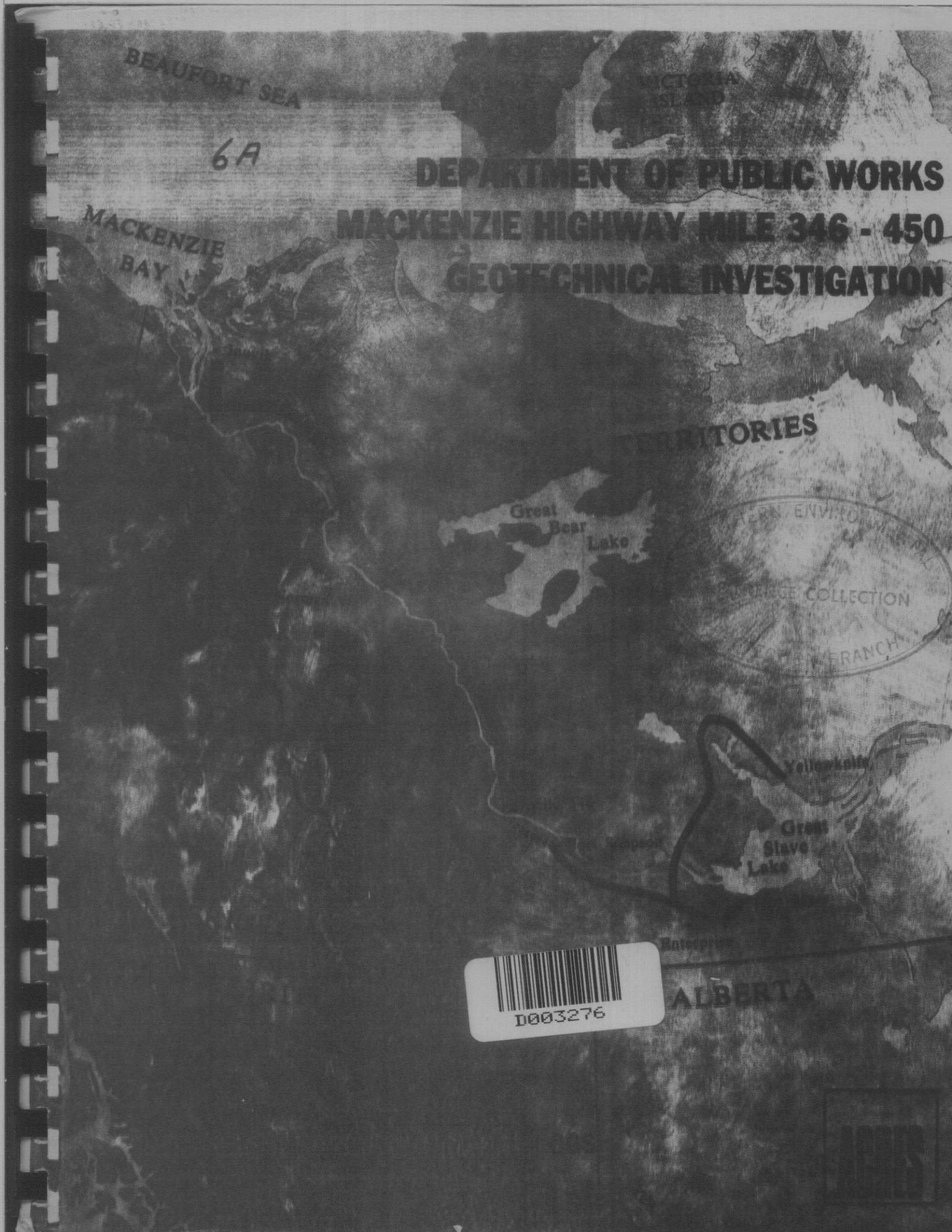


6A

DEPARTMENT OF PUBLIC WORKS
MACKENZIE HIGHWAY MILE 346 - 450
GEOTECHNICAL INVESTIGATION

ENVIRONMENT
COLLECTION
BRANCH
D003276

DEPARTMENT OF PUBLIC WORKS

MACKENZIE HIGHWAY MILE 346 - 450

GEOTECHNICAL INVESTIGATION

NOTE:

"Volume 6 - Borrow Area Borehole Logs" has now been replaced by Volumes 6A and 6B of the same title.

In the original Volume 6, the logs of boreholes on the proposed highway centreline which fell in designated borrow areas were not duplicated as they already appeared in Volumes 2 through 5. This led to an apparent lack of information on borrow areas, which has now been rectified by subdividing Volumes 6A and 6B into miles, and including in each subdivision the appropriate centreline borehole logs. Within each mileage subdivision the logs are arranged with those in the southern borrow area first.

In addition, the logs of boreholes which proved unsuccessful in proving suitable borrow areas are included at the end of Volume 6B.

BORROW AREAS

Mile 350

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

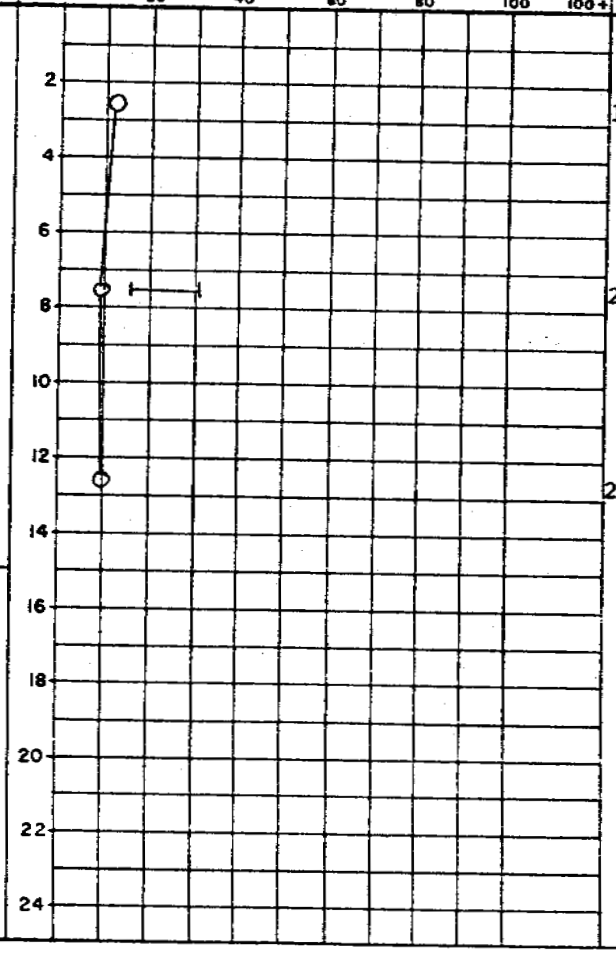
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 5/3/73	AIRPHOTO NO: A22768-101	CHAINAGE: 164+00	OFFSET:
CKD:	TECH: M.H.R.	RIG: 2	SURFACE DRAINAGE: FAIR	VEGETATION: B	ELEV: 314

TEST HOLE		
MILE	B,C,S	NUMBER
349	C	A

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2–4	1				ML	BROWN SILT AND SAND WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}	13	40	32	15			
6–8	2				ML				22	38	30	10			
12–14	3				ML				22	36	32	10			
16						END OF HOLE AT 15'									



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

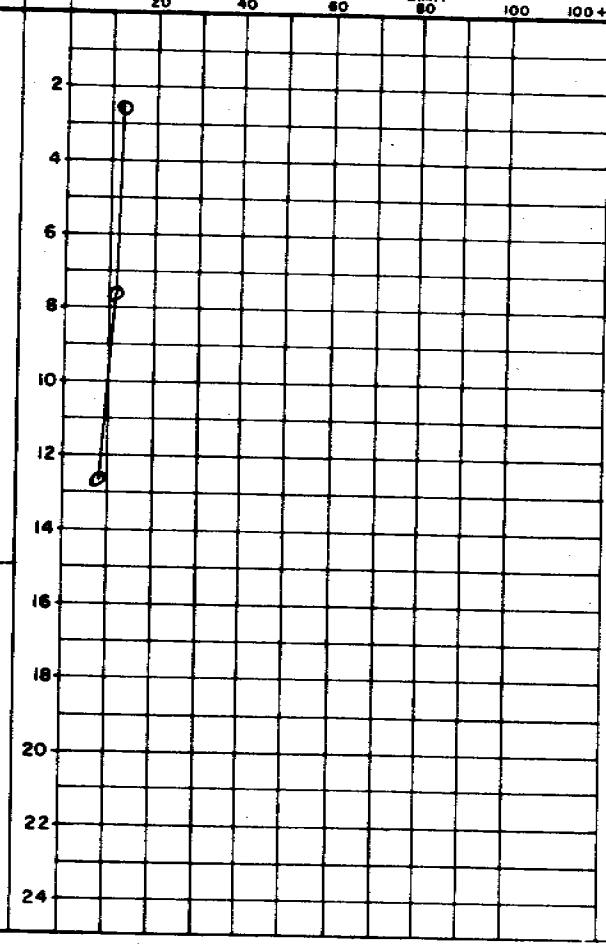
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 5/3/73	AIRPHOTO NO. A22768-101	CHAINAGE 158+00	OFFSET
CKD	TECH M.H.R.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION A	ELEV 311

TEST HOLE		
MILE	B,C,S	NUMBER
349	C	B

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				ML	BROWN SILT AND SAND WITH A TRACE OF CLAY	F								
4															
6	2				ML		UF								
8															
10	3														
12															
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



GRAIN-SIZE ANALYSIS

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

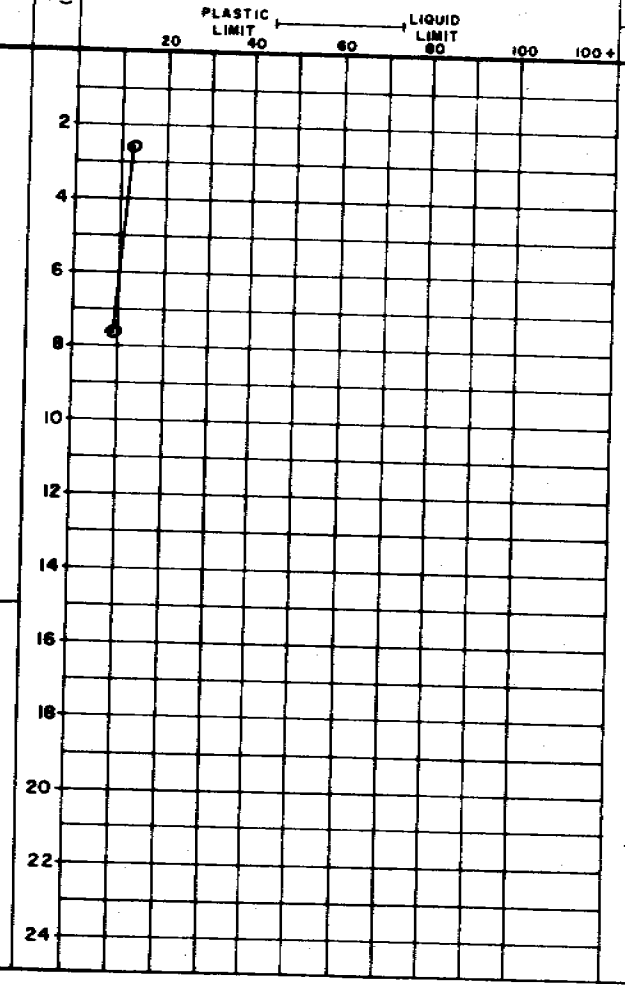
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 6/3/73	AIRPHOTO NO A22768-101	CHAINAGE 153+00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A B	ELEV 305

TEST HOLE		
MILE	B,C,S	NUMBER
349	C	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2–14	1				SM	BROWN SILTY SAND TILL WITH SOME CLAY AND A TRACE OF GRAVEL									
	2				SM		F	N_{bn}							
16						END OF HOLE AT 15'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

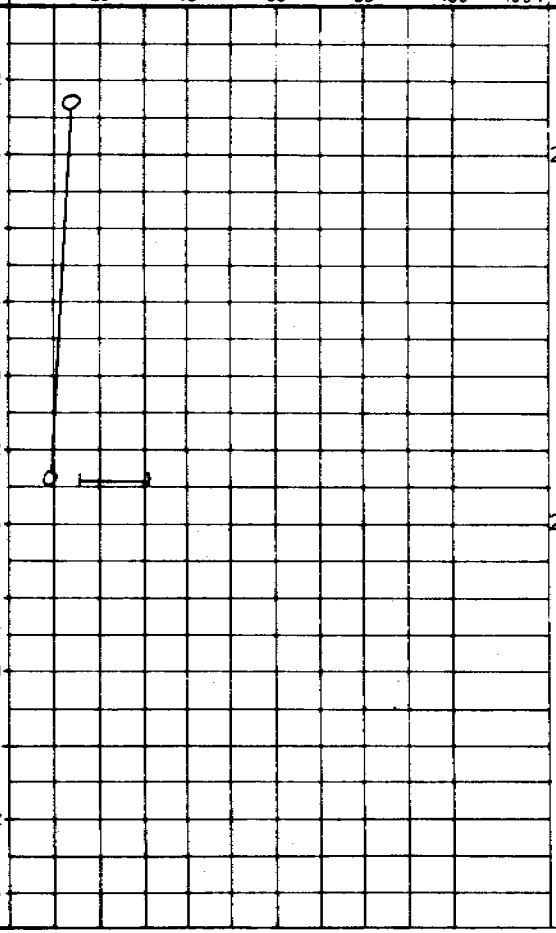
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 6/3	AIRPHOTO NO A22768-101	CHAINAGE 148 + 15	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A B D	ELEV 296

TEST HOLE

MILE	B,C,S	NUMBER
349	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				ML	BROWN SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}							
4									20	60	20	0			
6															
8															
10															
12	2				ML										
14									25	35	34	6			
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

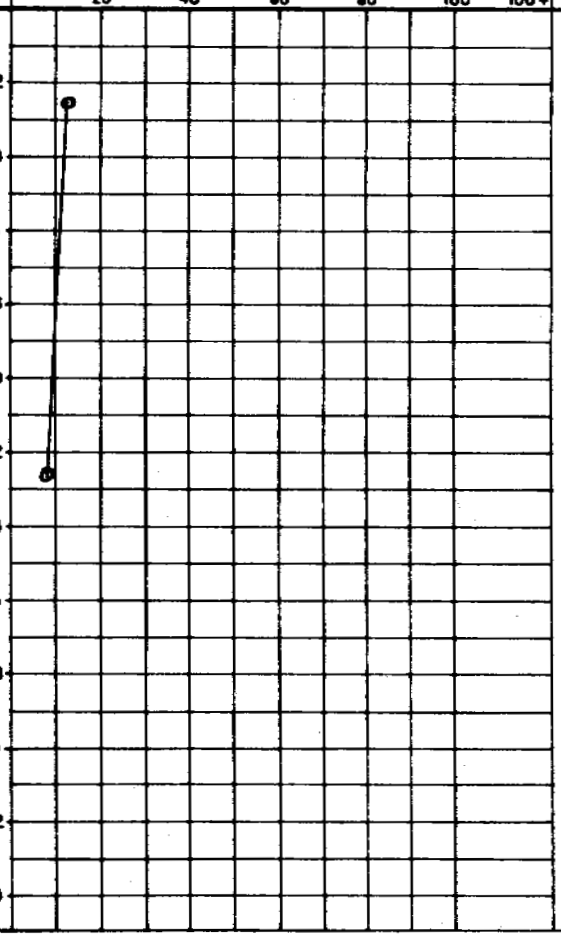
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 6/3/73	AIRPHOTO NO: A22768-101	CHAINAGE: 142+15	OFFSET
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B D	ELEV: 280

TEST HOLE		
MILE	B,C,S	NUMBER
349	C	E

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				ML	BROWN SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL									
4															
6							F	N_{bn}							
8	2				ML										
10															
12															
14	3														
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

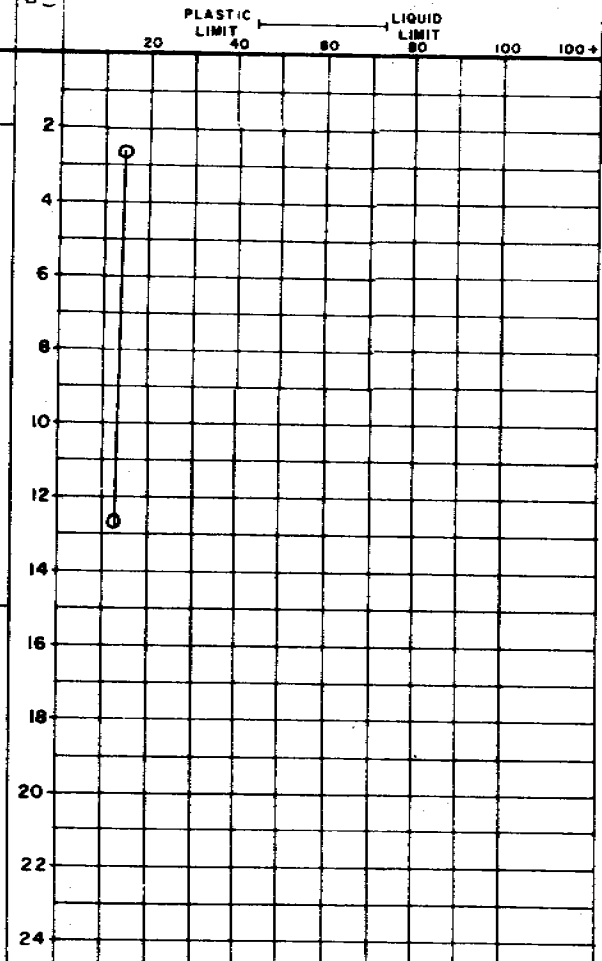
DWN	FIELD ENG	DATE DRILLED 6/3/73	AIRPHOTO NO A22[illegible]8-101	CHAINAGE 137+[illegible]	OFFSET
CKD	TECH M.H.R.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION A B	ELEV 272

TEST HOLE

MILE	B,C,S	NUMBER
349	C	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
2					Pt	PEAT		V_x
4	1				ML	BROWN SILT WITH SOME CLAY AND SAND	F	N_{bn}
6								
8	2				ML			
10								
12	3				ML			
14								
16						END OF HOLE AT 15'		
18								
20								
22								
24								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



GRAIN SIZE ANALYSIS						REMARKS
CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 6/3/73	AIRPHOTO NO A22765-101	CHAINAGE 132+30	OFFSET
CKD	TECH M.H.R.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION A B	ELEV 253

TEST HOLE		
MILE	B.C.S	NUMBER
349	C	G

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT		V_x							
2															
4	1				SM	BROWN SILTY SAND TILL WITH SOME CLAY AND A TRACE OF GRAVEL									
6															
8	2				SM		F	N_{bn}							
10															
12	3				SM										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

BORROW AREAS

Mile 353

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

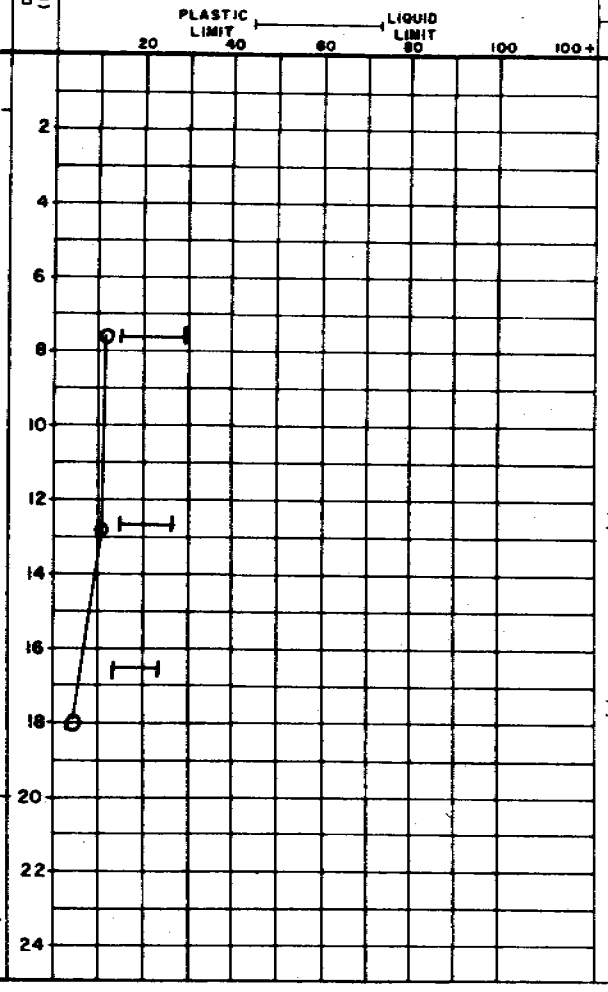
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 5/3/73	AIRPHOTO NO: A22768-108	CHAINAGE 358+00	OFFSET
CKD	TECH: R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION: A	ELEV 536

TEST HOLE		
MILE	B,C,S	NUMBER
353	C	A

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT		V_x							
2–4	1				ML	SAND AND SILT TILL WITH SOME CLAY AND GRAVEL									
8	2				ML		F	N_{bn}	18	36	37	9			
12–14	3				ML	BROWN / GREY			17	31	39	13			
18	4				ML				16	35	42	7			
20						END OF HOLE AT 20'									



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

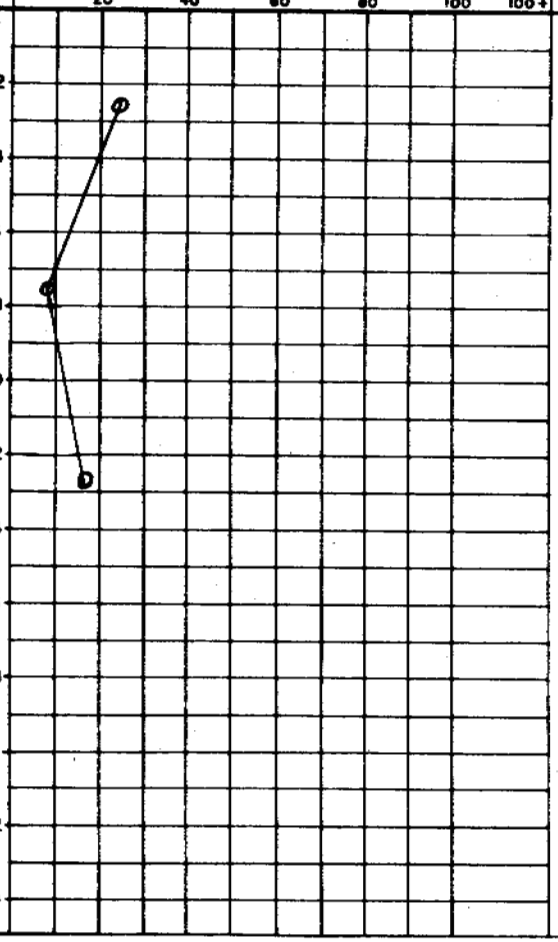
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 5/3/73	AIRPHOTO NO A22768+108'	CHAINAGE 355+00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 537

TEST HOLE		
MILE	B,C,S	NUMBER
353.	C	B

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT		V_x							
2	1				ML	SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL									
8	2				ML		F	N_{bn}							
14	3				ML										
18	4				ML										
20						END OF HOLE AT 20'									



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

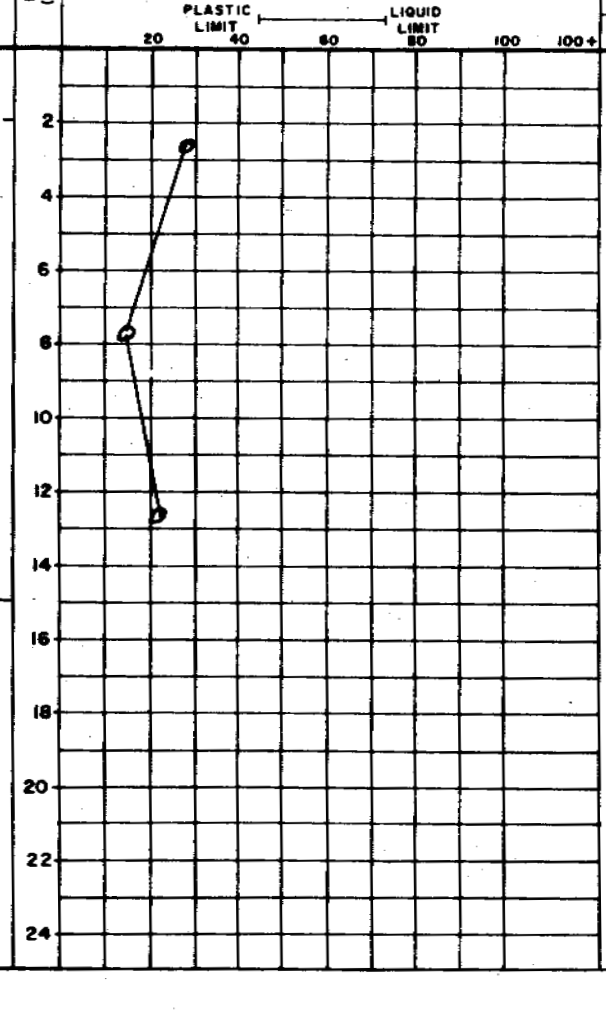
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 5/3/73	AIRPHOTO NO A22768-106	CHAINAGE 343+50	OFFSET
CKD	TECH R.S.	RIG I	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 529

TEST HOLE		
MILE	B,C,S	NUMBER
353	C	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT		V_x							
2	1				ML	SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}							
4															
6															
8	2				ML										
10						BROWN GREY									
12															
14	3				ML										
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

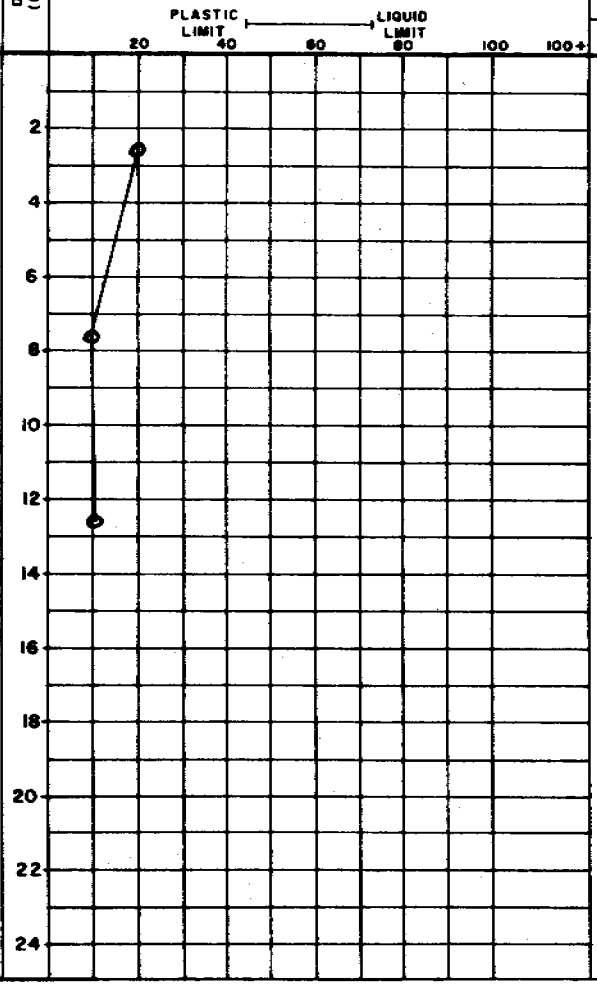
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 5/3/73	AIRPHOTO NO A22771-5	CHAINAGE 366+00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION B	ELEV 542

TEST HOLE		
MILE	B,C,S	NUMBER
354	C	E

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				Pt	PEAT		V_x							
4															
6						BROWN SANDY SILT WITH SOME CLAY AND A TRACE OF GRAVEL									
8	2				ML		F	N_{bn}							
10															
12	3				ML										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



BORROW AREAS

Mile 355

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 7/3/72	AIRPHOTO NO: A22771-6	CHAINAGE:	OFFSET:
CKD:	TECH R.S.	RIG 1	SURFACE DRAINAGE: GOOD	VEGETATION: B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
355	B	K

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT									
2	1				ML-CL	BROWN SILT TILL, CLAYEY AND SANDY WITH SOME GRAVEL AND COBBLES	F								
4															
5															
6							F	V_x							
8	2				ML-CL										
10															
12	3														
14						BROWN / GREY	F	V_r							
16															
18	4				ML-CL										
20						END OF HOLE AT 20'									
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

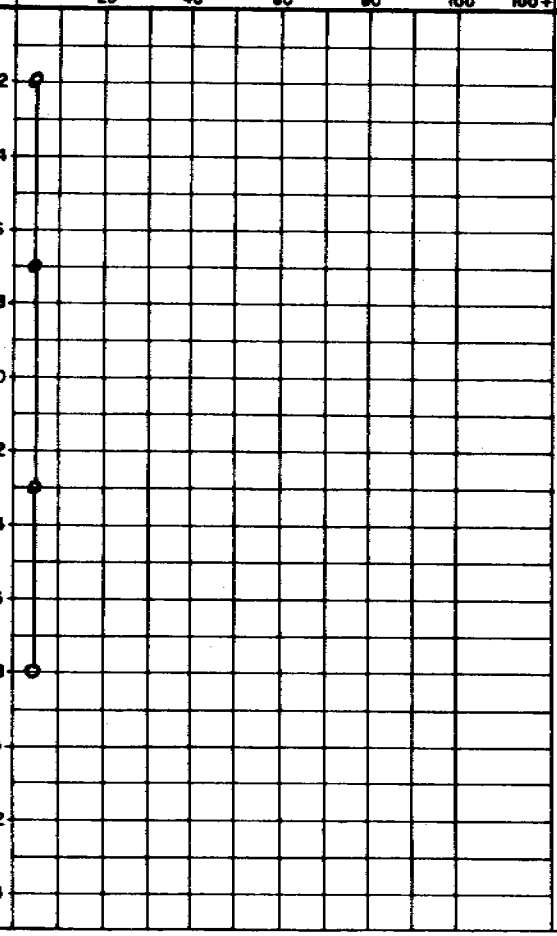
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 7/3/73	AIRPHOTO NO: A22771-6	CHAINAGE:	OFFSET:
CKD:	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
355	B	L

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				ML-CL	BROWN SILT TILL, CLAYEY AND SANDY WITH SOME GRAVEL AND A TRACE OF BOULDERS									
4															
6	2														
8							F	N_{bn}							
10															
12	3				ML-CL			- - - -							
14								N_f							
16	4														
18															
20						END OF HOLE AT 20'									
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

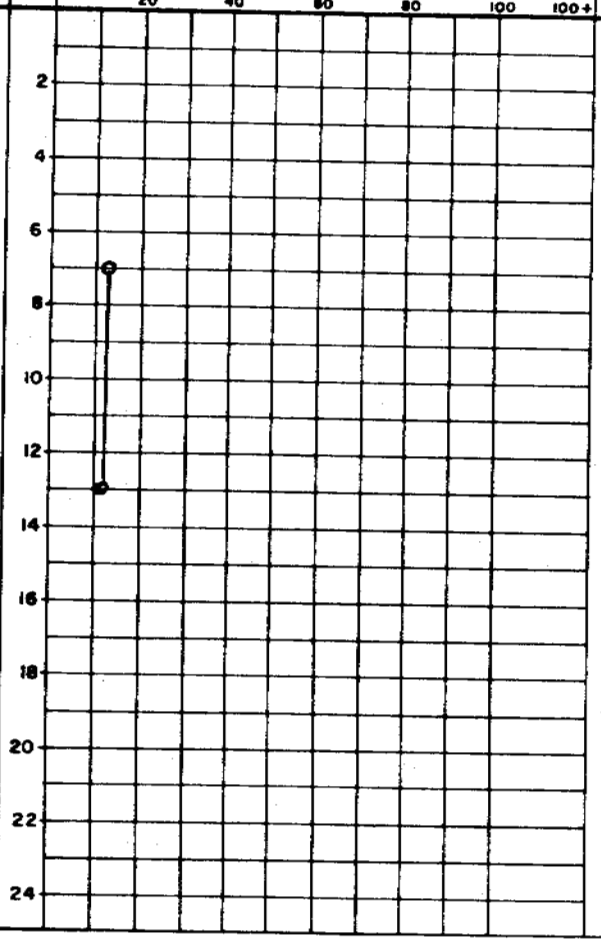
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 7/3/73	AIRPHOTO NO: A22771-6	CHAINAGE:	OFFSET
CKD	TECH: R. G.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
355	B	M

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2						BROWN SILT TILL, CLAYEY AND SANDY WITH SOME GRAVEL AND COBBLES									
4	1				ML-CL										
6															
8	2						F								
10								N_{bn}							
12	3				ML-CL										
14															
16															
18	4														
20						END OF HOLE AT 20'									
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 8/3/73	AIRPHOTO NO A22771-6	CHAINAGE 427+00	OFFSET 1,200' E
CKD	TECH	RIG D-7 CAT	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
355	BT	2

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					PT	PEAT									
2–6					ML CL	BROWN SILT TILL, CLAYEY AND SANDY WITH SOME GRAVEL AND COBBLES	F	N_{bn}	22	44	27	7			DIFFICULT TO EXCAVATE WHEN FROZEN
6						END OF TRENCH AT 6'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

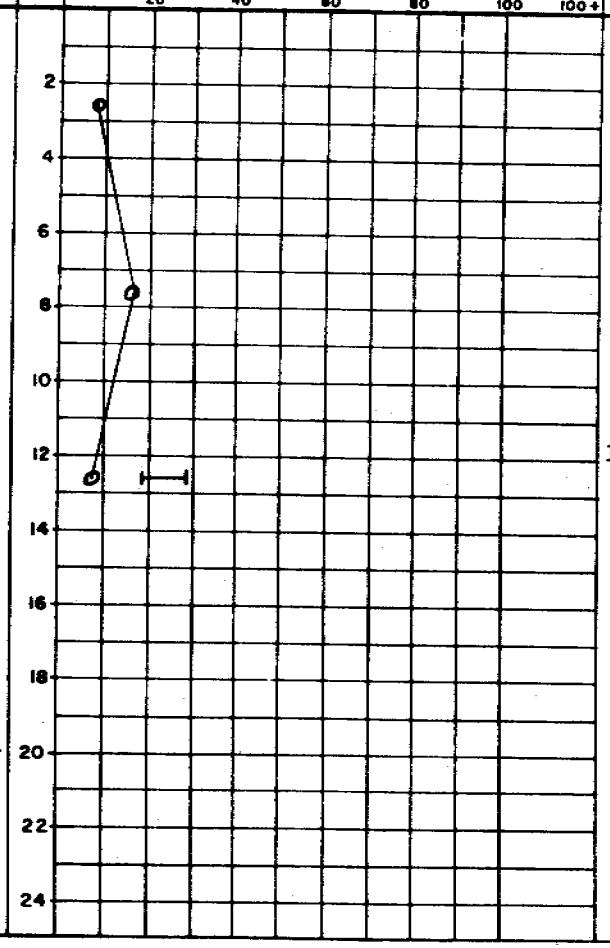
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN.	FIELD ENG	DATE DRILLED 4/3/	AIRPHOTO NO A22771-6	CHAINAGE 470 + 00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION BF	ELEV 589

TEST HOLE		
MILE	B,C,S	NUMBER
355	S	B

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				SM	BROWN SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL.	F.	N_{bn}	10	53	33	4			
4															
5															
6															
8															
10															
12	2				SM				18	59	21	2			
14															
15															
16															
18	3				SM				8	39	41	12			
20						END OF HOLE AT 20'									
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

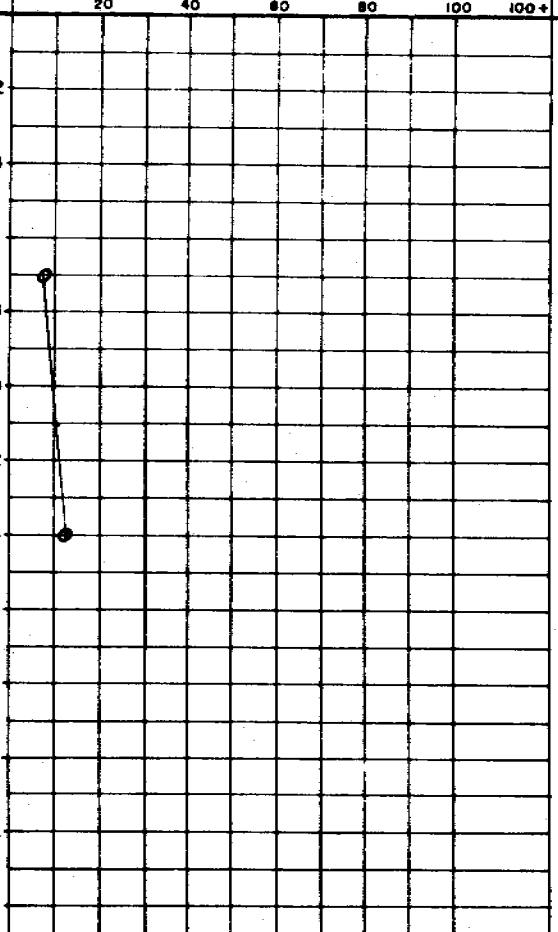
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/3/75	AIRPHOTO NO A22771-6	CHAINAGE 460 + 00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION B E	ELEV 605

TEST HOLE		
MILE	B,C,S	NUMBER
355	S	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SP	BROWN SAND WITH SOME GRAVEL AND A TRACE OF SILT.									
4															
6					SP										
8	2						F	N_{bn}	0	7	92	1			
10															
12	3				SW				0	9	79	12			
14															
15															
16															
18	4				SW										
20						END OF HOLE AT 20'									
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

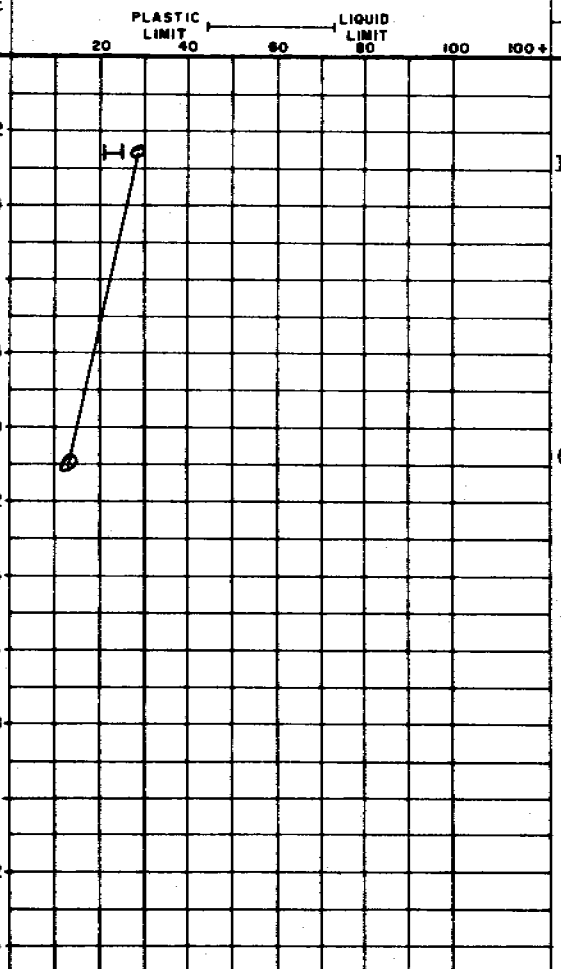
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 4/3/73	AIRPHOTO NO: A22771-6	CHAINAGE 444 + 00	OFFSET
CKD:	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION BF.	ELEV 566

TEST HOLE		
MILE	B,C,S	NUMBER
355.	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT	F	V_x							
2	1				ML	BROWN SILT WITH SOME CLAY AND A TRACE OF SAND.		N_{bn}	17	80	3	0			
4															
5							UF								
6															
7															
8						LIGHT BROWN SAND WITH A TRACE OF SILT AND FINE GRAVEL									
10					SP		F	N_f	0	4	92	4			
12	2														
14															
15						END OF HOLE AT 15'									
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 8/3/73	AIRPHOTO NO: A22771-7	CHAINAGE	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION A	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
355	B	N

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
					Pt	0.3' OF PEAT		
2	1				CL	BROWN SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL AND BOULDERS	F	N_{bn}
4								
6								
8	2							
10					CL			
12								
14								
16								
18								
20						END OF HOLE AT 20'		
22								
24								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS				WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
CLAY %	SILT %	SAND %	GRAVEL %			

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 8/3/72	AIRPHOTO NO: A22771-7	CHAINAGE: 470+00	OFFSET: 300' E
CKD	TECH: S.O.M.	RIG: D-7 Cat	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
355	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					PT	0.3' OF PEAT									
2–6	1				CL	BROWN SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}	18	55	26	1			DIFFICULT TO EXCAVATE WHEN FROZEN
6–8						END OF TRENCH AT 6.5'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

BORROW AREAS

Mile 356

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

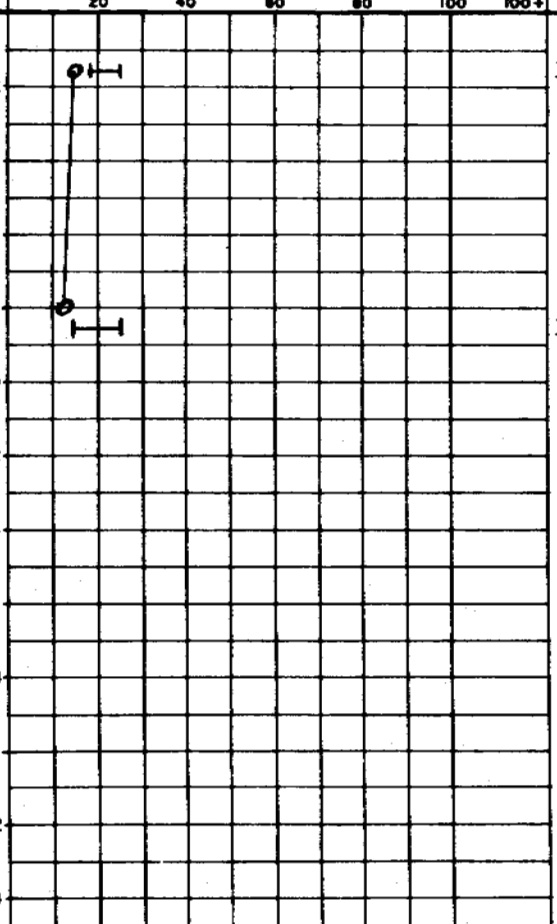
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 4/3/73	AIRPHOTO NO: A22771-8	CHAINAGE 495+00	OFFSET
CKD:	TECH W.R.	RIG: 1	SURFACE DRAINAGE FAIR	VEGETATION: B D.	ELEV 613

TEST HOLE		
MILE	B,C,S	NUMBER
356	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				ML	SILT AND SAND TILL WITH SOME CLAY AND A TRACE OF GRAVEL.			15	42	40	3			
4															
6							F	N_{bn}							
8	2				ML				19	43	36	2			
10															
12															
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 8/3/78	AIRPHOTO NO: A22771-7	CHAINAGE:	OFFSET:
CKD:	TECH: R.G.	RIG: 2	SURFACE DRAINAGE: FAIR	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
356	B	H

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
	1				ML										
2															
3															
4															
6	2					BROWN SANDY SILT TILL WITH SOME GRAVEL AND A TRACE OF CLAY, COBBLES AND SMALL BOULDERS	F	N_{bn}							
8															
10					ML										
12															
14															
16															
18															
20						END OF HOLE AT 20'									
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 8/3/73	AIRPHOTO NO: A22771-7	CHAINAGE: 487+00	OFFSET: 300' E
CKD:	TECH: B.P.S.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
356	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					PT	0.3' OF PEAT									
2–6	1				ML	BROWN SANDY SILT TILL WITH SOME GRAVEL AND A TRACE OF CLAY, COBBLES AND SMALL BOULDERS	F	N_{bn}							
8						END OF TRENCH AT 7'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 8/3/78	AIRPHOTO NO: A22771-7	CHAINAGE	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE GOOD	VEGETATION A,B	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
356	B	B

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
2	1				ML	BROWN SANDY SILT WITH SOME ORGANIC MATTER		N_{bn}
3						BROWN SAND AND GRAVEL WITH A TRACE OF COBBLES	F	
4	2				GW			
5								N_f
6	3							
7								
8						END OF HOLE AT 7'		
10								
12								
14								
16								
18								
20								
22								
24								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟷ LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS				WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
CLAY %	SILT %	SAND %	GRAVEL %			

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 8/3/72	AIRPHOTO NO: A22771-7	CHAINAGE: 507+00	OFFSET: 1,200' SE
CKD:	TECH: B.P.S.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
356	BT	2

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	0.3' OF PEAT									
2					ML	FINE SANDY SILT		N_{bn}							
4	1				GW	BROWN, INTERLAYERED VERY FINE SANDY GRAVEL, COARSE GRAVELLY SAND AND SANDY GRAVEL	F	N_f							
6	2								0	3	44	53			
8															
10						END OF TRENCH AT 9'									
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS

BORROW AREAS

Mile 360

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

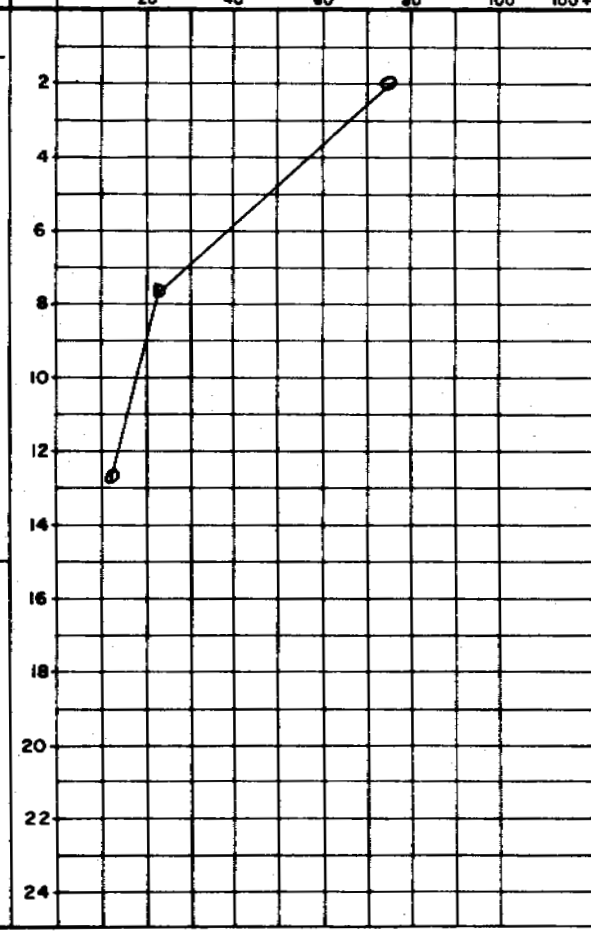
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/3/73	AIRPHOTO NO A22782-68	CHAINAGE 696+00	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION A	ELEV 681

TEST HOLE		
MILE	B,C,S	NUMBER
360	C	E

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT		V_x							
2	1				ML	BROWN SILT AND SAND TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}							
4															
6	2				ML										
8															
10															
12	3				ML										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



GRAIN-SIZE ANALYSIS

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

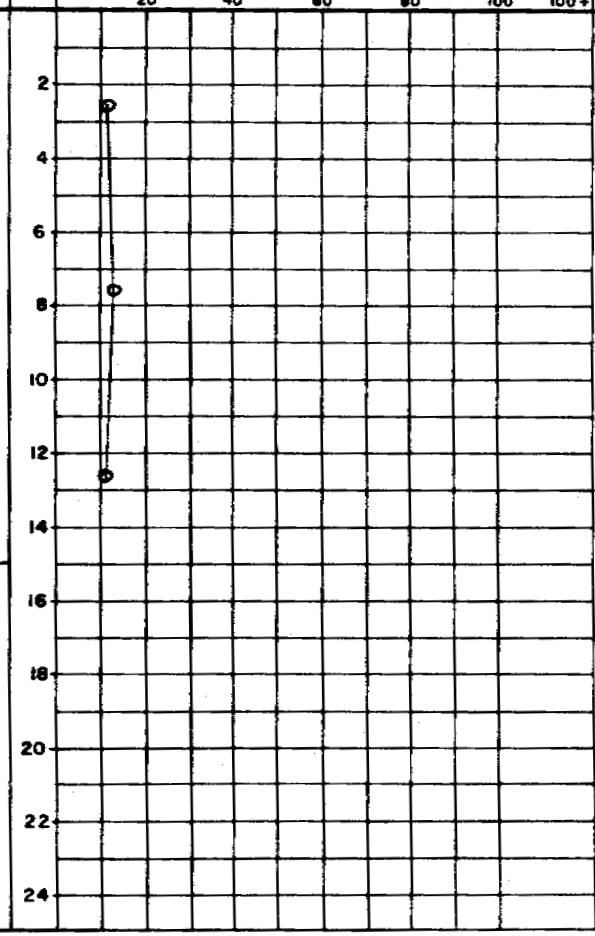
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/3/73	AIRPHOTO NO A22782-68	CHAINAGE 693+50	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION B	ELEV 681

TEST HOLE		
MILE	B,C,S	NUMBER
360	C	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
2	1				ML	BROWN SILT AND SAND TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}
4								
6								
8	2				ML			
10								
12	3				ML			
14								
16						END OF HOLE AT 15'		
18								
20								
22								
24								



GRAIN-SIZE ANALYSIS				WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
CLAY %	SILT %	SAND %	GRAVEL %			

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

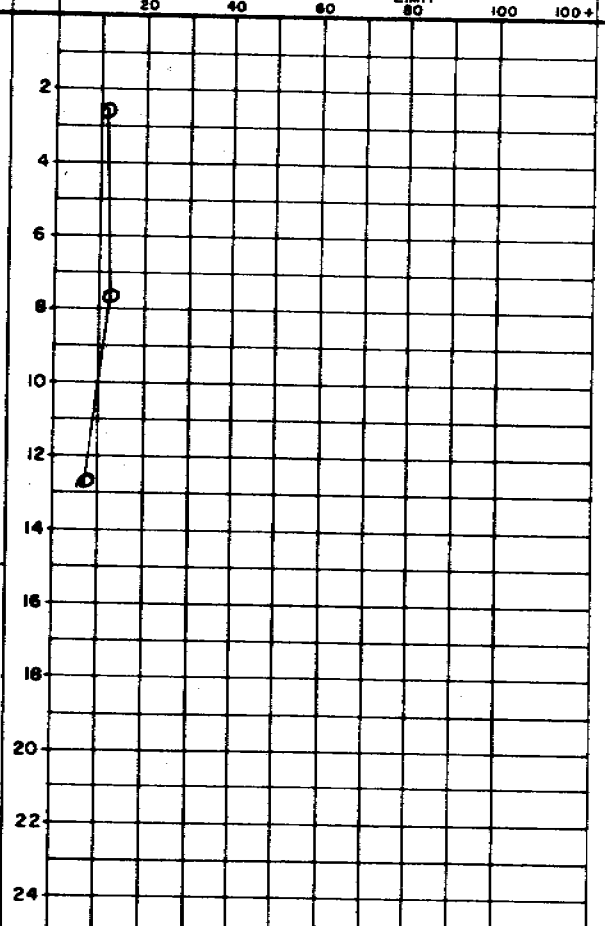
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/3/73	AIRPHOTO NO A22782-68	CHAINAGE 708+00	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION A	ELEV 683

TEST HOLE		
MILE	B,C,S	NUMBER
360	C	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				ML	BROWN SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}							
4															
6	2				ML										
8															
10															
12	3				ML										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

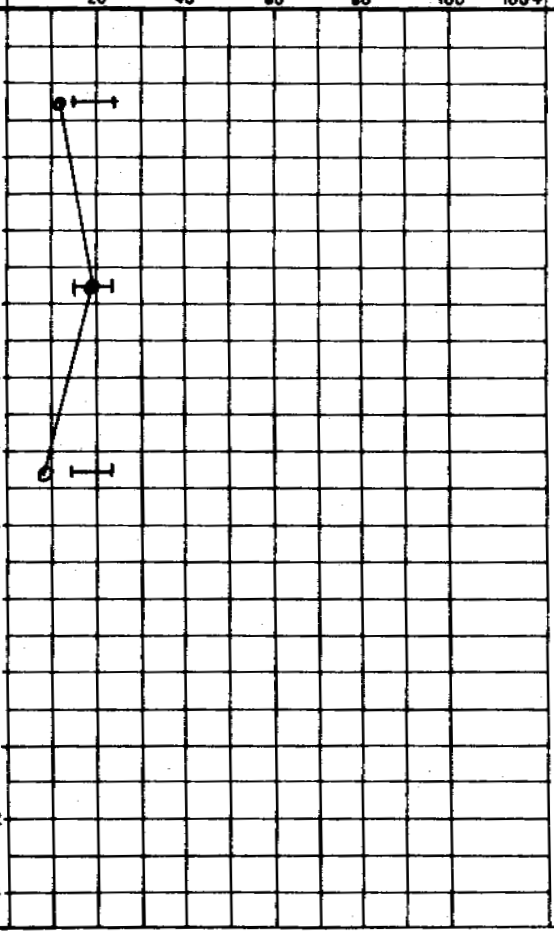
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/3/73	AIRPHOTO NO A22782-68	CHAINAGE 700+00	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION A	ELEV 685

TEST HOLE		
MILE	B,C,S	NUMBER
360	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				ML	BROWN SILT AND SAND TILL WITH SOME CLAY AND A TRACE OF GRAVEL			14	42	43	1			
4															
6															
8	2				ML		F	N_{bn}	13	35	45	7			
10															
12	3				ML				13	30	40	17			
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 7/3/7[illegible]	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH: M.H.R.	RIG: 2	SURFACE DRAINAGE: GOOD	VEGETATION: AB	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
360	B	H

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2						BROWN SILTY AND SANDY TILL WITH SOME CLAY AND A TRACE OF GRAVEL, COBBLES AND BOULDERS									
4															
6															
8	1														
10					ML-CL		F	N_{bn}	15	40	35	10			
12															
14															
16															
18															
20						END OF HOLE AT 20'									
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

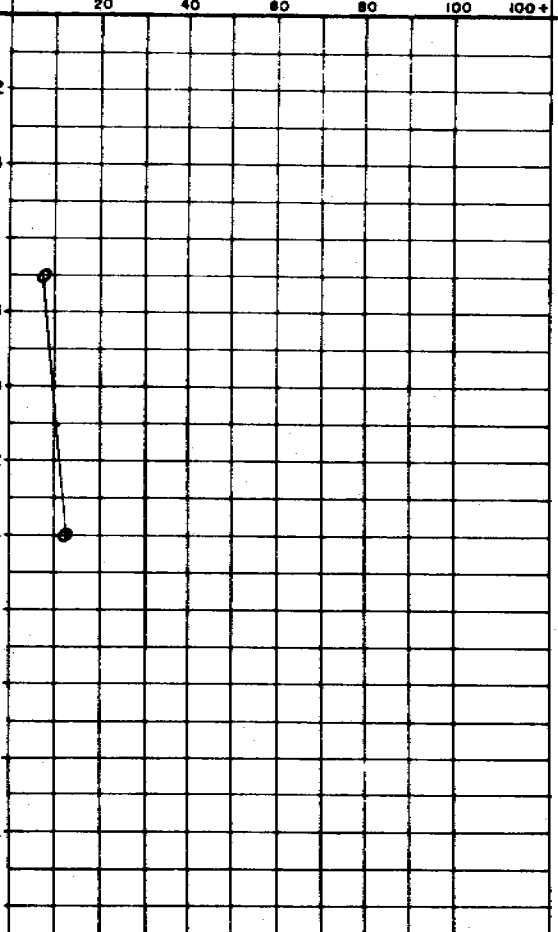
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/3/75	AIRPHOTO NO A22771-6	CHAINAGE 460 + 00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION B E	ELEV 605

TEST HOLE		
MILE	B,C,S	NUMBER
355	S	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SP	BROWN SAND WITH SOME GRAVEL AND A TRACE OF SILT.									
4															
6					SP										
8	2						F	N_{bn}	0	7	92	1			
10															
12	3				SW				0	9	79	12			
14															
15															
16															
18	4				SW										
20						END OF HOLE AT 20'									
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

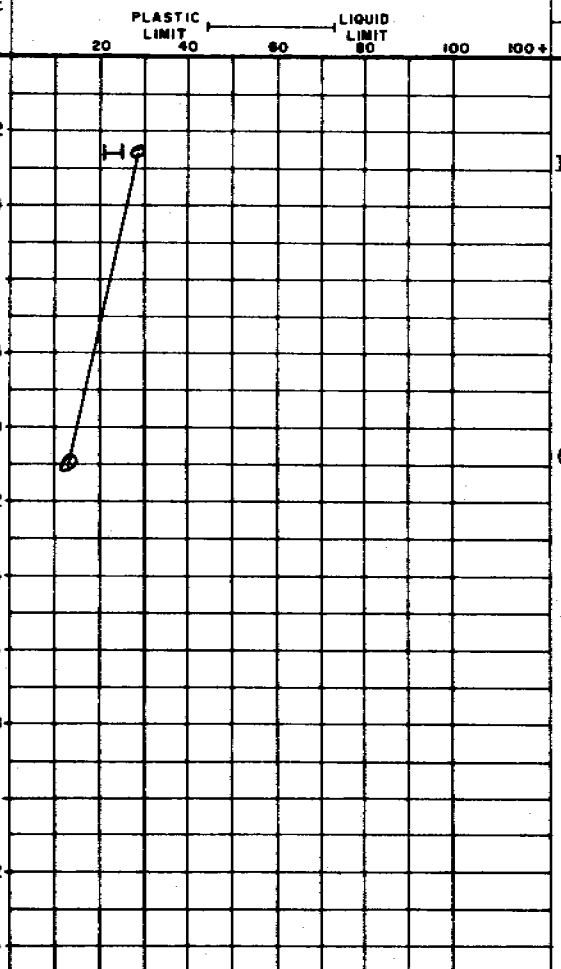
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 4/3/73	AIRPHOTO NO: A22771-6	CHAINAGE 444 + 00	OFFSET
CKD:	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION BF.	ELEV 566

TEST HOLE		
MILE	B,C,S	NUMBER
355.	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT	F	V_x							
2	1				ML	BROWN SILT WITH SOME CLAY AND A TRACE OF SAND.		N_{bn}	17	80	3	0			
4															
5							UF								
6															
7															
8						LIGHT BROWN SAND WITH A TRACE OF SILT AND FINE GRAVEL									
10					SP		F	N_f	0	4	92	4			
12	2														
14															
15						END OF HOLE AT 15'									
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 8/3/73	AIRPHOTO NO: A22771-7	CHAINAGE	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION A	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
355	B	N

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
					Pt	0.3' OF PEAT		
2	1				CL	BROWN SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL AND BOULDERS	F	N_{bn}
4								
6								
8	2							
10					CL			
12								
14								
16								
18								
20						END OF HOLE AT 20'		
22								
24								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS				WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
CLAY %	SILT %	SAND %	GRAVEL %			

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 8/3/72	AIRPHOTO NO: A22771-7	CHAINAGE: 470+00	OFFSET: 300' E
CKD	TECH: S.O.M.	RIG: D-7 Cat	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
355	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					PT	0.3' OF PEAT									
2–6	1				CL	BROWN SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}	18	55	26	1			DIFFICULT TO EXCAVATE WHEN FROZEN
6–8						END OF TRENCH AT 6.5'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

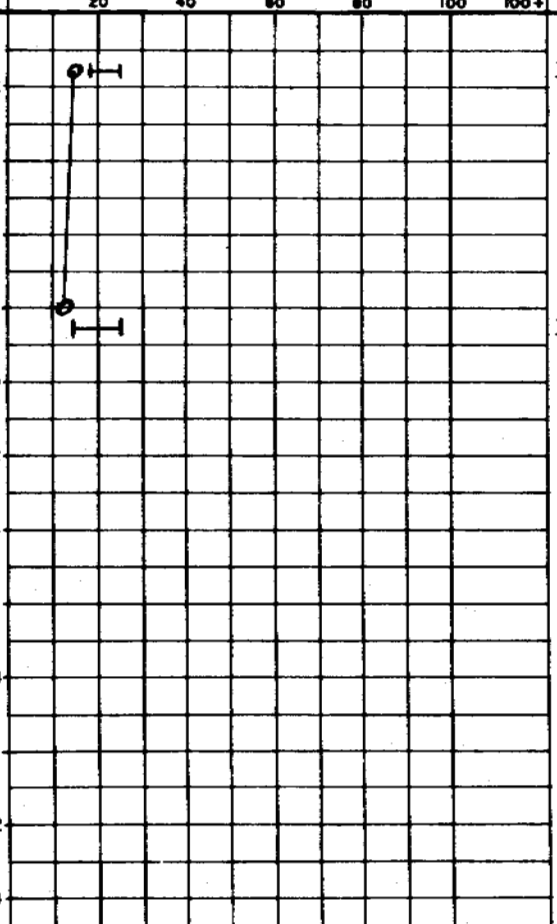
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 4/3/73	AIRPHOTO NO: A22771-8	CHAINAGE 495+00	OFFSET
CKD:	TECH W.R.	RIG: 1	SURFACE DRAINAGE FAIR	VEGETATION: B D.	ELEV 613

TEST HOLE		
MILE	B,C,S	NUMBER
356	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				ML	SILT AND SAND TILL WITH SOME CLAY AND A TRACE OF GRAVEL.			15	42	40	3			
4															
6							F	N_{bn}							
8	2				ML				19	43	36	2			
10															
12															
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 8/3/78	AIRPHOTO NO: A22771-7	CHAINAGE:	OFFSET:
CKD:	TECH: R.G.	RIG: 2	SURFACE DRAINAGE: FAIR	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
356	B	H

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
	1				ML										
2															
3															
4															
6	2					BROWN SANDY SILT TILL WITH SOME GRAVEL AND A TRACE OF CLAY, COBBLES AND SMALL BOULDERS	F	N_{bn}							
8															
10					ML										
12															
14															
16															
18															
20						END OF HOLE AT 20'									
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 8/3/73	AIRPHOTO NO: A22771-7	CHAINAGE: 487+00	OFFSET: 300' E
CKD:	TECH: B.P.S.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
356	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					PT	0.3' OF PEAT									
2–6	1				ML	BROWN SANDY SILT TILL WITH SOME GRAVEL AND A TRACE OF CLAY, COBBLES AND SMALL BOULDERS	F	N_{bn}							
8						END OF TRENCH AT 7'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 8/3/78	AIRPHOTO NO: A22771-7	CHAINAGE	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE GOOD	VEGETATION A,B	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
356	B	B

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
2	1				ML	BROWN SANDY SILT WITH SOME ORGANIC MATTER		N_{bn}
3						BROWN SAND AND GRAVEL WITH A TRACE OF COBBLES	F	
4	2				GW			
5								N_f
6	3							
7								
8						END OF HOLE AT 7'		
10								
12								
14								
16								
18								
20								
22								
24								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟷ LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS				WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
CLAY %	SILT %	SAND %	GRAVEL %			

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 8/3/72	AIRPHOTO NO: A22771-7	CHAINAGE: 507+00	OFFSET: 1,200' SE
CKD:	TECH: B.P.S.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
356	BT	2

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	0.3' OF PEAT									
2					ML	FINE SANDY SILT		N_{bn}							
4	1				GW	BROWN, INTERLAYERED VERY FINE SANDY GRAVEL, COARSE GRAVELLY SAND AND SANDY GRAVEL	F	N_f							
6	2								0	3	44	53			
8															
10						END OF TRENCH AT 9'									
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

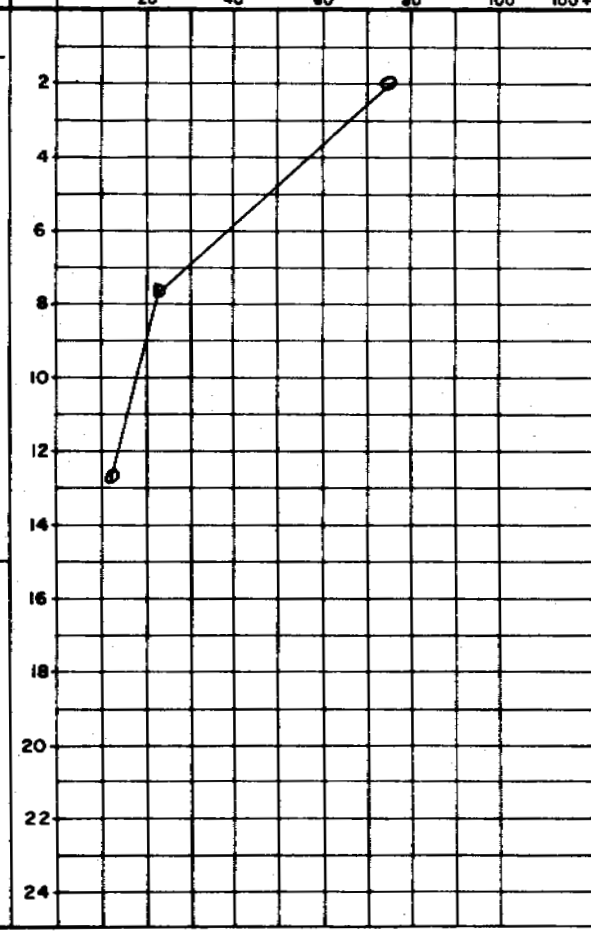
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/3/73	AIRPHOTO NO A22782-68	CHAINAGE 696+00	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION A	ELEV 681

TEST HOLE		
MILE	B,C,S	NUMBER
360	C	E

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT		V_x							
2	1				ML	BROWN SILT AND SAND TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}							
4															
6	2				ML										
8															
10															
12	3				ML										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



GRAIN-SIZE ANALYSIS

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 7/3/7[illegible]	AIRPHOTO NO:	CHAINAGE:	OFFSET:
CKD	TECH: M.H.R.	RIG: 2	SURFACE DRAINAGE: GOOD	VEGETATION: AB	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
360	B	H

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2						BROWN SILTY AND SANDY TILL WITH SOME CLAY AND A TRACE OF GRAVEL, COBBLES AND BOULDERS									
4															
6															
8	1														
10					ML-CL		F	N_{bn}	15	40	35	10			
12															
14															
16															
18															
20						END OF HOLE AT 20'									
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG.	DATE DRILLED 7/3/72	AIRPHOTO NO A22771-7	CHAINAGE 720+00	OFFSET 1,200' W	TEST HOLE
CKD:	TECH B.P.S.	RIG D-7 CAT	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV	MILE: 360 / B,C,S: BT / NUMBER: 1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					PT	PEAT									
2, 4, 6					ML-CL	BROWN SILTY AND SANDY TILL WITH SOME CLAY AND A TRACE OF GRAVEL, COBBLES AND BOULDERS	F	N_{bn}	24	39	32	5			
8, 10, 12, 14, 16, 18, 20, 22, 24						END OF TRENCH AT 7'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

BORROW AREAS

Mile 361

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/3/73	AIRPHOTO NO A22782-67	CHAINAGE 743+30	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 666

TEST HOLE		
MILE	B,C,S	NUMBER
361	C	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2						BROWN SILT AND SAND TILL WITH SOME CLAY AND A TRACE OF GRAVEL									
4	1				ML										
6															
8	2				ML		F	N_{bn}							
10															
12	3				ML										
14															
16	4				ML										
18															
20						END OF HOLE AT 20'									
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT

20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

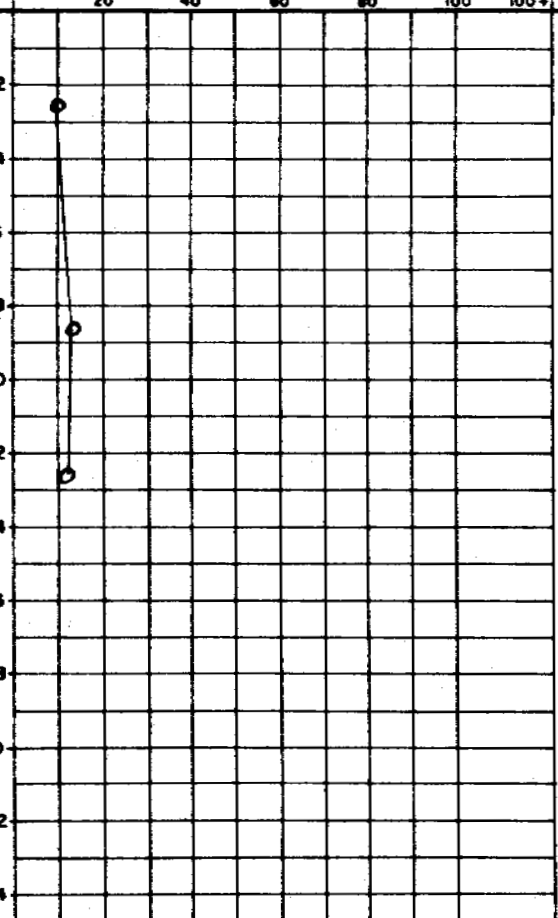
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/3/70	AIRPHOTO NO A22782-67	CHAINAGE 738+50	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 668

TEST HOLE		
MILE	B,C,S	NUMBER
361	C	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2						BROWN SILT AND SAND TILL WITH SOME CLAY AND A TRACE OF GRAVEL									
4	1				ML										
6							F	N_{bri}							
8	2				ML										
10															
12	3				ML										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



BORROW AREAS

Mile 362

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

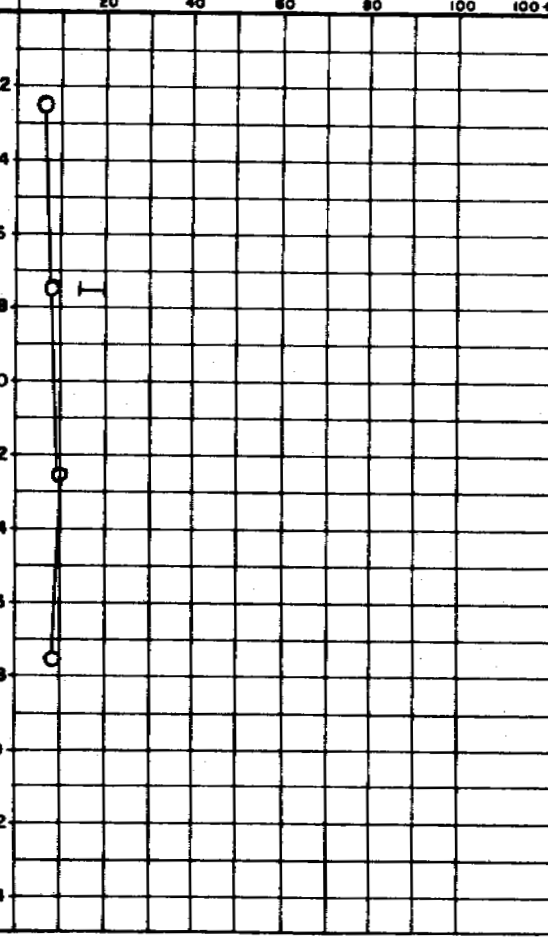
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 4/3/73	AIRPHOTO NO: A22782-65	CHAINAGE 813+00	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 629

TEST HOLE		
MILE	B,C,S	NUMBER
362	S	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2–4	1				SW	BROWN SAND WITH SOME SILT AND GRAVEL			2	11	68	19			
6–8	2				SM	BROWN SILTY SAND TILL WITH SOME CLAY AND MINOR GRAVEL	F	Nbn	10	27	54	9			
12–14	3				SM				12	26	53	9			
16–18	4				SM				12	22	60	6			
20						END OF HOLE AT 20'									



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

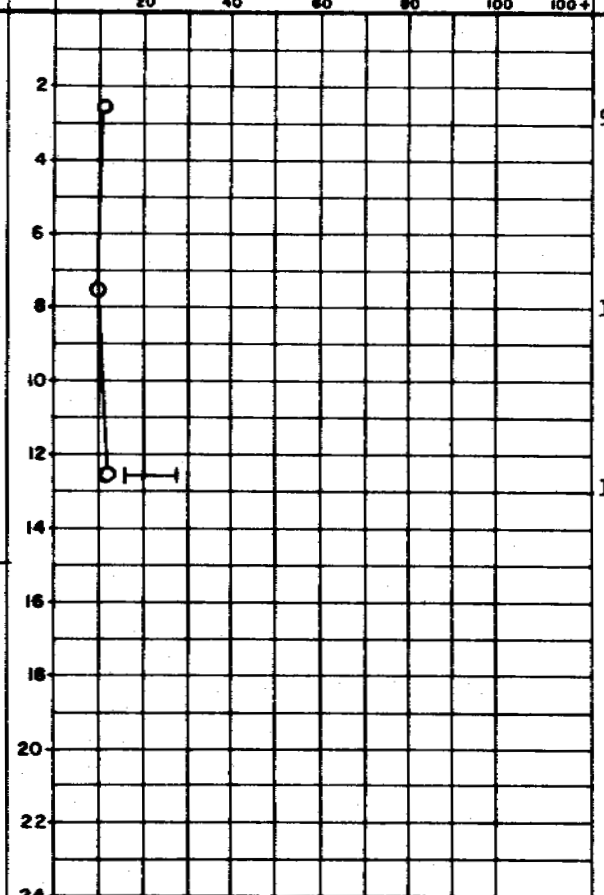
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/3/73	AIRPHOTO NO: A22782-65	CHAINAGE: 804+10	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION: B	ELEV 639

TEST HOLE		
MILE	B,C,S	NUMBER
362	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2–4	1				ML	BROWN SILT AND SAND TILL WITH SOME CLAY AND GRAVEL	F	N_{bn}	9	39	41	11			
6–8	2				SM				10	32	39	19			
10–12	3				ML				12	38	35	15			
14–24						END OF HOLE AT 15'									



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 3/3/73	AIRPHOTO NO A22782-65	CHAINAGE 820+00	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 628

TEST HOLE		
MILE	B,C,S	NUMBER
362	C	A

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2						BROWN SILTY SAND TILL WITH SOME CLAY AND GRAVEL									
4	1				SM				14	27	45	14			
6							F	N_{bn}							
8	2				SM				12	39	40	9			
10															
12	3				SM										
14									8	33	41	18			
16						END OF HOLE AT 15'									
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

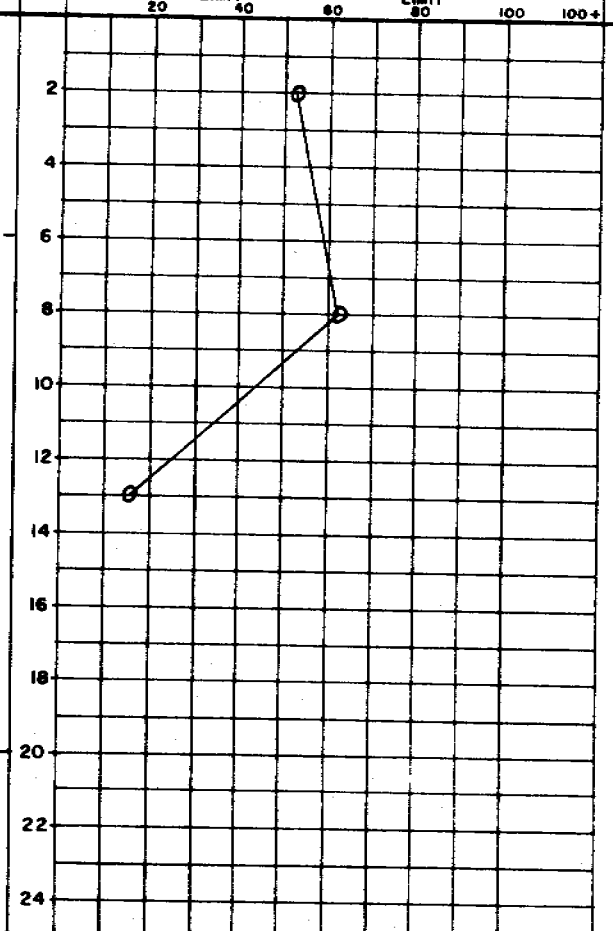
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 4/3/72	AIRPHOTO NO: A22782-65	CHAINAGE 816+00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE: GOOD	VEGETATION A	ELEV 603

TEST HOLE		
MILE	B,C,S	NUMBER
362	S	B

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				Pt	PEAT	F	V_x							
4															
6															
8	2				Pt										
10						SILT AND SAND TILL WITH SOME CLAY AND A TRACE OF GRAVEL	UF								
12	3				ML										
14															
16															
18	4				ML										
20						END OF HOLE AT 20'									
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 7/3/73	AIRPHOTO NO: A22782-65	CHAINAGE:	OFFSET:
CKD:	TECH: W. R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: ABD	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
362	B	T

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					SP	BROWN SILTY SAND		N_{bn}							
2															
4	1				SM	BROWN SILTY SANDY TILL WITH FINE GRAVEL	F	N_{bn}							
6									6	24	40	30			
8															
10															
12															
14	2														
16					SM	——DO——									
18															
20						END OF HOLE AT 20'									
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 7/3/73	AIRPHOTO NO A22782-65	CHAINAGE 820+00	OFFSET 450' E
CKD	TECH B.P.S.	RIG D-7 CAT	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
362	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					SM	FINE ORGANIC SILTY SAND									
2					ML	BROWN SILTY AND SANDY TILL WITH SOME GRAVEL AND A TRACE OF CLAY, COBBLES AND SMALL BOULDERS	F	Nbn							
4	1														
6															
8						END OF TRENCH AT 6.5'									
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS

BORROW AREAS

Mile 363

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 4/3/73

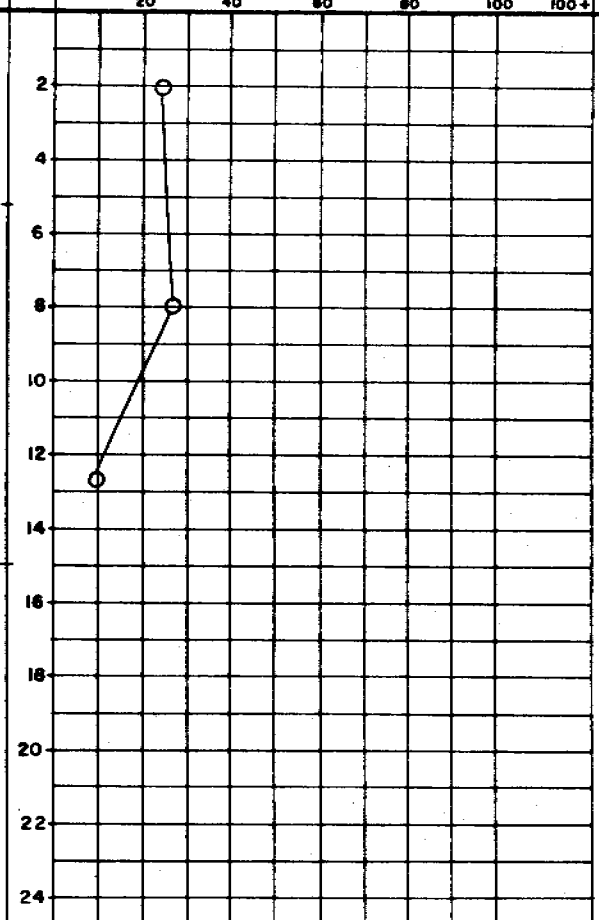
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED	AIRPHOTO NO: A22782-64	CHAINAGE:	OFFSET
CKD	TECH: R.S.	RIG: No. 1	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
363	B	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				SM	BROWN SILTY SAND TILL WITH SOME GRAVEL	F	Nbn							
8	2				SC	BROWN SILTY TILL, SANDY WITH SOME GRAVEL AND A TRACE OF COBBLES	UF								
15						END OF HOLE AT 15'									



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

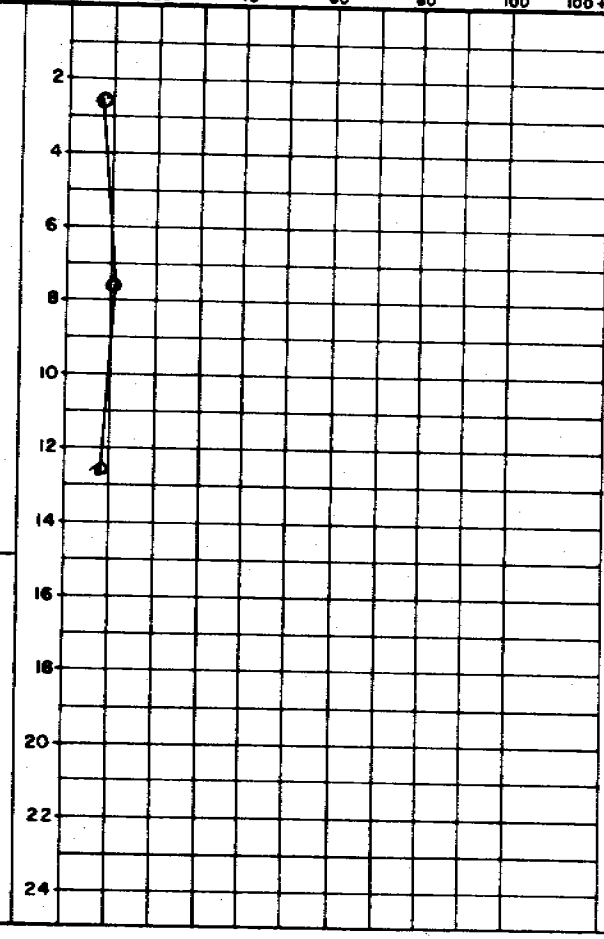
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 3/3/73	AIRPHOTO NO: A22782-64	CHAINAGE: 885+00	OFFSET
CKD	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: FAIR	VEGETATION: B	ELEV: 605

TEST HOLE		
MILE	B,C,S	NUMBER
363	C	A

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SM	BROWN SILTY SAND TILL WITH SOME GRAVEL AND TRACES OF CLAY, COBBLES AND SMALL BOULDERS			7	31	44	18			
4															
6	2				SM		F		7	35	50	8			
8															
10															
12	3				SM				11	36	38	15			
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 4/3/73

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED:	AIRPHOTO NO: A22782-64	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: No. 1	SURFACE DRAINAGE: FAIR	VEGETATION: B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
363	B	T

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2					SM	BROWN SILTY SANDY TILL WITH SOME GRAVEL	F	Nbn							
4	1														
6									8	35	40	17			
8															
10															
12	2						UF								
14					SM										
16															
18															
20						END OF HOLE AT 20'									
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟷ LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 7/3/72	AIRPHOTO NO: A22782-64	CHAINAGE: 881+00	OFFSET: 350' E
CKD:	TECH: B.P.S.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
363	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
					SM	FINE ORGANIC SILTY SAND		
2–4	1				ML	BROWN SILTY AND SANDY TILL WITH SOME GRAVEL AND A TRACE OF COBBLES AND SMALL BOULDERS	F	N_{bn}
6						END OF TRENCH AT 6'		

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT: 20, 40, 60, 80, 100, 100+

GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS

BORROW AREAS
Mile 364

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

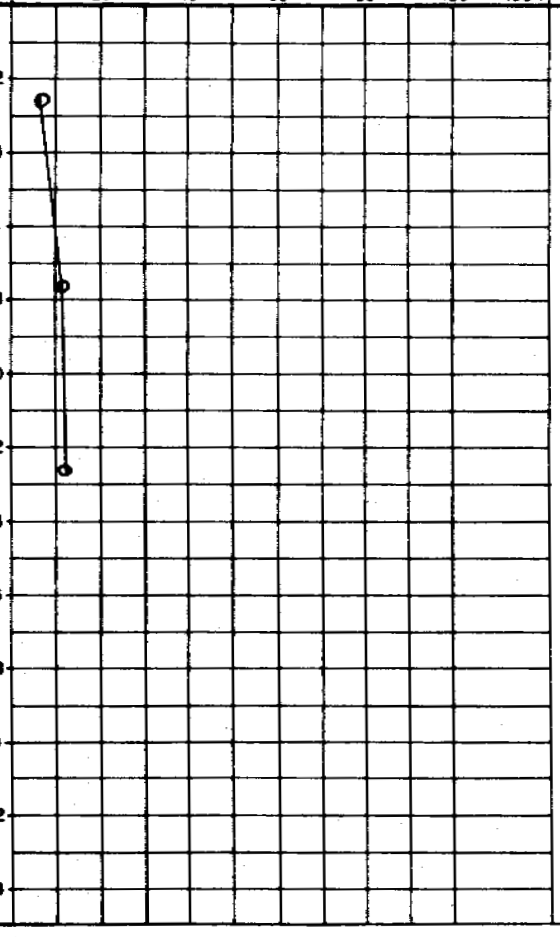
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 3/3/73	AIRPHOTO NO A22782-62	CHAINAGE 932+00	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 607

TEST HOLE

MILE	B,C,S	NUMBER
364	C	B

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				SP	LIGHT BROWN SAND WITH TRACES OF CLAY AND SILT	F	N_{bn}							
4															
6															
8	2				SP										
10															
12	3				SP	BROWN SILTY SAND TILL WITH TRACES OF CLAY GRAVEL AND COBBLES	UF								
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

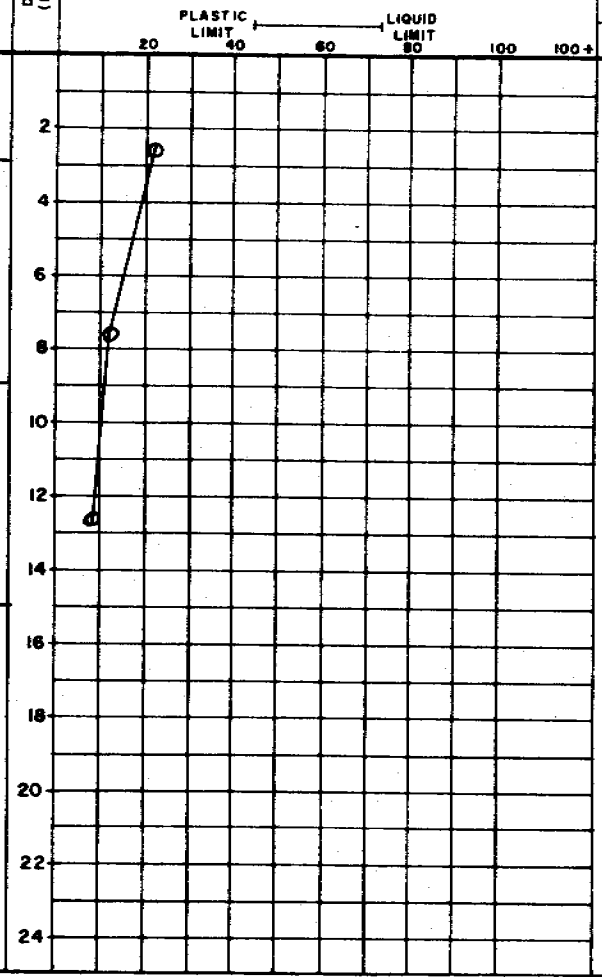
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 3/3/72	AIRPHOTO NO. A22782-62	CHAINAGE 928+00	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 608

TEST HOLE		
MILE	B,C,S	NUMBER
364	C	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SP	BROWN SAND WITH TRACES OF SILT AND CLAY		N_{bn}							
4															
6	2				SP		F	N_f							
8															
10						SILTY SAND TILL WITH TRACES OF CLAY AND GRAVEL		N_{bn}							
12	3				SP	BROWN GREY									
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 3/3/73	AIRPHOTO NO A22782-62	CHAINAGE 924+00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 606

TEST HOLE		
MILE	B,C,S	NUMBER
364	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				SM	SAND WITH SOME SILT AND TRACES OF CLAY AND FINE GRAVEL									
4															
6															
8	2				SM		F	N_{bn}	2	26	71	1			
10															
12	3				SM										
14															
16															
18	4				SM				2	24	73	1			
20						END OF HOLE AT 20'									
22															
24															

ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 3/3/73	AIRPHOTO NO: A22782-62	CHAINAGE 921+00	OFFSET	
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 610	

TEST HOLE		
MILE	B,C,S	NUMBER
364	C	E

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)
2	1				SM	SILTY SAND WITH TRACES OF CLAY AND GRAVEL	F	N_{bn}						
4														
6														
8	2				SM									
10						END OF HOLE AT 10'								
12														
14														
16														
18														
20														
22														
24														

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS

REMARKS

HOLE CAVING IN BADLY AT 10 FT.

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 3/3/72	AIRPHOTO NO. A22782-62	CHAINAGE 932+00	OFFSET 300'E
CKD	TECH B.P.S.	RIG D-7 CAT	SURFACE DRAINAGE GOOD	VEGETATION A B	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
364	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					SM	FINE ORGANIC SILTY SAND									
2							F	N_{bn}							
4	1				SP	BROWN GRAVELLY SAND		N_f	0	3	68	29			
6						END OF TRENCH AT 6'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

BORROW AREAS

Mile 365

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

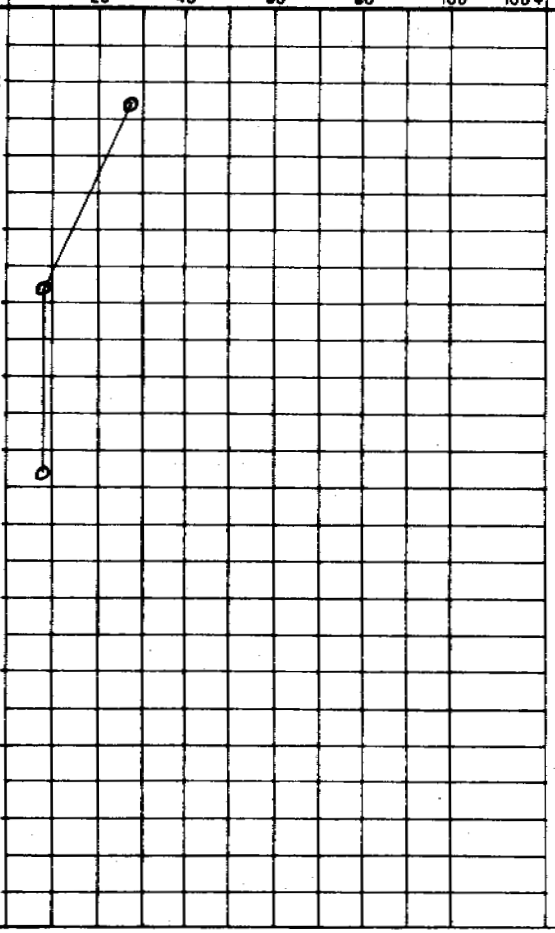
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 3/3/73	AIRPHOTO NO A22782-61	CHAINAGE 971+60	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 595

TEST HOLE		
MILE	B,C,S	NUMBER
365	C	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SM	BROWN SILTY SAND TILL WITH SOME GRAVEL									
4															
6															
8	2				SM		F	N_{bn}							
10															
12	3				SM										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

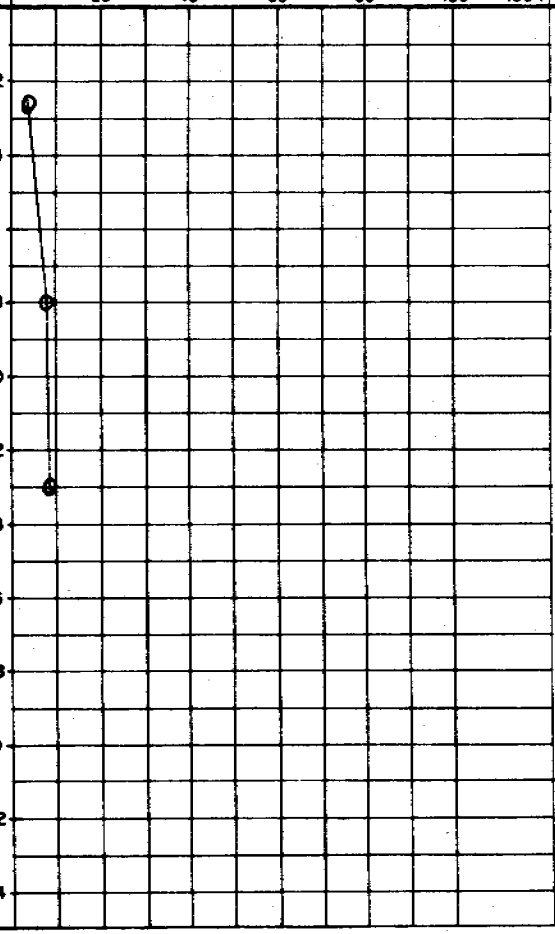
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 3/3/73	AIRPHOTO NO A22782-61	CHAINAGE 961+50	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 595

TEST HOLE		
MILE	B,C,S	NUMBER
365	C	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2						FINE SAND WITH SOME GRAVEL									
4	1				SW										
6						SILTY SAND TILL WITH A TRACE OF CLAY AND GRAVEL									
8	2				SW		F	N_{bn}							
10															
12	3				SM										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 4/3/73

DRILL HOLE REPORT

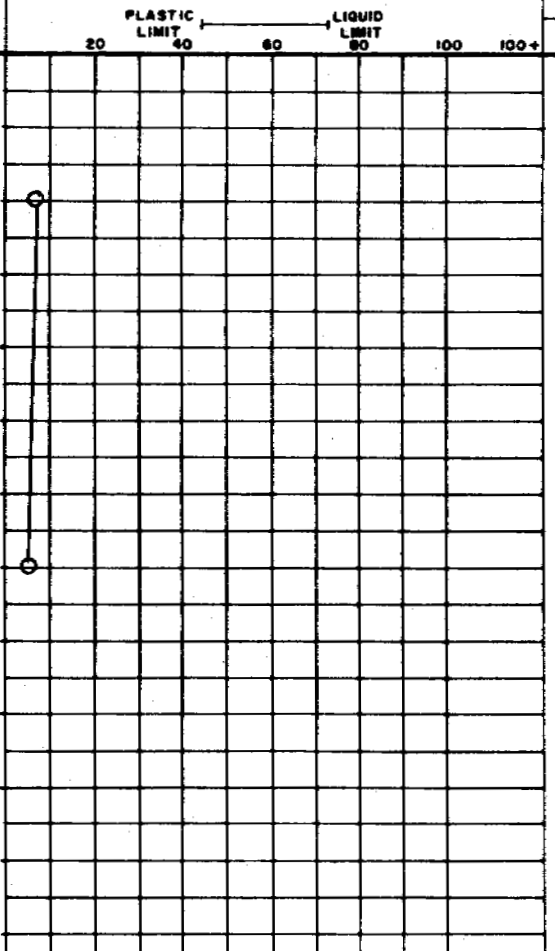
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED:	AIRPHOTO NO: A22782-61	CHAINAGE:	OFFSET:
CKD:	TECH: R.S.	RIG: No. 1	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
365	B	K

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2					SM	BROWN SANDY SILTY TILL WITH COBBLES	F	Nbn							
4	1														
6															
8															
10					SC	BROWNISH/GREY SANDY SILTY TILL WITH SOME CLAY AND GRAVEL	F	Nbn							
12															
14															
16															
18															
20						END OF HOLE AT 20'									
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



BORROW AREAS

Mile 366

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

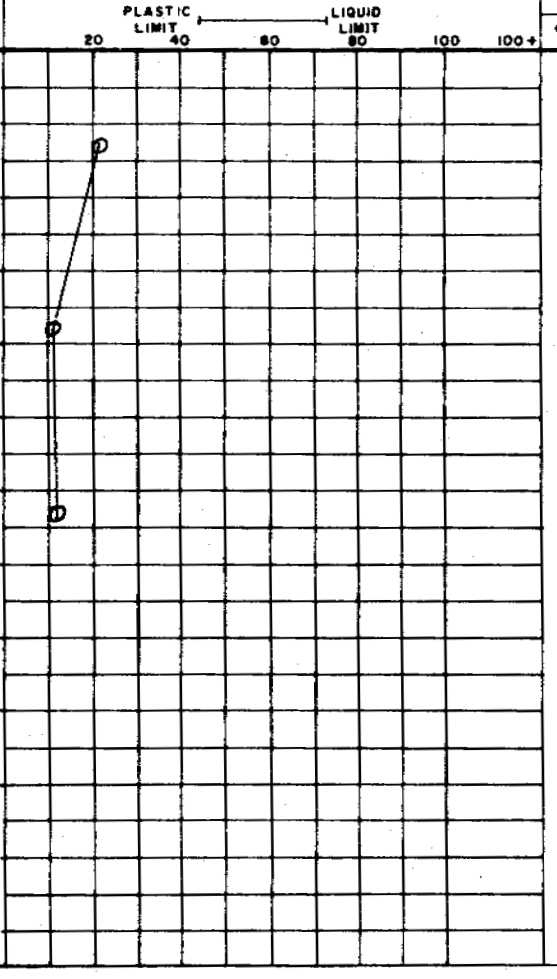
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 2/3/73	AIRPHOTO NO A22771-24	CHAINAGE 1034+00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A B	ELEV 615

TEST HOLE		
MILE	B,C,S	NUMBER
366	C	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					SM	BROWN SILTY SAND									
2															
4	1				ML	BROWN AND GREY SILT AND SAND TILL WITH A TRACE OF CLAY AND GRAVEL	F	N_{bn}							
6															
8	2				ML										
10															
12	3				ML										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

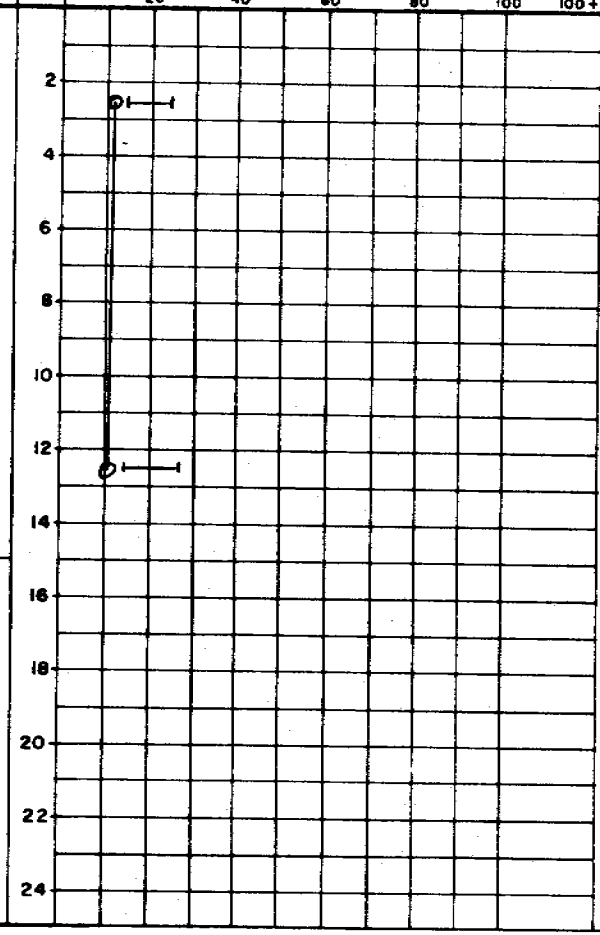
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/3/73	AIRPHOTO NO A22771-22	CHAINAGE 1022+00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE POOR	VEGETATION B E	ELEV 626

TEST HOLE		
MILE	B,C,S	NUMBER
366	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					SM	BROWN SILTY SAND									
2–4	1				ML	GREY SILT AND SAND TILL WITH A TRACE OF CLAY AND GRAVEL	F	N_{bn}	7	52	37	4			
12–14	2				SM				6	40	50	4			
16						END OF HOLE AT 15'									



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

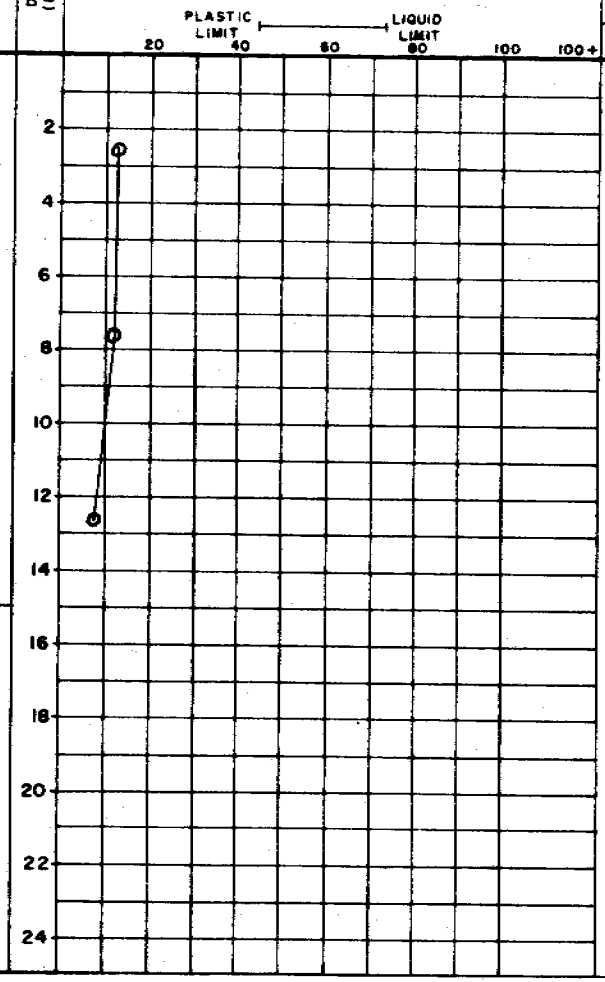
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/3/73	AIRPHOTO NO A22771-22	CHAINAGE 1016+00	OFFSET
CKD	TECH W.R.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION A B	ELEV 620

TEST HOLE		
MILE	B,C,S	NUMBER
366	C	E

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					SM	BROWN SILTY SAND									
2															
4	1				ML	GREY SILT AND SAND TILL WITH A TRACE OF CLAY AND GRAVEL	F	N_{bn}							
6															
8	2				ML										
10															
12	3				ML										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



BORROW AREAS

Mile 368

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

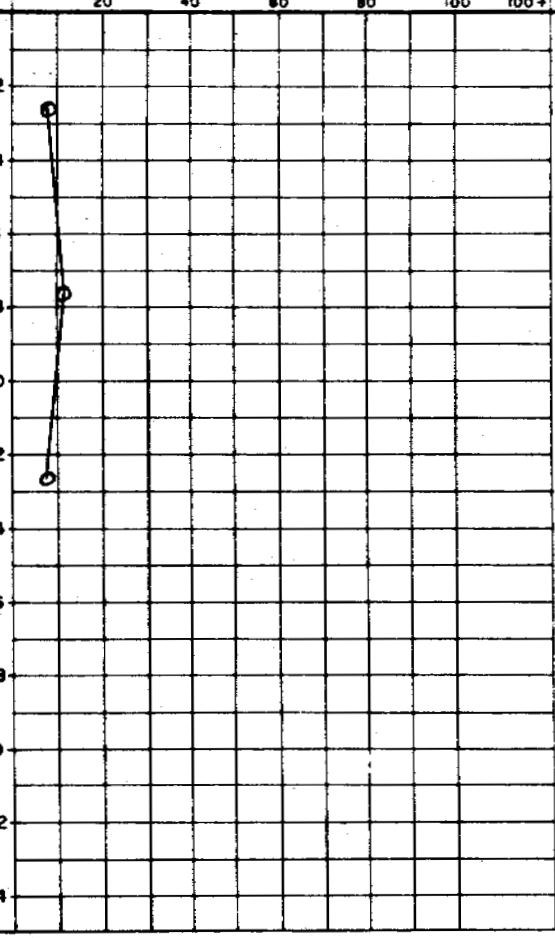
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/3/73	AIRPHOTO NO. A23037-44	CHAINAGE 1130+00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 574

TEST HOLE		
MILE	B,C,S	NUMBER
368	C	E

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT		V_x							
2–4	1				SM	SILTY SAND WITH A TRACE OF CLAY AND FINE GRAVEL									
6–8	2				SM		F	N_{bn}							
10–12	3				SM										
14–16	4				SM										
20						END OF HOLE AT 20'									



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

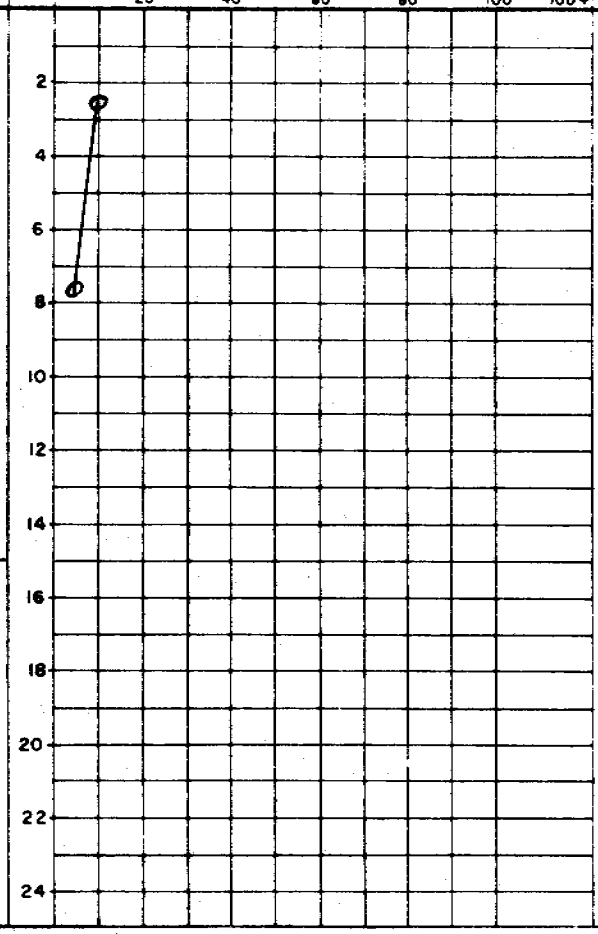
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/3/73	AIRPHOTO NO A23037-44	CHAINAGE 1121+00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 574

TEST HOLE		
MILE	B,C,S	NUMBER
368	C	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				SM	BROWN SILTY SAND WITH A TRACE OF CLAY AND FINE GRAVEL									
4															
6															
8	2				SM		F	N_{bn}							
10															
12	3				SM										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

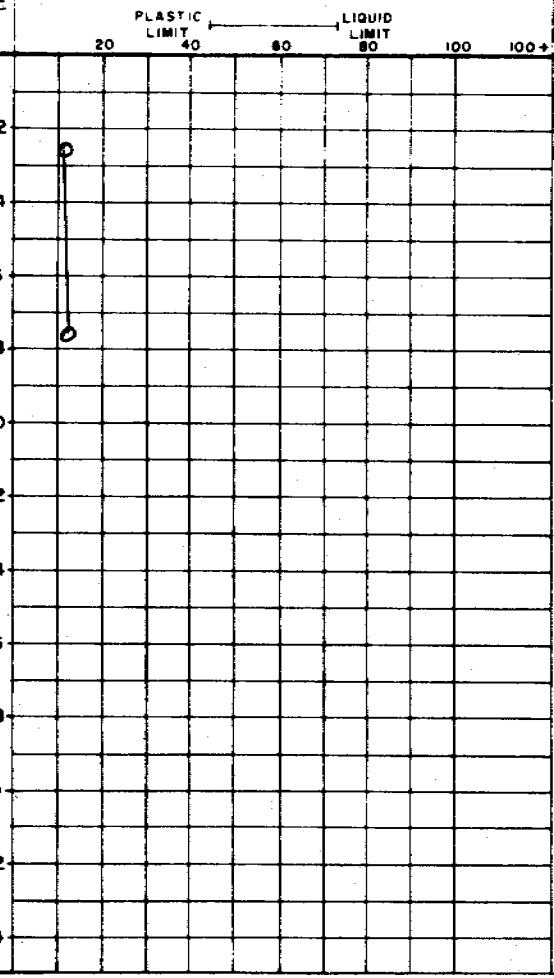
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/3/73	AIRPHOTO NO A23037-44	CHAINAGE 1118+00	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 567

TEST HOLE		
MILE	B,C,S	NUMBER
368	C	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				ML	BROWN SILT AND SAND TILL WITH A TRACE OF CLAY AND GRAVEL	F	N_{bn}							
4															
6															
8	2				ML										
10															
12	3				ML										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

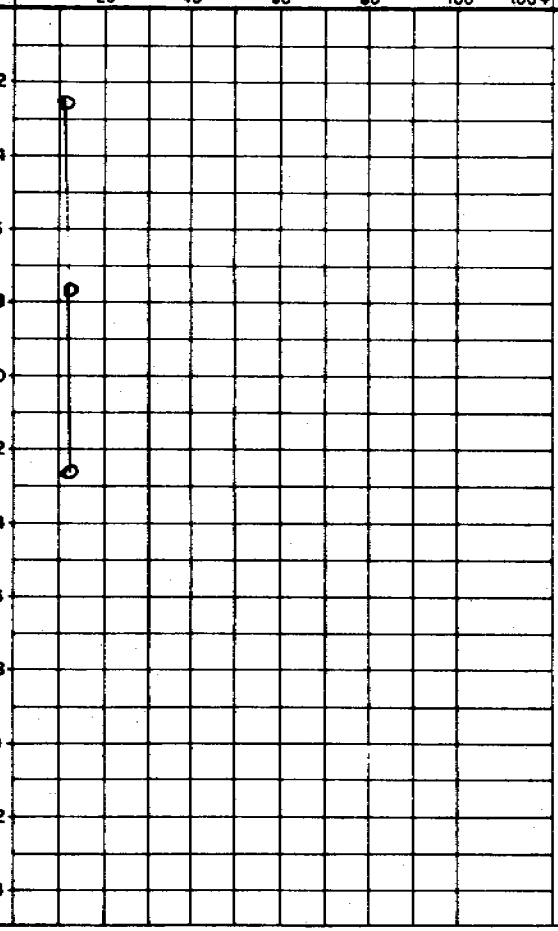
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/3/73	AIRPHOTO NO A23037-43	CHAINAGE 1143+00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 575

TEST HOLE		
MILE	B,C,S	NUMBER
368	C	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT		V_x							
2	1				ML	SILT AND SAND TILL WITH A TRACE OF CLAY AND GRAVEL									
4															
6							F	N_{bn}							
8	2				ML										
10															
12	3				ML	--BROWN-- GREY									
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

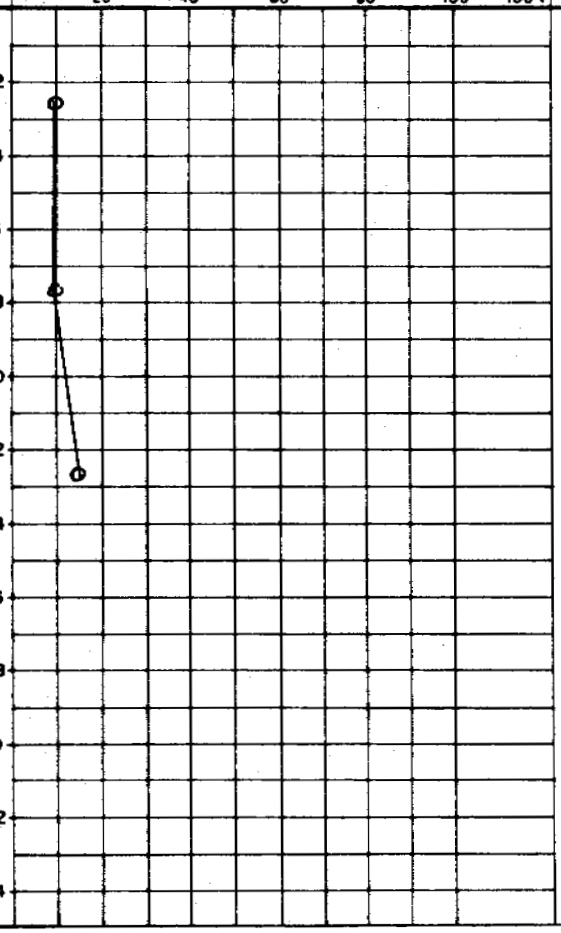
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/3/73	AIRPHOTO NO A23037-44	CHAINAGE 1137+00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 583

TEST HOLE		
MILE	B,C,S	NUMBER
368	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SW	BROWN SAND WITH SOME SILT AND A TRACE OF CLAY AND FINE GRAVEL	SI		4	25	64	7			
4															
6															
8	2				SW		F	N_{bn}	2	10	75	13			
10															
12	3				SW				5	29	63	3			
14															
16															
18	4				SW				4	32	59	5			
20						END OF HOLE AT 20'									
22															
24															



BORROW AREAS

Mile 369

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/3/73	AIRPHOTO NO A23037-43	CHAINAGE 1159+20	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 572

TEST HOLE		
MILE	B,C,S	NUMBER
369	C	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				SW	BROWN SAND WITH SOME GRAVEL AND A TRACE OF SILT		N_{bn}							
4								N_f							
6							F								
8	2				SW										
10						SILTY SAND TILL WITH A TRACE OF CLAY AND GRAVEL									
12	3				SM			N_{bn}							
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟵⟶ LIQUID LIMIT

20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 3/3/73	AIRPHOTO NO: A22037-43	CHAINAGE: 1162+00	OFFSET: 250' E
CKD:	TECH: B.P.S.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
369	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2					SM	FINE SILTY SAND WITH SOME ORGANIC MATTER AND A TRACE OF GRAVEL	F	N_{bn}							
4	1				SP	MEDIUM TO COARSE GRAINED SAND WITH SOME FINE GRAVEL		N_f	0	3	85	12			
6															
8						END OF TRENCH AT 5'									
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟷ LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/3/73	AIRPHOTO NO A23037-42	CHAINAGE 1179+00	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION A	ELEV 569

TEST HOLE

MILE	B,C,S	NUMBER
369	C	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				ML	BROWN SILT AND SAND TILL WITH A TRACE OF CLAY AND GRAVEL	F	N_{bn}							
4															
6	2				ML										
8															
10	3				ML										
12															
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟷ LIQUID LIMIT
20 40 60 80 100 100+

BORROW AREAS

Mile 370

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 2/3/73	AIRPHOTO NO. A23037-41	CHAINAGE 1221+00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 556

TEST HOLE		
MILE	B,C,S	NUMBER
370	C	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				SM	SILTY SAND WITH SOME GRAVEL AND A TRACE OF CLAY									
4								N_{bn}							
6															
8	2				SW	SAND WITH SOME GRAVEL AND A TRACE OF SILT	F	N_f							
10															
12	3				SW										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/3/73	AIRPHOTO NO. A23037-41	CHAINAGE 1215+00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 566

TEST HOLE		
MILE	B,C,S	NUMBER
370	C	H

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					SM	BROWN SILTY SAND		N_{bn}							
2															
4	1				SW	BROWN GRAVELLY SAND WITH A TRACE OF SILT		N_f							
6															
8	2				SM	SILTY SAND	F	N_{bn}							
10															
12	3				SM										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟷ LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 3/3/73	AIRPHOTO NO A23037-40	CHAINAGE 1221+00	OFFSET 400' W	TEST HOLE
CKD	TECH B. P.S.	RIG D-7 CAT	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV	MILE: 370 / B,C,S: BT / NUMBER: 2

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
1.5					SM	FINE ORGANIC SILTY SAND									
2–4	1				SP	BROWN FINE SAND WITH A TRACE OF SILT AND GRAVEL	F	N_{bn}	0	3	94	3			
5.5						END OF TRENCH AT 5.5'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT: 20, 40, 60, 80, 100, 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

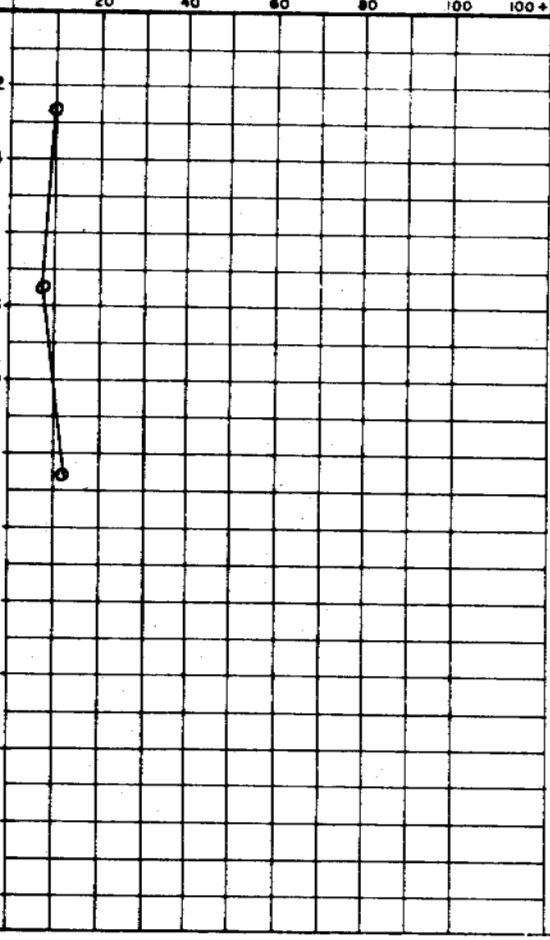
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 2/3/73	AIRPHOTO NO A23037-41	CHAINAGE 1231+50	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 534

TEST HOLE		
MILE	B,C,S	NUMBER
370	C	E

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2					SM	BROWN SILTY SAND									
4	1				SM	BROWN AND GREY SILTY SAND TILL WITH A TRACE OF CLAY AND GRAVEL	F	N_{bn}							
6															
8	2				SM										
10															
12	3				SM										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 3/3/73	AIRPHOTO NO: A23037-40	CHAINAGE: 1230+50	OFFSET: 250' E
CKD:	TECH: B.P.S.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
370	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					SM	FINE ORGANIC SILTY SAND									
2–4	1				ML	BROWN SILT TILL, SANDY WITH A TRACE OF CLAY, GRAVEL AND SMALL BOULDERS	F	N_{bn}	8	54	34	4			
6–24						END OF TRENCH AT 5'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

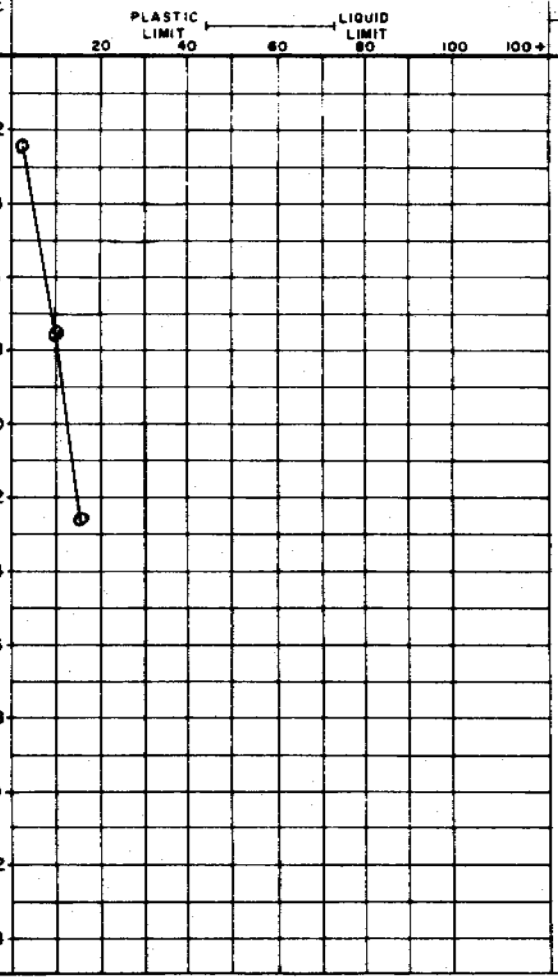
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 1/3/73	AIRPHOTO NO A23037-40	CHAINAGE 1253+00	OFFSET	TEST HOLE
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION A B D E	ELEV 510	MILE 370 / B,C,S C / NUMBER A

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SP	GREY SAND WITH A TRACE OF SILT			2	9	88	1			
6	2				SM	GREY SILTY SAND WITH A TRACE OF CLAY	F	N_{bn}	3	33	64	0			
14	3				SM				3	35	62	0			
16						END OF HOLE AT 15'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

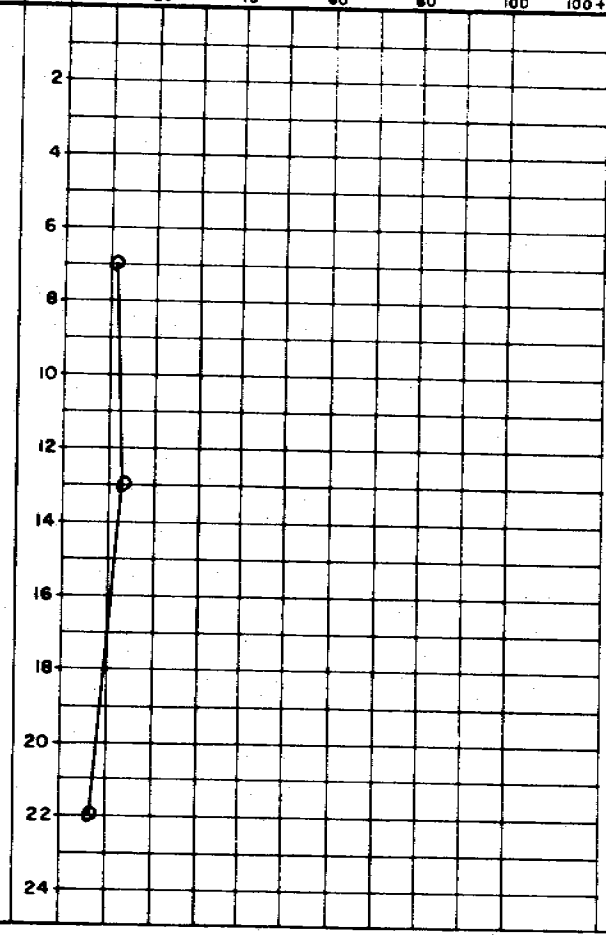
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 1/3/73	AIRPHOTO NO A23037-40	CHAINAGE 1246+50	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION B D	ELEV 516

TEST HOLE		
MILE	B,C,S	NUMBER
370	C	B

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT									
2	1				SM	SILTY SAND WITH A TRACE OF CLAY AND GRAVEL									
4															
6															
8	2				SM		F	N_{bn}							
10						BROWN GREY									
12															
14	3				SM										
16															
18															
20															
22	4				SM										
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 1/3/73	AIRPHOTO NO A23037-40	CHAINAGE 1246+50	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION B D	ELEV 516

TEST HOLE

MILE	B,C,S	NUMBER
370	C	B

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2–4	5				SM		F	N_{bn}							
6						END OF HOLE AT 30'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT

20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

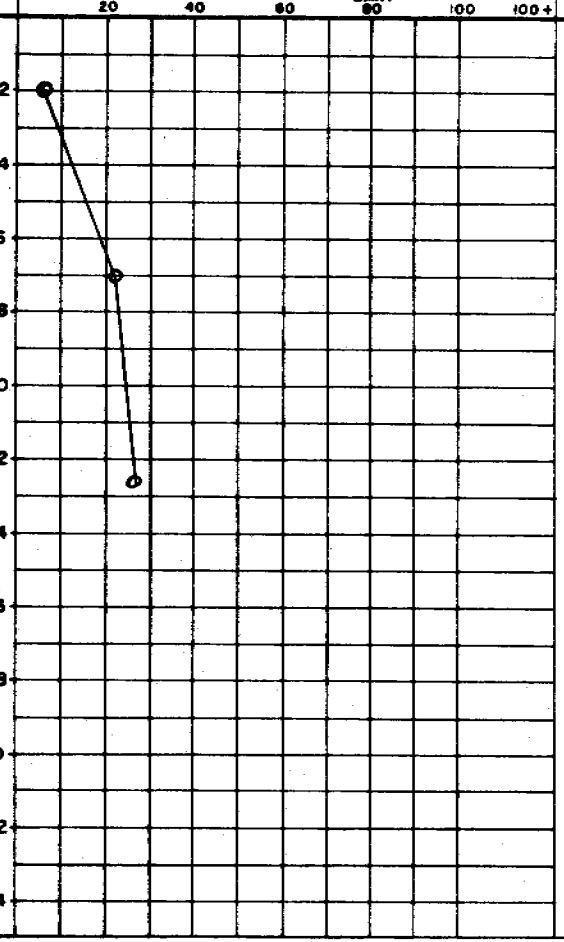
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 1/3/73	AIRPHOTO NO: A23037-41	CHAINAGE 1240+00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION A B D	ELEV 529

TEST HOLE		
MILE	B,C,S	NUMBER
370	C	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SP	BROWN SAND WITH A TRACE OF SILT AND GRAVEL		N_{bn}							
4															
6							F	N_f							
8	2				SP										
10															
12	3				SP		UF								
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



BORROW AREAS

Mile 371

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 1/3/73	AIRPHOTO NO: A22777-178	CHAINAGE: 1293+00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION: A B D	ELEV 431

TEST HOLE

MILE	B,C,S	NUMBER
371	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					SM	BROWN SILTY SAND									
2															
4	1				SM	GREY SAND WITH SOME SILT AND A TRACE OF GRAVEL			5	37	56	2			
6							F	N_{bn}							
8	2				SM				2	10	87	1			
10															
12															
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

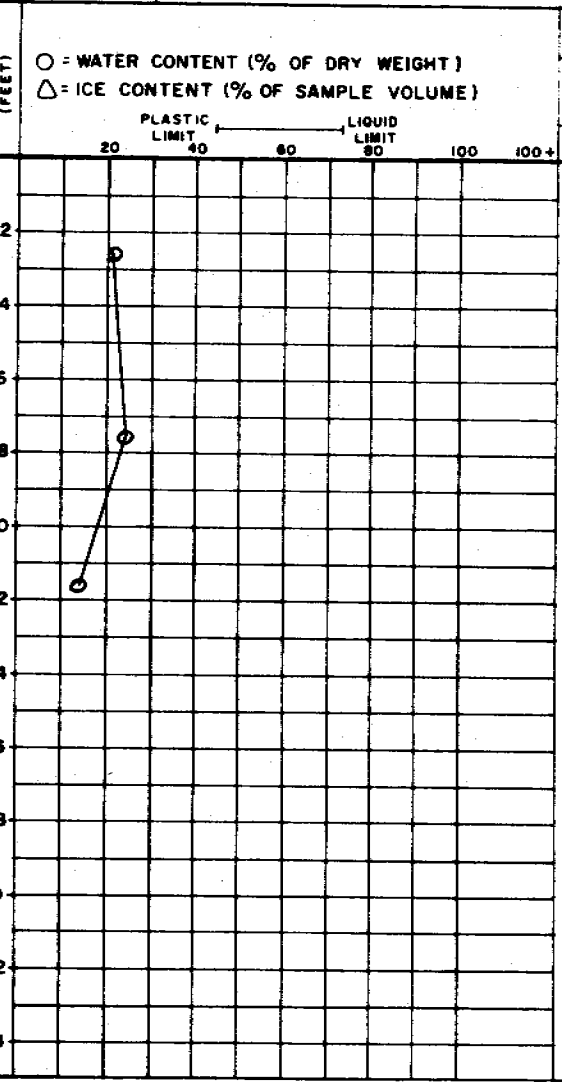
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 1/3/73	AIRPHOTO NO: A22777-178	CHAINAGE 1288+00	OFFSET
CKD:	TECH W.R.	RIG: 1	SURFACE DRAINAGE FAIR	VEGETATION A B D	ELEV 425

TEST HOLE		
MILE	B,C,S	NUMBER
371	C	E

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
					PT	PEAT		
					SM	BROWN SILTY SAND		
2								
4	1				ML	GREY AND BROWN SANDY SILT WITH A TRACE OF CLAY AND GRAVEL	F	N_{bn}
6								
8	2				ML		UF	
10							F	V_x
12	3				ML		UF	
14								
16						END OF HOLE AT 15'		
18								
20								
22								
24								



GRAIN-SIZE ANALYSIS				WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
CLAY %	SILT %	SAND %	GRAVEL %			

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

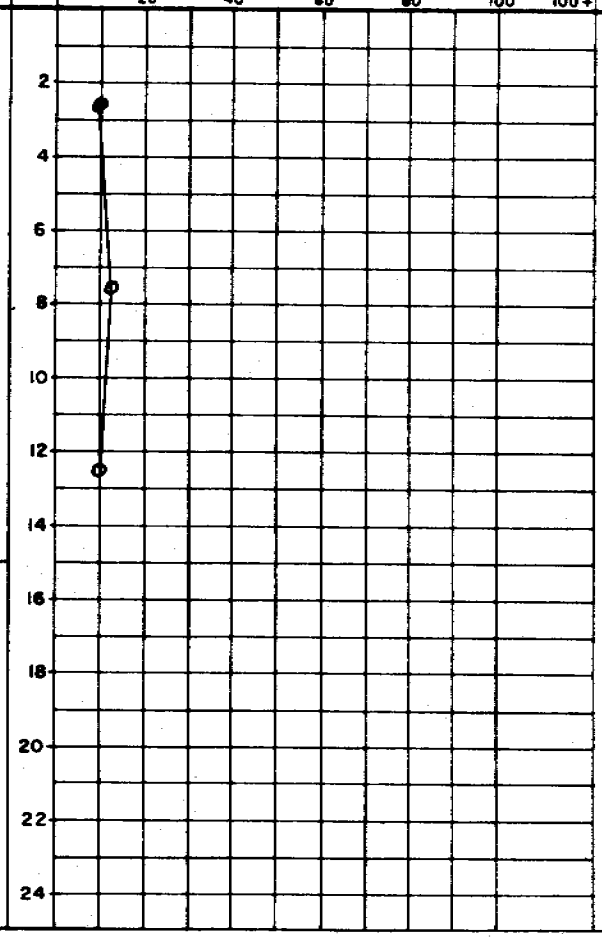
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 1/3/73	AIRPHOTO NO A22777-178	CHAINAGE 1283+00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A B D	ELEV 447

TEST HOLE		
MILE	B,C,S	NUMBER
371	C	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					SM	BROWN SILTY SAND									
2	1				SP	GREY BROWN SAND WITH A TRACE OF SILT									
4															
6						GREY SILTY SAND TILL WITH A TRACE OF GRAVEL AND CLAY	F	N_{bn}							
8	2				SM										
10															
12	3				SM										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



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CALGARY, ALBERTA

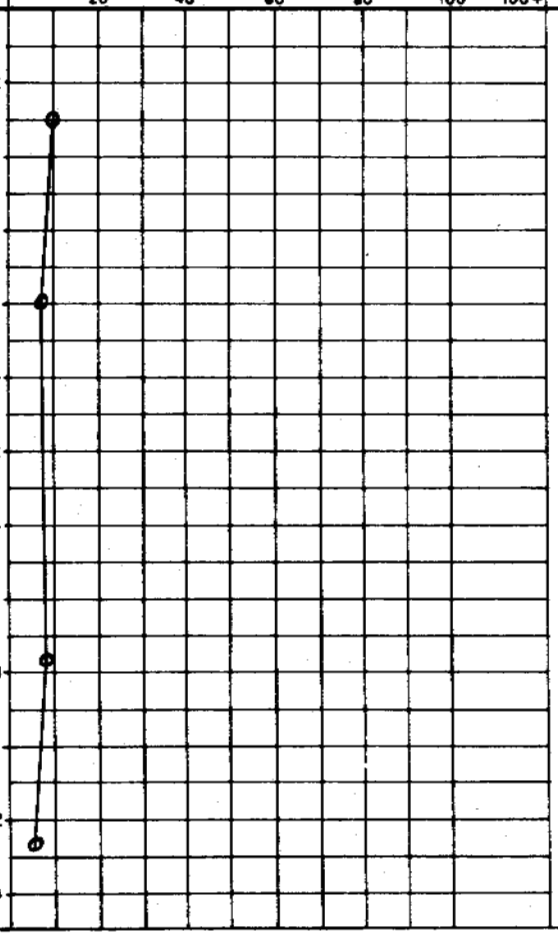
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 1/2/73	AIRPHOTO NO A22777-178	CHAINAGE 1280+00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A B D E	ELEV 472

TEST HOLE		
MILE	B,C,S	NUMBER
371	S	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					SM	BROWN SILTY SAND									
2	1				SM	GREY SILTY SAND TILL WITH A TRACE OF CLAY AND GRAVEL			4	38	49	9			
4															
6															
8	2				SM				5	38	50	7			
10							F	N_{bn}							
12															
14															
16															
18	3				SM			N_f							
20															
22	4				SM										
24						END OF HOLE AT 25'									



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CALGARY, ALBERTA

DRILL HOLE REPORT

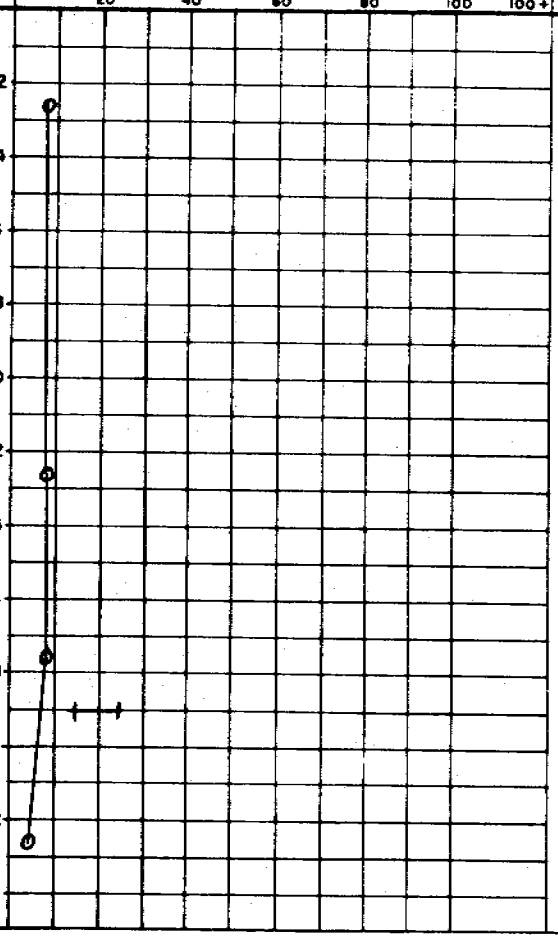
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 1/3/78	AIRPHOTO NO A22777-178	CHAINAGE 1278+50	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A B D	ELEV 465

TEST HOLE

MILE	B,C,S	NUMBER
371	S	H

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SW	GREY SAND TILL WITH SOME SILT AND GRAVEL AND A TRACE OF CLAY			2	16	71	11			
4															
6															
8															
10							F	N_{bn}							
12					SW										
14	2				SM	GREYISH BROWN SILT AND SAND TILL WITH SOME GRAVEL AND A TRACE OF CLAY									
16															
18									3	42	47	8			
20								N_f							
22															
24						END OF HOLE AT 25'									



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CALGARY, ALBERTA

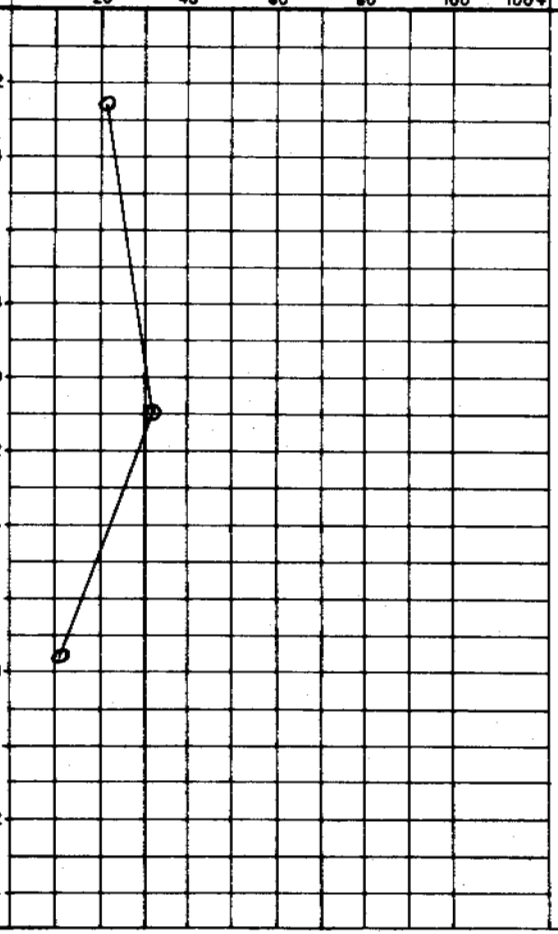
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 1/3/73	AIRPHOTO NO A22777-178	CHAINAGE 1276+80	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A B E	ELEV 444

TEST HOLE		
MILE	B,C,S	NUMBER
371	S	I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT										
2					SM	BROWN SILTY SAND		V_x	2							
4	1				ML	GREY SANDY SILT TILL WITH A TRACE OF CLAY AND GRAVEL			4							
6									6							
8							F	N_{bn}	8							
10	2				ML				10							
12									12							
14									14							
16	3				ML				16							
18									18							
20						END OF HOLE AT 20'			20							
22									22							
24									24							



GRAIN-SIZE ANALYSIS

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

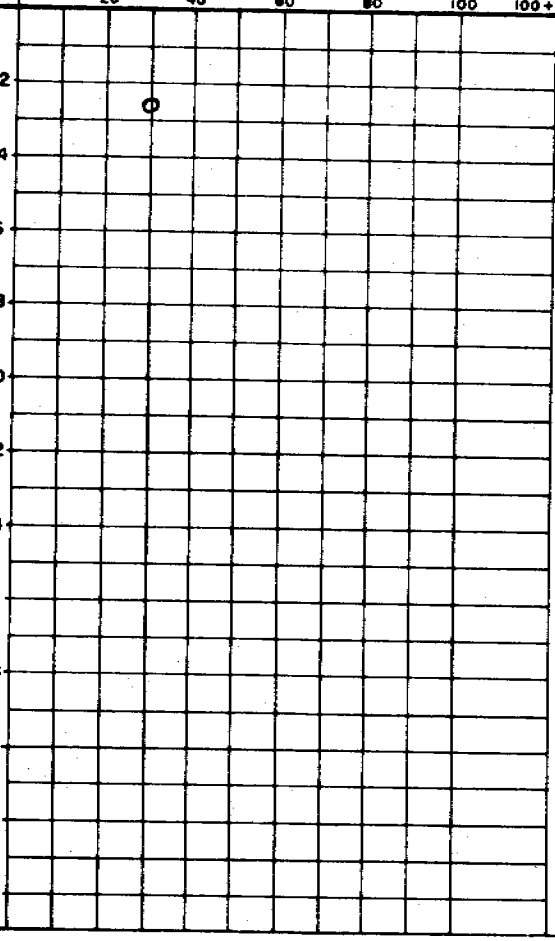
DWN:	FIELD ENG:	DATE DRILLED 1/3/73	AIRPHOTO NO A22777-178	CHAINAGE 1275+00	OFFSET
CKD:	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION B D	ELEV 449

TEST HOLE		
MILE	B,C,S	NUMBER
371	C	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT									
2–4	1				ML	GREY SILT AND SAND TILL WITH A TRACE OF CLAY AND GRAVEL		V_x							
6–8	2				ML		F	N_{bn}							
16						END OF HOLE AT 15'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

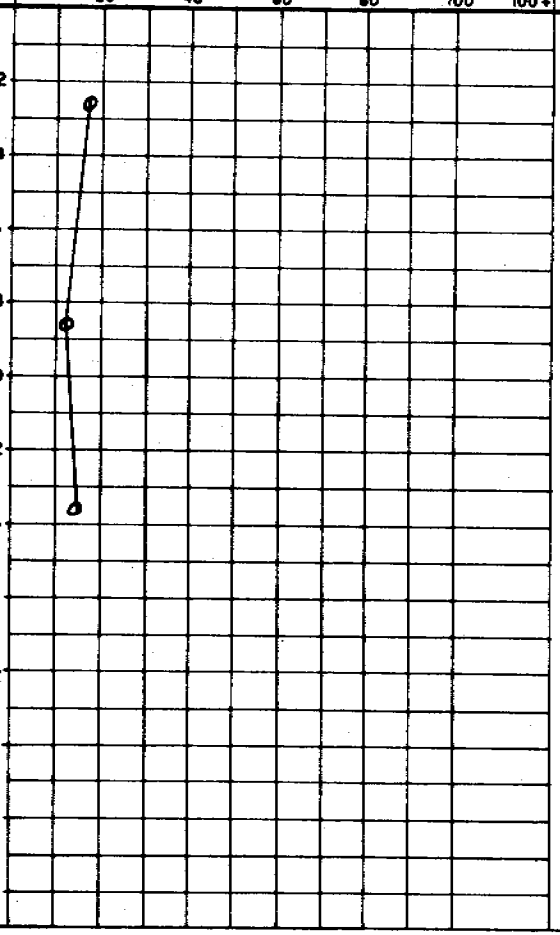
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 1/3/73	AIRPHOTO NO A22777-178	CHAINAGE 1271+00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION A B	ELEV 467

TEST HOLE		
MILE	B,C,S	NUMBER
371	C	K

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				ML	GREY AND BROWN SILT AND SAND TILL WITH A TRACE OF CLAY AND GRAVEL	F	N_{bn}							
4															
6															
8	2				ML										
10															
12															
14	3				ML										
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

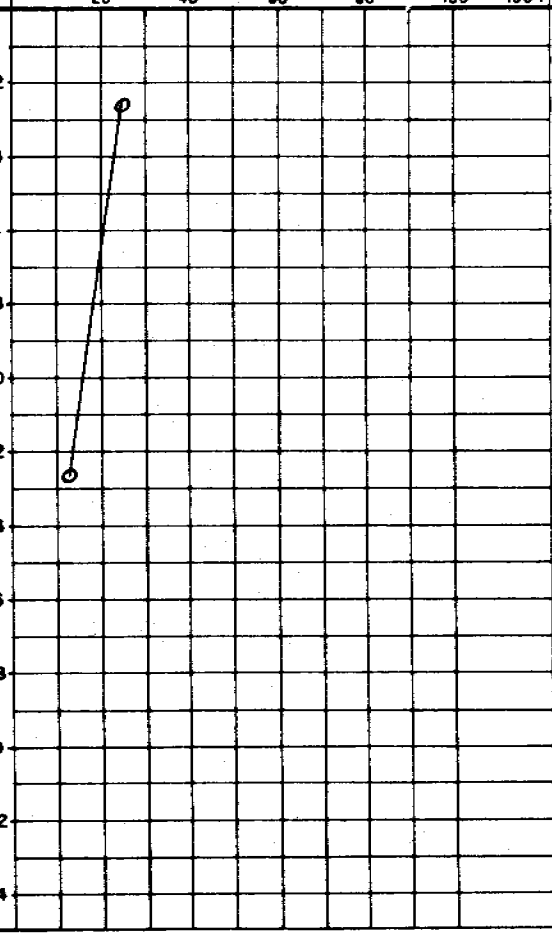
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 1/3/73	AIRPHOTO NO A22777-178	CHAINAGE 1298+50 (Approx)	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A B D	ELEV 422

TEST HOLE		
MILE	B,C,S	NUMBER
371	C	L

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					SM	BROWN SILTY SAND									
2															
4	1				ML	GREY SILT AND SAND TILL WITH A TRACE OF CLAY AND GRAVEL									
6							F	N_{bn}							
8	2				ML										
10															
12	3				ML										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



BORROW AREAS

Mile 373

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 1/3/73	AIRPHOTO NO. A22777-177	CHAINAGE 1365 + 80	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 352

TEST HOLE

MILE	B,C,S	NUMBER
373	C	J

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
1					SM	BROWN SILTY SAND		N_{bn}							
2	1				SW	BROWN SAND WITH SOME GRAVEL AND A TRACE OF SILT			3	10	73	14			
4															
5															
6															
8	2				SW		F	N_f	0	4	85	11			
10															
12	3				SW				1	7	85	7			
14															
15						END OF HOLE AT 15'									
16															
18															
20															
22															
24															

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

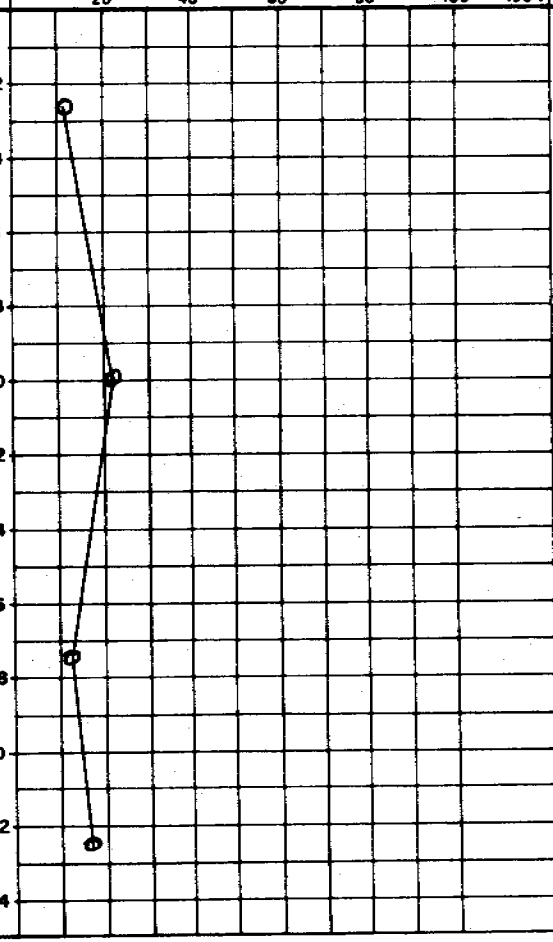
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 1/3/78	AIRPHOTO NO: A22777-175	CHAINAGE: 1402 + 00	OFFSET:
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION: A	ELEV 304

TEST HOLE

MILE	B,C,S	NUMBER
373	S	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SP	SAND WITH SOME SILT AND TRACES OF CLAY AND GRAVEL			4	15	79	2			
4															
5															
6						SILT WITH SOME CLAY AND SAND									
8															
10	2					BROWN GREY	F	N_{bn}	12	72	15	1			
12					ML										
14															
15															
16															
17	3					SAND WITH SOME GRAVEL AND SILT AND A TRACE OF CLAY									NON PLASTIC AT 15'
18					SW				3	26	63	8			
20								N_f							
21															
22	4				SM	SILTY SAND WITH TRACES OF CLAY AND GRAVEL			7	41	48	4			
24															
25						END OF HOLE AT 25'									



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

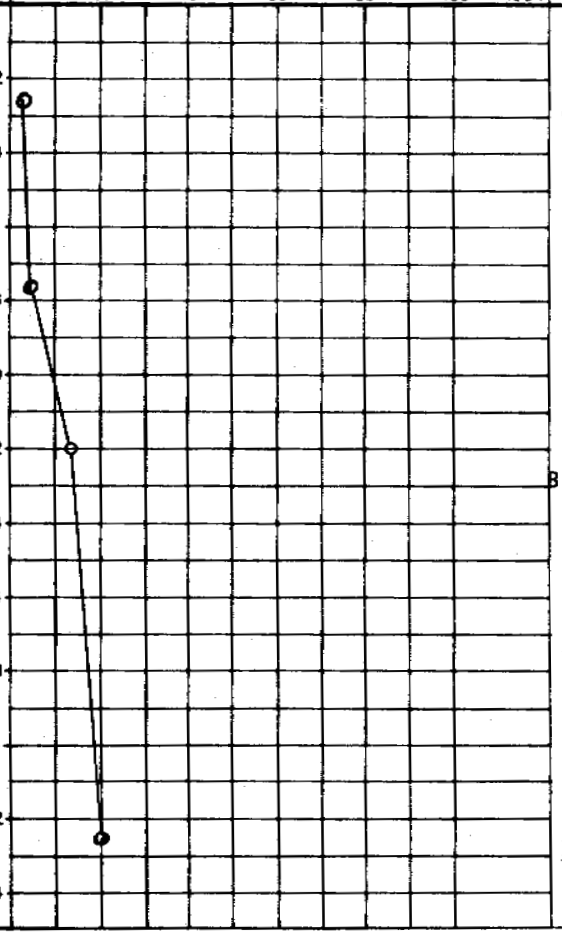
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 1/3/73	AIRPHOTO NO A22777 -176	CHAINAGE 1398 + 00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 318

TEST HOLE

MILE	B,C,S	NUMBER
373	S	E

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
1					SM	BROWN SILTY SAND		N_{bn}							
2–5	1				SW	SAND WITH SOME GRAVEL AND A TRACE OF SILT			0	3	87	10			NON PLASTIC AT 5'
6–8	2				SW		F	N_f	0	6	92	2			
10–13	3				SM				8	27	64	1			NON PLASTIC AT 15'
14–18	4				ML	SAND AND SILT WITH SOME CLAY; THIS SOIL HORIZON GRADES FROM A SILTY SAND TO A SILT WITH SOME SAND FROM TOP TO BOTTOM			12	45	42	1			
20–22	5				ML				12	71	17	0			
24–25						END OF HOLE AT 25'									



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

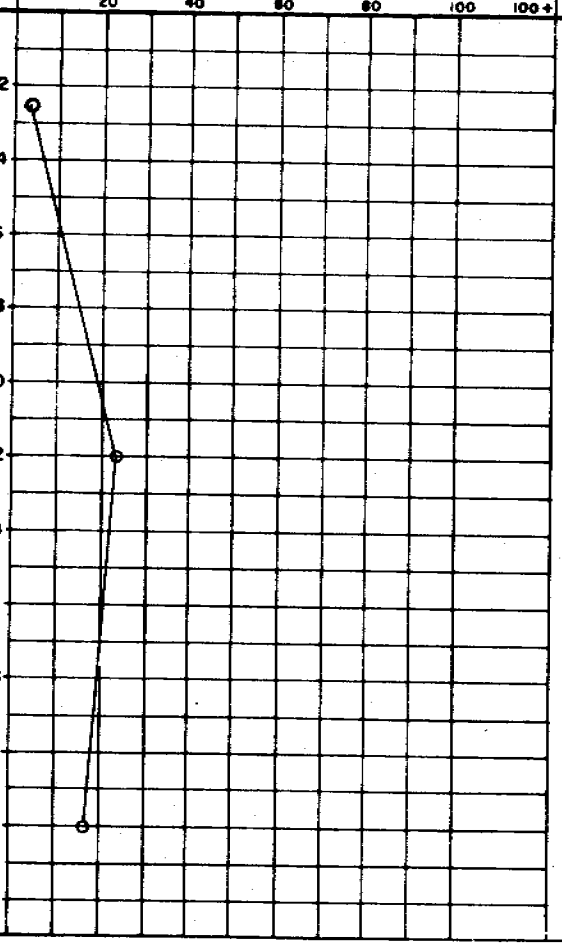
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 1/3/73	AIRPHOTO NO: A22777-176	CHAINAGE 1392 + 00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 313

TEST HOLE		
MILE	B,C,S	NUMBER
373	C	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
1					SM	BROWN SILTY SAND		N_{bn}							
2	1					BROWN SAND WITH SOME GRAVEL AND A TRACE OF SILT									
4					SW			N_f							
6															
7															
8	2					SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}							
10					ML										
12	3														
14															
16															
18	4				ML										
20															
22	5				ML										
24															
25						END OF HOLE AT 25'									



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 2/3/73	AIRPHOTO NO: A22777-175	CHAINAGE: 1382+50	OFFSET: 500' E
CKD:	TECH: B.P.S.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
373	BT	2

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					SM	ORGANIC SILTY SAND									
2–6	1				GW	BROWN SAND AND GRAVEL WITH SOME COBBLES AND A TRACE OF SILT	F	N_{bn} / N_{bn} - N_f	0	3	40	57			
6						END OF TRENCH AT 6'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)
PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 2/3/73	AIRPHOTO NO: A22777-175	CHAINAGE: 1412+00	OFFSET: 1,000'	TEST HOLE
CKD:	TECH: B.P.S.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A B	ELEV:	MILE: 373 / B,C,S: BT / NUMBER: 3

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					SM	ORGANIC SILTY SAND									
2	1				GP	BROWN SAND AND GRAVEL WITH OCCASIONAL COBBLES AND SILT	F	N_{bn}	0	7	51	42			
4	2				SP	BROWN POORLY GRADED MEDIUM GRAINED SAND			0	3	94	3			
6						END OF TRENCH AT 5'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟵⟶ LIQUID LIMIT

20 40 60 80 100 100+

BORROW AREAS

Mile 374

ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA 28/2	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED:	AIRPHOTO NO: A22777-174	CHAINAGE:	OFFSET:
CKD:	TECH: M.H.R.	RIG: No. 2	SURFACE DRAINAGE: GOOD	VEGETATION: ABI	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
374	B	A

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				GM	BROWN SANDY GRAVEL WITH LARGE COBBLES	F	N_f							
4															
6						END OF HOLE AT 5'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟷ LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 28/2

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED:	AIRPHOTO NO: A22777-174	CHAINAGE:	OFFSET:
CKD:	TECH: N.H.R.	RIG: No. 2	SURFACE DRAINAGE: GOOD	VEGETATION: AB	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
374	B	B

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				GP	BROWN SANDY GRAVEL	F	N_f							
4															
6															
8	2				GP										
10															
12															
14						END OF HOLE AT 12'									
16						* (CAVING IN)									
18															
20															
22															
24															

O = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 28/2

DRILL HOLE REPORT

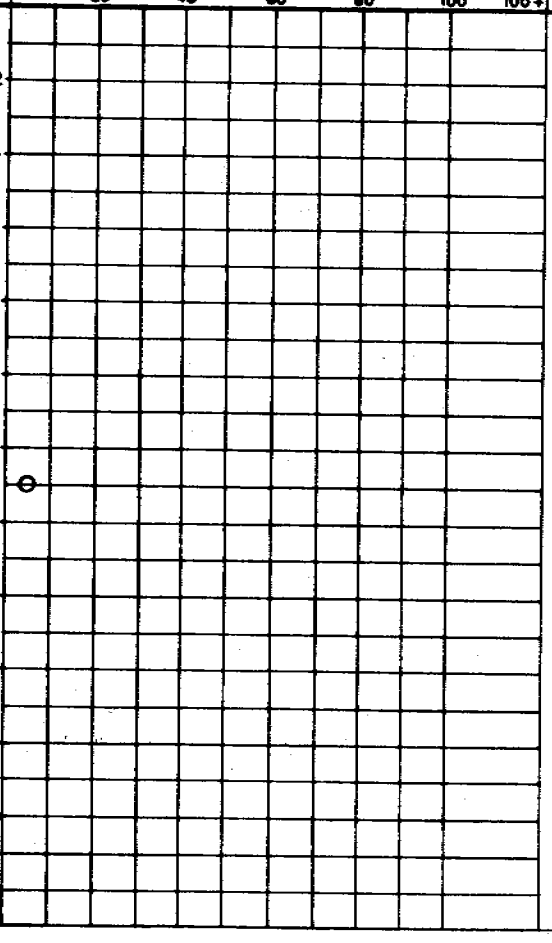
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED:	AIRPHOTO NO: A22777-174	CHAINAGE:	OFFSET
CKD:	TECH: M.H.R.	RIG: No. 2	SURFACE DRAINAGE GOOD	VEGETATION: AB	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
374	B	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2, 4, 5	1				SP	BROWN COARSE SAND	F	N_f							
6, 8, 10, 12, 14, 15	2				SP	BROWN COARSE SAND AND GRAVEL	UF								
16, 18, 20, 22, 24						END OF HOLE AT 15'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 28/2

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED	AIRPHOTO NO: A22777-174	CHAINAGE	OFFSET
CKD	TECH M.H.R.	RIG No. 2	SURFACE DRAINAGE GOOD	VEGETATION AB	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
374	B	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2					SP	BROWN FINE TO COARSE SAND AND GRAVEL	F	Nbn							
4															
6							UF	W.T.							
8															
10	2														
12															
14															
15															
16						END OF HOLE AT 15'									
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 2/3/78	AIRPHOTO NO: A22777-174	CHAINAGE: 1456+00	OFFSET: 1100' E
CKD:	TECH: B.P.S.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
374	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2					SM	BROWN FINE SILTY SAND WITH SOME ORGANIC MATTER		N_{bn}							
4	1				GP	BROWN SAND AND GRAVEL	F		0	2	60	38			
5.5								N_f							
6						END OF TRENCH AT 5.5'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

BORROW AREAS

Mile 375

ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 2/3/72	AIRPHOTO NO: A22777-174	CHAINAGE: 1506+00	OFFSET: 1400' SE
CKD:	TECH: B.P.S.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
375	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					SM	ORGANIC SILTY SAND									
2–4	1				GP	BROWN SAND AND GRAVEL	F	N_{bn} / N_f	0	2	53	45			
6						END OF TRENCH AT 6'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT

20 40 60 80 100 100+

BORROW AREAS

Mile 376

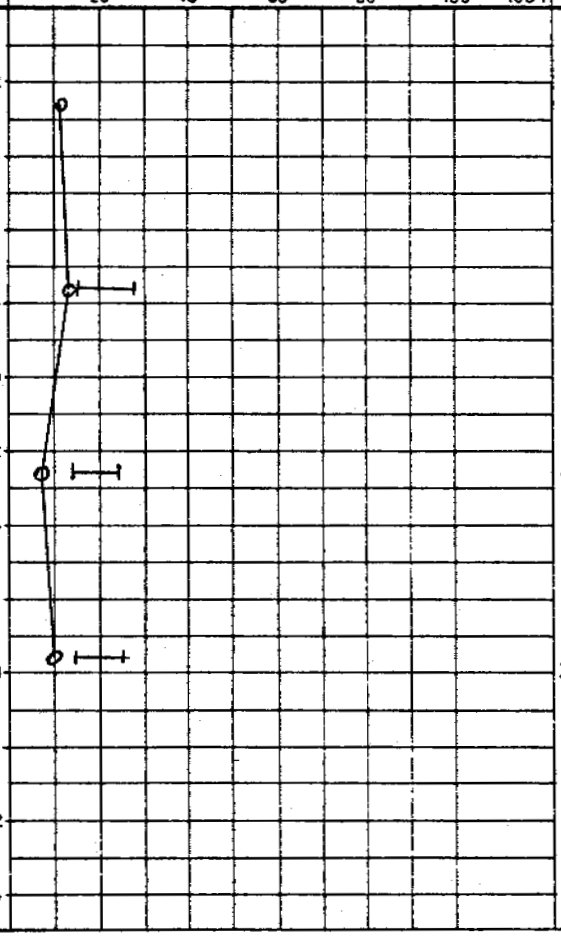
ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 28/2/78	AIRPHOTO NO: A22771-43	CHAINAGE: 33 + 95	OFFSET:
CKD:	TECH: R.G.	RIG: 2	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV: 499

TEST HOLE		
MILE	B,C,S	NUMBER
376	S	C

REMARKS

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)
2	1				ML	SILT AND SAND TILL WITH SOME CLAY AND A TRACE OF GRAVEL AND OF COBBLES								
4														
5														
6														
8	2				ML		F	N_{bn}	20	42	34	4		
10														
12	3					BROWN GREY			7	30	47	16		
14					SM									
15														
16														
18	4				ML				20	39	34	7		
20						END OF HOLE AT 20'								
22														
24														



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

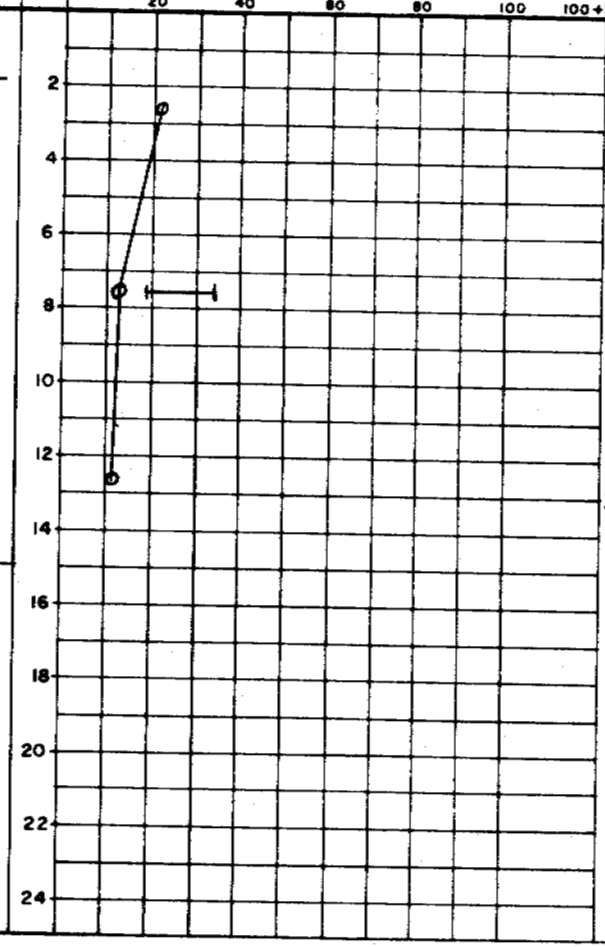
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 28/2/73	AIRPHOTO NO A22771-43	CHAINAGE 31 + 10	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION A	ELEV 498

TEST HOLE		
MILE	B,C,S	NUMBER
376	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT		V_x							
2	1				ML										
4															
5															
6	2					CLAYEY SILT AND SAND TILL WITH A TRACE OF GRAVEL									
8					ML		F	N_{bn}	27	41	26	6			
10															
12	3				ML	BROWN GREY			25	39	35	1			
14															
15															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



BORROW AREAS

Mile 378

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

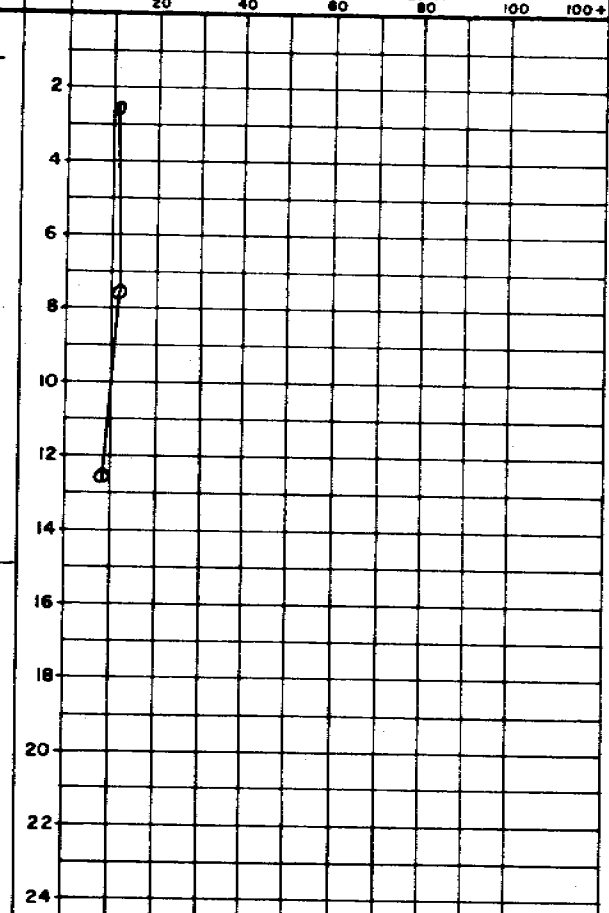
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO A22782-149	CHAINAGE 113 + 00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE FAIR - GOOD	VEGETATION AB	ELEV 510

TEST HOLE		
MILE	B,C,S	NUMBER
378	C	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
					Pt	PEAT		V_x
2	1				SM	BROWN SILTY SAND AND SOME GRAVEL		
4								
5								
6	2						F	N_{bn}
8					SM			
10								
11						GREY SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL		
12								
14								
15								
16						END OF HOLE AT 15'		
18								
20								
22								
24								



GRAIN-SIZE ANALYSIS				WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
CLAY %	SILT %	SAND %	GRAVEL %			

BORROW AREAS
Mile 380

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

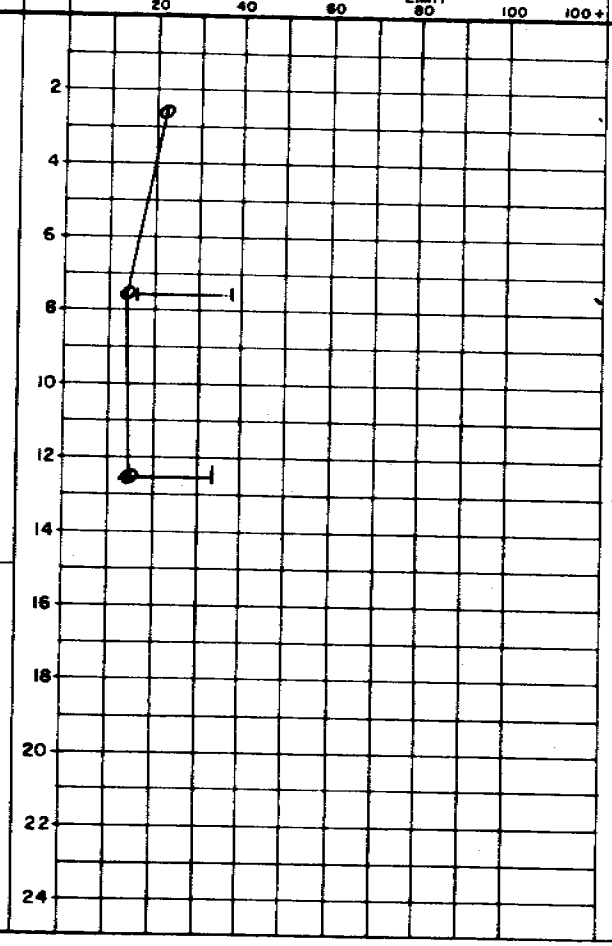
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 27/2/73	AIRPHOTO NO: A22782-151	CHAINAGE: 199 + 00	OFFSET:
CKD:	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV: 520

TEST HOLE		
MILE	B,C,S	NUMBER
379	C	A

REMARKS

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)
					Pt	PEAT								
2–5	1				ML	SAND AND SILT TILL WITH SOME CLAY AND GRAVEL			13	34	39	14		
6							F	N_{bn}						
8–10	2				ML	CLAYEY SILT AND SAND TILL WITH SOME GRAVEL			21	34	35	10		
						BROWN GREY								
12–15	3				ML				25	33	25	17		
16–24						END OF HOLE AT 15'								



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

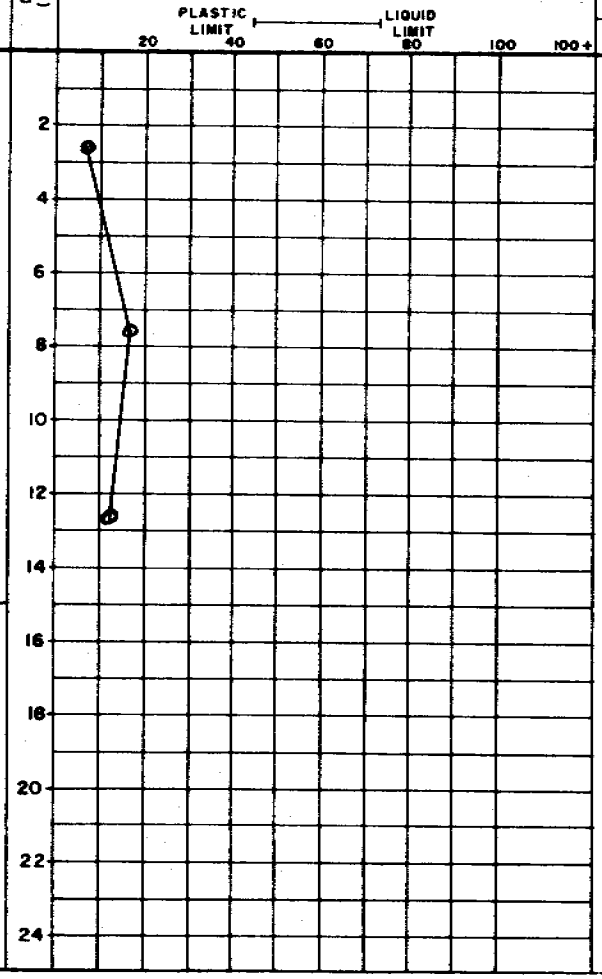
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 27/2/73	AIRPHOTO NO: A22782-152	CHAINAGE: 212+00	OFFSET:
CKD:	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV: 504

TEST HOLE		
MILE	B,C,S	NUMBER
380	C	I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2					SM	BROWN SILTY SAND									
4	1				ML	CLAYEY SILT TILL WITH SOME SAND AND A TRACE OF GRAVEL	F	N_{bn}							
6															
8	2				ML										
10															
12	3				ML										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

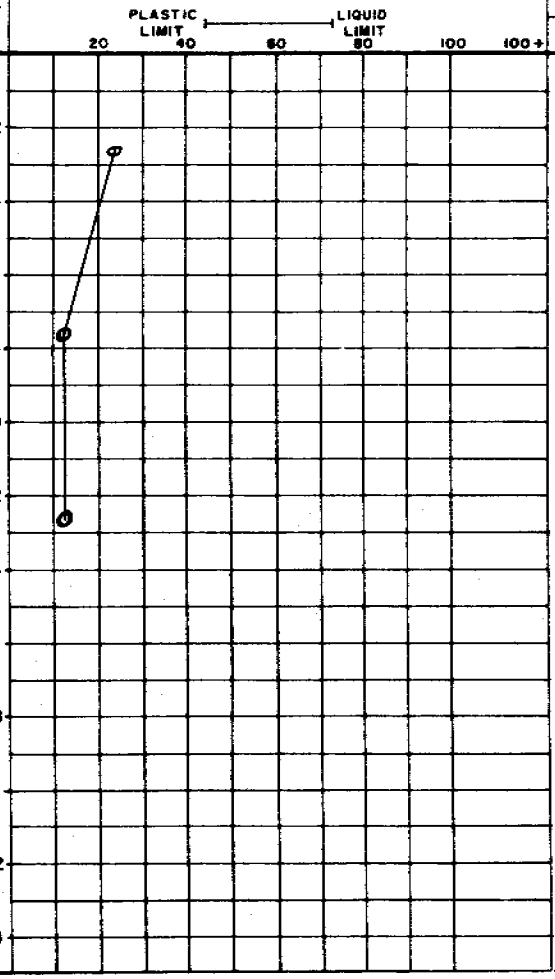
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 27/2/73	AIRPHOTO NO: A22782-152	CHAINAGE: 203+00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION: A	ELEV 518

TEST HOLE		
MILE	B,C,S	NUMBER
380	C	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SM	BROWN SILTY SAND									
4															
6						CLAYEY SILT TILL WITH SOME SAND AND A TRACE OF GRAVEL									
8	2				ML		F	N_{bn}							
10						BROWN / GREY									
12	3				ML										
14															
16															
18	4				ML										
20						END OF HOLE AT 20'									
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 27/2/73

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

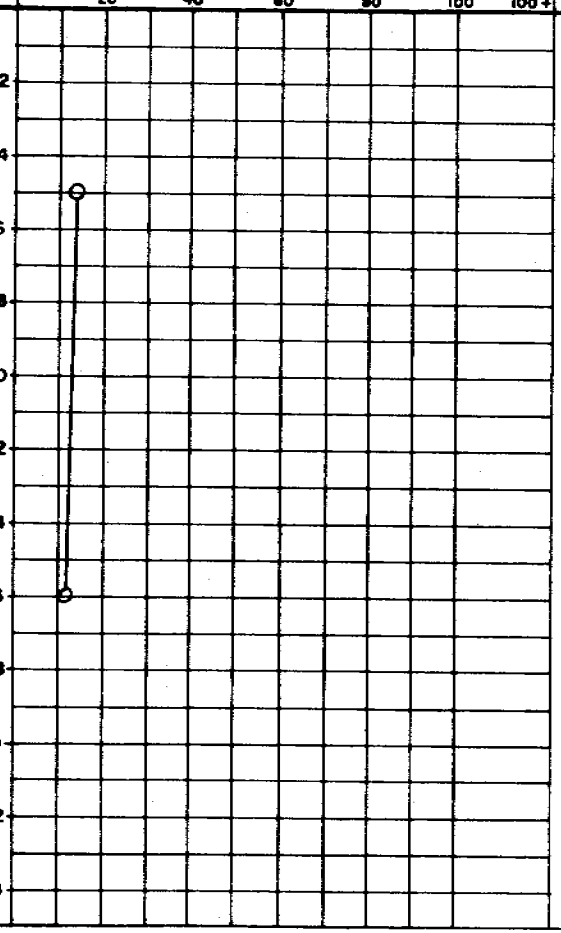
DWN:	FIELD ENG:	DATE DRILLED:	AIRPHOTO NO: A22771-51	CHAINAGE:	OFFSET
CKD	TECH: R.G.	RIG: No. 2	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
380	B	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				ML	Brown Sandy Silty Till With Some Gravel and a Trace of Clay	F	Nbn							
4															
6															
8															
10															
12															
14															
16	2				ML		F	Nbn							
18															
20															
22															
24															

GRAIN-SIZE ANALYSIS

O = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 27/2/73

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED:	AIRPHOTO NO: A22771-51	CHAINAGE:	OFFSET:
CKD:	TECH: R.G.	RIG: No. 2	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
380	B	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
	3				ML		F	Nbn							
30															
6						END OF HOLE AT 30'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 27/2/73

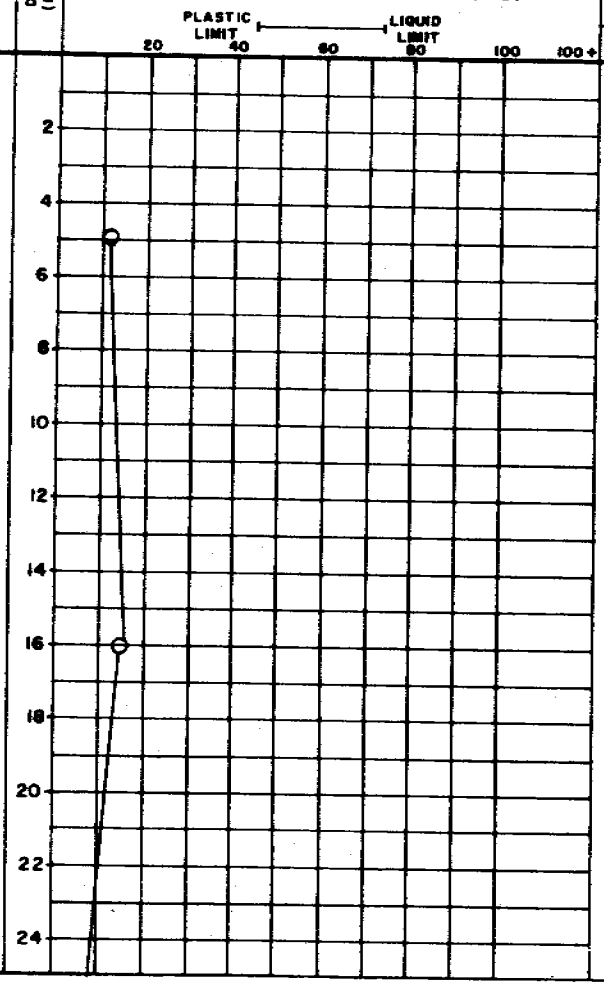
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED:	AIRPHOTO NO: A22771-51	CHAINAGE:	OFFSET:
CKD:	TECH: R.G.	RIG: No. 2	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
330	B	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				SM	BROWN SILTY SANDY TILL WITH SOME GRAVEL AND A TRACE OF CLAY									
4							F	Nbn							
6															
8															
10															
12	2						F	Nbn							
14															
16					SM										
18															
20															
22	3				SM										
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 27/2/73

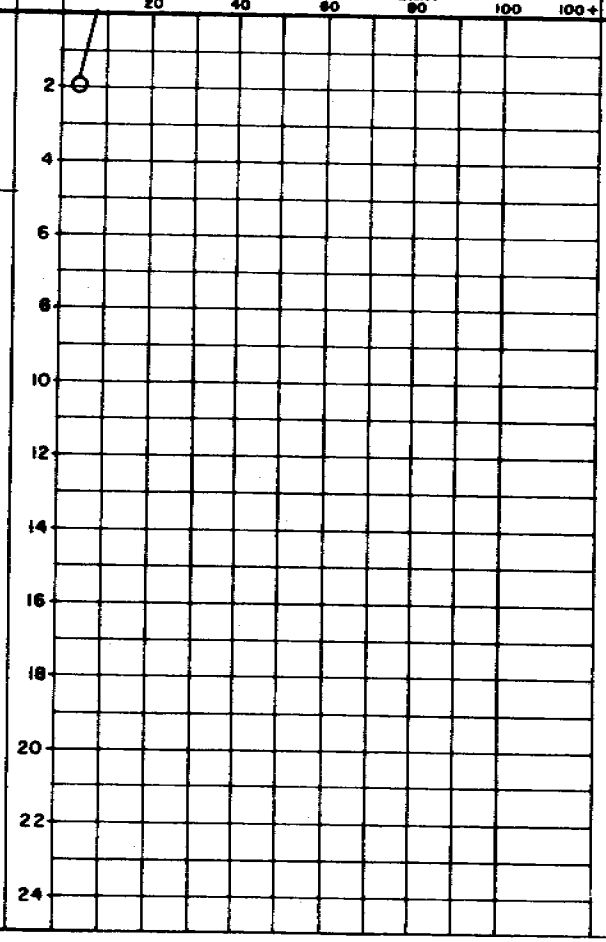
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED:	AIRPHOTO NO: A22771-51	CHAINAGE:	OFFSET:
CKD:	TECH: R.G.	RIG: No. 2	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
380	B	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
30'	3														
6						END OF HOLE AT 30'									
8															
10															
12															
14															
16															
18															
20															
22															
24															



BORROW AREAS

Mile 381

ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA 1/3/73	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED:	AIRPHOTO NO: A22771-51	CHAINAGE:	OFFSET:
CKD:	TECH: M.H.R.	RIG: No. 2	SURFACE DRAINAGE: FAIR	VEGETATION: AB	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
381	B	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT	F	V_x							
2															
4															
6	1				SM	BROWN SANDY SILTY TILL WITH SOME GRAVEL AND CLAY	F	Nbn							
8															
10															
12	2				SM										
14															
16							F	Nbn							
18															
20						END OF HOLE AT 20'									
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT

20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 1/3/73

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO A22771-51	CHAINAGE	OFFSET
CKD	TECH M.H.R.	RIG No. 2	SURFACE DRAINAGE POOR	VEGETATION A B	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
381	B	K

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT		V_x							
2															
4															
6	1				SM	BROWN SANDY SILTY TILL WITH SOME CLAY AND GRAVEL	F	Nbn							
8															
10															
12	2				SM										
14							F	Nbn							
16															
18															
20						END OF HOLE AT 20'									
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 1/3/73

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED:	AIRPHOTO NO: A22771-51	CHAINAGE:	OFFSET:
CKD	TECH: M.H.R.	RIG: No. 2	SURFACE DRAINAGE: POOR	VEGETATION: A B	ELEV:

TEST HOLE

MILE	B,C,S	NUMBER
381	B	L

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) (PLASTIC LIMIT — LIQUID LIMIT; 20 40 60 80 100 100+)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT		Vx									
2									2								
4	1				SM		F	Nbn	4								
6									6								
8	2					BROWN SANDY SILTY TILL WITH SOME GRAVEL AND SMALL BOULDERS			8								
10					SM		F	Nbn	10								
12									12								
14									14								
16									16								
18									18								
20						END OF HOLE AT 20'			20								
22									22								
24									24								

BORROW AREAS

Mile 384

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

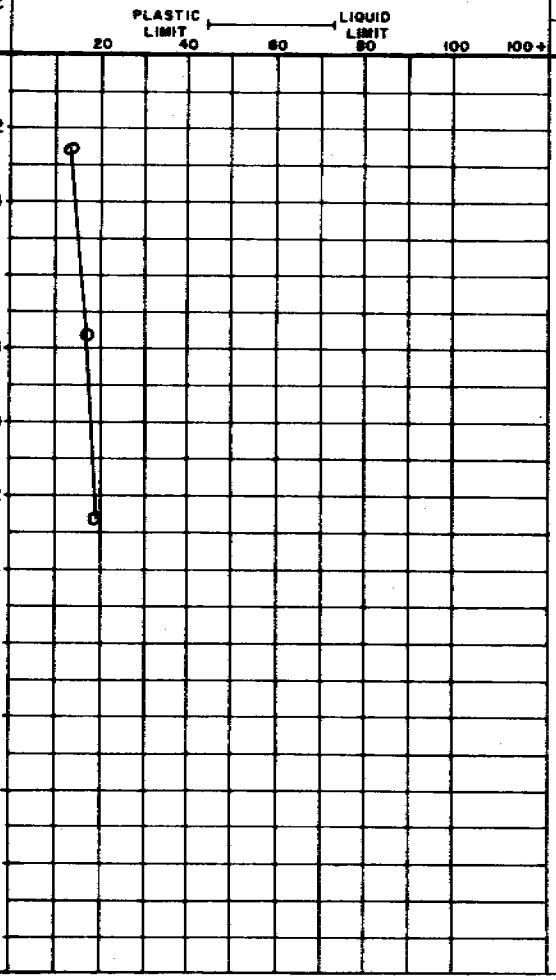
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 1/3/78	AIRPHOTO NO: A22771-55	CHAINAGE:	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE: FAIR	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
384	B	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				ML	SILTY AND SANDY TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}							
4															
6															
8	2				ML	BROWN / GREY									
10															
12	3				ML										
14															
16															
18	4				ML										
20						END OF HOLE AT 20'									
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED:	AIRPHOTO NO: A22771-55	CHAINAGE:	OFFSET:
CKD:	TECH: M.H.R.	RIG: 2	SURFACE DRAINAGE: FAIR	VEGETATION: A B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
384	B	O

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				ML	BROWN SILTY AND SANDY TILL WITH SOME CLAY AND A TRACE OF GRAVEL									
4															
6															
8							F	N_{bn}							
10															
12															
14															
16															
18	2				ML										
20						END OF HOLE AT 20'									
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟵⟶ LIQUID LIMIT

20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS

BORROW AREAS

Mile 385

ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 1/3/73	AIRPHOTO NO: A22771-57	CHAINAGE:	OFFSET:
CKD:	TECH: M.H.R.	RIG: 2	SURFACE DRAINAGE: FAIR	VEGETATION: A B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
385	B	H

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT		V_x								
2									2							
4	1				ML	SILTY AND SANDY TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}	4							
6									6							
8									8							
10									10							
12						BROWN			12							
14						GREY			14							
16									16							
18	2				ML		F	N_{bn}	18							
20									20							
22									22							
24						END OF HOLE AT 25'			24							

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟷ LIQUID LIMIT

20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 1/3/73	AIRPHOTO NO: A22771-57	CHAINAGE:	OFFSET:
CKD:	TECH: M.H.R.	RIG: 2	SURFACE DRAINAGE: FAIR	VEGETATION: A B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
385	B	I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) (PLASTIC LIMIT 20, 40, 60, LIQUID LIMIT 80, 100, 100+)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT		V_x									
2									2								
4	1				ML	GREY SILT TILL, CLAYEY AND SANDY WITH A TRACE OF GRAVEL	F	N_{bn}	4								
6									6								
8									8								
10									10								
12									12								
14	2				ML-CL		F	N_{bn}	14								
16									16								
18									18								
20									20								
22									22								
24						END OF HOLE AT 25'			24								

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 1/3/73	AIRPHOTO NO: A22771-57	CHAINAGE:	OFFSET:
CKD:	TECH: M.H.R.	RIG: 2	SURFACE DRAINAGE: FAIR	VEGETATION: A B	ELEV:

TEST HOLE

MILE	B,C,S	NUMBER
385	B	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
					Pt	PEATY TOP SOIL		V_x
2								
4						GREY SILTY AND SANDY TILL WITH SOME CLAY AND A TRACE OF GRAVEL		
6	1				ML			
8							F	N_{bn}
10								
12								
14								
16	2				ML		F	N_{bn}
18								
20						END OF HOLE AT 20'		
22								
24								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT

20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 1/3/73	AIRPHOTO NO A22771-57	CHAINAGE	OFFSET
CKD	TECH M.H.R.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION A B	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
385	B	K

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT		V_x							
2															
4	1				ML	BROWN SANDY SILTY TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}							
6															
8															
10															
12	2				ML		F	N_{bn}							
14															
16															
18															
20						END OF HOLE AT 20'									
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

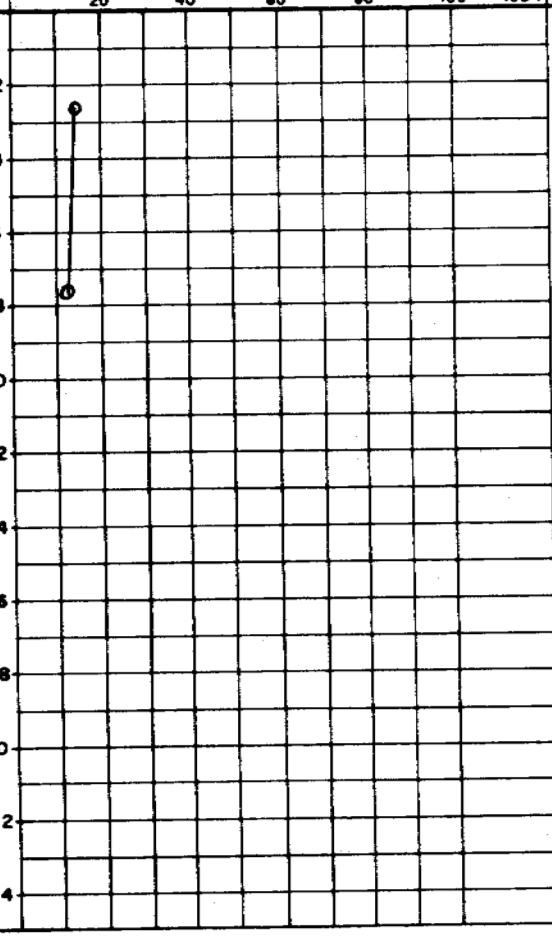
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 26/2/73	AIRPHOTO NO. A22771-57	CHAINAGE: 483+00	OFFSET
CKD	TECH J.M.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION: A B	ELEV. 501

TEST HOLE		
MILE	B,C,S	NUMBER
385	C	E

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT									
2	1				ML	SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL AND COBBLES	F	N_{bn}							
4															
6															
8	2				ML										
10															
12	3				ML	BROWN GREY									
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

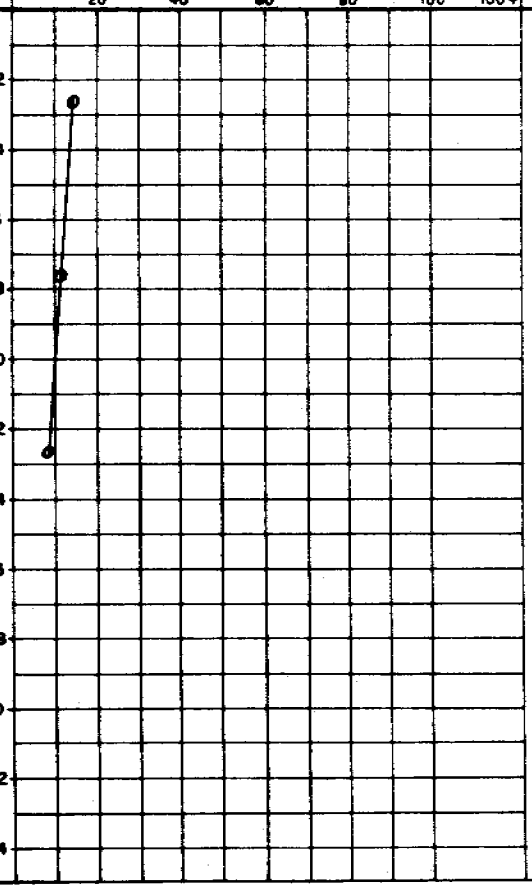
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 26/2/73	AIRPHOTO NO: A22771-57	CHAINAGE: 485+00	OFFSET
CKD:	TECH J.M.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION: A B	ELEV 501

TEST HOLE

MILE	B,C,S	NUMBER
385	C	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT		V_x							
2	1				ML	SANDY SILT WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}							
4															
6															
8	2				ML										
10						BROWN GREY									
12															
14	3				ML										
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 26/3/72	AIRPHOTO NO A22771-57	CHAINAGE 495+00	OFFSET
CKD	TECH J. M.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION B	ELEV 504

TEST HOLE

MILE	B,C,S	NUMBER
385	C	G

REMARKS

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)
					PT	PEAT									
2									2						
4	1				ML	SANDY SILT WITH SOME CLAY AND A TRACE OF GRAVEL AND COBBLES	F	N_{bn}	4						
6									6						
8	2				ML		UF		8						
10						BROWN			10						
12						GREY			12						
14	3				ML				14						
16						END OF HOLE AT 15'			16						
18									18						
20									20						
22									22						
24									24						

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS

BORROW AREAS
Mile 386

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

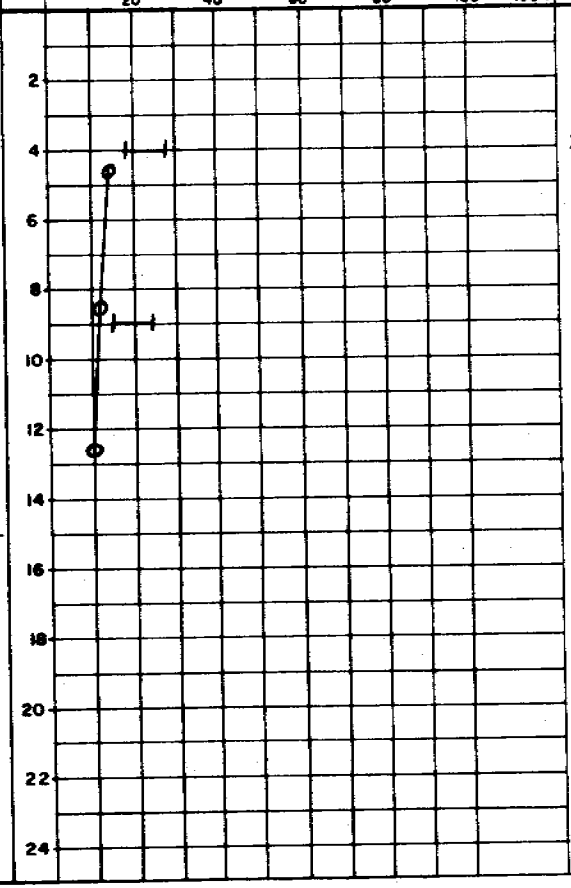
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 2/2/7[illegible]	AIRPHOTO NO A22771-58	CHAINAGE 500+00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE POOR	VEGETATION ABD	ELEV 508

TEST HOLE		
MILE	B,C,S	NUMBER
386	C	B

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2						SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL AND COBBLES, SILTIER WITH DEPTH									
4	1				SM				20	27	44	9			
5															
6															
7						BROWN GREY	F	N_{bn}							
8															
8	2				ML				18	49	28	5			
10															
12	3				ML										
14															
15						END OF HOLE AT 15'									
16															
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/2/78	AIRPHOTO NO A22771-58	CHAINAGE 505 + 00 (Approx)	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE POOR	VEGETATION AD	ELEV 507

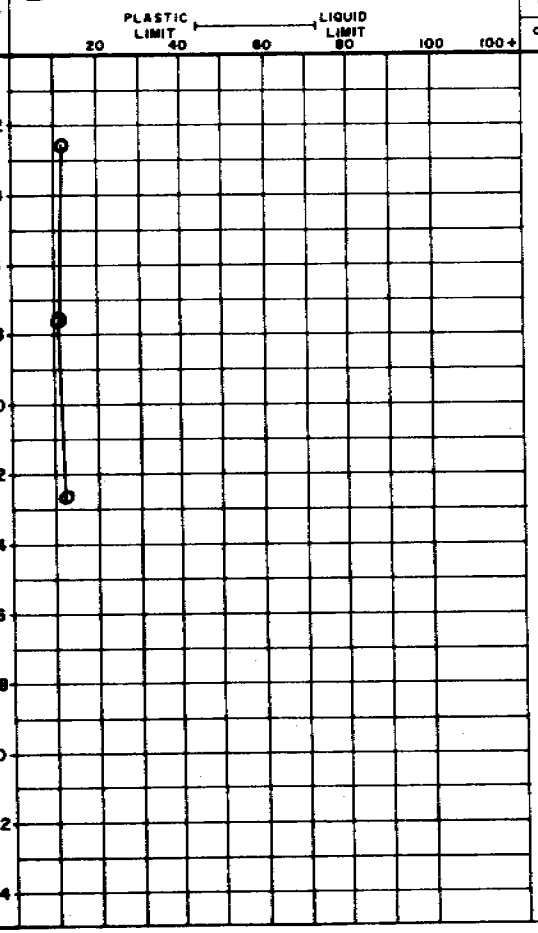
TEST HOLE

MILE	B,C,S	NUMBER
386	C	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT									
2	1				ML	SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL AND COBBLES	F	N_{bn}							
8	2				ML	BROWN GREY									
12	3				ML										
15						END OF HOLE AT 15'									

GRAIN-SIZE ANALYSIS

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

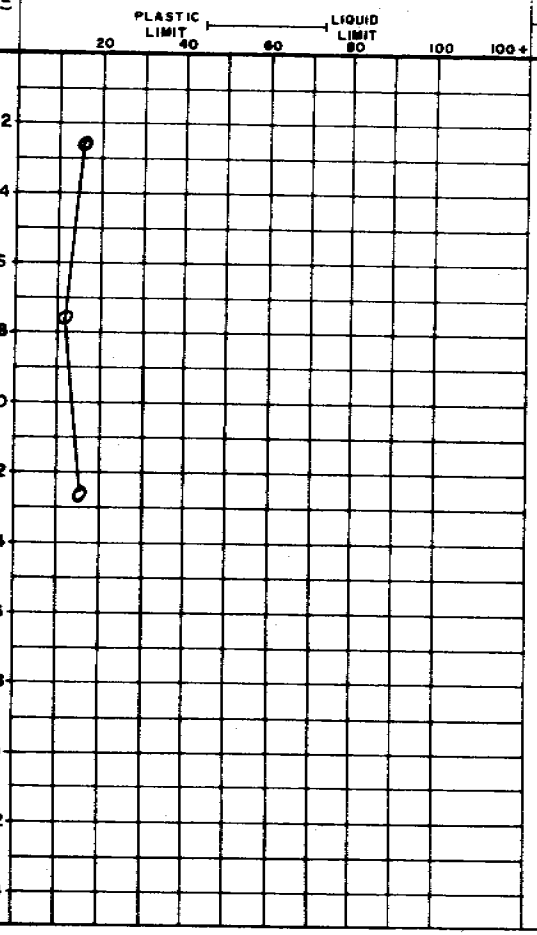
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 2/2/7	AIRPHOTO NO: A22771-58	CHAINAGE 508 + 00	OFFSET
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: FAIR	VEGETATION: ABD	ELEV 506

TEST HOLE		
MILE	B,C,S	NUMBER
386	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
						4 IN. OF PEAT									
2	1				ML	SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}							
5															
6					ML										
8	2														
10						BROWN GREY									
12	3				ML										
15						END OF HOLE AT 15'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

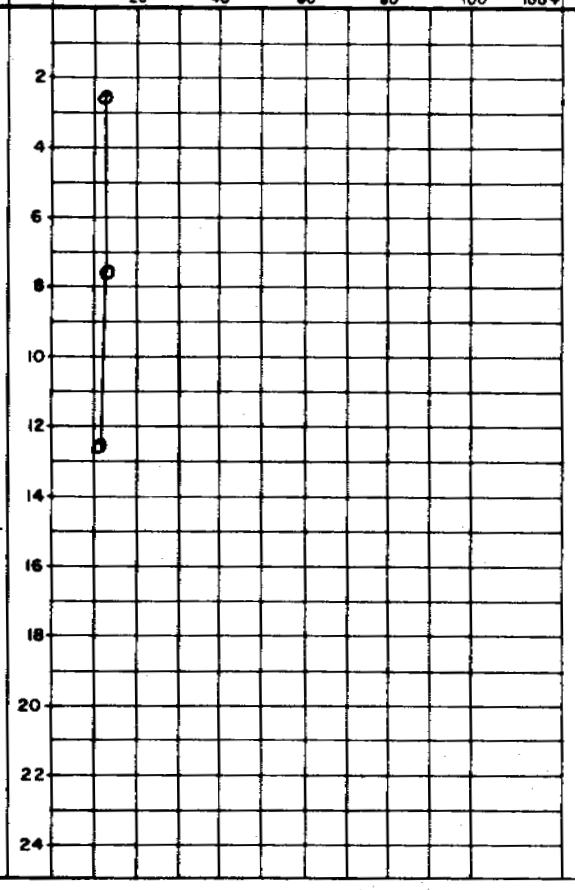
DWN	FIELD ENG	DATE DRILLED 2/2/73	AIRPHOTO NO A22771-58	CHAINAGE 526 + 00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION ABD	ELEV 498

TEST HOLE

MILE	B,C,S	NUMBER
386	C	E

REMARKS

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
2	1				ML	SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL		
4								
5								
6							F	N_{bn}
8	2				ML			
9						BROWN GREY		
10								
12	3				ML			
14								
15						END OF HOLE AT 15'		
16								
18								
20								
22								
24								



GRAIN-SIZE ANALYSIS				WET DENSITY (PCF)	DRY DENSITY (PCF)
CLAY %	SILT %	SAND %	GRAVEL %		

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

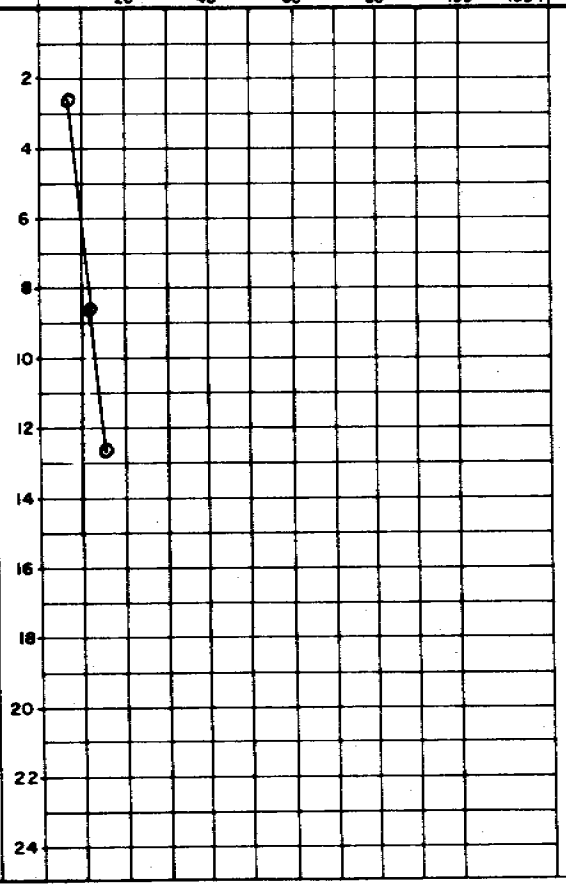
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/2/73	AIRPHOTO NO A22771-58	CHAINAGE 548 + 00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION ABD	ELEV 476

TEST HOLE		
MILE	B,C,S	NUMBER
386	C	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					Pt	PEAT		V_x							
2															
4	1				ML	SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}							
6															
8	2				ML										
10															
12	3					BROWN GREY									
14					ML										
15						END OF HOLE AT 15'									
16															
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

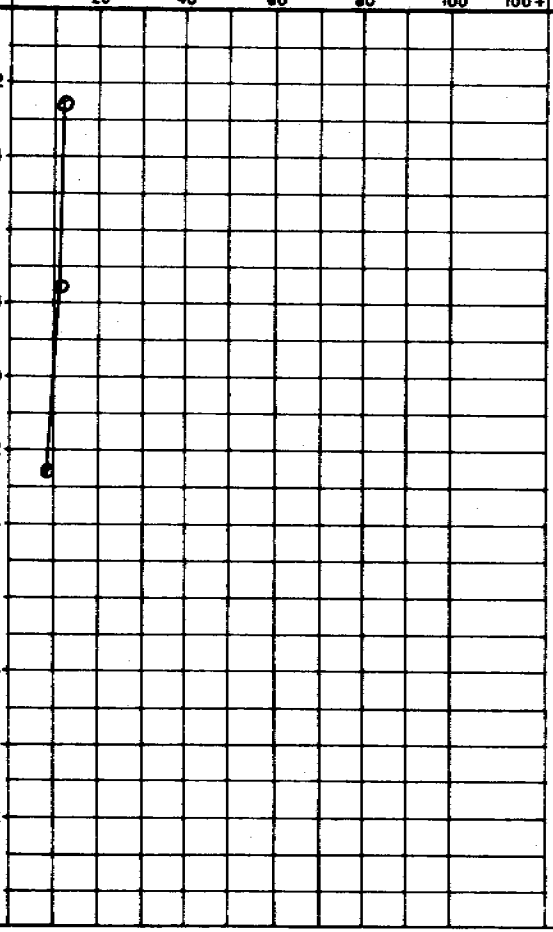
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 2/2/78	AIRPHOTO NO A22771-58	CHAINAGE 552 + 50	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION ABD	ELEV 474

TEST HOLE		
MILE	B,C,S	NUMBER
386	C	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				ML	SANDY SILT TILL WITH A TRACE OF CLAY GRAVEL AND COBBLES	F	N_{bn}							
4															
5															
6															
8	2				ML										
10															
11						BROWN GREY									
12	3				ML										
14															
15						END OF HOLE AT 15'									
16															
18															
20															
22															
24															



BORROW AREAS

Mile 387

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 2/2/73

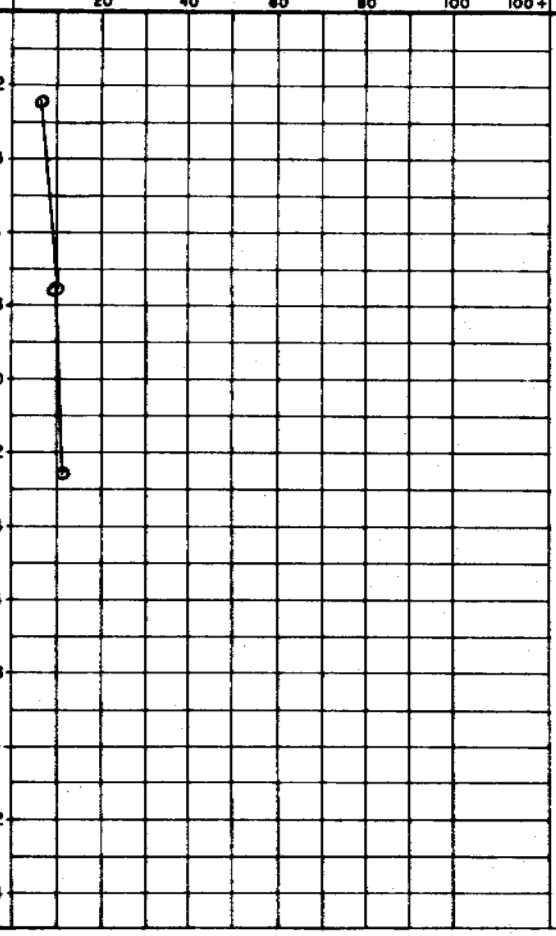
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO A22771-60	CHAINAGE 580+50	OFFSET
CKD	TECH W.R.	RIG No. 1	SURFACE DRAINAGE GOOD	VEGETATION ABD	ELEV 466

TEST HOLE		
MILE	B,C,S	NUMBER
387	C	B

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				ML	SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL AND COBBLES	F	N_{bn}							
4															
6						BROWN / GREY									
8	2				ML										
10															
12	3				ML										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



GRAIN-SIZE ANALYSIS

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 2/2/73

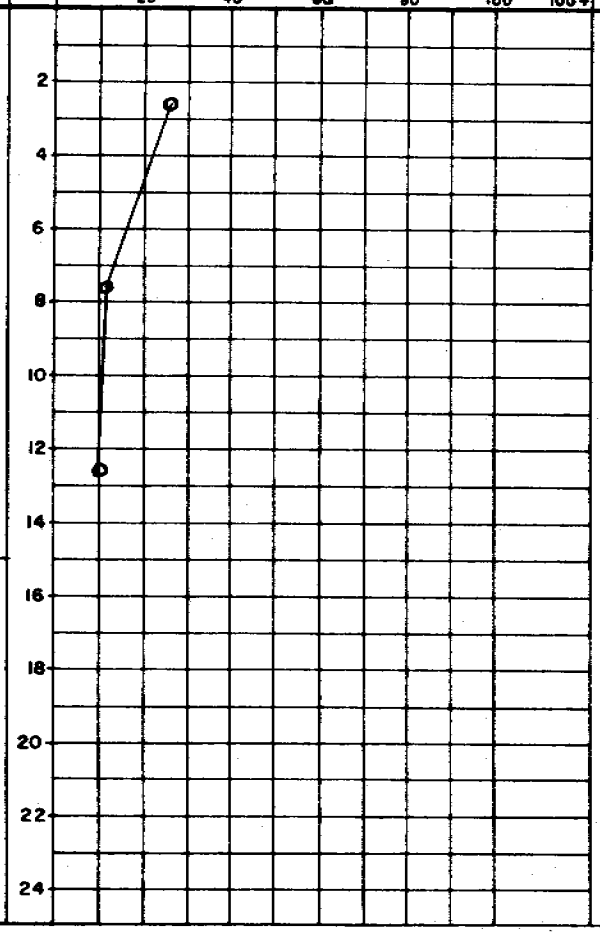
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO A22771-60	CHAINAGE 589+00	OFFSET
CKD	TECH W.R.	RIG No. 1	SURFACE DRAINAGE FAIR	VEGETATION ABD	ELEV 464

TEST HOLE		
MILE	B,C,S	NUMBER
387	C	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				ML	SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL AND COBBLES									
4															
6	2				ML										
8						BROWN / GREY	F	N_{bn}							
10															
12					ML										
14	3														
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 1/2/73

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED	AIRPHOTO NO. A22771-60	CHAINAGE 598+50	OFFSET
CKD	TECH R.S.	RIG No. 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 457

TEST HOLE

MILE	B,C,S	NUMBER
387	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
1					Pt	PEAT		Vx
2	1				ML	FINE SAND AND SILT WITH SOME CLAY	F	N_{bn}
4								
6								
8	2				SM			
10								
12	3				ML	BROWN GREY SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL		
14								
15								
16						END OF HOLE AT 15'		
18								
20								
22								
24								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT

20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
12	61	26	1			
16	30	54	0			
23	44	31	2			

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 1/2/73

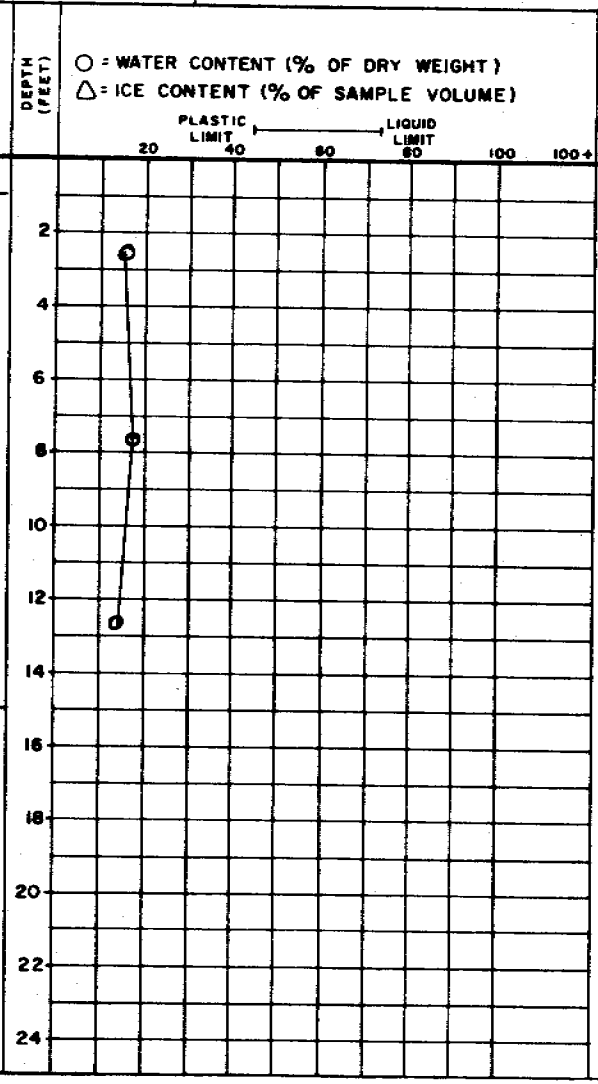
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED	AIRPHOTO NO: A22771-62	CHAINAGE 604+50	OFFSET
CKD:	TECH R.S.	RIG No. 1	SURFACE DRAINAGE GOOD	VEGETATION: A	ELEV 458

TEST HOLE		
MILE	B,C,S	NUMBER
387	C	E

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
					Pt	PEAT		Vx
2					ML	SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}
4								
5								
6								
8	2				ML			
10								
11						BROWN GREY		
12	3				ML			
14								
16						END OF HOLE AT 15'		
18								
20								
22								
24								



GRAIN-SIZE ANALYSIS				WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
CLAY %	SILT %	SAND %	GRAVEL %			

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA 1/2/73

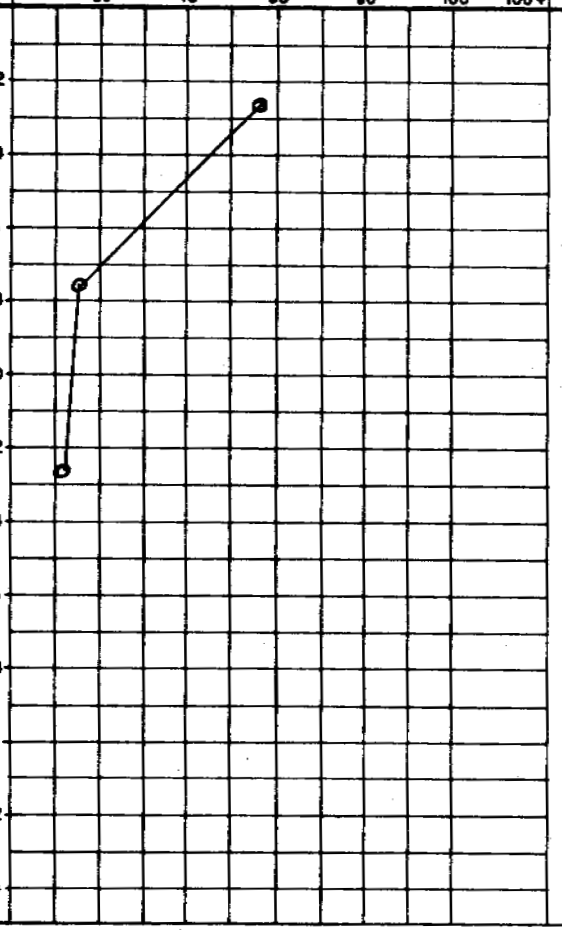
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED	AIRPHOTO NO: A22771-60	CHAINAGE 612+50	OFFSET
CKD	TECH R.S.	RIG No. 1	SURFACE DRAINAGE GOOD	VEGETATION: A	ELEV 458

TEST HOLE		
MILE	B,C,S	NUMBER
387	C	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					Pt	PEAT									
2	1				ML	SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL									
4															
6					ML										
8	2						F	N_{bn}							
10						BROWN GREY									
12	3				ML										
14															
15															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



BORROW AREAS
Mile 388

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

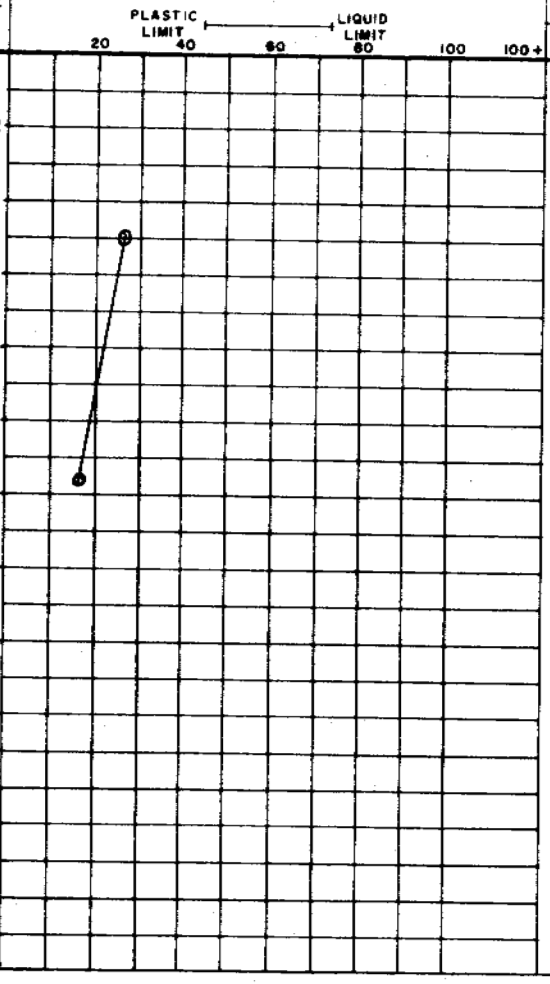
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/2/78	AIRPHOTO NO A22771-61	CHAINAGE	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
387	B	M

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				ML-CL	BROWN SANDY SILTY TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}	23	44	31	2			
4															
6	2				ML-CL										
8															
10															
12	3				ML-CL		F	N_{bn}							
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

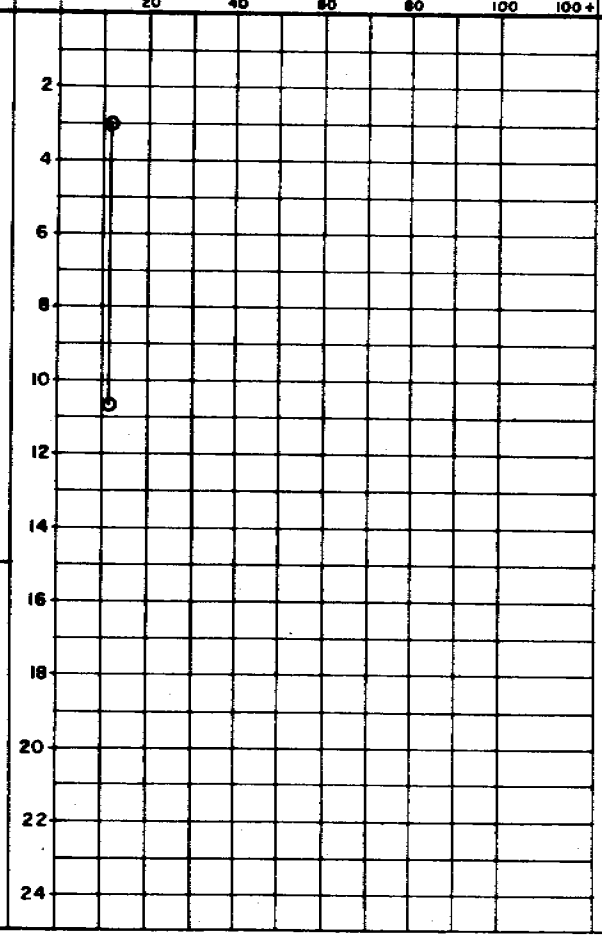
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 2/2/73	AIRPHOTO NO: A22771-62	CHAINAGE:	OFFSET:
CKD:	TECH W.R.	RIG 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B D	ELEV:

TEST HOLE

MILE	B,C,S	NUMBER
388	B	I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				ML	SILTY AND SANDY TILL WITH SOME CLAY AND GRAVEL									
4							F	N_{bn}							
6															
8	2				ML		F	N_{bn}							
10															
12															
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



BORROW AREAS

Mile 390

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

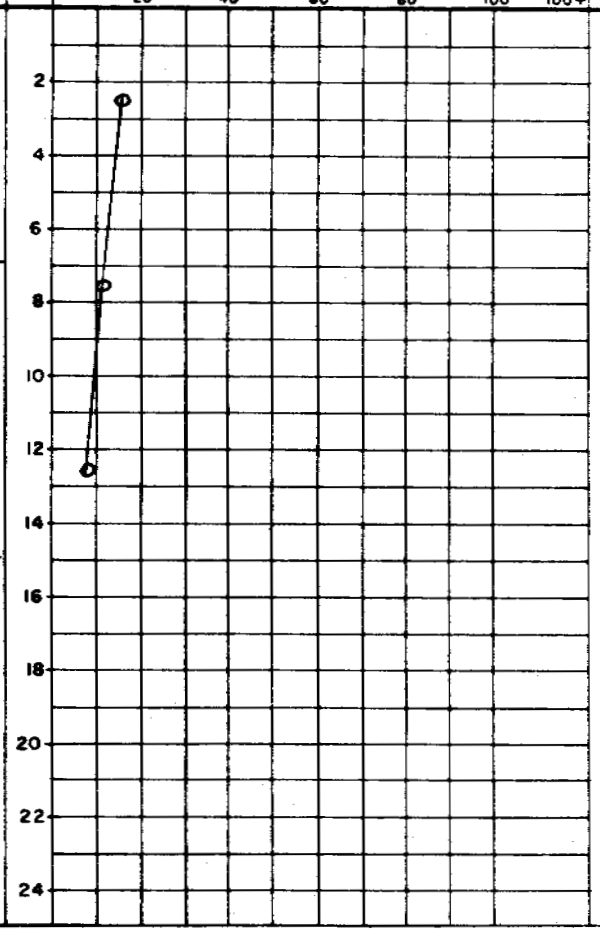
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 1/2/73	AIRPHOTO NO A22771-64	CHAINAGE 743 + 50	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION ABD	ELEV 474

TEST HOLE		
MILE	B,C,S	NUMBER
390	C	A

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
2	1				SM	BROWN FINE SILTY SAND		
3								
4					ML	BROWN SILTY AND SANDY TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}
5								
6	2				ML			
8							UF	
10								
12	3				ML			
14								
15								
16						END OF HOLE AT 15'		
18								
20								
22								
24								



GRAIN-SIZE ANALYSIS				WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
CLAY %	SILT %	SAND %	GRAVEL %			

BORROW AREAS

Mile 391

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

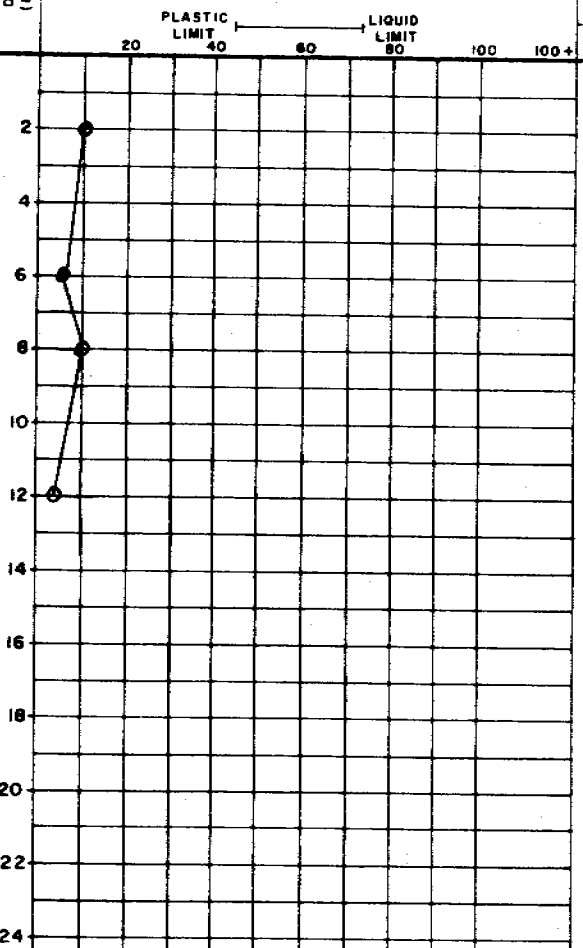
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 31/1/73	AIRPHOTO NO A22771-65	CHAINAGE 833 + 00	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 417

TEST HOLE		
MILE	B,C,S	NUMBER
391	C	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SP	Brown sand		Nf							
5															
6	2	P	50%	121	SW	Silty sand with some gravel	F	Vx							
7															
8	3				SW			Nf							
10															
	4														
12															
	4				SW	Sand with some gravel and a trace of silt									
14															
15															
16	5	P		26	SW				2	6	79	13			
17															
18						End of Hole at 17'									
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

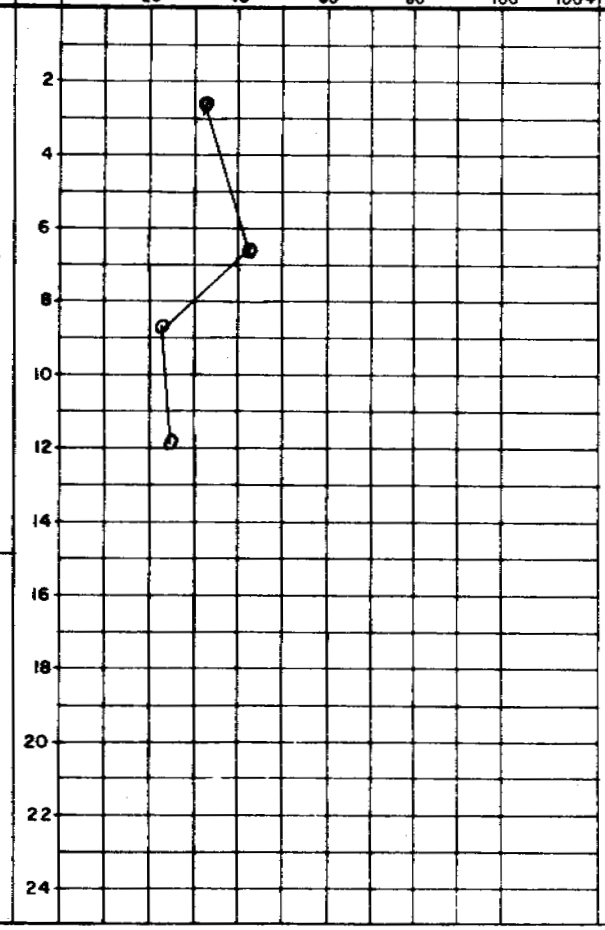
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 31/1/73	AIRPHOTO NO A22771-66	CHAINAGE 838 + 00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION AB	ELEV 407

TEST HOLE

MILE	B,C,S	NUMBER
391	C	D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1														
4					SM	Fine brown sand with some silt	F	Nbn							
6	2														
8							UF								
10	3				SM		F	N_f							
12	4														
14					SM										
15						End of hole at 15'									
16															
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

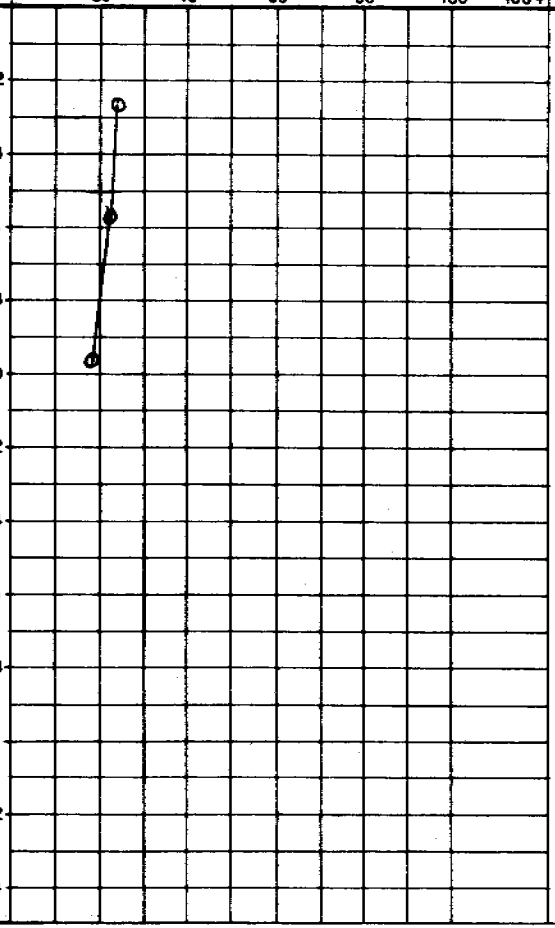
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 31/1/73	AIRPHOTO NO: A22771-66	CHAINAGE: 816 + 50	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION AB	ELEV 425

TEST HOLE		
MILE	B,C,S	NUMBER
391	C	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SM	Fine brown silty sand with a trace of clay									
4															
5							F	Nbn							
6					SM										
8	2														
10															
12					SM										
14															
15						End of hole at 15'									
16															
18															
20															
22															
24															



BORROW AREAS

Mile 392

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

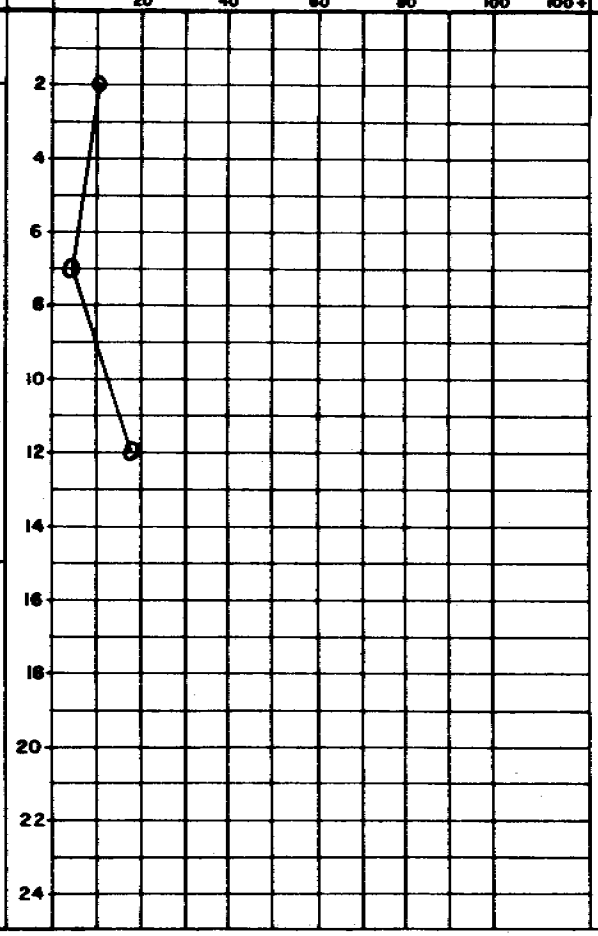
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 29/1/72	AIRPHOTO NO: A22771-69	CHAINAGE:	OFFSET:
CKD:	TECH: R.G.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
392	B	I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				SP	FINE BROWN SAND		N_{bn}	8	22	67	3			
4															
6	2				SP										
8							F	N_f							
10															
12	3				SP										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

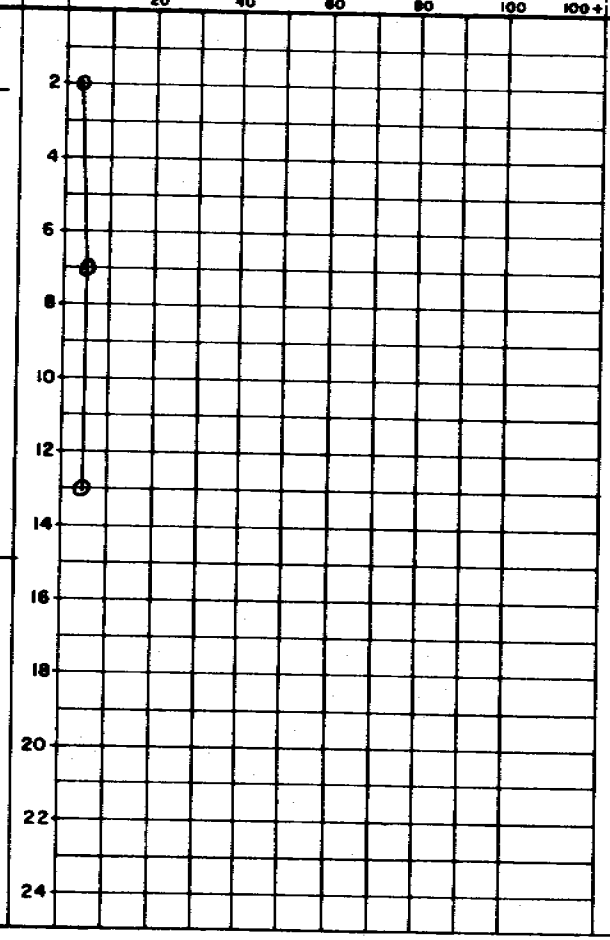
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 29/1/73	AIRPHOTO NO: A22771-69	CHAINAGE:	OFFSET:
CKD:	TECH: R.G.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
392	B	K

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2–4	1				SP	FINE BROWN SAND WITH SOME SILT		N_{bn}	0	15	85	0			
4–6															
6–8	2				SP										
8–10							F	N_f							
10–12	2				SP				0	5	95	0			
12–14															
14–16						END OF HOLE AT 15'									
16–18															
18–20															
20–22															
22–24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

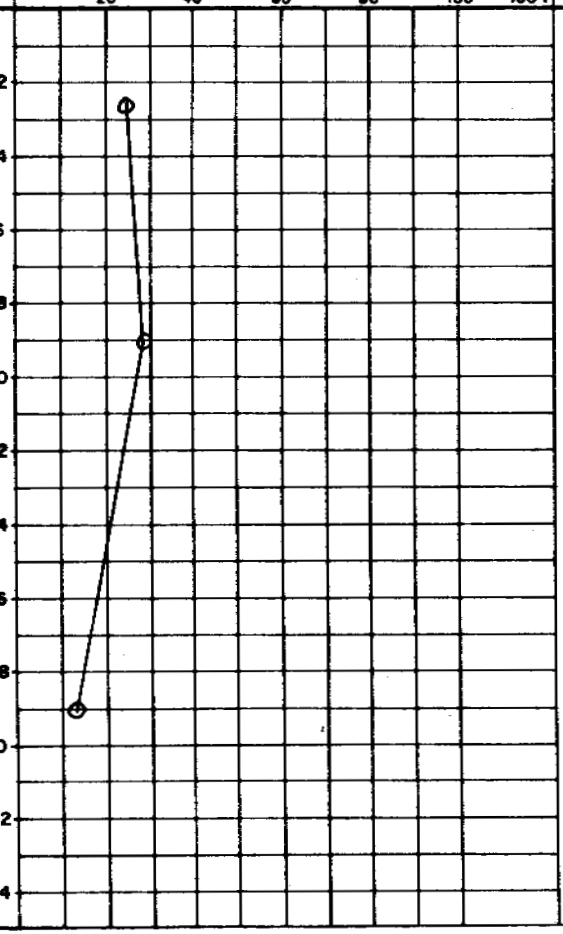
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/2/73	AIRPHOTO NO A22859-94	CHAINAGE	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION B	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
392	B	S

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SM		F	N_{bn}							
4															
6															
8	2				SM	BROWN SILTY SAND (FINE AND WET)									
10															
12							UF								
14															
16						BROWN AND GREY SAND WITH SOME SILT, AND GRAVEL AND A TRACE OF CLAY									
18	3				SW		UF								
20															
22	4														
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 4/2/73	AIRPHOTO NO	CHAINAGE	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION B	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
392	B	S

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
25															
2	5				SW				5	13	65	17			
4															
30															
6															
8	6				SM-ML	GREYISH/BROWN SILTY SAND WITH SOME CLAY									
35							UF								
10															
12	7				SM-ML										
14															
40															
16															
18	8				SM-ML										
20															
22	9				SM-ML										
24															
50						END OF HOLE AT 50'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/3/73	AIRPHOTO NO: A22771-69	CHAINAGE: 902+00	OFFSET: 3,300' E
CKD:	TECH: S.O.M.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
393	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
0.8'					PT	PEAT									
2								N_{bn}							
4	1				SP	BROWN, MEDIUM GRAINED SAND WITH HORIZONTAL BEDDING	F	N_f	0	8	91	1			
6															
8						END OF TRENCH AT 7'									
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

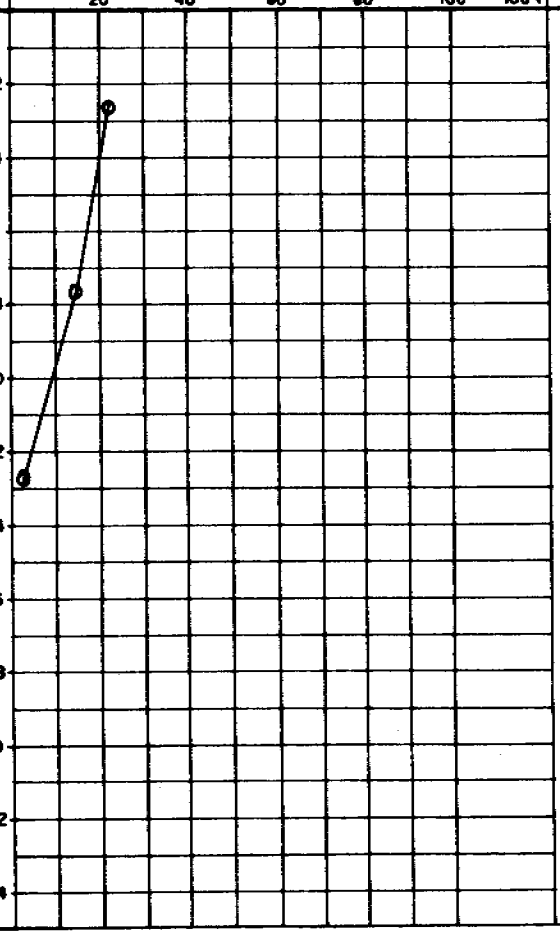
BORROW AREAS

Mile 393

ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 29/1/73	AIRPHOTO NO: A22771-68	CHAINAGE: 889 + 85	OFFSET	TEST HOLE
CKD:	TECH: R.G.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV 386	MILE: 393 / B,C,S: C / NUMBER: A

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				SM										
4						FINE BROWN SAND									
5	1														
6															
8					SM		F	Nbn							
10															
12					SM										
14															
15						END OF HOLE AT 15'									
16															
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

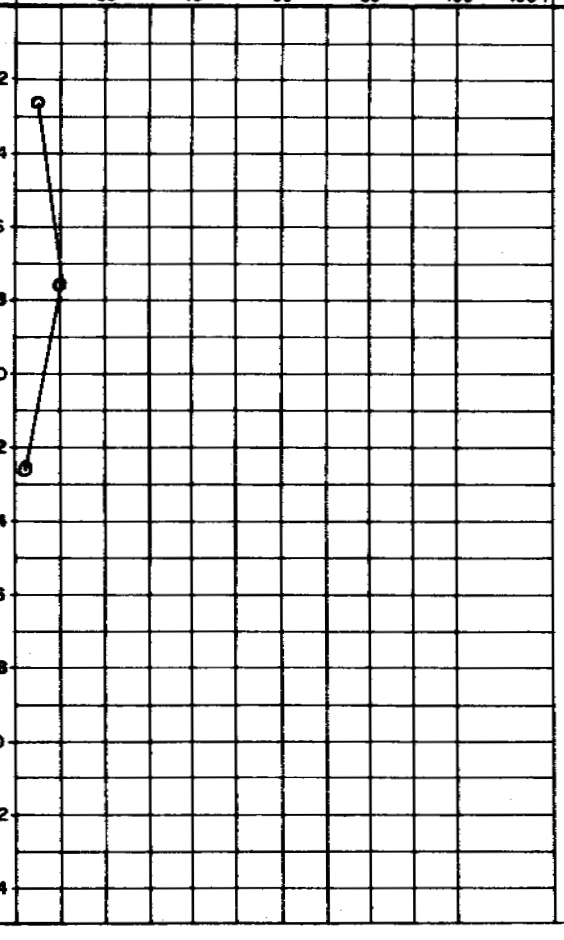
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 29/1/73	AIRPHOTO NO: A22771-68	CHAINAGE: 910 + 50	OFFSET:
CKD:	TECH: R.G.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV 392

TEST HOLE		
MILE	B,C,S	NUMBER
393	C	B

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				SM	FINE BROWN SAND WITH A TRACE OF GRAVEL	F	Nf							
4															
5															
6															
8	2				SM										
10															
12	3				SM										
14															
15						END OF HOLE AT 15'									
16															
18															
20															
22															
24															



BORROW AREAS

Mile 396

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

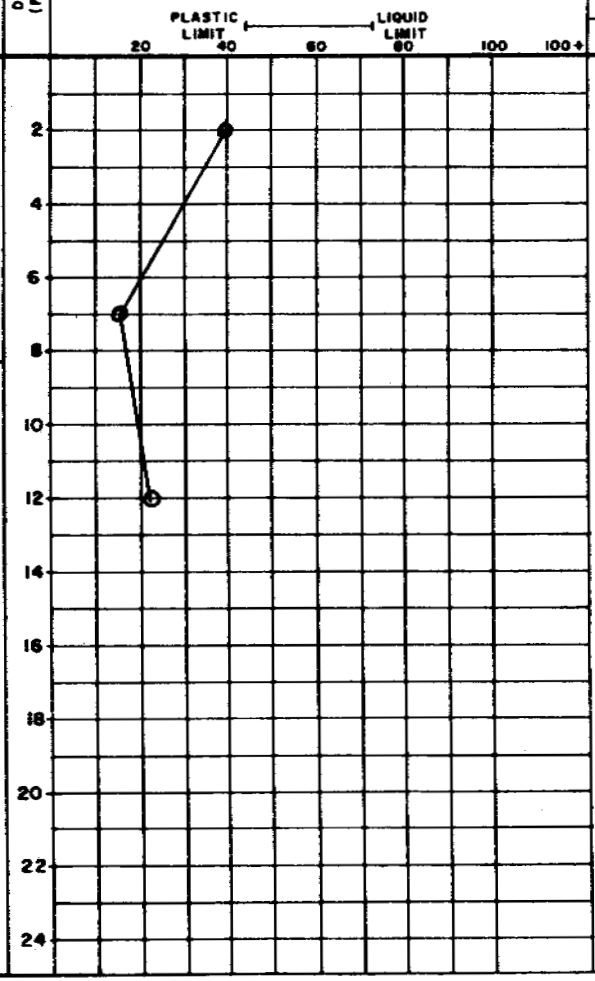
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 7/2/78	AIRPHOTO NO: A22771-73	CHAINAGE:	OFFSET:
CKD:	TECH: R.G.	RIG: 2	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
396	B	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				SM	BROWN SILTY AND GRAVELLY SAND TILL WITH SOME CLAY	F	N_{bn}	10	31	36	23			
4															
6															
8	2				SM		F	N_{bn}	12	25	45	18			
10															
12	3				SM		UF		14	27	36	23			
14															
16															
18							UF								
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 7/2/73	AIRPHOTO NO A22771-73	CHAINAGE	OFFSET
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV

TEST HOLE

MILE	B,C,S	NUMBER
396	B	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION
2	4				SM		UF	
4								
6						END OF HOLE AT 30'		
8								
10								
12								
14								
16								
18								
20								
22								
24								

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2							
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

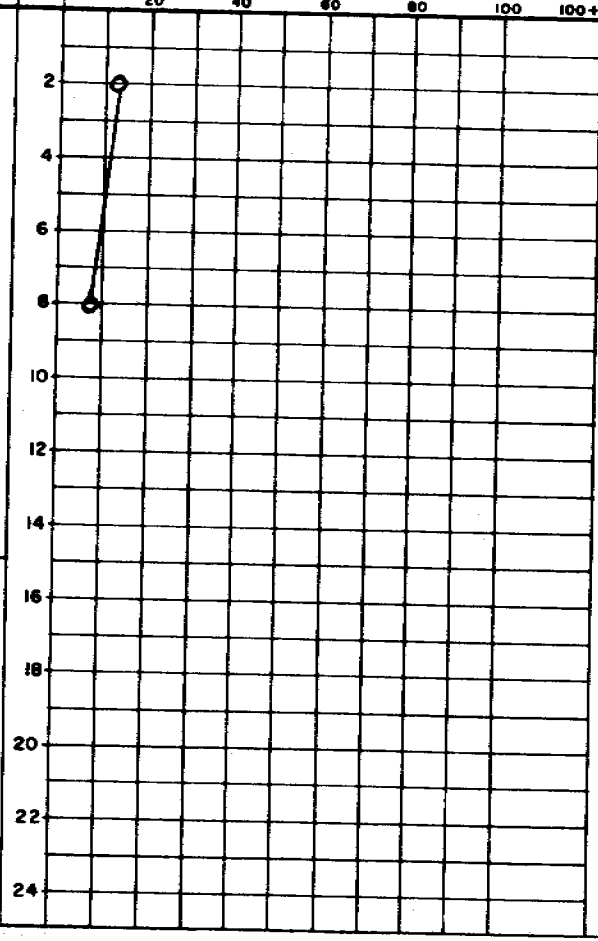
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 31/1/73	AIRPHOTO NO: A22771-73	CHAINAGE:	OFFSET:
CKD:	TECH: R.G.	RIG: 2	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
396	B	C

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				GM	BROWN SILTY AND SANDY TILL WITH SOME CLAY GRAVEL, AND COBBLES	F	N_{bn}							
4															
6															
8	2				ML		F	N_{bn}							
10															
12	3				ML										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

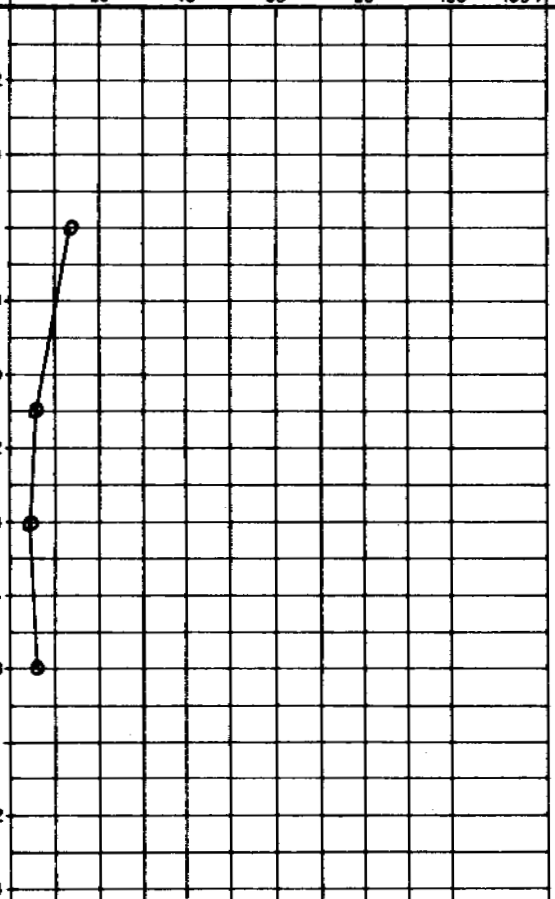
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 8/2/73	AIRPHOTO NO: A22771-73	CHAINAGE:	OFFSET
CKD	TECH M.H.R.	RIG 2	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
396	B	K

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2						BROWN SILTY AND GRAVELLY SAND TILL WITH SOME COBBLES AND CLAY, AND A TRACE OF BOULDERS	F	N_f							SPLIT SPOON SAMPLING COULD NOT PENETRATE THE FULL 18" BECAUSE OF COBBLES AND BOULDERS
4															
6	1	P		38/11"	SM										
8															
10	2	P		23/6"	SM				10	25	35	30			
12															
14															
16	3				SM		F	N_f							
18									17	23	58	2			
20						END OF HOLE AT 20'									
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 9/3/73	AIRPHOTO NO A22771-73	CHAINAGE 55+00	OFFSET 1,000' E
CKD	TECH S.O.M.	RIG D-7 CAT	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
396	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
					PT	0.3' OF PEAT									
2–4	1				GW	BROWN GRAVEL WITH SOME SILT, SAND AND COBBLES, AND A TRACE OF CLAY AND BOULDERS	F	Nbn	7	16	16	61			
6						END OF TRENCH AT 5'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟷ LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

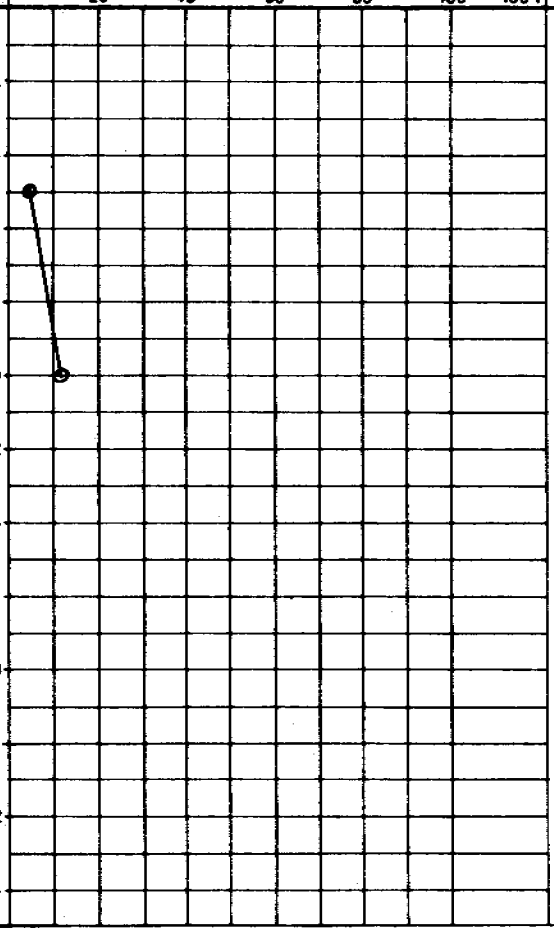
DWN:	FIELD ENG:	DATE DRILLED 4/2/73	AIRPHOTO NO: A22771-73	CHAINAGE: 73 + 00	OFFSET:
CKD:	TECH: R.S.	RIG 1	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV 470

TEST HOLE

MILE	B,C,S	NUMBER
396	S	E

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				SW	BROWN GRAVELLY SAND WITH SOME SILT	F	N_{bn}							
5							UF								
6	2	P		115	ML	SILTY AND CLAYEY TILL WITH SAND AND A TRACE OF GRAVEL									
10						BEDROCK (SHALE)									
12						END OF HOLE AT 12'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

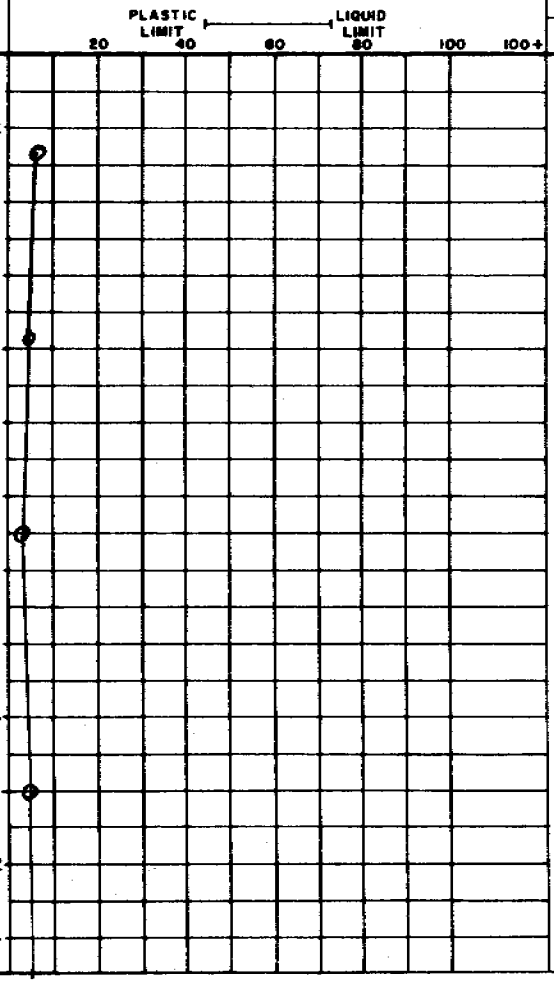
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 4/2	AIRPHOTO NO: A22771-73	CHAINAGE: 77 + 10	OFFSET
CKD	TECH	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV: 589

TEST HOLE		
MILE	B,C,S	NUMBER
396	S	I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
0.5						FINE SILTY SAND		N_{bn}							HOLE KEPT CAVING IN, HAD TO CASE TO 10 FT.
2	1				S	SAND WITH SOME SILT AND A TRACE OF GRAVEL AND CLAY	F	N_f							
5															
6	2								2	15	75	8			
13.5						SILTY TILL, SANDY WITH SOME CLAY AND GRAVEL		N_{bn}							
14	3	T	75%	98	ML										
20	4	T	30%	98	ML				7	15	77	1			
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 4/2	AIRPHOTO NO: A22771-73	CHAINAGE: 77 + 10	OFFSET
CKD:	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV 589

TEST HOLE		
MILE	B,C,S	NUMBER
396	S	I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	5	T		49	ML	SILT AND SAND TILL WITH SOME CLAY AND GRAVEL	F	Nb_n / N_f							
4															
30	5				ML										
6	6														
32															
8									20	30	32	18			
35															
10															
12					ML										
39	7								17	33	40	10			
						END OF HOLE AT 39'									
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 1/2/73	AIRPHOTO NO: A22771-75	CHAINAGE: 105 + 00	OFFSET
CKD	TECH: SITHAM	RIG: 2	SURFACE DRAINAGE: GOOD	VEGETATION: AG	ELEV: 542

TEST HOLE		
MILE	B,C,S	NUMBER
396	S	H

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					SP	BROWN SANDY SILT	F								
2						BROWN CLAYEY SILT TRACE OF GRAVEL		V_r							
4															
5															
6	1			11	ML										
8							UF								
10	2	T		32	ML										
12						FINE TO COARSE SANDY GRAVEL WITH SOME COBBLES									
14															
15															
16	3	P		44	GW										
18															
20	4			140	GW				15	35	50	0			
22															
24	5				GP										
25						END OF HOLE AT 25'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟵ ⟶ LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 5/2/73	AIRPHOTO NO. A22771-75	CHAINAGE 101 + 50	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 554

TEST HOLE		
MILE	B,C,S	NUMBER
396	S	M

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) (PLASTIC LIMIT 20, 40, 60, LIQUID LIMIT 80, 100, 100+)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
1					Pt	PEAT											
2	1				SC	BROWN SAND WITH SOME SILT AND GRAVEL AND A TRACE OF CLAY	F	N_{bn}	2								
4									4								
6					SC		UF		6								
8	2							N_f	8								
9		P	10	50/4"		SHALE BEDROCK	F										
10									10								
12									12								
14									14								
16									16								
18									18								
20									20								
22									22								
24									24								

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 5/2/73	AIRPHOTO NO: A22771-75	CHAINAGE 100 + 66	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION: AD	ELEV 557

TEST HOLE		
MILE	B,C,S	NUMBER
396	S	N

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
1	1	Z			Pt	PEAT	F	Vx							
2						SHALE BEDROCK									
						END OF HOLE AT 2'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟷ LIQUID LIMIT

20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 5/2/73	AIRPHOTO NO: A22771-75	CHAINAGE: 107 + 10 (Approx.)	OFFSET
CKD	TECH R.S.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A	ELEV 551

TEST HOLE		
MILE	B,C,S	NUMBER
396	S	L

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) (PLASTIC LIMIT — LIQUID LIMIT; 20, 40, 60, 80, 100, 100+)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				SW	BROWN SILTY SAND WITH SOME GRAVEL	NF	N_{bn}	2								
4									4								
5																	
6	2	P		73/3"					6								
7																	
8						END OF HOLE AT 7'			8								
10									10								
12									12								
14									14								
16									16								
18									18								
20									20								
22									22								
24									24								

BORROW AREAS
Mile 398

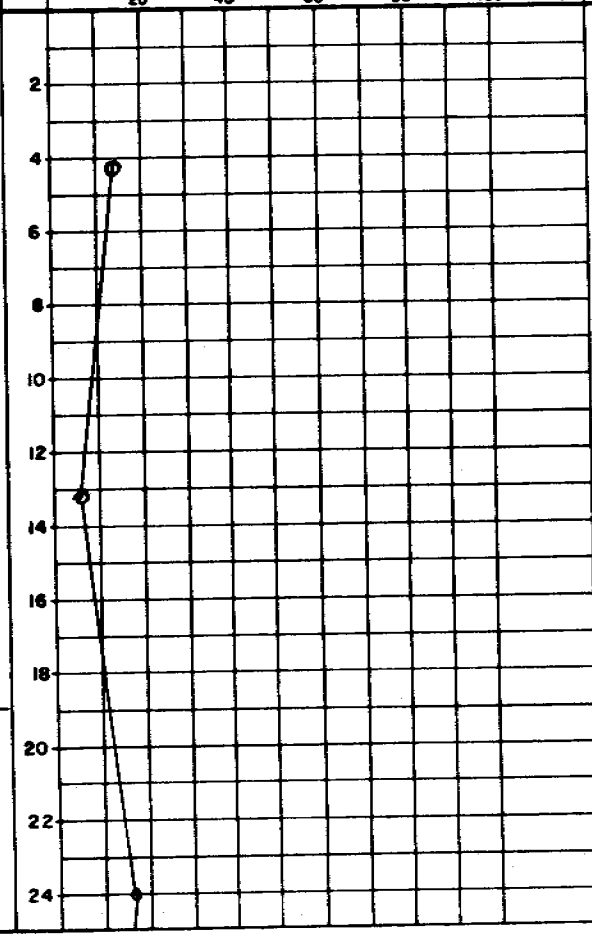
ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 6/2/73	AIRPHOTO NO: A22771-76	CHAINAGE:	OFFSET:	TEST HOLE
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B	ELEV:	MILE: 398 / B,C,S: B / NUMBER: T

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2–8	1				CL-ML	BROWN SILTY SANDY TILL WITH SOME CLAY AND GRAVEL	F	N_{bn}							
8–18	2				CL-ML		F	N_{bn}							
18–24						SOFT DARK GREY SHALE BEDROCK, WEATHERED AND FISSILE, HARDER AND MORE COMPETENT WITH DEPTH									



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

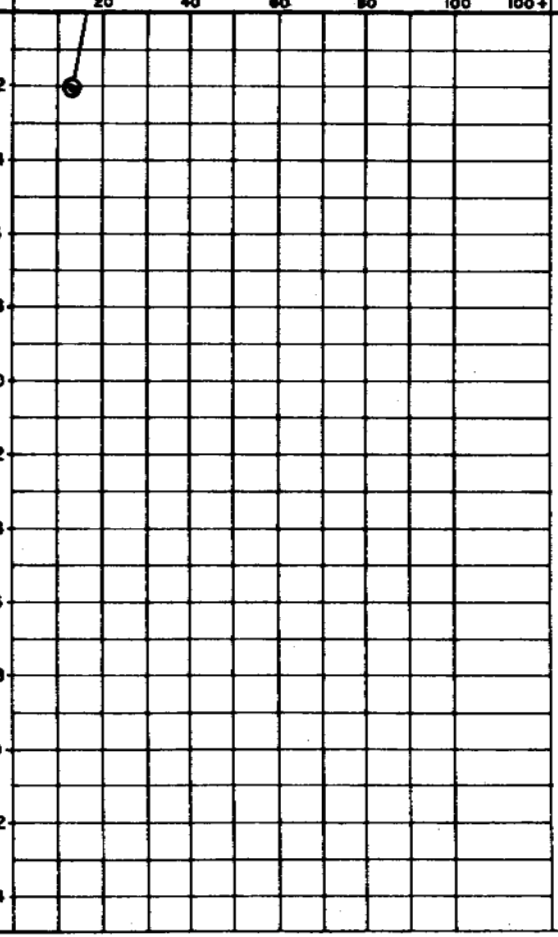
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 6/2/73	AIRPHOTO NO: A22771-76	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
398	B	T

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	3														
4															
30															
6						END OF HOLE AT 30'									
8															
10															
12															
14															
16															
18															
20															
22															
24															



BORROW AREAS

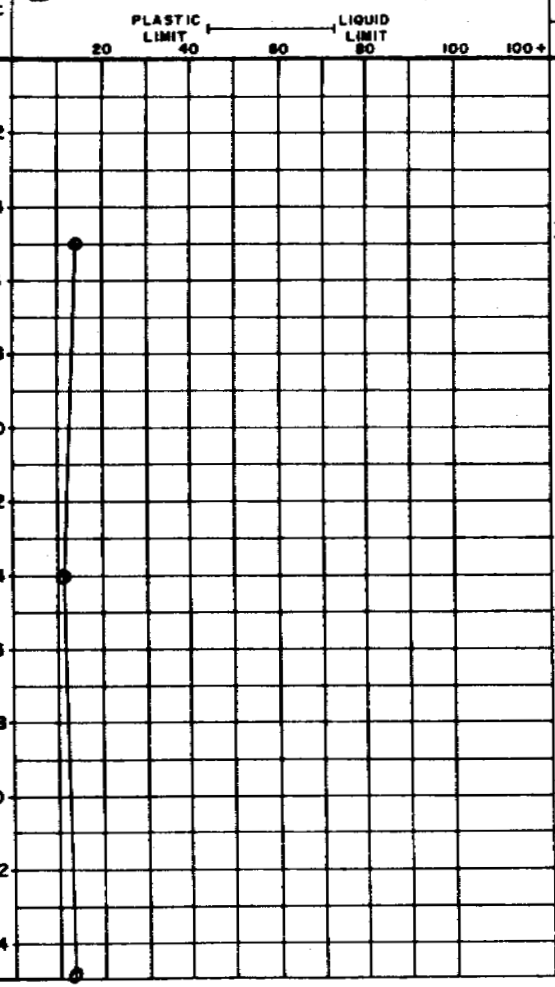
Mile 399

ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 6/2/73	AIRPHOTO NO: A22771-78	CHAINAGE:	OFFSET:	TEST HOLE
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: B D	ELEV:	MILE: 399 / B,C,S: B / NUMBER: H

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2–10	1				ML	BROWN SANDY SILT TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_{bn}	19	48	30	3			
12–24	2				SM	GREY SILTY SAND TILL WITH SOME CLAY AND GRAVEL; GRAVEL COMPOSED MAINLY OF SHALE: DEPOSIT GETS SLIGHTLY COARSER GRAINED WITH DEPTH	F	N_{bn}	18	27	47	8			
	3				SM		F	N_{bn}	13	27	44	16			

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 6/2/73	AIRPHOTO NO: A22771-78	CHAINAGE:	
CKD:	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION: B D	OFFSET: ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
399	B	H

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	3				SM		F	N_{bn}							
4															
30															
6						END OF HOLE AT 30'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

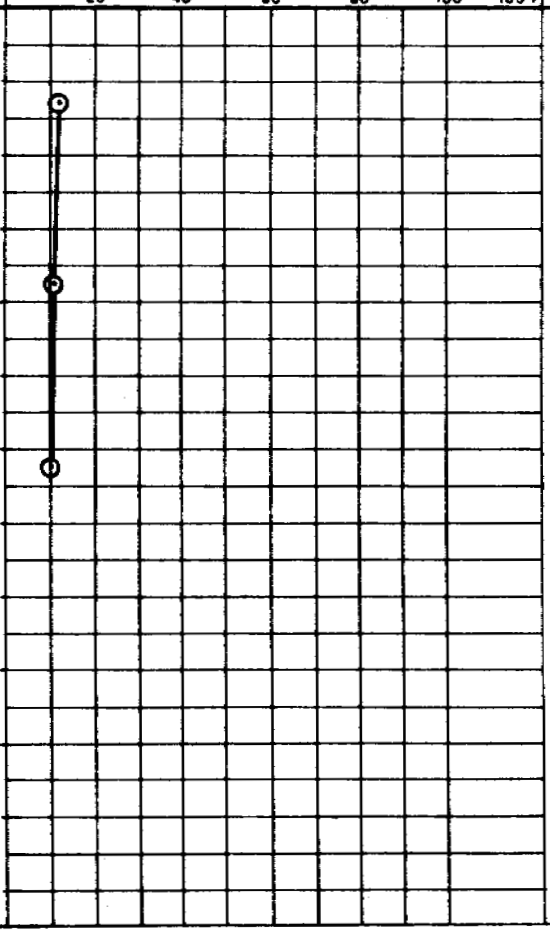
PLASTIC LIMIT ⟵ ⟶ LIQUID LIMIT

20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 2/2/73	AIRPHOTO NO: A22771-78	CHAINAGE: 239 + 40	OFFSET:	TEST HOLE
CKD:	TECH: R.G.	RIG: 2	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV: 925	MILE: 399 / B,C,S: C / NUMBER: D

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2–4	1				ML	BROWN SILTY AND SANDY TILL WITH SOME GRAVEL AND CLAY									
5–8	2				SC		F	N_{bn}							
10–12	3				SC										
15						End of hole at 15'									



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

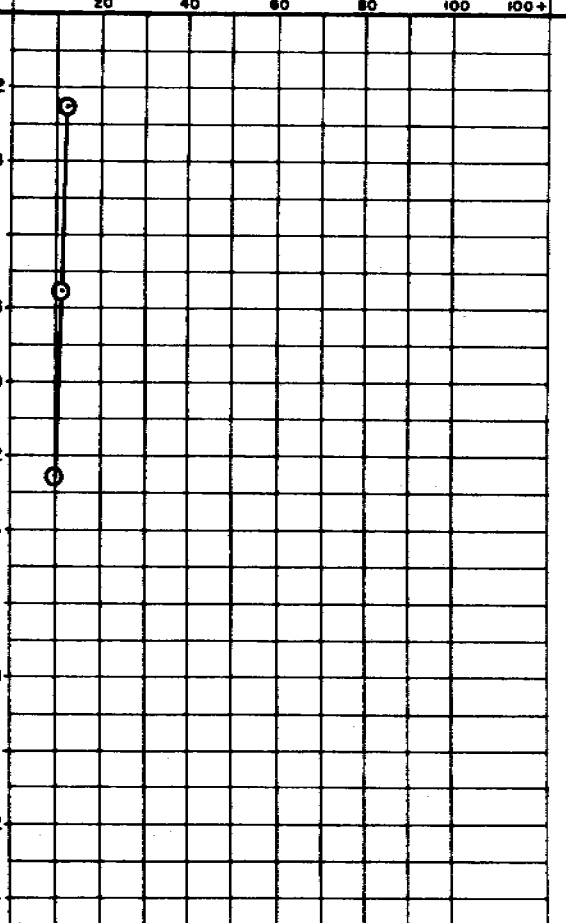
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 2/2/73	AIRPHOTO NO: A22771-78	CHAINAGE: 244 + 14	OFFSET:
CKD:	TECH: R.G.	RIG: 2	SURFACE DRAINAGE: GOOD	VEGETATION: B	ELEV: 939

TEST HOLE		
MILE	B,C,S	NUMBER
399	C	E

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2–5	1				ML	DARK BROWN SILTY AND SANDY TILL WITH SOME CLAY AND A TRACE OF GRAVEL	F	N_f							
5–10	2				ML	AS ABOVE WITH LESS GRAVEL									
10–15	3				ML	AS ABOVE									
15						End of hole at 15'									

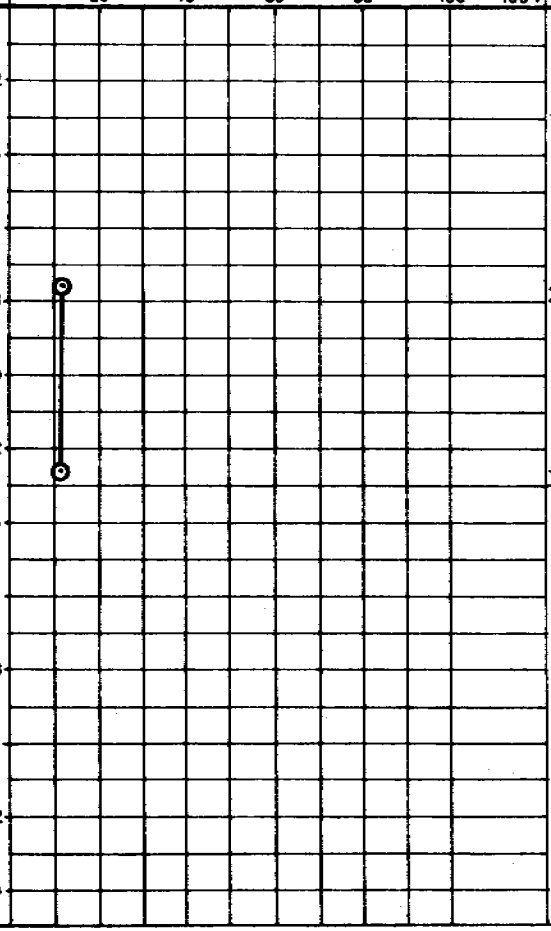


ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 2/2/73	AIRPHOTO NO A22771-78	CHAINAGE 248 + 18	OFFSET	TEST HOLE
CKD	TECH R.G.	RIG 2	SURFACE DRAINAGE FAIR	VEGETATION A	ELEV 942	MILE 399 / B,C,S C / NUMBER F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2–5	1				SM	BROWN SILTY AND SANDY TILL, WITH SOME CLAY AND GRAVEL, TRACE OF COBBLES	F	N_{bn}	15	30	43	12			
5–10	2				ML				25	28	41	6			
10–15	3				SM				12	14	44	30			
15						End of hole at 15'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



BORROW AREAS

Mile 400

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

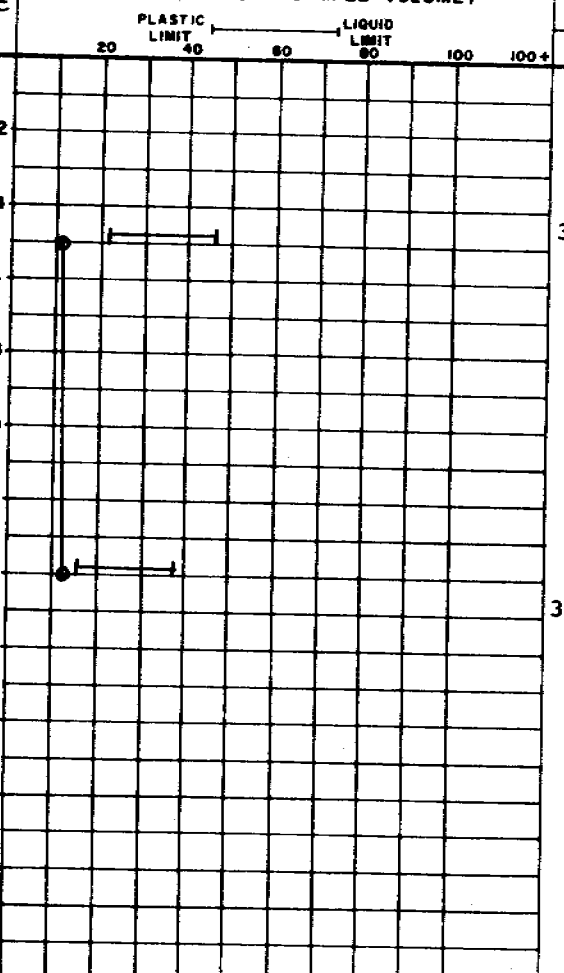
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22771-78	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A D	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
400	B	I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					SM	1' OF BROWN SILTY SAND WITH SOME ORGANIC MATTER									
2															
4							F	N_{bn}							
6	1				CL	GREY CLAYEY SILTY AND SANDY TILL WITH A TRACE OF GRAVEL			32	32	32	4			
8															
10															
12															
14	2				CL				30	33	34	3			
16															
18															
20															
22	3				CL										
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22771-78	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A D	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
400	B	I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
25															
2	3				CL		F	N_{bn}							
4															
30															
6						END OF HOLE AT 30'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT

20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

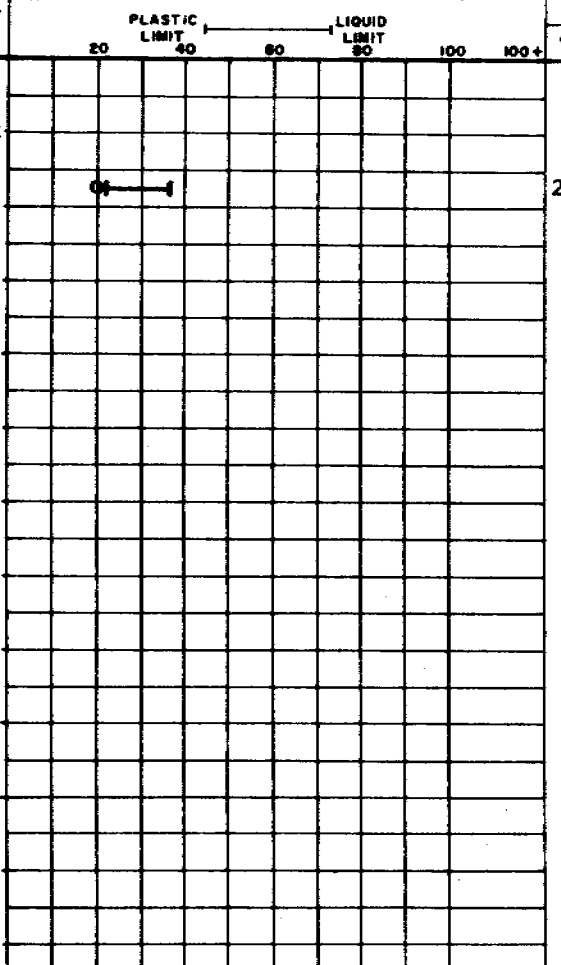
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 10/3/73	AIRPHOTO NO: A22771-78	CHAINAGE: 270+00	OFFSET: 500' W
CKD:	TECH: S.O.M.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
400	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2–4	1				CL	BROWN CLAYEY AND SANDY SILT TILL WITH SOME GRAVEL AND AND A TRACE OF COBBLES, SOME ORGANIC MATTER IN UPPER FOOT	F	N_{bn}	25	37	28	10			
6–24						END OF TRENCH AT 5'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22771-80	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: B D	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
400	B	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2					SW	BROWN SAND AND GRAVEL WITH SOME SILT AND A TRACE OF CLAY WITH LITTLE SILT									
4	1														
6							F	N_{bn}							
8															
10															
12															
14	2				SW			N_f	6	12	54	28			
16							F								
18															
20						GREY SAND AND GRAVEL									
22	3				SP			N_f							
24									0	1	69	30			

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22771-80	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
400	B	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	○ = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
	3																
2							F	N_f	2								
4	4				SP				4								
30							UF										
6						END OF HOLE AT 30'			6								
8									8								
10									10								
12									12								
14									14								
16									16								
18									18								
20									20								
22									22								
24									24								

BORROW AREAS
Mile 402

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

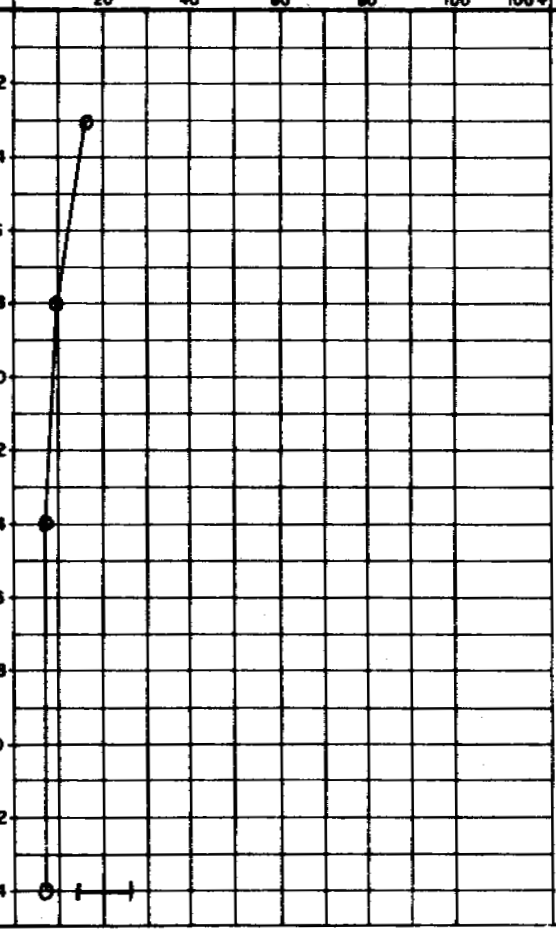
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-94	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B D	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
402	B	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
						2' OF PEAT AND ICE		V_x							
2															
4	1				SC	SILTY SAND TILL WITH SOME CLAY AND GRAVEL									
6															
8															
10							F	N_{bn}							
12															
14	3				SC				17	25	49	9			
16															
18															
20															
22	4				ML CL										
24									24	31	41	4			



ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-94	CHAINAGE:	OFFSET:	BEST HOLE
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B D	ELEV:	MILE: 402 / B,C,S: B / NUMBER: F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2 4	4						F	N_{bn}							
30 6 8 10 12 14 16 18 20 22 24						END OF HOLE AT 30'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

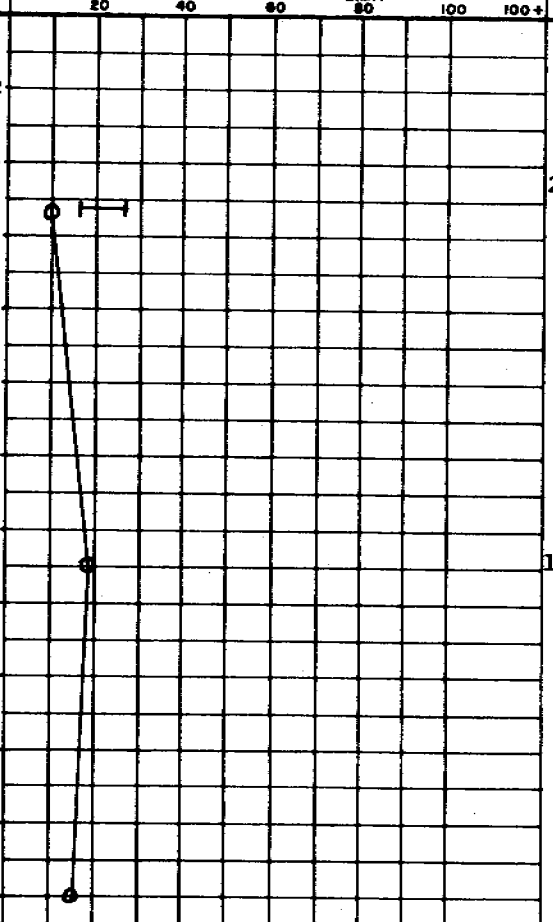
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-94	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B D	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
402	B	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2															
4					SC	SANDY AND SILTY TILL WITH SOME CLAY AND GRAVEL									
6	1								20	31	36	13			
8							F	N_{bn}							
10															
12															
14															
16	2				SC				18	30	32	20			
18															
20															
22	3														
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/72	AIRPHOTO NO: A22772- 94	CHAINAGE:	OFFSET
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B D	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
402	B	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2–4	4				SC				15	25	33	27			
30						END OF HOLE AT 30'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-94	CHAINAGE:	OFFSET:	TEST HOLE
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B D	ELEV:	MILE: 402 / B,C,S: B / NUMBER: H

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2							F	N_{bn}	2							
4						SILTY SAND TILL WITH SOME CLAY AND GRAVEL			4	15	26	55	4			
6	1				SC				6							
8									8							
10									10							
12									12							
14	2				SC				14	18	28	40	12			
16							F	N_{bn}	16							
18									18							
20									20							
22	3				SC				22							
24									24							

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-94	CHAINAGE:	OFFSET
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B D	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
402	B	H

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2–4	3				SC		F	N_{bn}	12	35	41	12			
30						END OF HOLE AT 30'									

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

BORROW AREAS

Mile 403

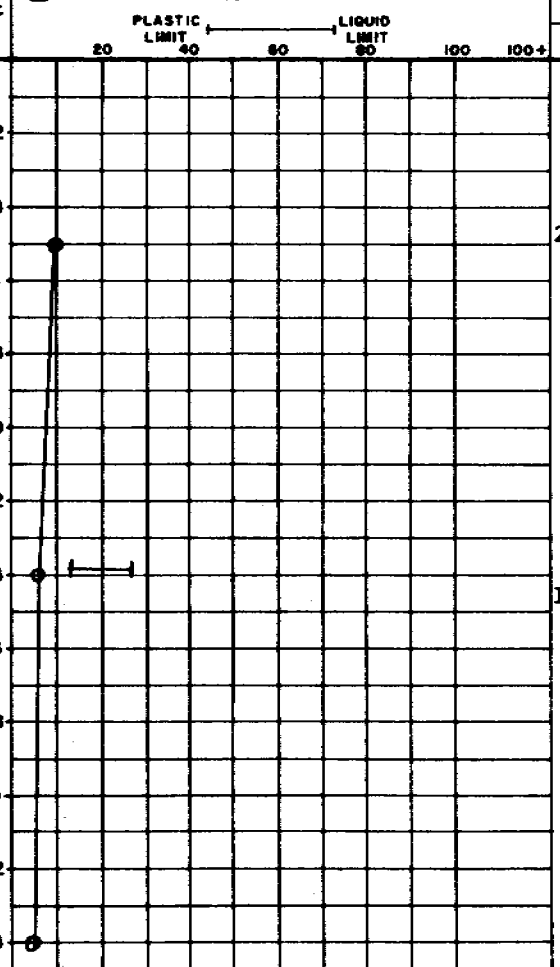
ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-96	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
403	B	I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
			—	—	SM	6" BROWN SAND									
2															
4						SILTY SAND TILL WITH SOME GRAVEL AND OCCASIONAL COBBLE AND SMALL BOULDER			20	33	45	2			
6	1				SC										
8															
10															
12							F	N_{bn}							
14									11	19	35	35			
16	2				SC										
18															
20															
22	3														
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

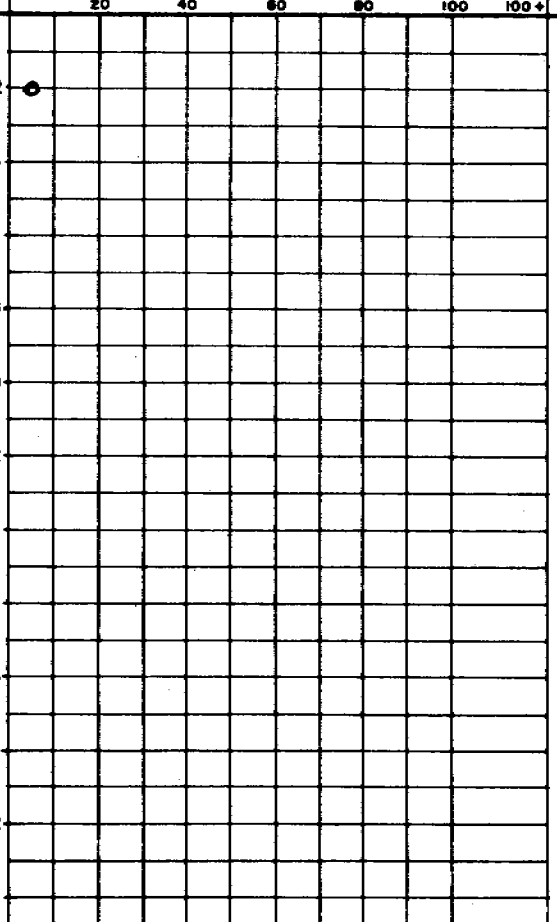
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-96	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE:	VEGETATION:	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
403	B	I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
25															
2															
	1				SC										
4															
30															
6						END OF HOLE AT 30'									
8															
10															
12															
14															
16															
18															
20															
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

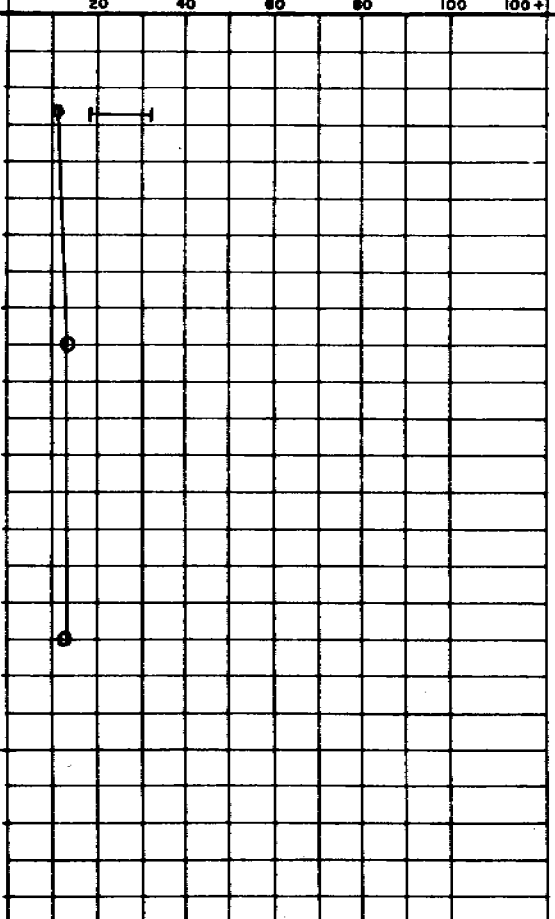
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/72	AIRPHOTO NO: A22772-96	CHAINAGE:	OFFSET:
CKD:	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: FAIR	VEGETATION: B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
403	B	H

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				ML-CL	CLAYEY SILT AND SAND TILL WITH SOME GRAVEL AND OCCASIONAL BOULDER			22	35	33	10			
10	2				ML-CL		F	N_{bn}							
22	3				ML-CL										



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-96	CHAINAGE:	OFFSET:
CKD:	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: FAIR	VEGETATION: B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
403	B	H

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	3				ML-CL										
4															
30															
6						END OF HOLE AT 30'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⟷ LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

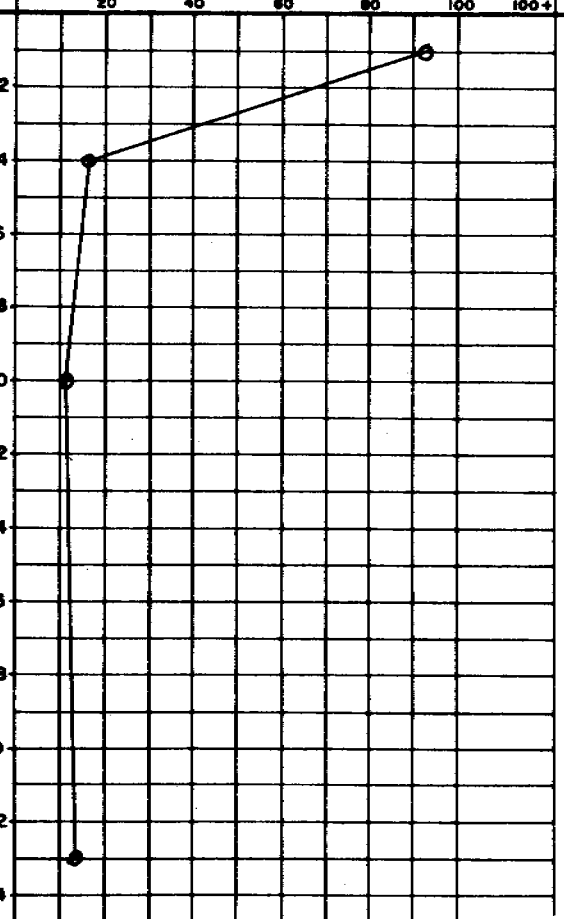
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-96	CHAINAGE:	OFFSET:
CKD:	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: FAIR	VEGETATION: B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
403	B	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				Pt	3' OF PEATY TOP SOIL	F	V_x							
4	2				SC										
6															
8															
10					SC	SILTY SAND TILL WITH SOME CLAY AND GRAVEL AND OCCASIONAL BOULDER									
12	3						F	N_{bn}							
14															
16															
18															
20	4				SC										
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-96	CHAINAGE:	OFFSET:
CKD:	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: FAIR	VEGETATION: B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
403	B	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
25															
2									15	26	51	8			
4	4				SC	SANDY CLAY WITH SILT (TILL)									
30															
6						END OF HOLE AT 30'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

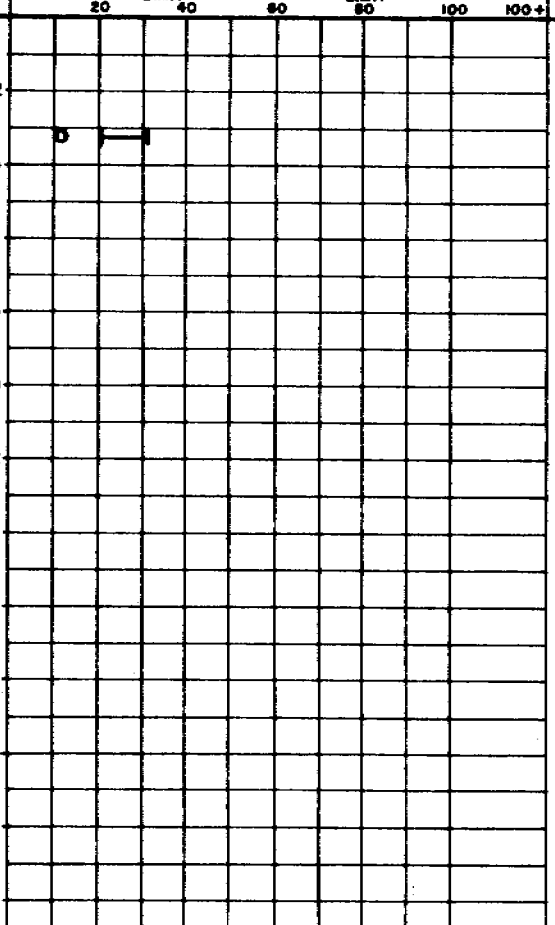
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 10/3/73	AIRPHOTO NO: A22772-97	CHAINAGE: 457+00	OFFSET: 250' E
CKD:	TECH: S.O.M.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
403	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
					SM	BROWN FINE SILTY SAND WITH SOME ORGANIC MATTER									
2															
4	1				CL	BROWN SILTY TILL, CLAYEY, SANDY AND GRAVELLY OCCASIONAL BOULDERS	F	N_{bn}	20	33	26	21			
6						END OF HOLE AT 4.5'									
8															
10															
12															
14															
16															
18															
20															
22															
24															



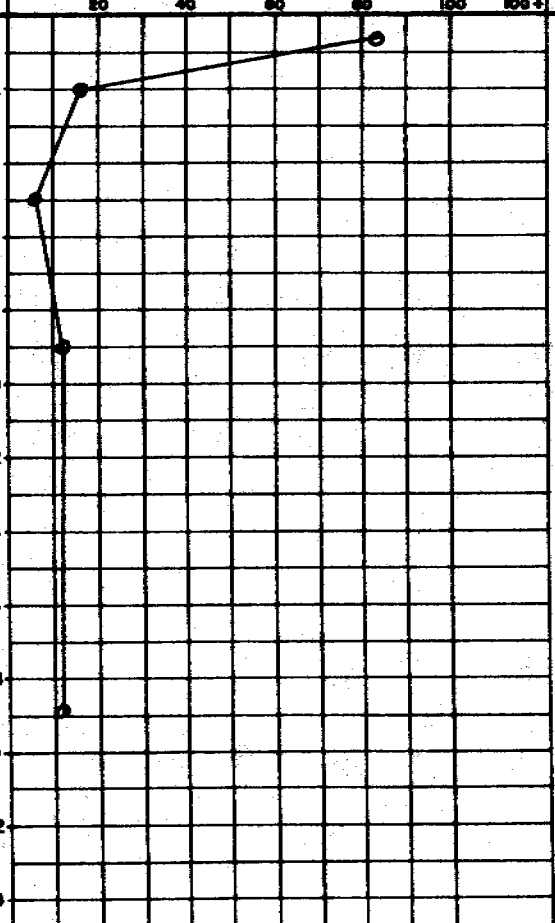
BORROW AREAS

Mile 404

ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/72	AIRPHOTO NO: A22772-97	CHAINAGE:	OFFSET:	TEST HOLE
CKD:	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: FAIR	VEGETATION: A D	ELEV:	MILE 404 / B,C,S B / NUMBER I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
	1				Pt	PEATY TOP SOIL									
2	2					CLAYEY AND SILTY SAND TILL WITH SOME GRAVEL AND OCCASIONAL BOULDER									
4	3				SC										
6	4														
8							F	N_{bn}							
10	5				SC				21	24	37	18			
12															
14															
16	6				SC										
18															
20									21	30	40	9			
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-97	CHAINAGE:	OFFSET:
CKD:	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: FAIR	VEGETATION: A D	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
404	B	I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
25																
2	7				SC				2	23	25	44	8			
4									4							
30																
6						END OF HOLE AT 30'			6							
8									8							
10									10							
12									12							
14									14							
16									16							
18									18							
20									20							
22									22							
24									24							

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

GRAIN-SIZE ANALYSIS

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

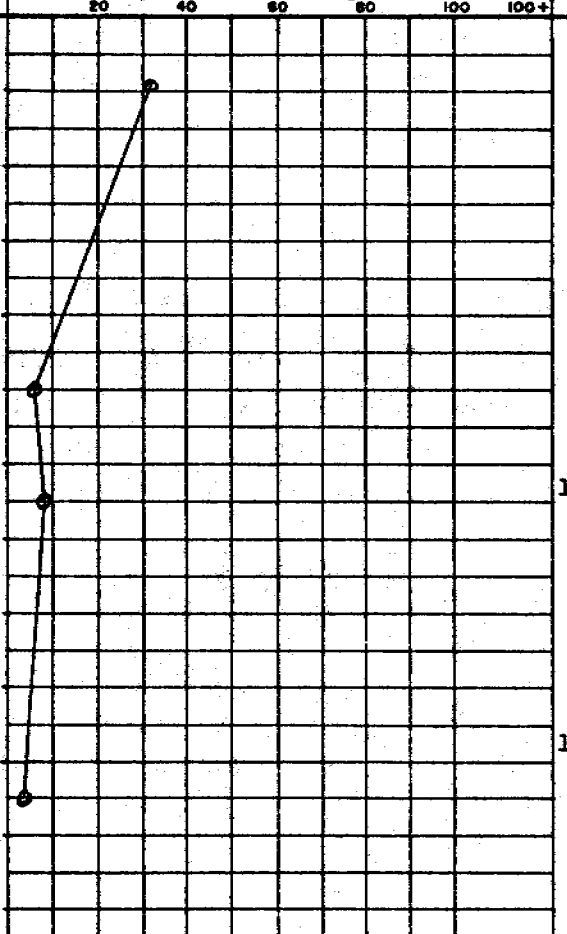
DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-97	CHAINAGE:	OFFSET:
CKD:	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: FAIR	VEGETATION: B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
404	B	J

REMARKS

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)
	1				SM	SILTY SAND & ORGANICS								
2						SILTY SAND TILL WITH SOME CLAY AND A TRACE OF GRAVEL WITH AN OCCASIONAL BOULDER								
4	1				SC									
6														
8							F	N_{bn}						
10	2				SC									
12														
14	3				SC				16	30	52	2		
16														
18														
20	4				SC				17	26	54	3		
22														
24														



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-97	CHAINAGE:	OFFSET:
CKD:	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: FAIR	VEGETATION: B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
404	B	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	5				SC										
4															
30															
6						END OF HOLE AT 30'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT

20 40 60 80 100 100+

BORROW AREAS
Mile 405

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

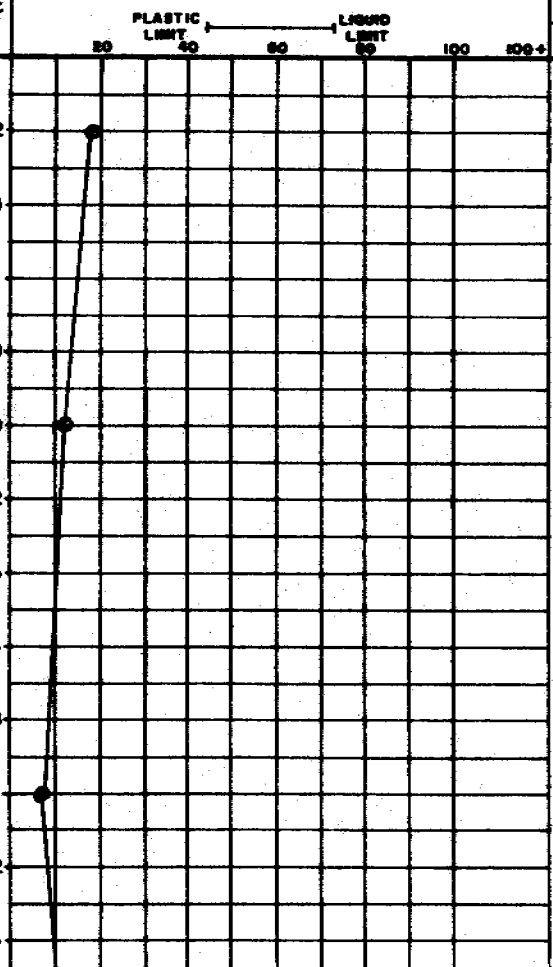
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-97	CHAINAGE:	OFFSET:
CKD:	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
405	B	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				SC				2							
4									4							
6									6							
8							F	N_{bn}	8							
10	2				SC	SILTY SAND TILL WITH SOME CLAY AND GRAVEL AND OCCASIONAL BOULDERS			10	15	30	40	15			
12									12							
14									14							
16									16							
18									18							
20	3				SC				20	12	22	51	15			
22									22							
24									24							



GRAIN-SIZE ANALYSIS

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 9/2/73	AIRPHOTO NO: A22772-97	CHAINAGE:
CKD	TECH: R.S.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A.

OFFSET:
ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
405	B	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	O = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT (20, 40, 60, 80, 100, 100+)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
25																	
2									2								
	4				SC												
4									4								
30																	
6						END OF HOLE AT 30'			6								
8									8								
10									10								
12									12								
14									14								
16									16								
18									18								
20									20								
22									22								
24									24								

BORROW AREAS
Mile 406

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

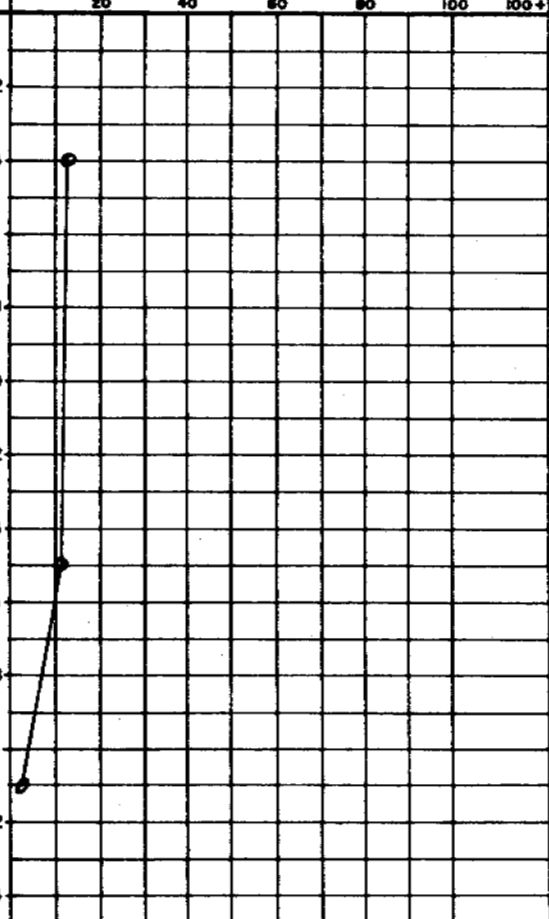
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 10/2/73	AIRPHOTO NO: A22772-99	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B D	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
406	B	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
						6" BROWN TOP SOIL									
2															
4															
6	1				SC	SILTY AND GRAVELLY SAND TILL WITH SOME CLAY AND OCCASIONAL BOULDER									
8															
10							F	N_{bn}							
12															
14	2				SC				15	25	30	30			
16															
18															
20															
22	3				SC										
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 10/2/73	AIRPHOTO NO: A22772-99	CHAINAGE:	OFFSET
CKD:	TECH: W R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B D	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
406	B	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	O = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) PLASTIC LIMIT — LIQUID LIMIT 20 40 60 80 100 100+	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	3				SC				2								
4									4								
30																	
6						END OF HOLE AT 30'			6								
8									8								
10									10								
12									12								
14									14								
16									16								
18									18								
20									20								
22									22								
24									24								

BORROW AREAS

Mile 407

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

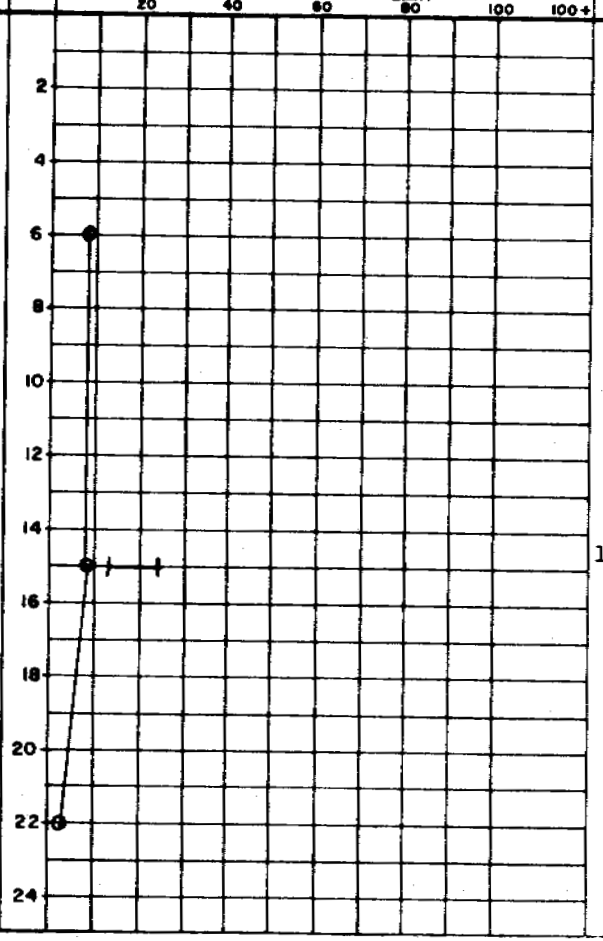
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 10/2/73	AIRPHOTO NO: A22772-99	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: FAIR	VEGETATION: A B D	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
407	B	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2						SILTY SAND TILL WITH SOME CLAY AND GRAVEL AND OCCASIONAL COBBLES AND BOULDERS									
4	1				SC										
6															
8															
10															
12							F	N_{bn}							
14	2				SC				16	30	37	17			
16															
18															
20															
22															
24	3				SC										



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 10/2/73	AIRPHOTO NO: A22772-99	CHAINAGE:	
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: FAIR	VEGETATION: A B D	OFFSET:
					ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
407	B	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	3				SC										
4															
30															
6						END OF HOLE AT 30'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

O = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT

20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

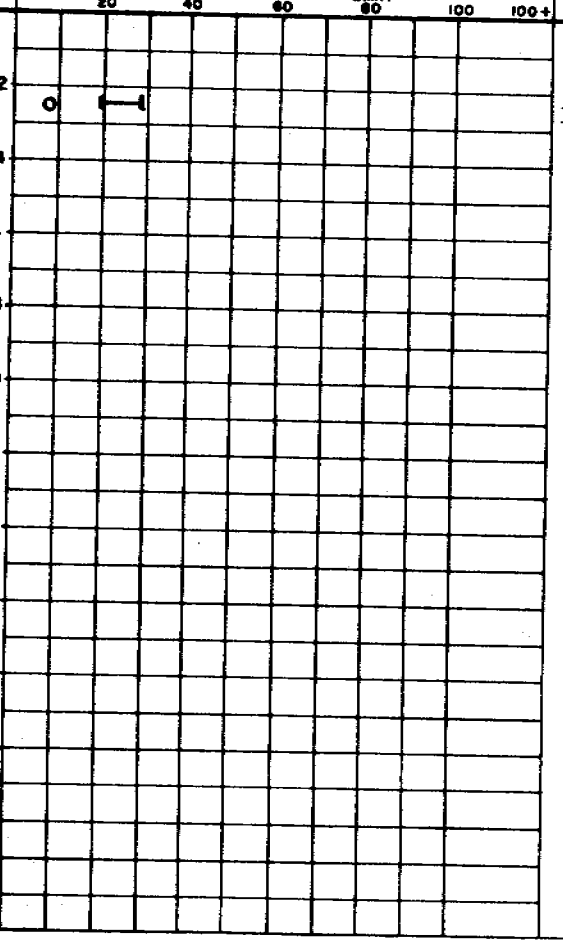
DWN:	FIELD ENG:	DATE DRILLED: 10/3/73	AIRPHOTO NO: A22772-102	CHAINAGE: 659+00	OFFSET: 450' E
CKD:	TECH: S.O.M.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A B	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
407	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2–4	1				GW	BROWN SILTY AND SANDY GRAVEL TILL WITH SOME CLAY AND OCCASIONAL BOULDERS	F	N_{bn}	10	25	25	40			
4						END OF HOLE AT 4'									

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT



BORROW AREAS

Mile 408

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

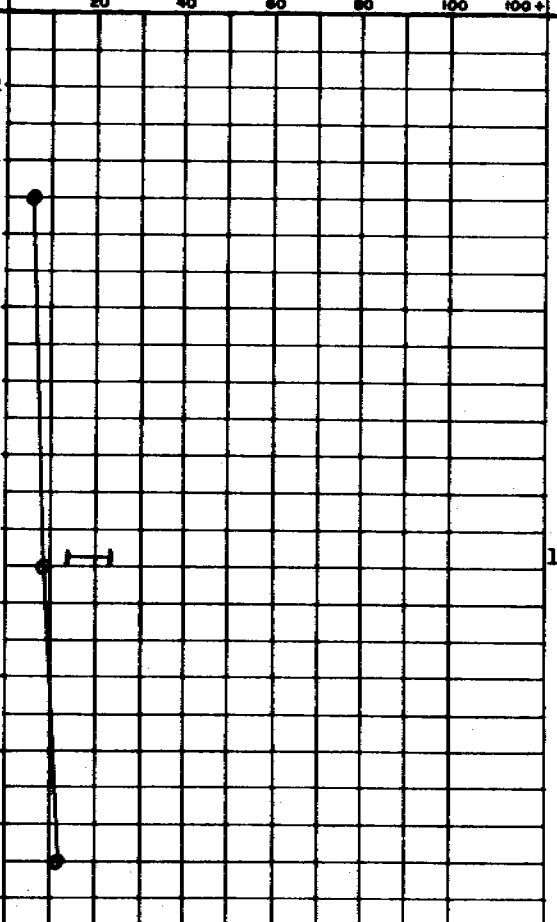
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 10/2/73	AIRPHOTO NO: A22772-104	CHAINAGE:	OFFSET:
CKD:	TECH: N.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A D	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
408	B	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2						SILTY SAND TILL WITH SOME CLAY AND GRAVEL									
4	1				SC										
6															
8															
10							F	N_{bn}							
12															
14	2				SC				14	23	48	15			
16															
18															
20															
22	3				SC										
24															
25						END OF HOLE AT 25'									



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 10/2/73	AIRPHOTO NO: A22772-104	CHAINAGE:
CKD	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A D

OFFSET
ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
408	B	K

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2															
4	1				SC	SILTY SAND TILL WITH SOME CLAY AND GRAVEL AND OCCASIONAL COBBLES									
6															
8															
10															
12							F	N_{bn}							
14															
16	2				SC				18	32	45	5			
18															
20															
22	3				SC										
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 10/2/73	AIRPHOTO NO: A22772-104	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A D	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
408	B	K

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
25															
2															
	3				SC										
4															
30															
6						END OF HOLE AT 30'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

O = WATER CONTENT (% OF DRY WEIGHT)
Δ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT

20 40 60 80 100 100+

BORROW AREAS

Mile 409

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 10/2/73	AIRPHOTO NO: A22772-104	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B D	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
409	B	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2						SILTY SAND WITH SOME CLAY AND GRAVEL AND OCCASIONAL COBBLES									
4	1				SC				21	31	46	2			
6															
8															
10							F	N_{bn}							
12															
14	2				SC										
16															
18															
20															
22	3														
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 10/2/73	AIRPHOTO NO: A22772-104	CHAINAGE:	OFFSET:
CKD:	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B D	ELEV:

TEST HOLE		
MILE	B,C,S	NUMBER
409	B	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	O = WATER CONTENT (% OF DRY WEIGHT) △ = ICE CONTENT (% OF SAMPLE VOLUME) (PLASTIC LIMIT 20 — LIQUID LIMIT 40, 60, 80, 100, 100+)	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	3				SC				2								
4									4								
30																	
6						END OF HOLE AT 30'			6								
8									8								
10									10								
12									12								
14									14								
16									16								
18									18								
20									20								
22									22								
24									24								

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

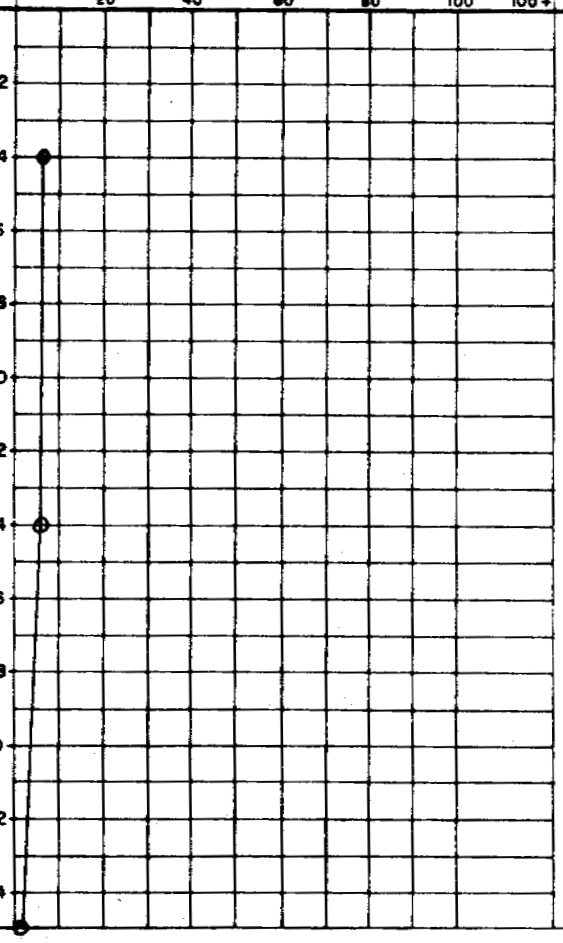
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 10/2/73	AIRPHOTO NO. A22772-106	CHAINAGE	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A B	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
409	B	K

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2						SILTY SAND TILL WITH SOME CLAY AND GRAVEL									
4	1				SM										
6															
8															
10															
12							F	N_{bn}							
14	2				SM										
16															
18															
20															
22	3														
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 10/2/72	AIRPHOTO NO: A22772-106	CHAINAGE:	OFFSET
CKD	TECH: W.R.	RIG: 1	SURFACE DRAINAGE: GOOD	VEGETATION: A B	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
409	B	K

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2					SM				17	30	43	10			
4															
30															
6						END OF HOLE AT 30'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
20 40 60 80 100 100+

ACRES CONSULTING SERVICES LIMITED CALGARY, ALBERTA	DRILL HOLE REPORT	DEPARTMENT OF PUBLIC WORKS, CANADA MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED: 10/3/73	AIRPHOTO NO: A22772-105	CHAINAGE: 775+00	OFFSET: 1,650' E	TEST HOLE
CKD:	TECH: S.O.M.	RIG: D-7 CAT	SURFACE DRAINAGE: GOOD	VEGETATION: A B	ELEV:	

MILE	B.C.S	NUMBER
409	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2						BROWN SILTY SAND TILL WITH SOME GRAVEL AND A TRACE OF CLAY, SOME ORGANIC MATTER IN UPPER 1.5'	F	N_{bn}							
4	1				SM				7	32	45	16			
6						END OF TRENCH AT 6'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

BORROW AREAS
Mile 410

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

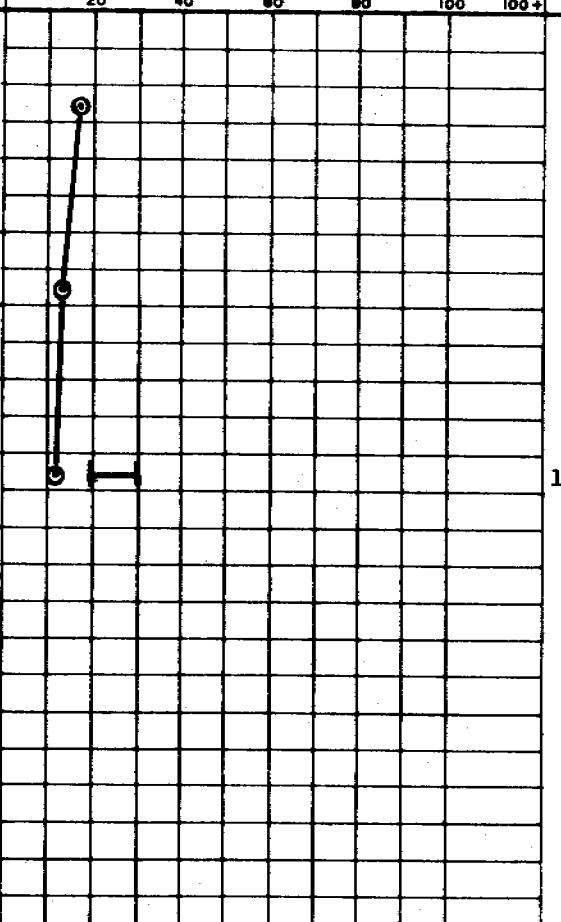
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 8/2/73	AIRPHOTO NO. A-22772-107	CHAINAGE 824 + 10	OFFSET
CKD	TECH W.R.	RIG #1	SURFACE DRAINAGE FAIR	VEGETATION ABD	ELEV 404

TEST HOLE		
MILE	B,C,S	NUMBER
410	C	F

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2–5	1				ML-CL	BROWN SILTY TILL, TRACE CLAY, SAND AND MINOR GRAVEL		N_{bn}							
5–6								V_c							
6–10	2				ML-CL			N_{bn}							
10–15	3				ML-CL				13	76	7	4			
15–24						End of hole at 15'									



ACRES CONSULTING SERVICES LTD
CALGARY, ALBERTA

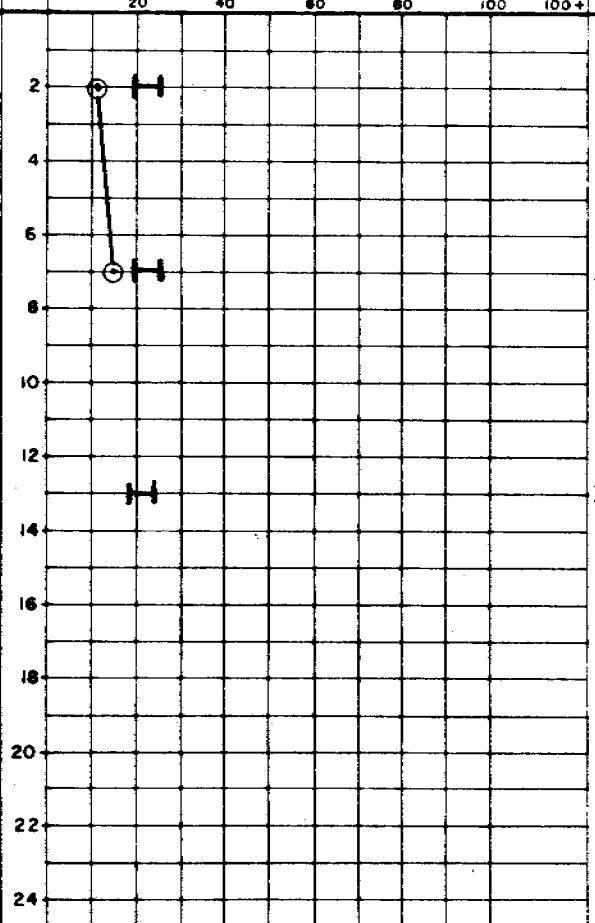
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN FIELD ENG | DATE DRILLED | AIRPHOTO NO. 7-32772-107 | CHAINAGE 828+5 | OFFSET
CKD TECH .R. | RIG I | SURFACE DRAINAGE | VEGETATION ABD | ELEV 392

TEST HOLE		
MILE	B,C,S	NUMBER
410	C	G

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2	1				ML-CL	BROWN SANDY AND SILTY TILL, MINOR CLAY WITH SOME GRAVEL		N_{bn}	12	33	40	15			
6	2				ML-CL	GREY SILT, TRACE OF SAND AND CLAY	F		16	78	6	0			
12	3				ML-CL				14	80	6	0			
16						End of hole at 15'									



GRAIN-SIZE ANALYSIS

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

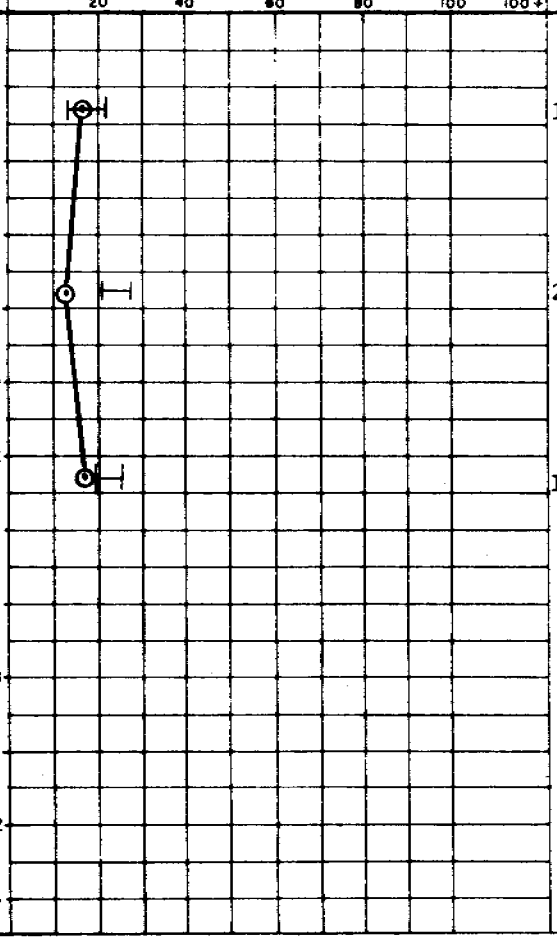
DWN	FIELD ENG	DATE DRILLED 8/2/73	AIRPHOTO NO A-22772-107	CHAINAGE 830 + 60	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION ABD	ELEV 392

TEST HOLE

MILE	B,C,S	NUMBER
410	C	H

REMARKS

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)
2–4	1				ML CL	BROWN SILTY SAND, MINOR CLAY AND A TRACE OF GRAVEL			13	39	46	2		
5–10	2				CL	BROWN SANDY SILT, MINOR CLAY, TRACE OF GRAVEL	F	N_{bn}	20	70	9	1		
12–14	3				ML CL				17	63	18	2		
15–24						End of hole at 15'								



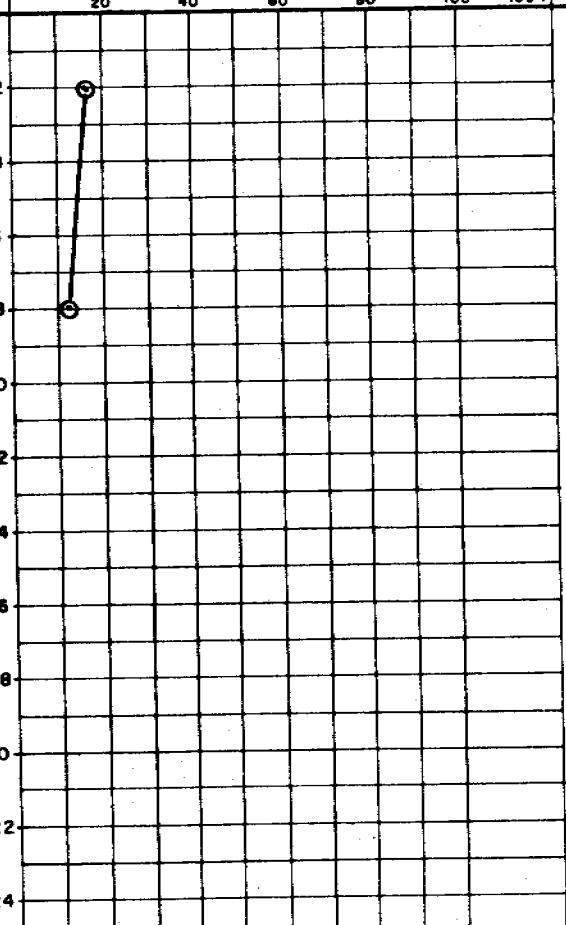
ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG:	DATE DRILLED 8/2/73	AIRPHOTO NO. -22772-103	CHAINAGE 835 + 09	OFFSET	TEST HOLE
CKD:	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION ABD	ELEV 374	MILE 410 / B,C,S C / NUMBER I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	DEPTH (FEET)	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				ML	BROWN CLAYEY AND SILTY TILL, SANDY WITH A TRACE OF GRAVEL	F	N_{bn}								
4	2				ML											
6																
8	3				ML											
10																
12	4				SC	SILTY TILL, SANDY WITH A TRACE OF CLAY AND GRAVEL										
14																
16	5				SC											
18																
20																
22	6				SC											
24																



GRAIN-SIZE ANALYSIS

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 8/2/73	AIRPHOTO NO A.22772-103	CHAINAGE 835 + 09	OFFSET
CKD	TECH W.R.	RIG I	SURFACE DRAINAGE GOOD	VEGETATION ABD	ELEV 374

TEST HOLE

MILE	B,C,S	NUMBER
410	C	I

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
	7				SC										
27															
	8				SC		F	N_{bn}							
4															
30															
6						End of hole at 30'									
8															
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+

DEPTH (FEET): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

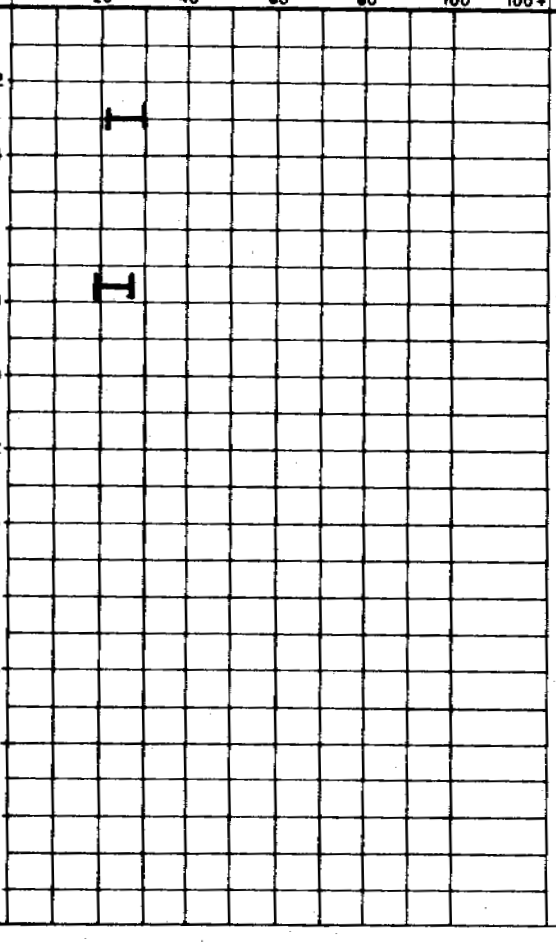
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 8/2/78	AIRPHOTO NO: A22772-102	CHAINAGE 839+00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A B D	ELEV 361

TEST HOLE		
MILE	B,C,S	NUMBER
410	C	J

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2						BROWN SILTY TILL, SANDY AND CLAYEY WITH A TRACE OF GRAVEL VARIES LOCALLY									
4	1				CL				17	45	33	5			
6															
8	2				CL				18	55	23	4			
10															
12	3				CL										
14															
16						END OF HOLE AT 15'									
18															
20															
22															
24															



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CALGARY, ALBERTA

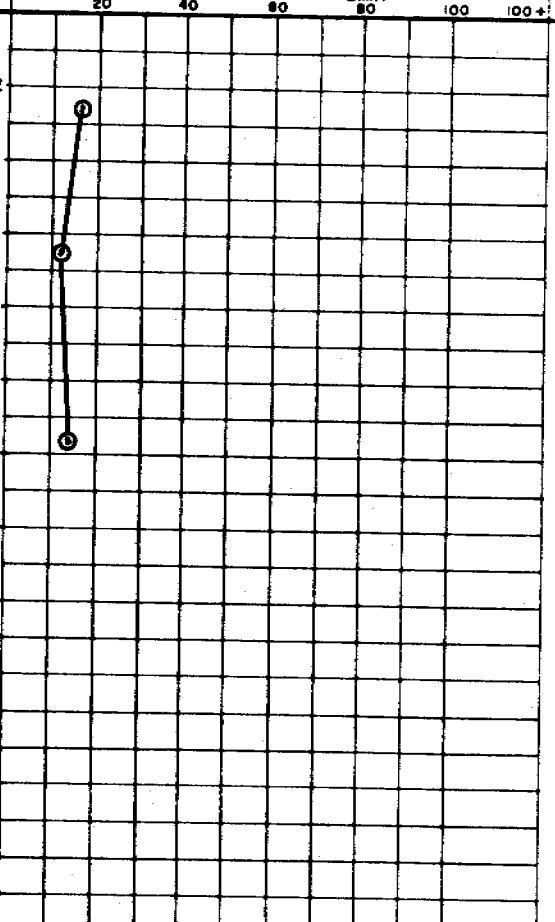
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG G.S.	DATE DRILLED 8/2/73	AIRPHOTO NO A22772-107	CHAINAGE 841 + 00	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE FAIR	VEGETATION AD	ELEV 361

TEST HOLE		
MILE	B,C,S	NUMBER
410	C	K

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2–5	1				ML	BROWN SILTY TILL, CLAYEY AND SANDY WITH SOME GRAVEL	F	N_{bn}							
5–8	2				ML										
8–15	3				SM	SANDY TILL, SILTY WITH SOME GRAVEL AND A TRACE OF CLAY									
15						End of hole at 15'									



BORROW AREAS

Mile 411

ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

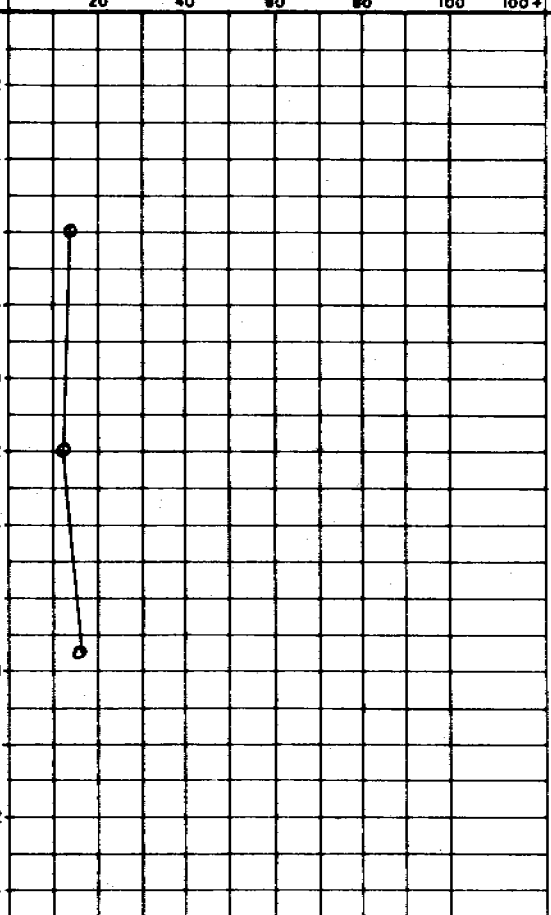
DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN	FIELD ENG	DATE DRILLED 11/2/73	AIRPHOTO NO A22772-107	CHAINAGE	OFFSET
CKD	TECH W.R.	RIG 1	SURFACE DRAINAGE GOOD	VEGETATION A B	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
411	B	2

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (PCF)	DRY DENSITY (PCF)	REMARKS
2					Pt	3' OF PEAT	F	V_x							
4						SILT WITH SOME CLAY AND SAND AND A TRACE OF GRAVEL									
6	1				ML-CL										
8															
10							F	N_{bn}							
12	2				ML-CL										
14															
16	3				ML-CL										
18															
20						END OF HOLE AT 20'									
22															
24															



ACRES CONSULTING SERVICES LIMITED
CALGARY, ALBERTA

DRILL HOLE REPORT

DEPARTMENT OF PUBLIC WORKS, CANADA
MACKENZIE HIGHWAY

DWN:	FIELD ENG	DATE DRILLED 11/3/73	AIRPHOTO NO. A22772-107	CHAINAGE 849+00	OFFSET 1,350'
CKD	TECH S.O.M.	RIG D-7 CAT	SURFACE DRAINAGE FAIR-GOOD	VEGETATION B.A.	ELEV

TEST HOLE		
MILE	B,C,S	NUMBER
411	BT	1

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE TYPE	% RECOVERY	PENETRATION RESISTANCE	UNIFIED SOIL SYMBOL	SOIL DESCRIPTION	LIMITS OF FROZEN GROUND	ICE DESCRIPTION	GRAIN-SIZE ANALYSIS CLAY %	SILT %	SAND %	GRAVEL %	WET DENSITY (P.C.F.)	DRY DENSITY (P.C.F.)	REMARKS
2	1				CL	BROWN CLAYEY SILT WITH SOME SAND, SOME ORGANIC MATTER IN UPPER 1.5'	F	N_{bn}	27	62	11	0			SOIL VERY DIFFICULT TO EXCAVATE WHEN FROZEN
4						END OF TRENCH AT 3.5'									
6															
8															
10															
12															
14															
16															
18															
20															
22															
24															

○ = WATER CONTENT (% OF DRY WEIGHT)
△ = ICE CONTENT (% OF SAMPLE VOLUME)

PLASTIC LIMIT — LIQUID LIMIT
20 40 60 80 100 100+