

INTER-OFFICE MEMORANDUM

SUBJECT: 1977 Thermal Gradient Drilling Data, Utah

DATE June 28, 1977

TO: H. J. Olson

cc: C. Caywood
 W. Dolan
 L. Hall
 M. Hegge
 A. Lange

FROM: H. D. Pilkington

<u>Project Hole #</u>	<u>"B" Hole #</u>	<u>Location</u>	<u>Depth (m)</u>	<u>ΔT</u>	<u>K</u>	<u>Q</u>
755-1	B-289	NW $\frac{1}{4}$ SW $\frac{1}{4}$ S34 T30S R11W	68	72	4.5	3.2
2A	290	NW $\frac{1}{4}$ NW $\frac{1}{4}$ S9 T30S R11W	20	195	4.0	7.8
2	291	NW $\frac{1}{4}$ NW $\frac{1}{4}$ S9 T30S R11W	68	190, 167	4.5	7.5
3	279	SE $\frac{1}{4}$ SW $\frac{1}{4}$ S7 T31S R11W	68	47	6.5	3.1
4	274	SW $\frac{1}{4}$ NE $\frac{1}{4}$ S32 T30S R11W	68	153, 87	5.0	4.4
5	278	SE $\frac{1}{4}$ SE $\frac{1}{4}$ S33 T31S R12W	68	58	4.5	2.6
6	419	SW $\frac{1}{4}$ SW $\frac{1}{4}$ S32 T30S R10W	100	90	3.5	3.2
8	280	NE $\frac{1}{4}$ SE $\frac{1}{4}$ S25 T31S R12W	68	58	5.0	2.9
9	281	SE $\frac{1}{4}$ SW $\frac{1}{4}$ S2 T32S R12W	90	89	5.0	4.5
11	288	NW $\frac{1}{4}$ NW $\frac{1}{4}$ S14 T31S R11W	100	127, 100, 119	4.5	5.4
12	420	SW $\frac{1}{4}$ SE $\frac{1}{4}$ S28 T30S R10W	100	88, 97	3.5	3.4
13	421	SW $\frac{1}{4}$ SE $\frac{1}{4}$ S13 T30S R10W	100	65, 49	4.5	2.2
777-1	B-262	NW $\frac{1}{4}$ NE $\frac{1}{4}$ S36 T24S R7W	50	348, 250	9.1	22.8
2	257	SW $\frac{1}{4}$ SW $\frac{1}{4}$ S31 T24S R6W	68	354, 277	7.0	19.4
3	261	NE $\frac{1}{4}$ SE $\frac{1}{4}$ S6 T25S R6W	68	280	6.0	16.8
4	423	NW $\frac{1}{4}$ SW $\frac{1}{4}$ S13 T25S R7W	68	102, 84	5.5	8.6
5	272	SE $\frac{1}{4}$ SE $\frac{1}{4}$ S7 T25S R6W	68	189, 174	5.4	9.4
6	273	SW $\frac{1}{4}$ SW $\frac{1}{4}$ S30 T25S R6W	68	380, 281	5.4	15.2
7	271	NE $\frac{1}{4}$ SE $\frac{1}{4}$ S1 T26S R7W	100	343, 413, 0, -131	3.5	NVD
8	270	SW $\frac{1}{4}$ SW $\frac{1}{4}$ S19 T25S R6W	68	433, 282, 211	6.0	12.7
9	269	SW $\frac{1}{4}$ NE $\frac{1}{4}$ S13 T26S R7W	68	172, 348, 446, 28	5.0	NVD

Project Hole #	"B" Hole #	Location	Depth (m)	ΔT	K	Q
777-10	B-268	SE $\frac{1}{4}$ SE $\frac{1}{4}$ S23 T26S R7W	68	98	5.0	4.9
11	267	NE $\frac{1}{4}$ SE $\frac{1}{4}$ S29 T25S R6W	68	254,434,192	6.1	11.7
778- 1	B-412	NW $\frac{1}{4}$ NE $\frac{1}{4}$ S21 T29S R9W	68	32	6.8	2.2
2	410	NW $\frac{1}{4}$ NE $\frac{1}{4}$ S19 T29S R9W	68	26	5.5	1.4
3	411	NW $\frac{1}{4}$ SW $\frac{1}{4}$ S20 T29S R9W	68	28	5.5	1.5
779- 1	B-297	NW $\frac{1}{4}$ NW $\frac{1}{4}$ S34 T23S R8W	100	169,140	5.5	7.7
2	266	NE $\frac{1}{4}$ SE $\frac{1}{4}$ S15 T27S R8W	100	37,20,11,38	3.5	1.3
3	298	NE $\frac{1}{4}$ SW $\frac{1}{4}$ S3 T24S R8W	65	56,90,50	5.5	2.8
4	295	SE $\frac{1}{4}$ NW $\frac{1}{4}$ S35 T23S R8W	100	43,49	3.5	1.7
5	277	NE $\frac{1}{4}$ SE $\frac{1}{4}$ S26 T23S R8W	70	45,32	3.5	1.1
6	260	NW $\frac{1}{4}$ SE $\frac{1}{4}$ S27 T23S R6W	100	37,32	5.0	1.6
7	282	SE $\frac{1}{4}$ NW $\frac{1}{4}$ S21 T23S R6W	100	31,58,28,12	3.5	1.0
8	258	NW $\frac{1}{4}$ NE $\frac{1}{4}$ S8 T23S R6W	100	80,0,89,47	3.5	1.6
9	424	NE $\frac{1}{4}$ SE $\frac{1}{4}$ S23 T22S R6W	100	68,32,44	3.5	1.5
10	264	SE $\frac{1}{4}$ SW $\frac{1}{4}$ S30 T22S R5W	45	23,9	2.2	NVD
11	263	NW $\frac{1}{4}$ SE $\frac{1}{4}$ S32 T22S R5W	100	20,42,25	3.5	0.9
12	259	SW $\frac{1}{4}$ SW $\frac{1}{4}$ S1 T22S R6W	100	34,29,35	3.5	1.2
13	415	SW $\frac{1}{4}$ SW $\frac{1}{4}$ S10 T30S R8W	100	39,15	2.2	0.9
14	416	NE $\frac{1}{4}$ NE $\frac{1}{4}$ S3 T30S R8W	100	19,44,32	3.5	1.1
15	417	SW $\frac{1}{4}$ NE $\frac{1}{4}$ S26 T29S R8W	100	56,33,64,43	3.5	1.5
16	414	NE $\frac{1}{4}$ NE $\frac{1}{4}$ S3 T30S R7W	70	68,54,92	3.5	3.2
17	413	SW $\frac{1}{4}$ NW $\frac{1}{4}$ S19 T29S R6W	100	45	3.5	1.6
19	418	NW $\frac{1}{4}$ NE $\frac{1}{4}$ S10 T26S R9W	68	33	5.5	1.8
20	276	SW $\frac{1}{4}$ SW $\frac{1}{4}$ S5 T26S R8W	150	39	4.5	1.8
21	296	SW $\frac{1}{4}$ SW $\frac{1}{4}$ S31 T24S R7W	68	247,390,218,159	3.7	8.1
22	425	NE $\frac{1}{4}$ SE $\frac{1}{4}$ S36 T26S R7W	32	11.5	5.5	NVD
23	287	SW $\frac{1}{4}$ SW $\frac{1}{4}$ S35 T26S R7W	100	31	3.5	1.1
806- 1	B-294	NE $\frac{1}{4}$ NE $\frac{1}{4}$ S26 T24S R8W	68	124,57,218,73	5.0	3.7
2	293	NE $\frac{1}{4}$ SE $\frac{1}{4}$ S25 T24S R8W	68	155,110	3.7	4.1
3	292	NW $\frac{1}{4}$ NW $\frac{1}{4}$ S21 T24S R7W	100	70	5.5	3.9
4	275	SE $\frac{1}{4}$ SW $\frac{1}{4}$ S27 T24S R7W	75	346,260,227	3.4	7.7

<u>Project Hole #</u>	<u>"B" Hole #</u>	<u>Location</u>	<u>Depth(m)</u>	<u>ΔT</u>	<u>K</u>	<u>Q</u>
819- 1	B-265	SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec 11 T22S R6W	18	112	2.2	NVD
2	422	SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec 11 T22S R6W	100	54,141,173,123	3.5	4.3
821- 4	B-284	SE $\frac{1}{4}$ NE $\frac{1}{4}$ S18 T29S R13W	68	46	4.0	1.8
6	285	SW $\frac{1}{4}$ NE $\frac{1}{4}$ S7 T29S R13W	68	82	4.0	3.3
7	286	NE $\frac{1}{4}$ SW $\frac{1}{4}$ S6 T29S R13W	68	18	5.0	0.9
8	402	SW $\frac{1}{4}$ SE $\frac{1}{4}$ S36 T28S R13W	68	60	3.5	2.1
9	283	NE $\frac{1}{4}$ NE $\frac{1}{4}$ S8 T29S R13W	70	22	5.0	1.1
10	401	SE $\frac{1}{4}$ NE $\frac{1}{4}$ S4 T29S R13W	68	33	5.5	1.8
11	400	SE $\frac{1}{4}$ SE $\frac{1}{4}$ S32 T28S R13W	68	28	5.5	1.5
12	403	NW $\frac{1}{4}$ SE $\frac{1}{4}$ S26 T27S R13W	68	161	5.0	8.1
13	409	NE $\frac{1}{4}$ NE $\frac{1}{4}$ S30 T27S R12W	100	62	5.0	3.1
14	405	NE $\frac{1}{4}$ SW $\frac{1}{4}$ S7 T28S R12W	68	59	5.0	3.0
15	408	SE $\frac{1}{4}$ SE $\frac{1}{4}$ S5 T28S R12W	150	47	4.5	2.1
16	404	SW $\frac{1}{4}$ SE $\frac{1}{4}$ S15 T28S R12W	100	36	3.5	1.3
17	407	SE $\frac{1}{4}$ NW $\frac{1}{4}$ S34 T27S R12W	100	43	4.0	1.7
18	406	SW $\frac{1}{4}$ SW $\frac{1}{4}$ S13 T28S R13W	100	47	4.1	1.9

Drill holes 777-7 and 777-9 have gradients which reflect lateral heat flow associated with leakage of warm waters along the mountain front fault bounding the west side of the Tushar Mountains. No valid heat flow calculations can be made on the basis of the shallow gradients. In drill holes 779-10 and 779-22 cold water aquifers were encountered which concealed the true gradients and no reliable heat flow calculation can be made.

H. D. Pilkington
H. D. Pilkington