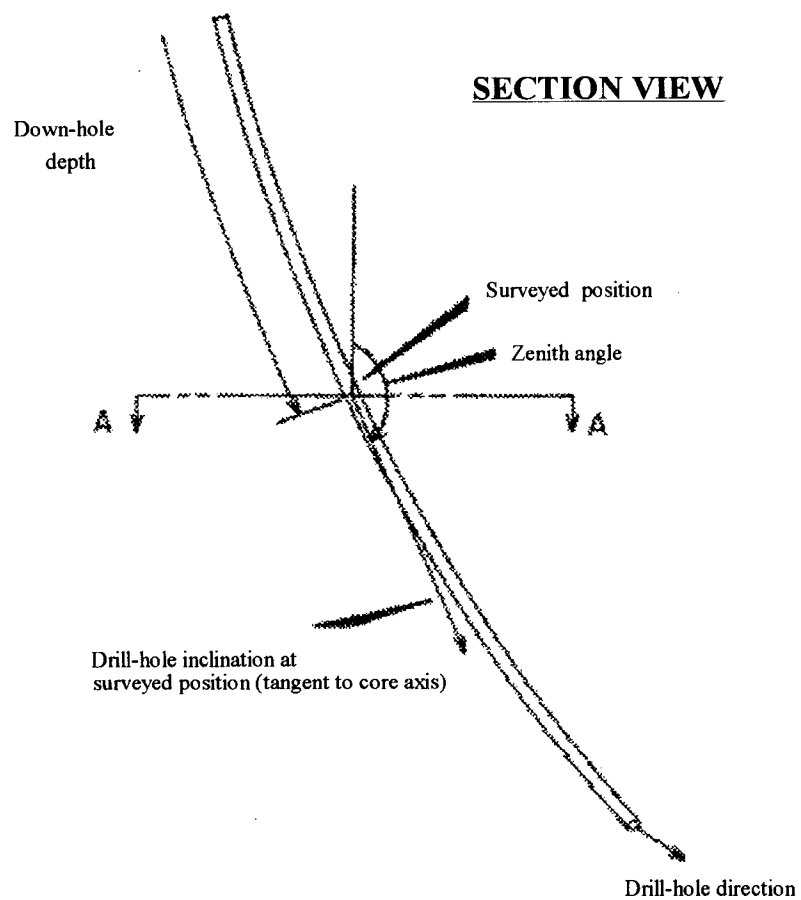


Figure 3

Notes: Maximum 30 characters, any clarifying notes on the survey

Lithology Log (Sedimentary Lithologies)

DDH ID: As for the DDH ID# in the header section of the Control Sheet.

This DDH ID must be consistent on all forms, as the DDH ID is the only reference/key linking all diamond drill forms/databases.

Level 0: Distinctive, "mappable/correlatable" units ≥ 5 metres (see general note at end of section)

From: decimal metres

To: decimal metres

Lithology

Main:

Code: (see also lithological code description in Appendix A)

OVB overburden

ARGL argillite - massive very fine grained (mud) sediment

SLST siltstone - grains can be felt, visible ≤ 0.5 mm

SNDS sandstone - medium grained > 0.5 , ≤ 1.0 mm; coarse > 1 , ≤ 5 mm

PGGM pebble conglomerate, clasts ≥ 5 mm

LMST limestone

QZMZ quartz monzonite

MFDK mafic dyke

use the geological abbreviation dictionary at end of manual for other lithological units

Modifiers: Maximum of four modifiers per unit and used in order of decreasing importance and describe a general feature of entire section (see also modifier code descriptions in Appendix C).

M Massive

Tb Thick bands of mixed sediments;
bands ≥ 1 metre apart

Mb Medium bands of sediments;
bands ≥ 0.1 , < 1.0 metre apart

Fb Fine banding of mixed sediments;
bands $< .1$ metre apart

Cg Sandstone grains > 1 , ≤ 5 mm

Mg Sandstone grains ≤ 1 mm, grains
visible

St Silty

Sd Sandy

C Calcareous

Gu Graded bedding, fining up drill core

Gd Graded bedding, fining down drill core

Fs Fissile

Ph Phyllitic

Sh Shaley

Vg Vuggy, either voids or due to oxidation

Gr Graphitic

Colour: Overall average colour of entire section.

Brown	BN	White	WT
Black	BK	Tan	TN
Blue	BL	Grey	GY
Red	RD	Red Brown	RD-BN
Pink	PK	Buff to Brown	BF-BN
Yellow	YL	Tan Brown	TN-BN
Green	GR	Grey, Blue Grey	GY-BL-GY
Olive	OL	White Buff	WT-BF
Buff	BF	Grey Blue	GY-BL
		Olive Green	OL-GR

Clasts: Amount of Quartz, Feldspar or Lithic clasts or fragments in the section

Scale:	0	< 5%
	1	> 5, ≤ 10%
	2	> 10, ≤ 25%
	3	> 25, ≤ 50%
	4	> 50, ≤ 80%
	5	> 80%

When there are subunits within the main section where these modifiers would apply create a level 1 subunit with appropriate modifiers.

Level 1: Small distinctive units which may be significant and are ≤ 2 m
eg zone with distinctive bedding
chert bed/horizon
small dyke/sill etc

from: decimal metre
to: decimal metre

Description: A clear concise clarifying description of the unit (of whatever level) as a whole. Please use proper punctuation to separate your points.

General Note:

For level 0, mixed units must be coherent "mappable" units (this is fairly subjective) - therefore these units should be logged in units of ≥ 5 m. Subunits and distinctive and possibly correlatable units of < 5 m should be logged as level 1 units.

Where the lithological break occurs at a vein, the upper unit (relative to the orientation of the core) will include the vein section.

Vein Log

DDH ID:

As for the DDH ID# in the header section of the Control Sheet.

This DDH ID must be consistent on all forms, as the DDH ID is the only reference/key linking all diamond drill forms/databases.

Interval:

Encompasses the entire vein and gives general description of entire vein.

From decimal metre

To decimal metre

Vein Code: VX₁X₂

The vein code describes the different veins and faults encountered in the area. The vein code is not used to describe bull white quartz which can occur as "sweats" and are normally subparallel to foliation. The vein codes are as follows (see also vein code descriptions in Appendix C). **V** is used to denote the vein code and is used at the start of the code sequence. **X₁** is used to describe the nature of the vein and/or fault. **X₂** is used to describe the relative amounts of the gangue minerals.

X ₁ Type		X ₂ Gangue	
K	stockwork	Q	Quartz
I	Infilling fractures/gashes	C	Calcite
X	Breccia	S	Siderite
S	Sheeted Veins	B	Barite
V	Vuggy/open	E	Quartz/Calcite
Z	Zoned	F	Quartz/Feldspar
C	Chalcedonic	X	sulphide/oxide filled
B	Bull white		

Width:

True width of vein in centimetres.

∠ to CA:

Angle of edge of vein to core axis.

Lithology Code:

Use the lithology code without modifiers. The lithology code used will be the lithology code which totally encompasses the vein section or adjoins the vein section on the upper (relative to the orientation of the core) vein contact.

Gangue Minerals:

The gangue minerals recorded are quartz, calcite, feldspar and lithic. The % of the gangue mineral occurring within the vein is the item recorded, using the following percentage scale (see figure 7 for visual estimation of percentage):

Percentage Scale

0	< 5%	3	> 25, ≤ 50%
1	> 5, ≤ 10%	4	> 50, ≤ 80%
2	> 10, ≤ 25%	5	> 80%

Quartz:	Si	occurs as fine grained zoned (chalcedonic) quartz, bull white massive quartz to crystalline quartz generally within vugs
Calcite:	CaCO ₃	colourless to white massive calcite to rhombohedral crystals
Lithic:		broken fragments of host rock incorporated into vein
Feldspar:		pale yellow to milky white massive (orthoclase?, slightly altered) grains in white to grey massive semi-translucent quartz.

Minerals: Make a visual estimation of percentage.

Pyrite:	FeS ₂	massive to cubic/octahedral crystals, pale brass-yellow in colour, sometimes iridescent
Arsenopyrite:	FeAsS	silver white to steel grey mineral associated with quartz and pyrite in some veins
Fe Oxides:		oxidation material from weathering of sulphides and Fe bearing minerals
Other Minerals		other minerals noted in the vein and visual estimation of percentage

Notes: General notes of other items related to the vein

Alteration Log

DDH ID:

As for the DDH ID# in the header section of the Control Sheet.

This DDH ID must be consistent on all forms, as the DDH ID is the only reference/key linking all diamond drill forms/databases.

Interval

From: decimal metre - start of alteration zone

To: decimal metre - end of alteration zone

Type Type or form of alteration, more than one code can be used.

Codes: if alteration is definitely caused by "weathering" preface code with lower case "w".

- P Pervasive, alteration occurs throughout core
- F Alteration confined to foliation planes, fractures, joints or other planar structure
- D Discontinuous / patchy, may be controlled by fracturing and joints
- M Alteration mainly limited to the matrix
- C Alteration mainly limited to the clasts
- V Alteration limited to veins and associated selvage

Alteration

Fe Oxide (generally weathering, related to water flow along planar structures), Hematite, Argillic, Chloritic and Sericitic alteration is recorded as on a relative intensity scale of 0 to 5.

- Scale:
- 0 trace of alteration
 - 1 trace to 5% altered
 - 2 > 5% to ≤ 25% altered
 - 3 > 25% to ≤ 50% altered
 - 4 > 50% to < 100% altered
 - 5 100% of the material being altered is replaced by the alteration

Mineralization Log

DDH ID:

As for the DDH ID# in the header section of the Control Sheet.

This DDH ID must be consistent on all forms, as the DDH ID is the only reference/key linking all diamond drill forms/databases.

Interval

From: decimal metre - start of mineralization zone

To: decimal metre - end of mineralization zone

Type Type or form of mineralization, more than one code can be used.

Codes:

- D Disseminated
- B Blebs/Patches of mineralization with no discernable structural control
- F Fracture/Joint coating
- I Infilling of tension gashes, fractures or joints, mineralization has a thickness (generally > 1mm), can be lensoidal in shape
- V Occurs within or on walls of veins
- S Occurs as disseminations/blebs/fracture coatings/infilling, but definitely associated with the selvage of a vein.
- R Replacement - how to be described in notes

Mineralization

Pyrite and arsenopyrite mineralization is recorded as a visual percentage estimation of content of core/host material. Other minerals are recorded using mineral codes from Appendix D in either the "Min 1" or "Min 2" columns along with a visual percentage estimation, recorded in the "%" column.

Structure Log

DDH ID: As for the DDH ID# in the header section of the Control Sheet.

This DDH ID must be consistent on all forms, as the DDH ID is the only reference/key linking all diamond drill forms/databases

Logged by: The name of the person who did structural log

Date: format mm/dd/yy; date structural log completed

Level 0

Used to delineate zones where the reference fabric has basically the same/or similar dip to the core axis.

From: decimal metre To: decimal metre

Level 1

Used to delineate all other structures which are measured relative to the reference fabric.

From: decimal metre To: decimal metre

Note: for point structural data, use a from and to which straddles the point by a total of 0.1 metre.

Str Code: Structure code which describes the structure being measured and described.

Structure Code:

Sx_1x_2 denotes a planar structure, where:

x_1 is:	b	bedding	x_2 is:	0	bedding
	a	axial plane		1	1 st phase of deformation
	c	cleavage/foliation		2	2 nd phase of deformation
	f	fracture(s)			

The structures are recorded as Sx_mx_n codes, where m = type of planar structure and n = 0, 1, 2, .. etc. Sx_1x_2 is a point observation of the orientation of a particular planar element with respect to the core axis. n describes the deformation phase associated with the S-surface being measured. S_0 refers to primary sedimentary bedding, S_1 refers to the axial plane cleavage formed during the first phase of deformation etc.

Lx_1x_3 denotes a linear structure, where:

x_1 is:	type of linear structure:			
	a	fold axis	b	bedding/cleavage intersection
	m	mineral elongation	c	cleavage/cleavage intersection
	s	striation		

x_2 is: relative age, with 0 being oldest.

Jx denotes jointing, generally crosscutting foliation
 x denotes relative frequency with regards to other jointing orientations in the same general area with 0 being the most frequent or only joint set

Fx denotes a fault
 x denotes the most prevalent feature of the fault:

g	gouge	h	healed fault
b	breccia	x	gouge and crushed rock
d	crushed rock	v	void or lost material
r	rubble, coarse rock frags	c	calcite healed fault
s	silica healed fault		

Vx denotes a vein where x^1 denotes the vein type and x^2 denotes the most prevalent gangue mineral present.

X_1 Type		X_2 Gangue	
X	Breccia	Q	Quartz
S	Sheeted Veins	C	Calcite
G	Crushed/gouge	S	Siderite
V	Vuggy/open	B	Barite
Z	Zoned	E	Quartz/Calcite
C	Chalcedonic	F	Feldspar
B	Bull white		

Reference:

This refers to the Reference Fabric Element (RFE). The reference fabric element (RFE) is defined as the planar element which is developed throughout the core for a particular area, mine and DDH and ***has a constant dip line azimuth (dip direction) in the area.*** As it is assumed to have a constant dip direction, the RFE should ideally be the axial plane cleavage for the latest deformation phase observed in the drill core.

Struc:

This refers to the structure being used as the reference fabric element, eg S_0 , S_1 etc.

Dip:

This is the dip angle of the RFE in relation to the core axis and is measured from 0 to 90°.

In all calculations of orientations of the planar elements measured for a DDH, the RFE is assumed to dip in a direction specified by the field geologist on the Control Sheet.

Sym:

Symmetry refers to the angular relationship between the surface being folded and the reference fabric element (axial planar cleavage of a fold).

The symmetry codes are as follows (For concordance in logging, symmetry should be determined with the core axis orientated in the appropriate drilling position.):

M symmetry

This refers to a zone of mixed symmetry usually implying a hinge zone of uncertain vergence.

E and 3 symmetry

These codes are used for actually observed fold closures in the drill core and have a implied symmetry changes associated with them. For the E code, the zone above the symbol has implied S symmetry and the zone below Z symmetry. For the 3 code, the zone above the symbol has implied Z symmetry and the zone below S symmetry.

S & Z symmetry

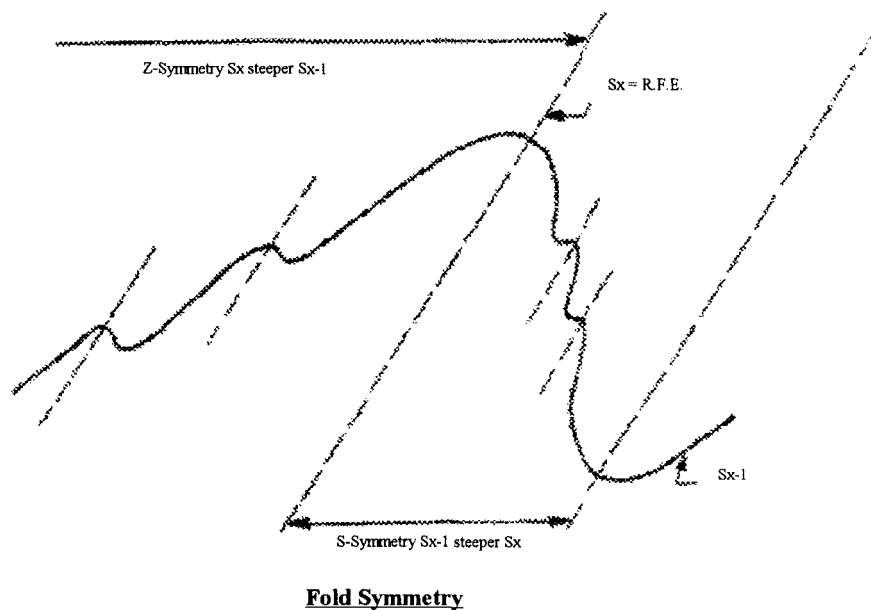


Figure 8

Azm: Azimuth, 0 to 360°

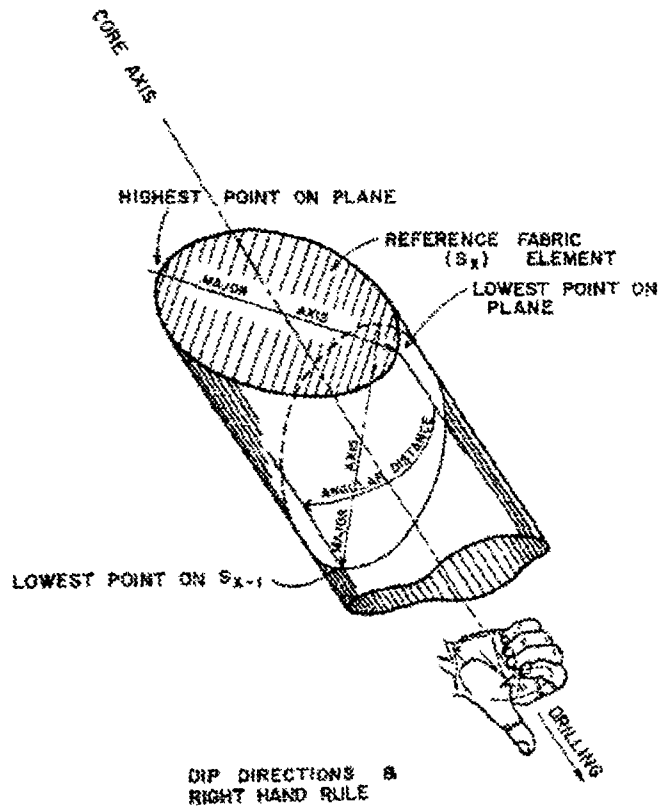


Figure 10

For linear structures, the azimuth will be measured as the clockwise rotation as determined by looking down the core (down hole), from the line connecting the highest point to the lowest point on the reference fabric plane to the line describe by the linear structure.

Dip: Dip, 0 to 90°

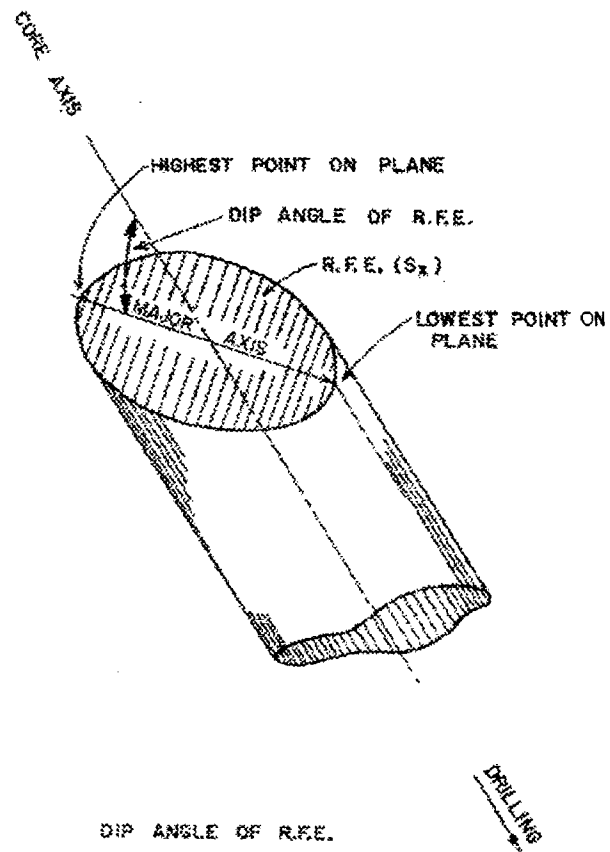


Figure 11

When measuring the dip of a linear structure, draw a line from the lowest point on the core where the linear structure shows to the highest point and measure the dip of that line to the core axis.

Lth Code: Lithology code which corresponds to the section containing the structure

Notes: Any clarifying notes or small diagrams showing structure(s) and relationships

Geotechnical Log (reference GAC short course #10; Description of Rock Mechanics, Core Logging Technique, prepared by Piteau Associates Engineering Ltd.)

DDH ID: As for the DDH ID# in the header section of the Control Sheet.

This DDH ID must be consistent on all forms, as the DDH ID is the only reference/key linking all diamond drill forms/databases

Logged by: The name of the person who did geotechnical log

Date: format mm/dd/yy; date geotechnical log completed

The geotechnical log is based upon the markers placed in the core boxes by the diamond drillers each time the core tube is pulled.

From: The first marker delineating a "run" by the diamond drill, in decimal metre. This marker is the same as the ending marker of the previous "run".

To: The next marker delineating the end of a "run" by the diamond drill, in decimal metre.

Core Recovery:

Length: The length of core recovered in decimal metre.

%: $(\text{length of core recovered} / \text{length of "run"}) * 100$

RQD

Length: Sum of all pieces of core $\geq 4"$ (between natural breaks) for the "run".

%: $(\text{sum of pieces of core} \geq 4" / \text{length of "run"}) * 100$

Hardness: Use hardness code as described in table 1.

Degree of Breakage:

The degree of breakage is a visual, somewhat subjective estimation of the quality of the rock in terms of the number of fractures or breaks (table 2, figure 12). The numerical equivalent shown in table 2 is recorded.

Foliation breaks:

of: The number of naturally occurring breaks that are parallel or subparallel to the dominant foliation are counted and recorded.

freq: # of foliation breaks / length of "run"; this gives # of breaks per foot

Cross breaks:

of: The number of naturally occurring breaks that are not parallel or subparallel to the dominant foliation are counted and recorded.

freq: # of cross breaks / length of "run"; this gives # of breaks per foot

Notes:

Any drillers notes recorded on the "run" markers or other markers placed within the core boxes.

Table 2

HARDNESS	CONSISTENCY	FIELD IDENTIFICATION	APPROXIMATE RANGE OF UNCONFINED COMPRESSIVE STRENGTH	
			MPa	p.s.i
S1	very soft soil	easily penetrated several inches by fist; shows distinct heel marks	<0.025	<3.5
S2	soft soil	easily penetrated several inches by thumb; faint heel marks	0.025 - 0.05	3.5 - 7
S3	firm soil	can be penetrated by thumb with moderate effort; difficult to cut with hand spade	0.05 - 0.1	7 - 14
S4	stiff soil	readily indented by thumb but penetrated only with great effort; cannot be cut with hand spade	0.1 - 0.2	14 - 28
S5	very stiff soil	Readily indented by thumbnail; requires pneumatic spade for excavation	0.2 - 0.4	28 - 56
S6	hard soil	indented with difficulty by thumbnail	>0.4	>56
R0	extremely soft rock	indented by thumbnail	0.2 - 0.7	28 - 100
R1	very soft rock	crumbles under firm blows with point of geological pick; can be peeled by a pocket knife	0.7 - 7	100 - 1000
R2	soft rock	can be peeled by a pocket knife with difficulty; shallow indentations made by firm blow of geological pick	7 - 28	1000 - 4000
R3	average rock	cannot be scraped or peeled with a pocket knife; specimen can be fractured with single firm blow of hammer end of geological pick	28 - 56	4000 - 8000
R4	hard rock	specimen requires more than one blow with hammer end of geological pick to fracture it	56 - 112	8000 - 16000
R5	very hard rock	specimen requires more than one blow with hammer end of geological pick to fracture it	112 - 224	16000 - 32000
R6	extremely hard rock	specimen can only be chipped with geological pick	>224	>32000

Table 3

CATEGORY	NUMERICAL EQUIVALENT	MEAN SPACING OF BREAKS OR DIAMETER OF FRAGMENTS (inches)	QUALITY DESCRIPTIONS
A-	1	< ½	fault gouge with/without minor rock fragments
A	2		gouge and crushed rock
A +	3		crushed rock with/without minor gouge
B-	4	½ to 2	crushed rock no gouge
B	5		crushed rock - diameter of pieces < 2"
B +	6		broken rock - fracture spacing < 2"
C-	7	2 - 4	mean spacing 2 to 3"
C	8		mean spacing 3"
C +	9		mean spacing 3 to 4"
D-	10	4 - 8	mean spacing 4 to 6"
D	11		mean spacing 6"
D +	12		mean spacing 6 to 8"
E-	13	> 8	mean spacing 8 to 12"
E	14		mean spacing 12 to 14"
E +	15		mean spacing > 24"

Assay Log

DDH ID: As for the DDH ID# in the header section of the Control Sheet.

This DDH ID must be consistent on all forms, as the DDH ID is the only reference/key linking all diamond drill forms/databases

Logged by: The name of the person who layed out the sample intervals

Date: format mm/dd/yy; date sample intervals layed out

Sampled by:
The name of the person who collected the samples

Date: format mm/dd/yy; date sample collected

Sample #: The sample # from the sample tag book which correlates to the sampled section

Type: Type of sample analysis, see Appendix J, can be multiple types, eg ASSY, ICP, WRCK;

From: Start of the sampled section in decimal metre

To: End of the sampled section in decimal metre

Length: Length of the sampled section in decimal metre

Recovery: Actual length of solid core sampled in decimal metre

% Recvry: $(\text{Recovery} / \text{Length}) * 100$ no decimals

Lth Code: Lithology code which corresponds to the sampled section

Core Splitting

All core intervals to be sampled will be marked by the geologist with either a grease pencil or felt marker. A portion of the sample tag will be stapled in the core box at the start of the section to be sampled.

The geologist will piece the core together and draw a line along the core in such a manner as to orientate the splitting across the "foliation" on mineralization (figure 5).

The core will be marked clearly using a red grease pencil showing the:

- limits of the samples and footages
- the line along which the core is to be split
- the side which is to be kept

The core splitter is then to carefully split the core along the axis of the "foliation" as marked by the geologist and to carefully arrange the half to be kept (that which is marked in red) back into the core box so that the pieces fit together (figure 6).

Limits of the samples are to be clearly marked in red with the footage marked in pencil on the core box wherever space permits.

The core splitting area is to be kept clean at all times to avoid contamination of the samples. The splitter bench and core saw is to be cleaned off after every sample. The limits of individual samples are to be marked clearly in red grease pencil with the distance along the hole shown whenever possible.

NOTE: THE CORE IS TO BE SPLIT ONLY AFTER ALL LOGGING IS COMPLETED AND THE CORE HAS BEEN PHOTOGRAPHED!

NOTE: MAKE SURE THE DRILL HOLE SAMPLE CONTROL SHEET IS UP TO DATE! (see section on ancillary control forms).

Core Sampling Flowchart

- The core samples have been layed out by the geologist as per the section on core splitting.
- The core has been photographed.
- The sample tag at the start of the section being split corresponds to the sample# clearly marked on both sides of the sample bag and the two sample tags included with the sample.
 - One tag will be marked with the date, hole number and footage.
 - The other tag remains blank.

Appendix A

Lithological Descriptions:

<u>Code</u>	<u>Description</u>
-------------	--------------------

OVB	overburden
ARGL	argillite - massive very fine grained (mud) sediment
SLST	siltstone - grains can be felt, visible $\leq 0.5\text{mm}$
SNDS	sandstone - medium grained $> 0.5, \leq 1.0\text{ mm}$; coarse $> 1, \leq 5\text{mm}$
PCGM	pebble conglomerate, clasts $\geq 5\text{ mm}$
LMST	limestone
QZMZ	quartz monzonite
MFDK	mafic dyke

Lithology Codes:

ACIV ACTF AEXV AGGS AGLM ALNT ALSK ALVM AMGN AMPB ANDS APLT ARGL ARKS ARNT BCIV BDRT BEXV BGDR BGNS BGRT BHDR BHPP BPPP BQMZ BQZD BRCC BSCS BSLT CCRT CGLM CHRT CLCT COAL DCIT DCPP DIBS DOLM DORT DRGS DUNT DYKE EXTV FBGD FBPP FBQM FDRT FGDR FHQM	acid intrusive acid tuff acid extrusive augen gneiss agglomerate alnoite alaskite = leucogranite alluvium amphibolite gneiss amphibolite andesite aplite argillite arkose arenite basic intrusive biotite diorite basic extrusive biotite granodiorite biotite gneiss biotite granite biotite-hornblende diorite biotite-hornblende porphyry biotite porphyry biotite-quartz monzonite biotite-quartz diorite breccia biotite schist basalt clastic rock conglomerate chert calcite coal dacite dacite porphyry diabase dolomite diorite diorite gneiss dunite dyke extrusive volcanic foliated biotite granodiorite foliated biotite porphyry foliated biotite quartz monzonite foliated diorite foliated granodiorite foliated hornblende-quartz monzonite	FHGD FLBC FLST FPPP FQDR FQMZ GASC GBBR GBDR GDGN GLCM GNSS GPSC GRCK GRDR GRGN GRST GRNT GSCT GWSS HBDC HBDR HBFP HBGD HBGB HBGN HBLD HBMZ HBPP HBQD HBQM HBSC HFLS HSCS IEXV IGBT IRFM JSPR KFPP LMST MFDK MCVS MDSN MGMT MGVC MLNT MNZN MRBL MSDM ORGS ORQZ	foliated hornblende granodiorite flow breccia felsite feldspar porphyry foliated quartz diorite foliated quartz monzonite garnet schist gabbro gabbro diorite granodiorite gneiss glacial material gneiss graphite gneiss greywacke granodiorite granite gneiss greenstone granite graphitic schist greywacke sandstone hornblende dacite hornblende diorite hornblende-feldspar porphyry hornblende granodiorite hornblende gabbro hornblende gneiss hornblendite hornblende monzonite hornblende porphyry hornblende-quartz diorite hornblende-quartz monzonite hornblende schist hornfels hornfels schist intermediate extrusive ignimbrite iron-formation jasperoid potassium feldspar porphyry limestone mafic dyke muscovite schist mudstone migmatite massive green volcanics mylonite monzonite = syenodiorite marble metasediments orthogneiss orthoquartzite
--	--	--	--

OVB	overburden	RYPP	rhyolite porphyry
PCGM	pebble conglomerate	SCST	schist
PGMT	pegmatite	SDMT	sediment
PLL	phyllite	SSCT	sericite schist
PPDC	porphyritic dacite	SHLE	shale
PPGD	porphyritic granodiorite	SKRN	skarn
PPQM	porphyritic quartz monzonite	SLST	siltstone
PPRY	porphyritic rhyolite	SLTE	slate
PRDT	peridotite	SNDS	sandstone
OTCL	pyroclastics	SRPN	serpentine
PYXN	pyroxenite	SURF	surficial/glacial
QFPP	quartz-feldspar porphyry	SYNT	syenite
QTZT	quartzite	TCYT	trachyte
QZCS	quartz chlorite schist	TILL	till
QZDC	quartz dacite	TNLT	tonalite
QZDR	quartz diorite	TUFF	tuff
QFP	quartz-feldspar porphyry	UKNN	unknown
QZMZ	quartz monzonite = adamellite	UMFC	ultramafic
QZPP	quartz porphyry	VCCB	volcanic breccia
RDCT	rhyodacite = quartz latite = dellenite	VLSD	volcanic sediment
		VOLC	volcanics
RYLT	rhyolite		

Appendix B

Vein Descriptions:

Vein Code: VX_1X_2

The vein code describes the different veins and faults encountered in the area. The vein code is not used to describe bull white quartz which can occur as "sweats" and are normally subparallel to foliation. The vein codes are as follows (see also vein code descriptions in Appendix C). **V** is used to denote the vein code and is used at the start of the code sequence. X_1 is used to describe the nature of the vein and/or fault. X_2 is used to describe the relative amounts of the gangue minerals.

X_1 Type		X_2 Gangue	
X	Breccia	Q	Quartz
S	Sheeted Veins	C	Calcite
G	Crushed/gouge	S	Siderite
V	Vuggy/open	B	Barite
Z	Zoned	E	Quartz/Calcite
C	Chalcedonic	F	Feldspar
B	Bull white		

Appendix C

Modifier Descriptions:

Modifiers: Maximum of four modifiers per unit and used in order of decreasing importance and describe a general feature of entire section (see also modifier code descriptions in Appendix C).

M	Massive	Sd	Sandy
Tb	Thick bands of mixed sediments; bands ≥ 1 metre apart	C	Calcareous
Mb	Medium bands of sediments; bands ≥ 0.1 , < 1.0 metre apart	Gu	Graded bedding, fining up drill core
Fb	Fine banding of mixed sediments; bands $< .1$ metre apart	Gd	Graded bedding, fining down drill core
Cg	Sandstone grains > 1 , ≤ 5 mm	Fs	Fissile
Mg	Sandstone grains ≤ 1 mm, grains visible	Ph	Phyllitic
St	Silty	Sh	Shaley
		Vg	Vuggy, either voids or due to oxidation

Appendix D

Mineral Codes:

Siderite:		FeCO_3
Quartz:		Si
Calcite:		CaCO_3
Silver:		Ag
Galena:		PbS
Sphalerite:		ZnS
Jamesonite:		$\text{Pb}_4\text{FeSb}_6\text{S}_{14}$
Bournonite:		PbCuSbS_3
Boulangerite:		$\text{Pb}_5\text{Sb}_4\text{S}_{11}$
Pyrite		FeS_2
Freibergite	FBGT	$(\text{Cu,Fe,Zn,Ag})_{12}(\text{Sb,As})_4\text{S}_{13}$
Pyrargyrite	PYGT	Ag_3SbS_3
Polybasite	PLBT	$(\text{Ag,Cu})_{16}\text{Sb}_2\text{S}_{11}$
Stephanite	STPN	Ag_5SbS_4
Arsenopyrite	ASPY	FeAsS
Marcasite	MCST	FeS_2
Chalcopyrite	CPY	CuFeS_2
Barite	BART	BaSO_4
Limonite	LMNT	
Kaolin	KOLN	

Appendix E

Structure Codes:

Sx_1x_2 denotes a planar structure, where:

x_1 is:	b	bedding	x_2 is:	0	bedding
	a	axial plane		1	1 st phase of deformation
	c	cleavage/foliation		2	2 nd phase of deformation
	f	fracture(s)			

The structures are recorded as Sx_mx_n codes, where m = type of planar structure and n = 0, 1, 2, .. etc. Sx_1x_2 is a point observation of the orientation of a particular planar element with respect to the core axis. n describes the deformation phase associated with the S-surface being measured. S_0 refers to primary sedimentary bedding, S_1 refers to the axial plane cleavage formed during the first phase of deformation etc.

Lx_1x_3 denotes a linear structure, where:

x_1 is:	type of linear structure:			
	a	fold axis	b	bedding/cleavage intersection
	m	mineral elongation	c	cleavage/cleavage intersection
	s	striation		

x_2 is: relative age, with 0 being oldest.

Jx denotes jointing, generally crosscutting foliation

x denotes relative frequency with regards to other jointing orientations in the same general area with 0 being the most frequent or only joint set

Fx denotes a fault

x denotes the most prevalent feature of the fault:

g	gouge	h	healed fault
b	breccia	x	gouge and crushed rock
d	crushed rock	v	void or lost material
r	rubble, coarse rock frags	c	calcite healed fault
s	silica healed fault		

Vx denotes a vein where x^1 denotes the vein type and x^2 denotes the most prevalent gangue mineral present.

X_1 Type		X_2 Gangue	
X	Breccia	Q	Quartz
S	Sheeted Veins	C	Calcite
G	Crushed/gouge	S	Siderite
V	Vuggy/open	B	Barite
Z	Zoned	E	Quartz/Calcite
C	Chalcedonic	F	Feldspar
B	Bull white		

Appendix F

Age Codes:

Unknown	UNKNOWN
Holocene	Ho
Pleistocene	Pt
Quaternary	Q
Pliocene	PI
Pliocene - Recent	PIR
Miocene	Mi
Miocene - late Tertiary	MiT
Neogene	N
Oligocene	OI
Oligocene - Miocene	OIMi
Eocene	E
Palaeocene	Pc
Palaeogene	P
Palaeogene - Neogene - Tertiary	PNT
Tertiary	T
early Tertiary	eT
lower Tertiary	IT
Tertiary - Quaternary	TQ
Tertiary - Eocene	TE
Cenozoic	Cz
Cretaceous	K
upper upper Cretaceous	uuK
upper Cretaceous	uK
middle Cretaceous	mK
lower Cretaceous	lK
upper Cretaceous - Oligocene	uKOI
Cretaceous - Tertiary	KT
Jurassic	J
middle & upper Jurassic	muJ
lower & middle Jurassic	lmJ
upper Jurassic - lower Cretaceous	uJIK
Jurassic - Cretaceous	JK
Triassic	Tr
upper Triassic	uTr
upper Triassic - lower Jurassic	uTrlJ
Triassic - Jurassic	TrJ
Mesozoic	Mz
Permian	Pr
Permian - Triassic	PrTr
Carboniferous	C
Carboniferous - Jurassic	CJ
Carboniferous - Permian	CPr
Carboniferous - Mississippian	CM
Pennsylvanian	Pn
Pennsylvanian - Permian	PnPr
Mississippian	M
Mississippian - upper Triassic	MuTr
Devonian	D
upper Devonian	uD
middle Devonian	mD
lower Devonian	ID
Devonian - Permian	DPr
Devonian - Mississippian	DM
Devonian - Cretaceous	DK
Devonian - Carboniferous	DC
Silurian	S
Silurian - Devonian	SD
Ordovician	O
Ordovician - Triassic	OTr
Ordovician - Devonian	OD
Ordovician - Silurian	OS
Ordovician - Silurian - lower Devonian	OSID
Cambrian	Cb

upper Cambrian	uCb
middle Cambrian	mCb
lower Cambrian	lCb
Cambrian - Devonian	CbD
Cambrian - Ordovician	CbO
Palaeozoic	Pa
upper Palaeozoic	uPa
middle Palaeozoic	mPa
lower Palaeozoic	lPa
Hadrynian	H
Hadrynian - Cambrian	HCB
Helikian	Hk
Aphebian	Ab
Proterozoic	Pz
upper Proterozoic	uPz
middle Proterozoic	mPz
lower Proterozoic	lPz
upper Proterozoic - lower Cambrian	uPzlCb
middle & upper Proterozoic	muPz
upper Proterozoic - Palaeozoic	uPzPa
upper Proterozoic - Triassic	uPzTr
Archean	Ac
PreCambrian	pCb
Archean - Proterozoic	AcPz

and more to come!

Appendix G

Standard Symbols:

The standard symbols of the Geological Survey of Canada will be used.

Appendix H

Colour Code:

Brown	BN
Black	BK
Blue	BL
Red	RD
Pink	PK
Yellow	YL
Green	GR
Olive	OL
Buff	BF

White	WT
Tan	TN
Grey	GY
Red Brown	RD-BN
Buff to Brown	BF-BN
Tan Brown	TN-BN
Grey, Blue Grey	GY-BL-GY
White Buff	WT-BF
Grey Blue	GY-BL
Olive Green	OL-GR

Appendix I

Conversion Factors:

Appendix J

Sample Analysis Codes:

ASSY	Assay (fire)
ICPxx	Induced Coupled Plasma analysis, followed by the number of elements analysed for.
AA	Atomic Absorbption analysis
NA	Nuetron Activation
SG	Specific Gravity
WRCK	Whole Rock
GTCH	Geotechnical Sample, eg compressional strength

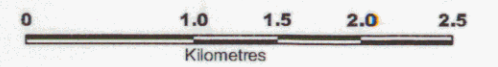


Projection: North American Datum (NAD)83 Zone 9



Grid North

SCALE



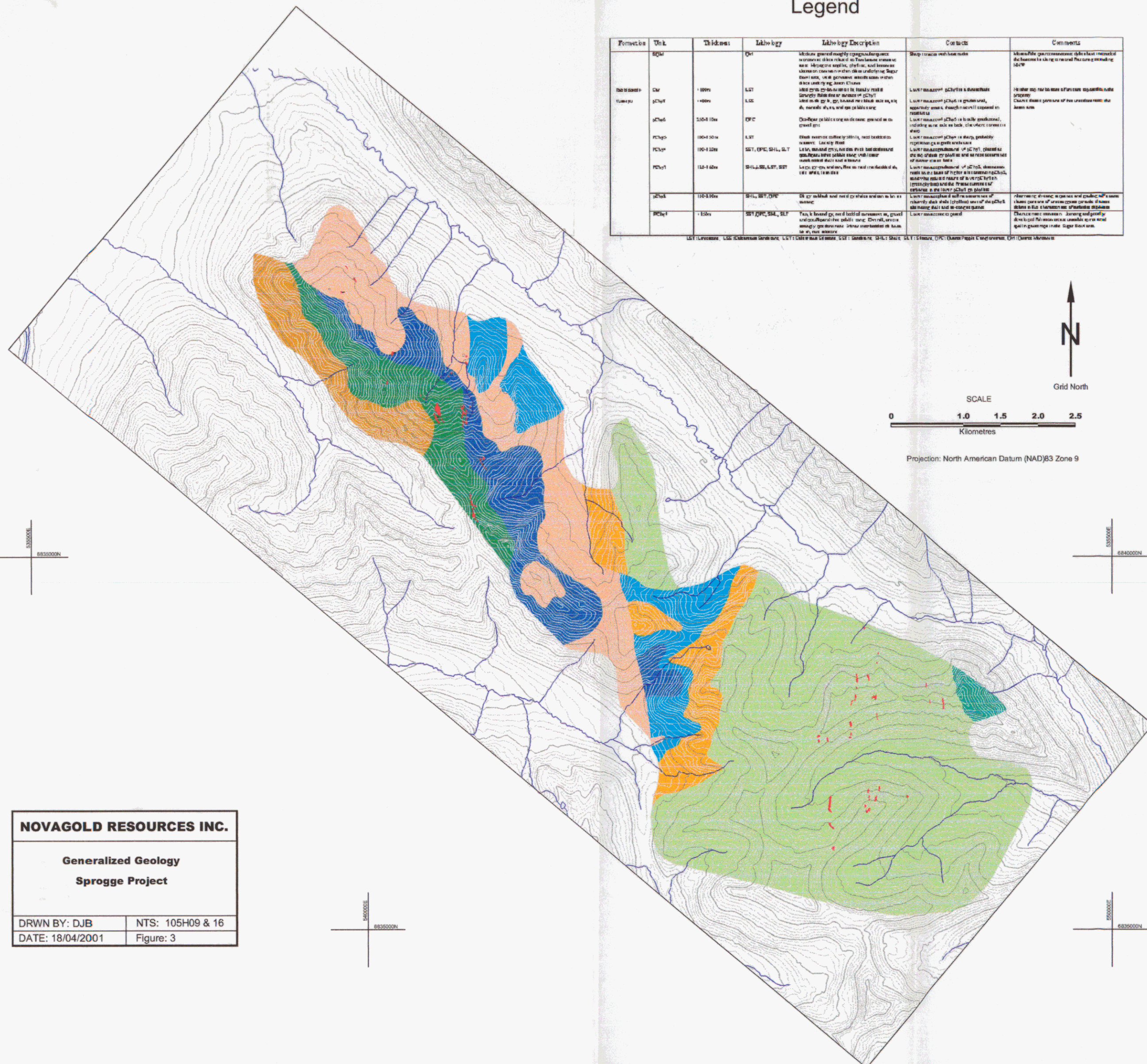
NOVAGOLD RESOURCES INC.

**Claim Map
Sprogge Project**

DRWN BY: DJB	NTS: 105H09 & 16
DATE: 18/04/2001	Figure: 2

[illegible]

LST: Limestone, LSC: Carbonaceous Sandstone, LST: Carbonaceous Shale, GST: Sandstone, SHL: Shale, SLT: Siltstone, OPC: Orange Pigeon Claystone, OPI: Orange Mica



Generalized Geology
Sprogge Project

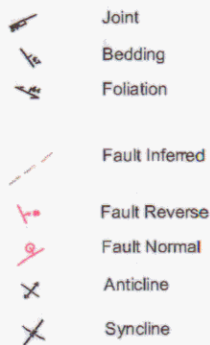
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DATE: 18/04/2001	Figure: 3

LEGEND

Rock Types



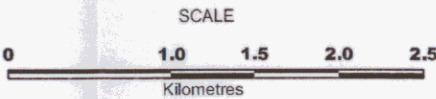
Structure



Projection: North American Datum (NAD)83 Zone 9



Grid North



NOVAGOLD RESOURCES INC.	
Outcrop and Structural Geology and Sugar Bowl & Justin Location Sprogge Project	
DRWN BY: DJB	NTS: 105H09 & 16
DATE: 18/04/2001	Figure: 4