Deloitte & Touche

2001 Annual Inspection
Waste and Water Management Facilities Vangorda Mine
Yukon Territory

Prepared for:

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2001 ANNUAL INSPECTION
WASTE AND WATER MANAGEMENT FACILITIES
VANGORDA MINE
YUKON TERRITORIES

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1. Introduction

At the request of Deloitte and Touche (DT), Mr. Peter Healey of Steffen Robertson and Kirsten (Canada) Inc. (SRK) completed an inspection of the waste and water management facilities at Vangorda Plateau Mine on July 12, 2001. The Vangorda mine is located 16 km south of the Faro Mine, Yukon Territory as shown on Figure 1. The purpose of this inspection was to evaluate the geotechnical performance and stability of the following structures:

- Vangorda Waste Rock Containment Facility (Photo 1) including the seepage collection system ;
- Little Creek Dam;
- Vangorda Creek Diversion;
- Sludge Pond Embankments at the Water Treatment Plant,
- Grum Settling Pond;
- The Grum Interceptor Ditch; and
- The Sheep Pad Sediment Ponds below the Overburden Stockpile.

A plan of the Vangorda Plateau area and the above components are shown in Figure 2.

This report presents our observations and comments on the performance and stability of the structures and provides recommendations for any remediation, where appropriate.

2. Vangorda Waste Rock Pile

2.1 Observations

2.1.1 Seepage Collection System

2.2.1.1 Channel Berm

The small depression at the south abutment of the Little Creek Dam still exists and provides the opportunity for ponding of water. It was however noted that a pile of rock has been dumped adjacent to this area presumably for the purpose of back filling this area. The remaining sections of the berm show no signs of settlement, cracking or sloughing.

2.2.1.2 Transverse Drains and Weirs

During construction of the original till berm, six transverse drains were installed beneath the berm to allow seepage to drain from the waste dump. These drains were connected to the seepage collection channel during the 1994 upgrading. V-Notch weirs were installed at each drain to monitor the flow.

During this year's inspection, higher seepage flow than normal was observed at Weirs 3, 5 and 6. We also observed subsidence on the downstream face of the dyke, particularly above the #6 drain and below the existing piezometers 3A and 3B. This area has historically been susceptible to high runoff and erosion of the downstream face of the dyke. The problem was caused by poor drainage from the area above the till dyke. Water collects in a number of depressions, which were left behind during the end-dumping of the till overburden from the Vangorda Pit while the mine was operating. In 1999, an attempt was made to remediate the drainage problem by constructing a diversion ditch on the top of the till starter dyke. A discussion of this ditch is presented in the next section.

The weirs at Drains 5 and 3 are functioning normally. There was no flow observed at Drains 1, 2 and 4.

2.2.1.3 Starter Dyke Diversion Ditch

As discussed above, the mine attempted to control runoff and instability of the area above the weir at Drain 6, by excavating a drainage ditch along the crest of the till starter dyke in September 1999 (Photo 2, and 3). The depth of the excavation varied from about 1 to 4 m. The sideslopes of the ditch were vertical in most places and had sloughed in at several locations causing water to pool in the ditch. The excavated material had been placed on the downstream slope of the starter dyke resulting in an oversteepening of the upper section of the slope. Tension cracks and surficial movement were observed on the downstream face of the till dyke between Drains #5 and #6.

2.2.1.4 Seepage Channel

The seepage channel around the Vangorda Waste dump is functioning normally and no instability of the sideslopes of the seepage channel was observed. Staining along the base of the ditch indicated that there had been significant flow in the channel during in 2001. During the inspection, however there was no measurable flow observed in the ditch.

2.2.2 Starter Dyke and Till Cover

The sideslopes of the till starter dyke remain susceptible to erosion. There is one area that lies just below the 1994 resloping and till cover placement that is particularly eroded (Photo 4). Runoff concentrates in-between the till cover and the resloped rock causing erosion gullies and silt spill into the seepage channel at the toe of the dyke.

Adjacent to Weir 3, till had been removed from the toe of the starter dyke in 1992 by the mine to construct an adjacent sump. It was noted that the excavated areas had been backfilled. Because of the unusually high rainfall this year, we observed a greater number of rills on the till cover. However, the overall cover is performing well.

2.2.4 Instrumentation

DT has been taking water level readings from the nine piezometers and four of the five groundwater wells around and within the facility. A summary of the water level readings taken to date in both the piezometers and the groundwater wells is presented in Table 1. Water levels, as recorded on July 9, 2001 in Piezometers P94-01A, 01B, 02A and 02B, are shown in Figures 3 and 4. SRK understands that additional groundwater wells were installed around the Vangorda Waste dump after SRK's inspection in 2001.

2.2.5 Rock Pile

Tension cracks are still evident in places along the crest at the northeast end of the dump. The cracks have not widened since SRK last inspected the rock pile in 2000.

TABLE 1 Water Levels in Piezometers and Groundwater Wells - Vangorda Rock Pile

Measured Static Water Level (meters)

underlined readings (begin in 1998) indicate that no water was identified (hole was dry or frozen).
readings post Sep/98 given as metres below top of plastic piezometer pipe.
readings prior to Nov/98 could be metres below to top of piezo. pipe or steel casing.

Date	V34 GW-94-01	V35 GW-94-02	V36 GW-94-03	V37 GW-94-04	V38 GW-94-05*	V39 P-94-01A	V40 P-94-01B	V41 P-94-02A	V42 P-94-02B	V43 P-94-02C	V44 P-94-03A	V45 P-94-03B	V46 P-94-04A	V47 P-94-04B
3-May-94	8.28	14.33	11.28	14.33	11.56	12.37	6.05	10.57	6.12	13.08	14.10	9.80	12.17	8.99
21-Jun-94	7.45	8.65	9.15	9.65										
30-Jun-95						7.79	5.62	8.02	6.11	9.02	13.91	9.80	11.35	8.99
13-Jul-95						7.80	5.59							
30-Jul-95						7.86	5.48	7.99	6.12	8.81	13.68	9.80	11.83	8.99
26-Aug-95	6.89	8.47		9.05										
31-Aug-95	7.36					7.93	4.85	7.97	6.06	8.66	13.62		12.60	
17-Oct-95	7.14	8.26		9.37		7.90	4.23	8.70	5.76	8.54	13.41		11.88	
20-Nov-95	7.10	8.18		9.19										
13-Mar-96	7.44	9.23		9.39										
28-May-96	7.50	9.34	10.00	10.25		8.34	5.38	9.94	6.12	9.37	14.12		12.77	
24-Sep-96	7.50	7.43	7.95	9.17		10.40	5.30	8.30	6.12	8.66	13.68	9.88	12.80	8.99
13-May-97	6.84	9.42	9.96	9.53		9.17	5.67	7.74	6.40	9.51	12.78	9.96	12.78	9.62
11-Jul-97						9.80	5.90	7.92	6.12	8.97	14.10	9.80	9.97	9.00
11-Aug-97	6.75	8.38	8.41	8.81	1.99	9.59	5.25	8.10	6.25	8.77	12.84	9.96	12.62	9.21
14-Oct-97	6.76	8.58	9.15	8.99		9.51	4.96	7.99	6.23	8.94	12.96	9.96	12.73	9.21
23-Dec-97	6.70	9.05	9.53	9.13		9.25	4.76	7.68	6.07	8.95	12.70	9.81	12.66	9.02
31-May-98	6.72	8.60	9.73	9.59	1.86	9.52	5.25	8.05	6.24	9.20	12.87	9.95	12.77	9.20
25-Jul-98						10.20	5.22	8.04	6.20	9.11	12.58	9.92	12.79	9.18
15-Sep-98	6.67	8.85	9.52	9.10	2.40	10.02	5.22	7.98	6.20	9.22	12.54	9.92	12.83	9.19
16-Nov-98						10.32	5.11	7.93	6.11	9.06	12.45	9.78	12.70	8.99
31-Dec-98	6.70	9.06	9.91	9.23			-		-		-	-	-	-
18-Jun-99	6.88	9.24	10.24	10.18		9.96	5.09	8.35	6.11	9.48	12.48	9.77	12.70	8.99
12-Oct-99	6.61	7.58	8.81	8.79		10.01	5.10	8.16	5.73	8.82	12.49	9.78	12.71	8.97
31-May-00	5.75	8.68	8.26	9.33	1.84	10.20	5.10	7.85	5.93	8.97	12.48	9.78	12.66	8.88
5-Sep-00	6.66						-				-	-		
9-Oct-00	4.98	3.96	6.90	8.35	0.93		-				-	-	-	
9-Jul-01						10.42	4.84	8.86	7.72	5.46	12.84	9.78	10.84	8.88

*: depth to bottom of hole GW-94-05 (V38) checked as 14.7m on Sep 15/98.

Top of Pipe Elevations (masl)

V34 GW9401	V35 GW9402	V36 GW9403	V37 GW9404	V38 GW9405	V39 P-94-01A	V40 P-94-01B	V41 P-94-02A	V42 P-94-02B	V43 P-94-02C	V44 P-94-03A	V45 P-94-03B	V46 P-94-04A	V47 P-94-04B
1117.445	1117.405	1118.431	1116.165	1101.673	1136.555	1136.493	1138.41	1138.332	1129.84	1134.373	1134.459	1134.609	1134.327

Piezometric Elevation (masl)

Date	V34 GW-94-01	V35 GW-94-02	V36 GW-94-03	V37 GW-94-04	V38 GW-94-05	V39 P-94-01A	V40 P-94-01B	V41 P-94-02A	V42 P-94-02B	V43 P-94-02C	V44 P-94-03A	V45 P-94-03B	V46 P-94-04A	V47 P-94-04B
3-May-94	1109.165	1103.075	1107.151	1101.835	1090.113	1124.185	1130.443	1127.84	1132.212	1116.76	1120.273	1124.659	1122.439	1125.337
21-Jun-94	1109.995	1108.755	1109.281	1106.515										
30-Jun-95						1128.765	1130.873	1130.39	1132.222	1120.82	1120.463	1124.659	1123.259	1125.337
13-Jul-95						1128.755	1130.903							
30-Jul-95						1128.695	1131.013	1130.42	1132.212	1121.03	1120.693	1124.659	1122.779	1125.337
26-Aug-95	1110.555	1108.935		1107.115										
31-Aug-95	1110.085					1128.625	1131.643	1130.44	1132.272	1121.18	1120.753		1122.009	
17-Oct-95	1110.305	1109.145		1106.795		1128.655	1132.263	1129.71	1132.572	1121.3	1120.963		1122.729	
20-Nov-95	1110.345	1109.225		1106.975										
13-Mar-96	1110.005	1108.175		1106.775										
28-May-96	1109.945	1108.065	1108.431	1105.915		1128.215	1131.113	1128.47	1132.212	1120.47	1120.253		1121.839	
24-Sep-96	1109.945	1109.975	1110.481	1106.995		1126.155	1131.193	1130.11	1132.212	1121.18	1120.693	1124.579	1121.809	1125.337
13-May-97	1110.605	1107.99	1108.476	1106.635		1127.385	1130.823	1130.67	1131.932	1120.33	1121.593	1124.499	1121.829	1124.707
11-Jul-97						1126.755	1130.593	1130.49	1132.212	1120.87	1120.273	1124.659	1124.639	1125.327
11-Aug-97	1110.695	1109.025	1110.021	1107.355	1099.683	1126.965	1131.243	1130.31	1132.082	1121.07	1121.533	1124.499	1121.989	1125.117
14-Oct-97	1110.685	1108.825	1109.281	1107.175		1127.045	1131.533	1130.42	1132.102	1120.9	1121.413	1124.499	1121.879	1125.117
23-Dec-97	1110.745	1108.355	1108.901	1107.035		1127.305	1131.733	1130.73	1132.262	1120.89	1121.673	1124.649	1121.949	1125.307
31-May-98	1110.725	1108.805	1108.701	1106.575	1099.813	1127.035		1130.36		1120.64		1124.509	1121.839	1125.127
25-Jul-98						1126.355		1130.37		1120.73			1121.819	
15-Sep-98	1110.775	1108.555	1108.911	1107.065	1099.273	1126.535		1130.43		1120.62			1121.779	
16-Nov-98						1126.235		1130.48		1120.78				
31-Dec-98	1110.745	1108.345	1108.521	1106.935										
18-Jun-99	1110.565	1108.165	1108.191	1105.985		1126.595		1130.06		1120.36				
12-Oct-99	1110.835	1109.825	1109.621	1107.375		1126.545		1130.25		1121.02				
31-May-00	1111.695	1108.725	1110.171	1106.835	1099.833	1126.355		1130.56	1132.402	1120.87			1121.949	1125.447
5-Sep-00	1110.785													
9-Oct-00	1112.465	1113.445	1111.531	1107.815	1100.743									
9-Jul-01						1126.135	1131.653	1129.55	1130.612	1124.38	1121.533	1124.679	1123.769	1125.447

2.3 Recommendations

2.3.1 Seepage Collection Channel

SRK recommends that DT backfill the depression at the south abutment of Little Creek Dam with locally available till and compact with several passes of a dozer. Monthly monitoring of the area should be conducted for any signs of further settlement.

SRK understands that since the July site visit, DT has filled in the depression and compacted the fill.

2.3.2 Transverse Drains and Weirs, Starter Dyke Diversion Ditch

Following the inspection on July 12, 200, SRK considered the existing diversion ditch to be inadequate and believed there was a high degree of risk of further subsidence in the short term, which would have a negative impact on the structural integrity of the starter dyke. Furthermore, it was our opinion that it was very likely that the #6 drain will be blocked off by the subsidence. Consequently, SRK recommended to DT that remediation of this area be initiated during this year's construction season. The work would involve the following:

- Removal of the saturated soil within the drainage ditch, stockpile and allowing it to dry;
- Pull back the loose material from the upper half of the till dyke and round-off the crest to provide a flatter more stable condition;
- Reslope the downstream face of the end-dumped till stockpile above the starter dyke and backfill the ditch. The resloped surface should be no steeper than 3:1(H:V) and the final toe should not be less than 5m from the reshaped crest of the starter dyke.
- Compact the reloped surface with several passes of a self propelled sheepsfoot (pad) roller.
- Regrade the upper surface of the till stockpiles above the starter dyke to improve drainage;
- Remove the saturated soil at the bottom of the slope above the #6 drain;
- Place geotextile filter fabric and buttress half way up the slope with clean shotrock. The shotrock should be placed to an angle no steeper than 2:1(H:V).

SRK understands that this work was completed in August and September, 2001 as shown in Photos 5, 6, 7 & 8.

2.3.3 Till Covers and Berms

In the upper reaches of the seepage collection channel below the till cover, DT should remove any silt that has accumulated in the channel. Assuming the dump will eventually be covered with till, this area would likely be recontoured and the sediment problem would be reduced. In the meantime, DT should continue to monitor the silt build-up and periodically remove the material.

2.3.3 Instrumentation

Water level readings should continue to be taken from both the groundwater wells and the standpipe piezometers in the till berm around the rock pile. These readings should be taken at least semi-annually with close attention given to the water levels in P94-01A and B, and P94-02A, 02B and 02C.

Water quality samples should continue to be taken from the groundwater wells around the Vangorda Waste dump.

2.3.4 Rock pile

DT should continue to regularly monitor the cracks observed on the surface of the rock fill. Any widening of these cracks should be reported.

3. Little Creek Dam

3.1 Observations

A view of the Little Creek dam and the new emergency spillway are shown in Photos 9 and 10. Runoff from the eastern approach road continues to cause erosion and subsidence of the road embankment sideslopes as shown in Photos 11 and 12 .

Water level in the pond during our inspection was recorded at about 1109m. DT periodically pumps water from the pond to Vangorda Pit. However, at the time of our inspection no water was being pumped from the pond. No cracks or major settlement of the dam were observed and there was no noticeable seepage along the toe.

The downstream face of the dam shows little evidence of surficial movement, bulging or instability. The loose, uncompacted material at the toe of the dam, which was deposited during it's construction in 1991, has not moved but does shows signs of erosion.

In 1994, six pneumatic piezometers and three thermistors were installed along the crest of the Little Creek dam. The six piezometers are located at three separate locations; two piezometers, one deep and one shallow, at each location. The location of the piezometers and thermistors are shown on Figure 5 and the most recent 2001 piezometric levels are shown in section on Figures 6, 7 & 8. Actual readings are presented in Appendix B.

During the inspection, no seepage was observed along the toe of the downstream dam.

3.2 Recommendations

DT should continue to regularly monitor the crest of the dam for any cracks, settlement or surficial movement of the slope.

The piezometric levels are consistent with the water levels recorded in the impoundment and are in accordance with the design safety factors associated with the stability of the dam.

SRK recommends that the pneumatic piezometers and thermistors are monitored on a semi-annual basis and the results compiled and forwarded to SRK.

It is recommended that DT construct either a riprapped or CMP lined channel down the face of the end dumped material to minimize the erosion and the potential for sediment entering Vangorda Creek. Furthermore, the road surface should be regraded to encourage drainage off the crest and a 150mm layer of 20mm minus sand and gravel should be placed and compacted on the crest.

SRK understand that since the site visit, the Little Creek Dam access road was resurfaced.

4. Vangorda Creek Diversion

4.1 Observations

The half-round culvert in the upper reaches (Photo 13) has performed well but the flume does not weather well along the lower reaches. The potential still remains for slide debris to enter the flume at certain locations along the channel. The crossbars are badly bent and the flume is buckled in places. In several areas along the flume, riprap has settled to below the lip of the culvert.

SRK noted that new riprap has been placed around the entrance to the culvert at the headworks of the Vangorda diversion covering the exposed underlying geotextile (Photos 14 and 15).

There are no signs of instability or settlement of the headwork's dam.

We also observed that DT is pumping water from a small seepage collection pond in the old Vangorda Creek ditch back into the flume. This is part of an overall plan by DT to reduce flow of clean water into the Vangorda Pit.

DT has placed new riprap around the area of the plunge pool that had been excavated to allow water trucks to be filled (Photo 16). This appears to be working satisfactorily.

The exit culvert from the drop box structure (Photo 17) remains intact and is functioning satisfactorily

4.2 Recommendations

DT should continue to monitor the sideslopes above the flume for sloughing and areas of instability and should top-up riprap along flume where the material has settled below the rim of the culvert sections.

SRK is of the opinion that because of the gradual deterioration of the flume and the increase in seepage loss over time, a review of the structural integrity of the overall diversion system is required. SRK recommends DT commission a geotechnical assessment by a qualified rock mechanics engineer of the bench currently hosting the

diversion channel. Failure of the bench and the diversion channel would direct an uncontrolled flow of water into the Vangorda. As DT plan to pump and treat the pit water, all efforts must be made to reduce the risk of clean water discharge into the pit.

SRK understand that the Vangorda flume underwent repairs in September 2001 and aprox. 70 brackets were replaced. In addition, DT placed and compacted fine gravel material along the sides of the flume where material had been eroded away. Riprap was also placed along the sides of the flume and up the bank.

5. Sludge Pond Embankment-Vangorda Water Treatment Plant

5.1 Observations

At the time of our inspection, the water level in the sludge pond was about 6m below the crest of the embankment (Photo 18). The tension cracks along the inside face of the pond and along the crest of the dyke have not changed since the last inspection.

Although there is still evidence of previous settlement and minor sloughing of the downstream slope in the southwest corner of the pond, there are no signs of recent movement. Vegetation on the downstream slope is providing some stability to the face (Photo 19).

During the inspection no water treatment was in progress.

5.2 Recommendations

The following actions should be taken at the Water Treatment Plant:

- Ensure that the pond level does not exceed 2m. below crest;
- Continue to monitor on a monthly basis, the crest and sideslopes for cracking or any signs of sloughing. With the pond level at an all time low, the risk of any instability is quite small.
- Fill in or blade over tension cracks both in the crest and along the upstream face to prevent entry from runoff and precipitation.

- Weekly inspection of the upstream face and the crest for further development of the cracks is recommended.

6. Grum Settling Pond

6.1 Observations

At the time of our inspection the water level in the pond was about 3m below the crest of the dyke (Photo 20) and the downstream sideslopes showed no signs of any recent movement. No significant cracks were observed in the crest.

There was no seepage noted along the toe of the dyke.

6.2 Recommendations

The crest of the embankment should be monitored monthly for cracks and the pond level should not exceed 1.0 m below crest. Seepage into and out of the pond should also be monitored.

Monthly inspections along the toe of the embankment for seepage are recommended.

7. Grum Interceptor Ditch and Sheep Pad Settling Pond

7.1 Observations

In the upper reaches of the GID, the slopes have performed well and the vegetation is providing effective erosion control of the sideslopes (Photo 21). Inlets and outlets of some of the culverts are silted up and require cleaning (Photo 22). Below the treatment plant, however, there are sections of the ditch where the grade steepens and the sideslopes have subsided narrowing the channel (photo 23 and 24). This subsidence results in an increase in the sediment load reporting to the Sheep Pad ponds (Photo 25). It was noted that water collecting in the ponds was being siphoned into the Vangorda Pit because of the high level of suspended solids.

7.2 Recommendations

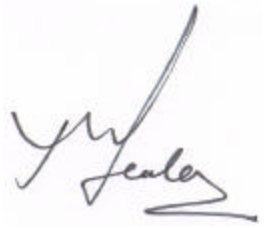
The following actions are recommended:

- Place additional riprap (shotrock) around inlets and outlets of all culverts where applicable to prevent erosion and sediment build-up. Geotextile should be placed against the exposed soil prior to placing the riprap;
- Monitor monthly tension cracks in the settling pond dykes, on the crest and on the upstream and downstream slopes;
- Monitor monthly the toe of the dykes for any seeps;
- Continue to provide riprap protection on the lower reaches of the GID to minimize erosion and sediment loading to the ponds.

SRK understand that additional riprap was placed on the sideslopes of the ditch following the inspection in July 2001.

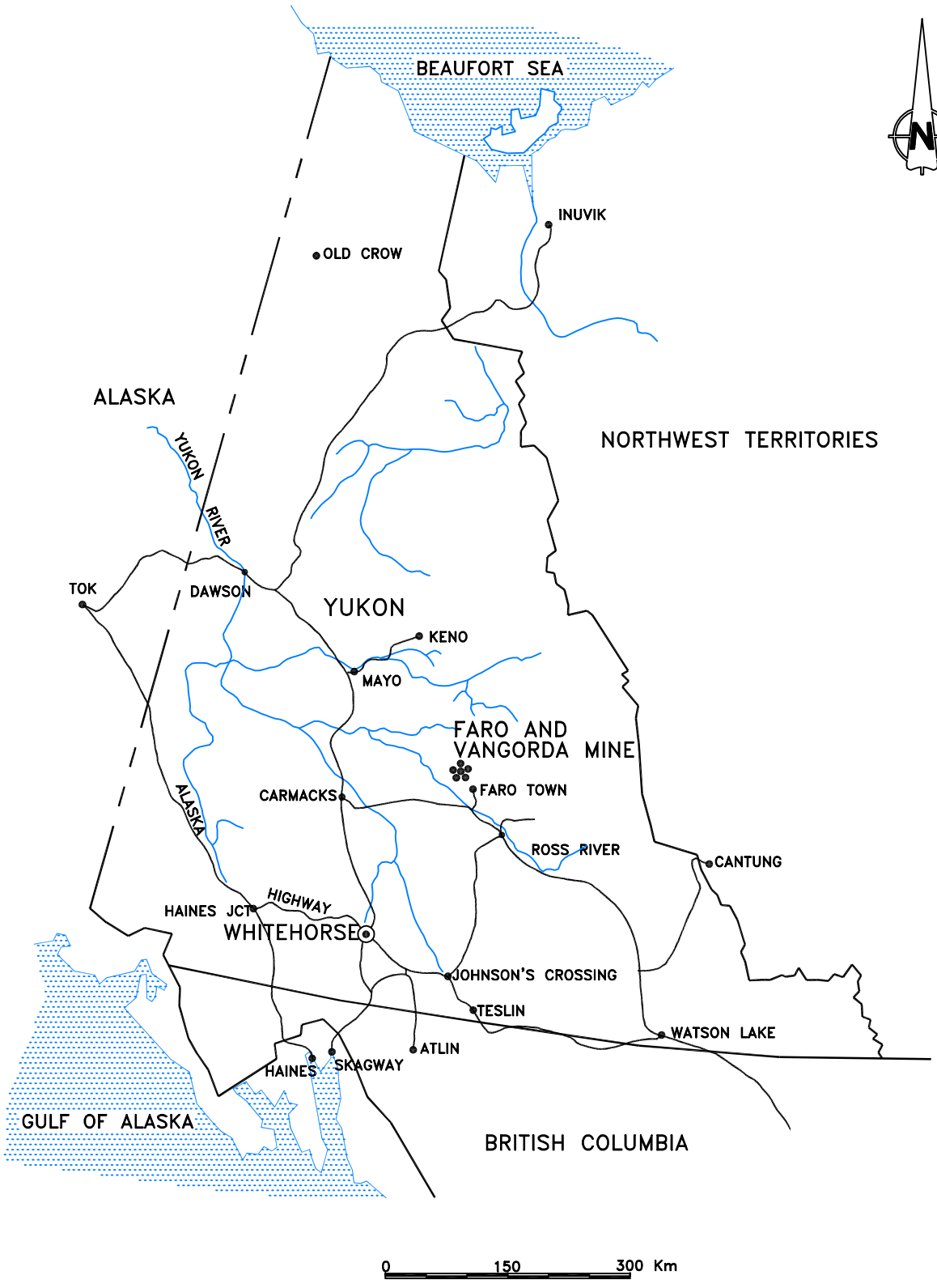
This Report, **1CD003.05 - 2001 Annual Inspection Waste and Water Management Facilities Vangorda Mine, Yukon Territories** has been prepared by:

STEFFEN ROBERTSON AND KIRSTEN (CANADA) INC.



Peter Healey, P.Eng.
Principal

Figures



SRK Consulting
Engineers and Scientists

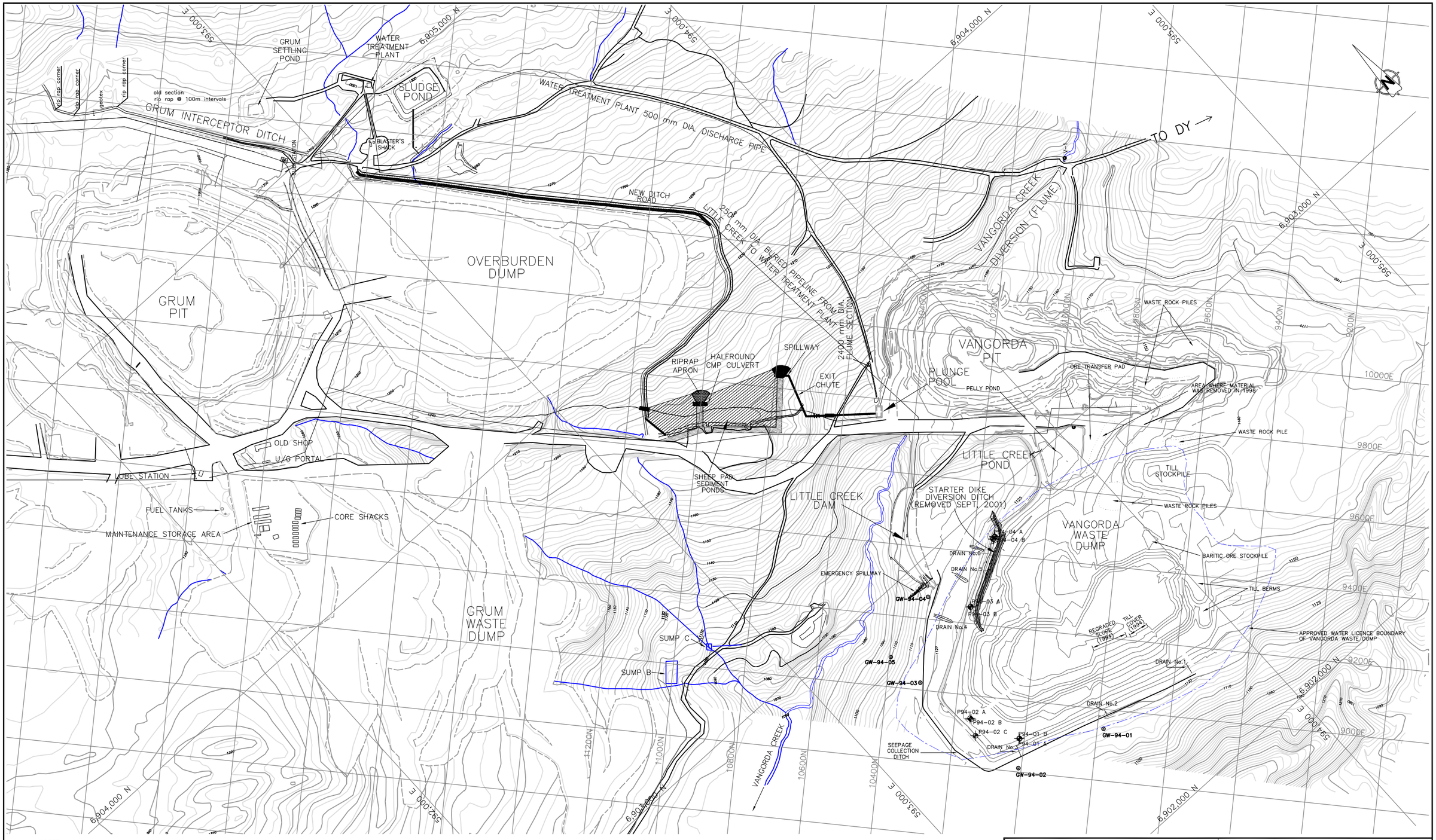
DELOITTE & TOUCHE

VANGORDA PLATEAU MINE

LOCATION MAP

PROJECT NO.	DATE	APPROVED	FIGURE
1CD003.05	Feb 2002		1

Dwg Ref: Yukon.dwg



NOTES:

1. TOPOGRAPHIC MAP PROVIDED BY ANVIL RANGE MINING CORPORATION

0 50 100 150 200 250 Metres
1:10000

CONTOUR INTERVAL = 2m

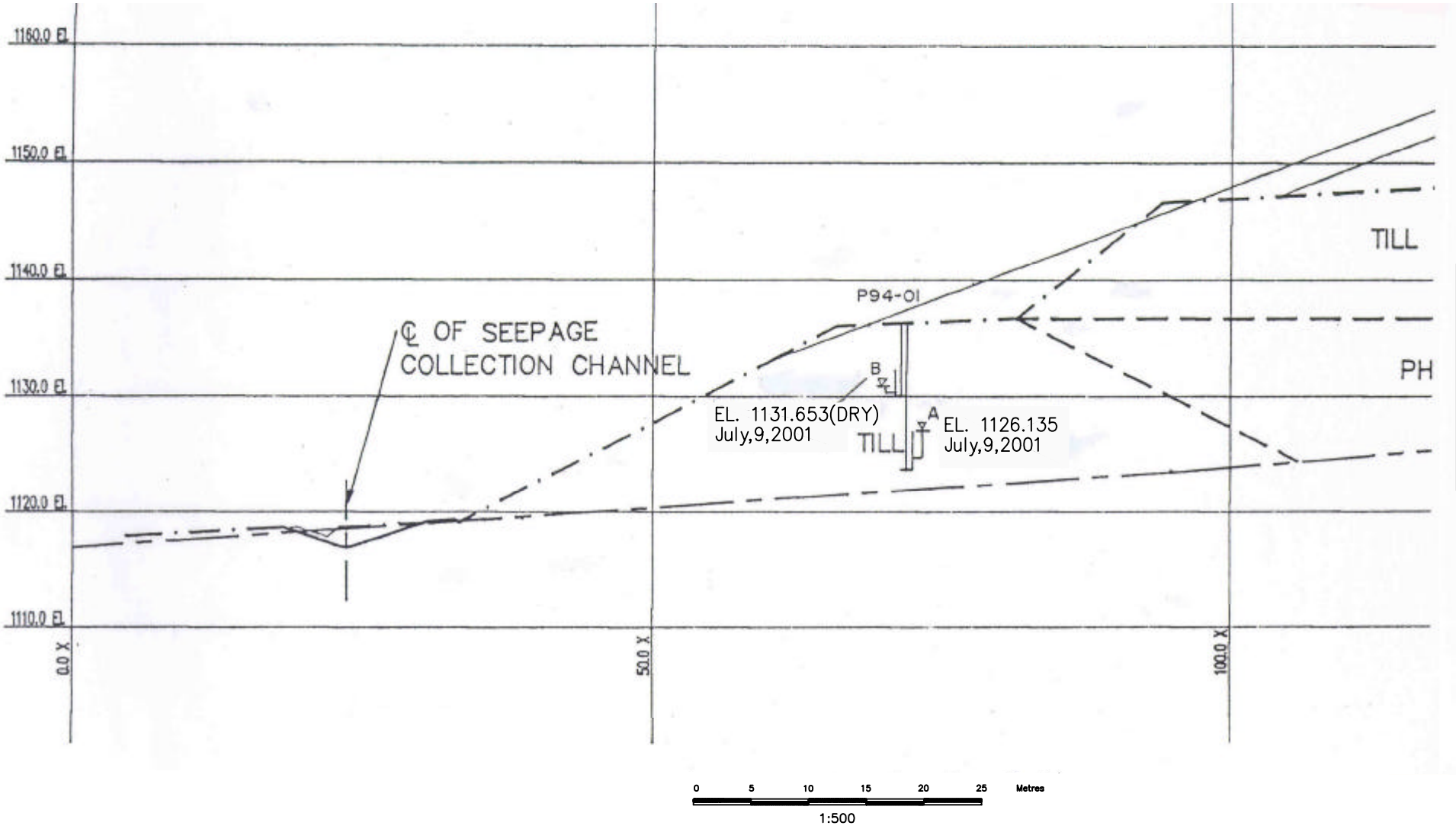
SRK Consulting
Engineers and Scientists

DELOITTE & TOUCHE

VANGORDA PLATEAU MINE

SITE PLAN

PROJECT NO.	DATE	APPROVED	FIG.
1CD003.05	Feb, 2002		2



FILE REF: FIG-4.dwg

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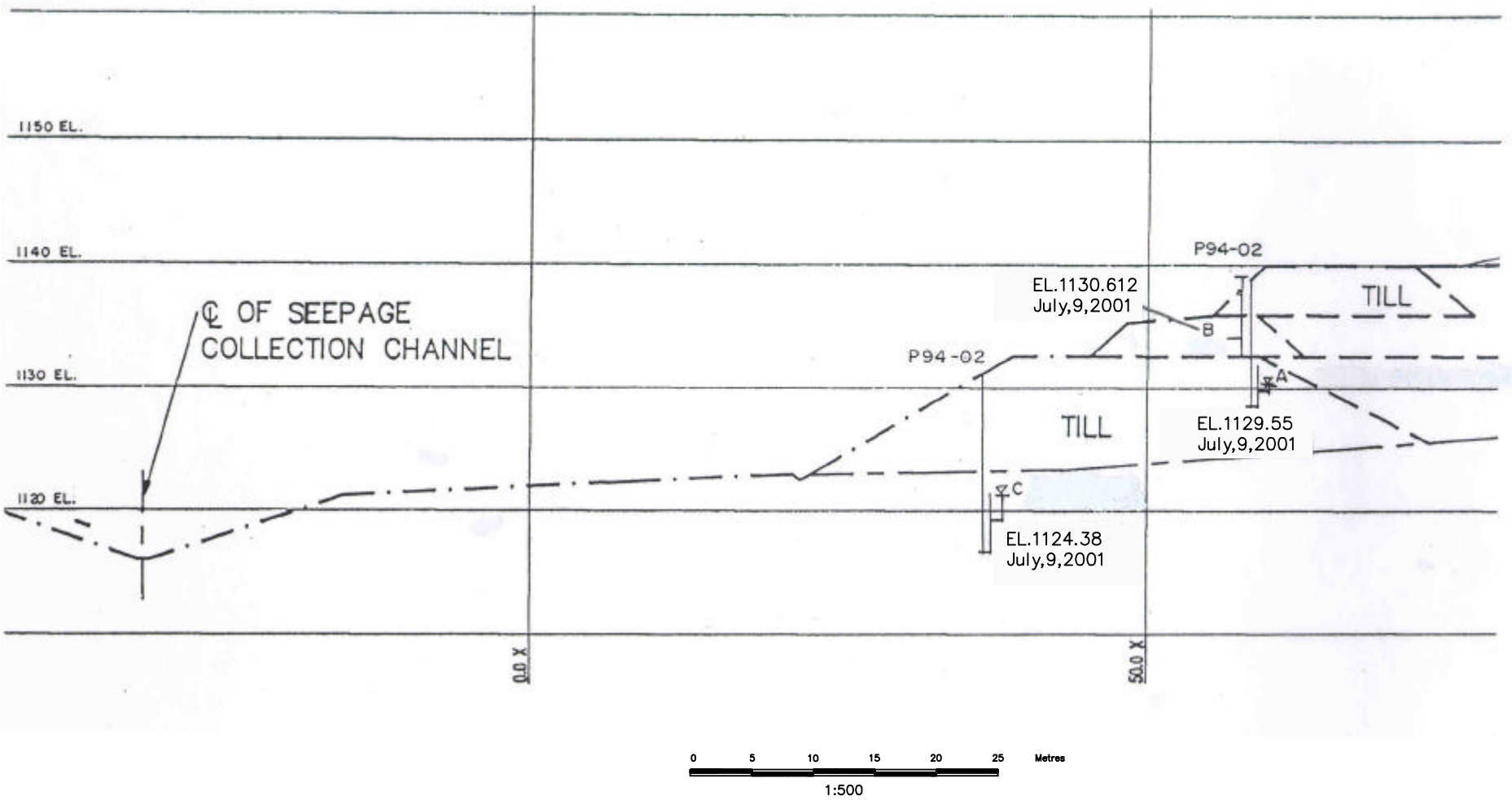
SECTION D-3
CHANNEL STA. 4+80

PROJECT NO.	DATE	APPROVED	FIGURE
1CD003.05	Feb 2002		3



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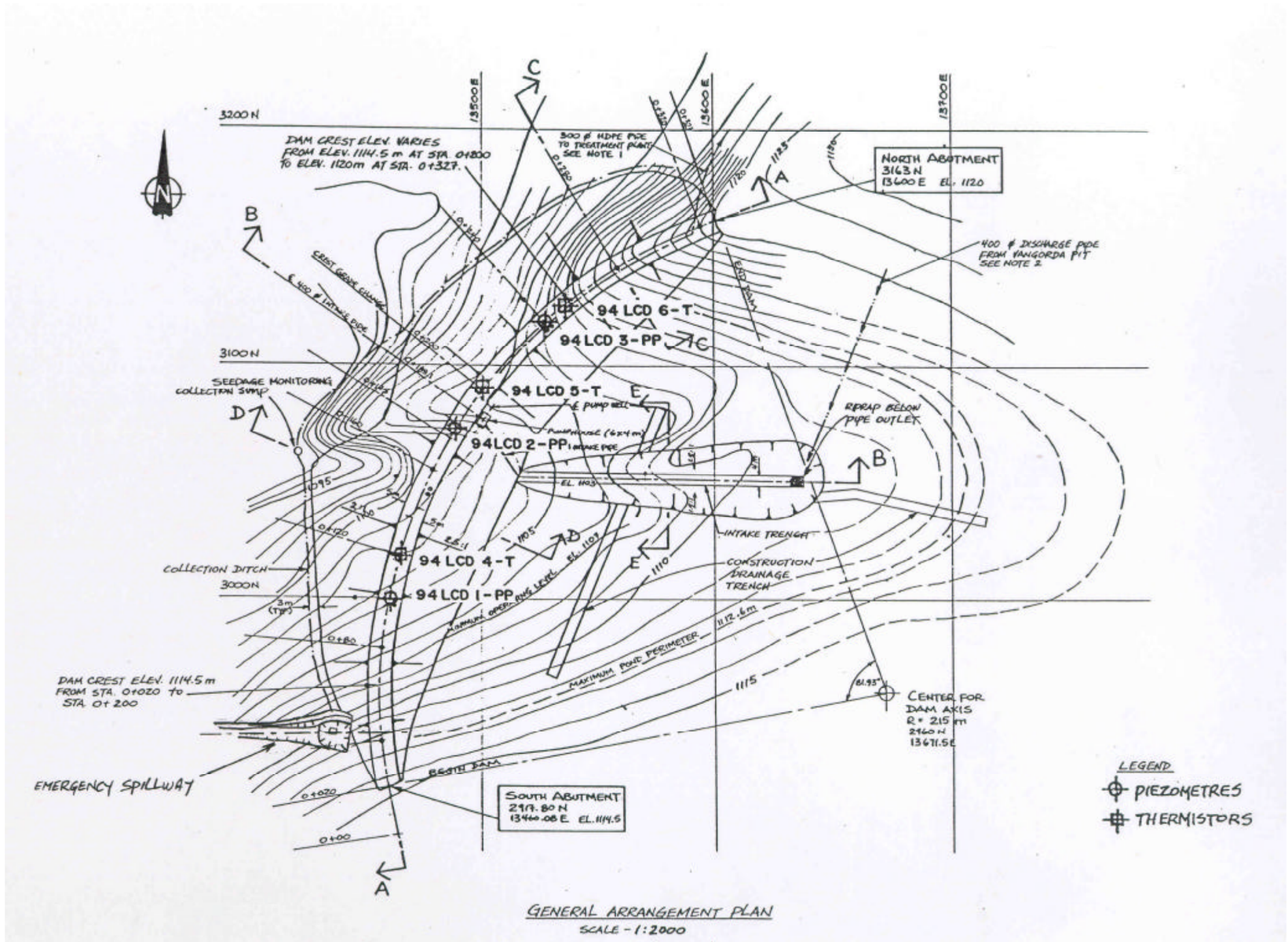
SECTION D–4
CHANNEL STA. 9+00

PROJECT NO.	DATE	APPROVED	FIGURE
1CD003.05	Feb 2002		4

FILE REF: FIG-5.dwg



GENERAL ARRANGEMENT PLAN
SCALE - 1:2000

File Ref: FIG-9.DWG

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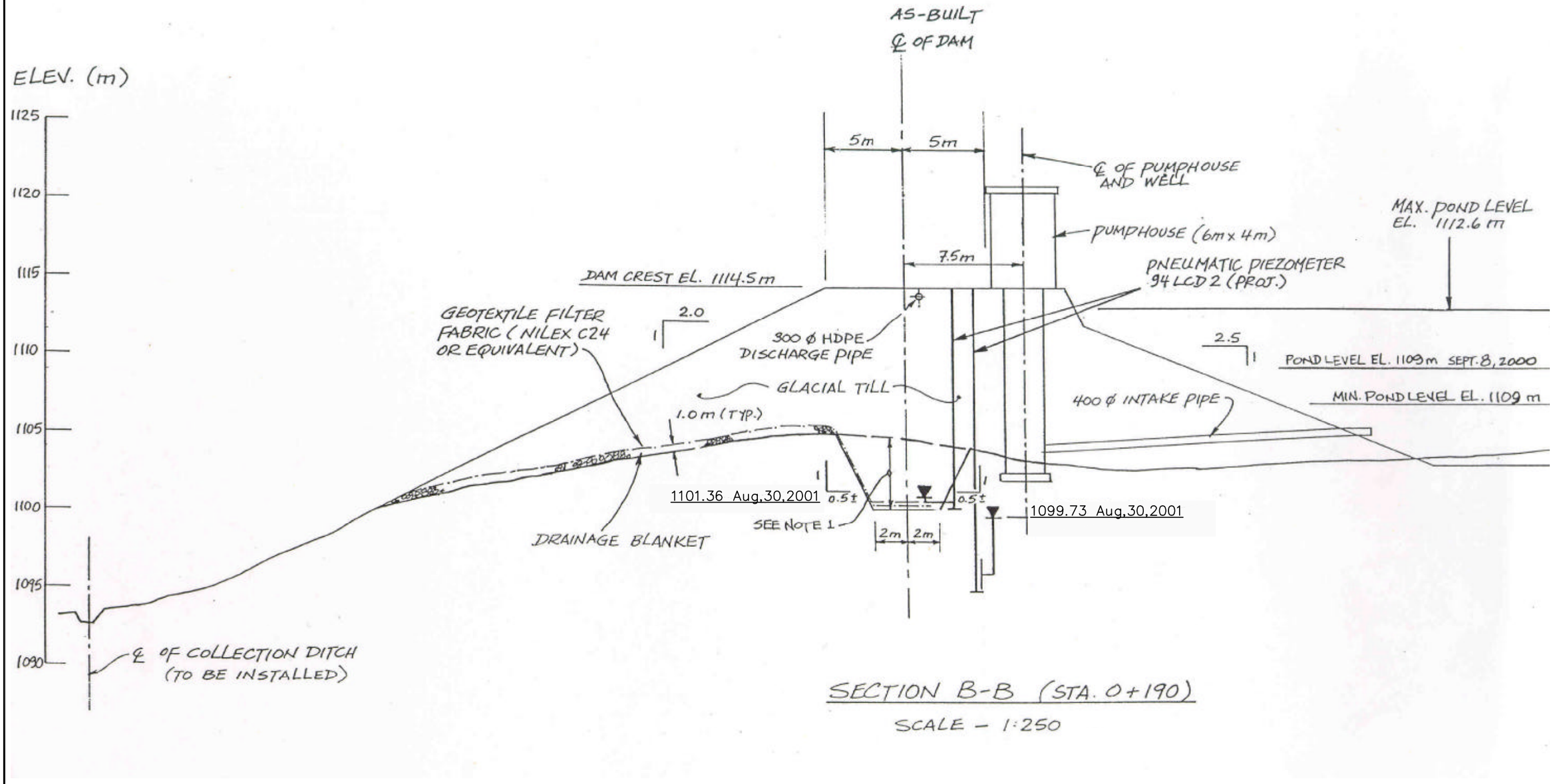
LITTLE CREEK DAM
GENERAL ARRANGEMENT PLAN

PROJECT NO.	DATE	APPROVED	FIGURE
1CD003.05	Feb 2002		5



SECTION B-B (STA. 0+190)

SCALE – 1:250

0 2 4 6 8 10 METRES

1:250

File Ref: Fig-10.DWG

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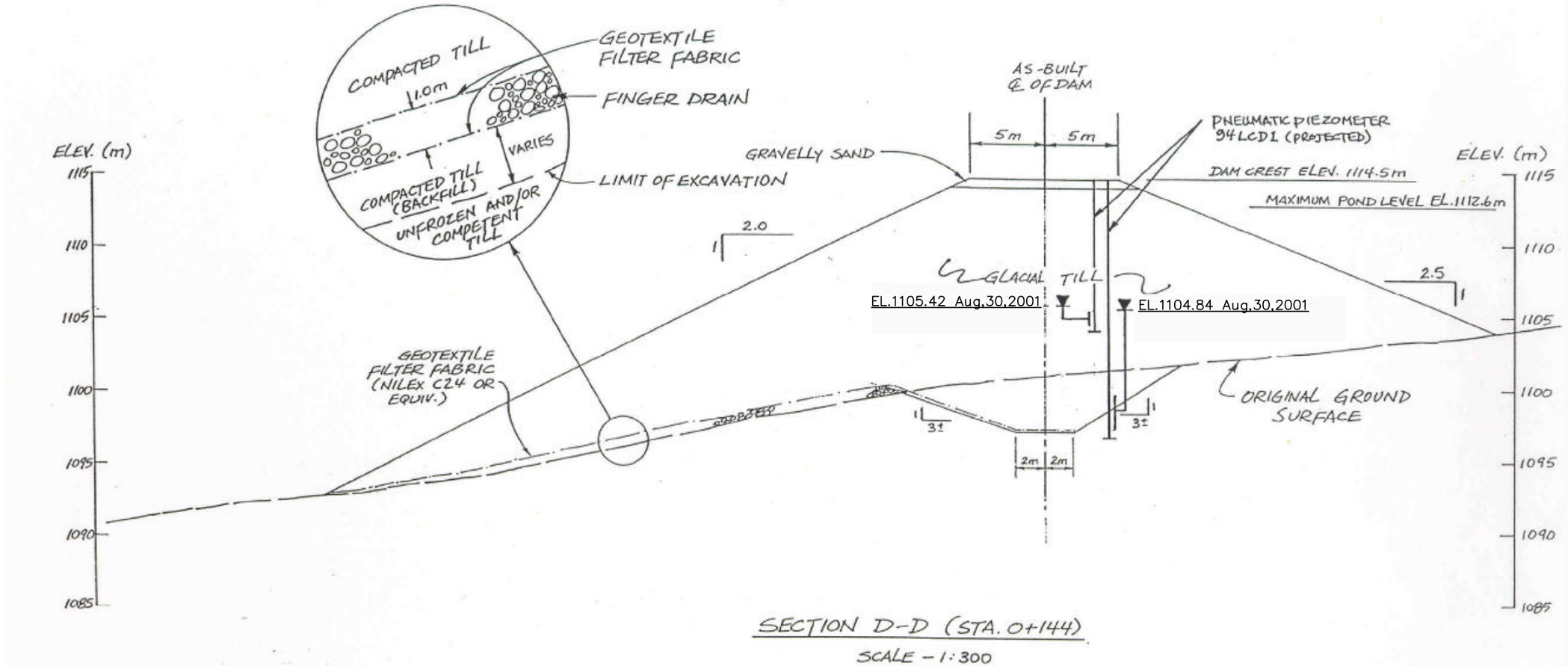
LITTLE CREEK DAM
SECTION B–B

PROJECT NO.	DATE	APPROVED	FIGURE
1CD003.05	Feb 2002		6



SECTION D-D (STA. 0+144)

SCALE - 1:300

File Ref: Fig-11.DWG

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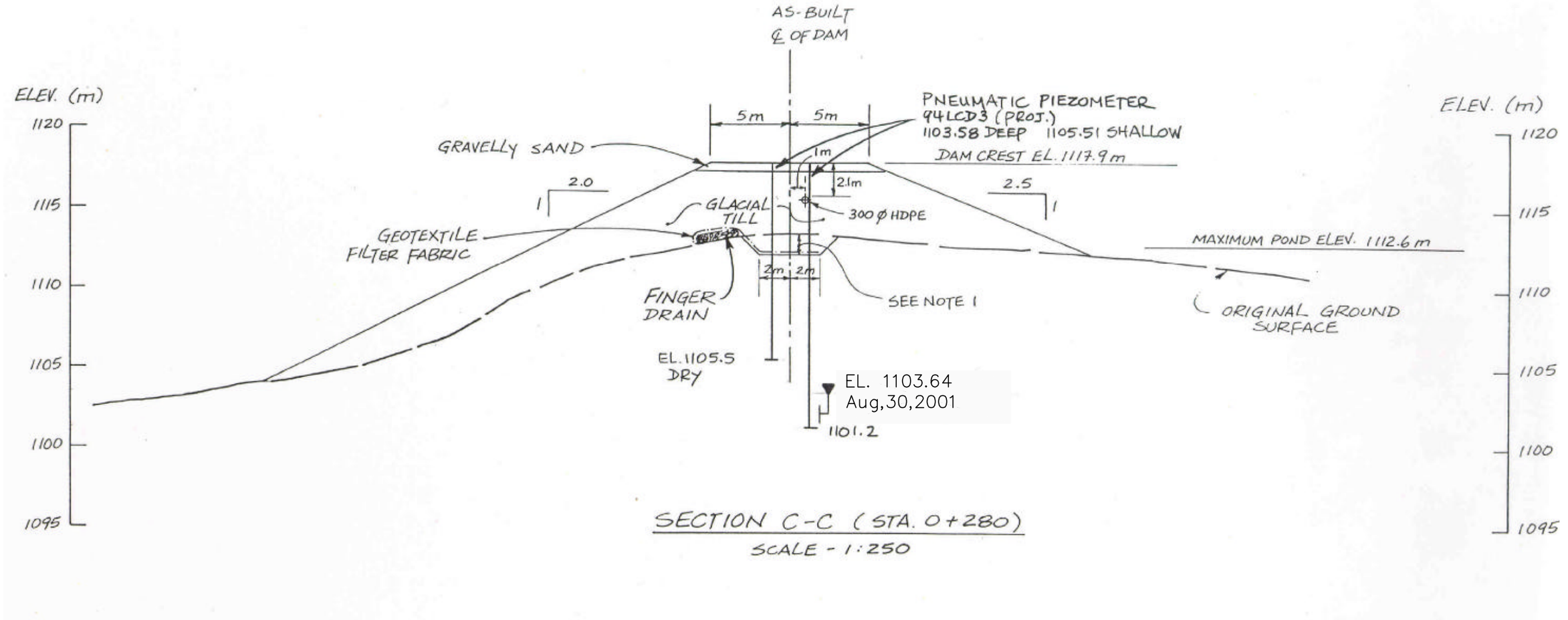
LITTLE CREEK DAM
SECTION D-D

PROJECT NO.	DATE	APPROVED	FIGURE
1CD003.05	Feb 2002		7



SECTION C-C (STA. 0+280)

SCALE - 1:250

0 2 4 6 8 10 METRES

1:250

File Ref: Fig-12.DWG

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VANGORDA PLATEAU MINE

LITTLE CREEK DAM
SECTION C-C

PROJECT NO.	DATE	APPROVED	FIGURE
1CD003.05	Feb 2002		8

APPENDIX B

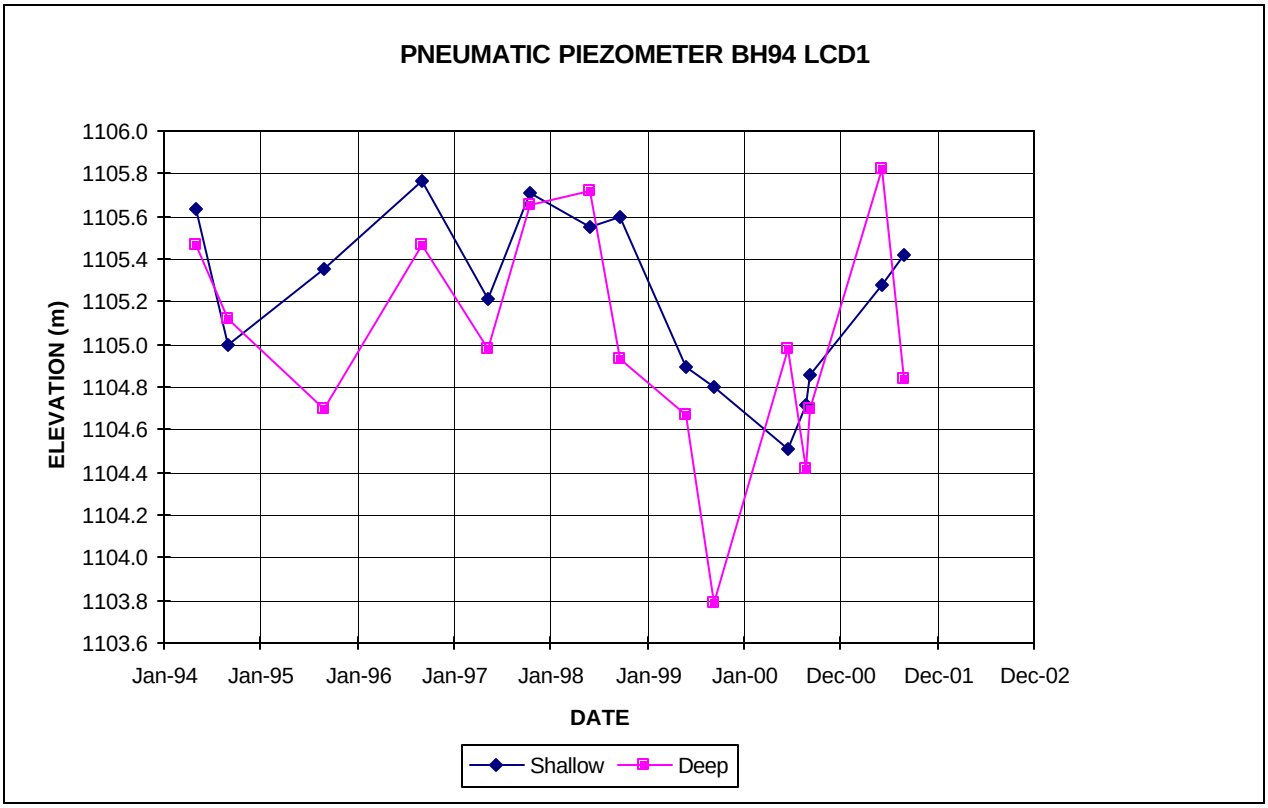
Pneumatic Piezometer Readings - Little Creek Dam

Little Creek Dam Pneumatic Piezometers

BH94 LCD1 **Location:** Little Creek Dam Crest **Ground Elevation:** 1114.5m **Coordinates** 3000N, 13460E

Date Installed: June '94 **Shallow Tip Elevation:** 1103.6 **Deep Tip Elevation :** 1097.0 **Surface Protector:** yes

Date	Reading (psi)		Piezometric Elevation (m)		Pond
	Shallow	Deep	Shallow	Deep	Level
May-94	2.9	12.1	1105.63	1105.47	
Sep-94	2.0	11.6	1105.00	1105.12	
Sep-95	2.5	11.0	1105.35	1104.70	
Sep-96	3.1	12.1	1105.77	1105.47	
May-97	2.3	11.4	1105.21	1104.98	
Oct-97	3.02	12.36	1105.71	1105.65	
May-98	2.79	12.46	1105.55	1105.72	
Sep-98	2.85	11.33	1105.60	1104.93	~1109.5
May-99	1.85	10.95	1104.90	1104.67	
Sep-99	1.71	9.70	1104.80	1103.79	~1105
Jun-00	1.30	11.40	1104.51	1104.98	
Aug-00	1.60	10.60	1104.72	1104.42	
Sep-00	1.80	11.00	1104.86	1104.70	
5-Jun-01	2.40	12.60	1105.28	1105.82	
30-Aug-01	2.60	11.20	1105.42	1104.84	1109



Little Creek Dam Pneumatic Piezometers

BH94 LCD2

Location: Little Creek Dam Crest

Ground Elevation: 1114.5m

Coordinates: 3065N,13485E

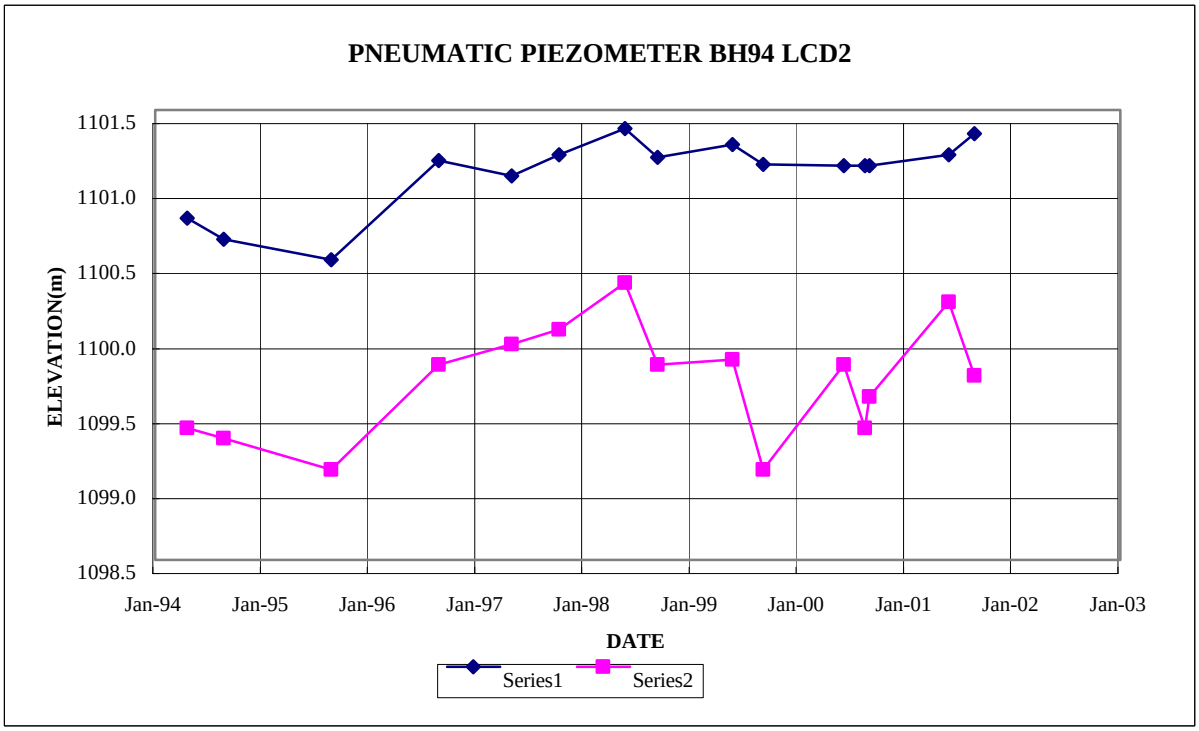
Date Installed: June '94

Shallow Tip Elevation: 1100.5

Deep Tip Elevation : 1094.9

Surface Protector: yes

Date	Reading (psi)		Piezometric Elevation (m)		Pond
	Shallow	Deep	Shallow	Deep	Level
May-94	0.4	6.4	1100.78	1099.38	
Sep-94	0.2	6.3	1100.64	1099.31	
Sep-95	0.0	6.0	1100.50	1099.10	
Sep-96	0.95	7.0	1101.17	1099.80	
May-97	0.8	7.2	1101.06	1099.94	
Oct-97	1.00	7.34	1101.20	1100.04	
May-98	1.25	7.78	1101.38	1100.35	
Sep-98	0.98	7.00	1101.19	1099.80	~1109.5
May-99	1.10	7.05	1101.27	1099.84	
Sep-99	0.91	6.00	1101.14	1099.10	~1105
Jun-00	0.90	7.00	1101.13	1099.80	
Aug-00	0.90	6.40	1101.13	1099.38	
Sep-00	0.90	6.70	1101.13	1099.59	
Jun-01	1.00	7.60	1101.20	1100.22	
Aug-01	1.20	6.90	1101.34	1099.73	



Little Creek Dam Pneumatic Piezometers

BH94 LCD3

Location: Little Creek Dam Crest

Ground Elevation: 1114.5m

Coordinates: 3115N, 13525E

Date Installed: June '94

Shallow Tip Elevation: 1105.5

Deep Tip Elevation : 1101.2

Surface Protector: yes

Date	Reading (psi)		Piezometric Elevation (m)	
	Shallow	Deep	Shallow	Deep
May-94	0.8	4.3	1106.06	1104.21
Sep-94	0.2	3.7	1105.64	1103.79
Sep-95	0.0	3.5	1105.50	1103.65
Sep-96	0.15	4.0	1105.61	1104.00
May-97	0.2	3.8	1105.64	1103.86
Oct-97	0.14	4.54	1105.60	1104.38
May-98	0.54	4.58	1105.88	1104.41
Sep-98	0.17	3.62	1105.62	1103.73
May-99	0.40	3.50	1105.78	1103.65
Sep-99	0.30	2.42	1105.71	1102.89
Jun-00	0.10	3.40	1105.57	1103.58
Aug-00	0.00	3.10	1105.50	1103.37
Sep-00	0.01	3.40	1105.51	1103.58
Jun-01	0.00	4.80	1105.50	1104.56
Aug-01	0.01	3.49	1105.51	1103.64