TO ACCOMPANY REPORT TITLED
Preliminary Gravity Survey
BY S.A. Ager PhD
DATED 15 Dec 75 PROJECT # Prince

SURVEY GRID

SCALE 1:50,000
1.25 inches to 1 mile approximately

C·B· GRAVITY PROFILES

PRINCETON BASIN

B·C· DEPT OF MINES & P·R·

FIGURE 1

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PRINCETON BASIN GRAVITY SURVEY

SUMMARY

Three reconaissance gravity profiles over the Princeton basin area, B.C. have indicated that the basin is about 2400 feet thick, thins toward the north, has a convex shaped bottom with sides that slope moderately inward. Two possible coal anomalies are in the vicinity of known coal zones, a third anomaly is well located with respect to proposed drill holes, and several others of unknown potential are identified as well. The best possibility for another Hat Creek type of occurance exists in the north, on line 675N, where a sufficiently large 6 mgal anomaly is observed. If follow up geological work proves the significance of gravity as a diagnostic tool for coal in this basin, then further gravity surveying is recommended as an aid in fully defining the coal potential of the basin.

Respectfully submitted,

Charles A. Ager

December 18, 1975

Charles A. Ager, Ph.D.
Geophysicist

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LOCATION & DATA OF SURVEY

Location: Princeton Basin area, Princeton, B.C.

49° 27.8' North Latitude by 120°30.2 West Longitude

NTS 92H 7, 8, 9,, 10

Date: Field Work; November 7 - November 23, 1975

Office Work; November 24- December 18, 1975

INTRODUCTION

The intent of the reconaissance gravity survey over the Princeton Basin area (Figure 1) was to investigate the gross geometry of the basin and to test for the presence of coal anomalies within it. Because the sedimentary rocks are surrounded by denser Tertiary and Nicola volcanic units, a significant gravity low was expected to be present over the basin. As well, the less dense coal beds were expected to exhibit themselves as subtle gravity low zones of 1 mgal or less within the broader basin gravity low feature. The possibility also remained open as to whether or not the gravity data would indicate the presence of unknown and thicker coal beds similar to those found in the Hat Creek area of B.C.

FIELD PROCEDURES & INSTRUMENTATION

Three reconaissance gravity lines were established over the Princeton basin. The survey grid with line locations is shown on Figure 1. Station positions are shown in detail on Figure 5 and a listing of grid co-ordinates is given in the Appendix.

The survey grid was established by C.A.Ager & Assoc. Ltd. using chain and compass. Blue flagging marks every survey line. In densely

wooded areas lines were either cut or alternate routes were selected as shown on Figure 1. Compass bearing of each line is 110° using magnetic declination 22.5° E. Station spacing is 200 feet.

In total 401 gravity stations were observed using a LaCoste & Romberg gravity meter (No. G199) with reading accuracy of ±0.02 mgal. Most observations were within the dial range 4000-4100 for which the instrument constant was 1.05890 mgal/division. Diurnal and instrument drift was monitored and accounted for by tying into the National Network Base Station (9031-54) at Princeton during the course of each survey day. Drift averaged 0.12 mgal/8 hour day. Observed gravity values so determined are considered accurate to ±0.04 mgal. All gravity values have been calculated relative to the base station (9031-54) which has the following parameters:

Latitude	49° 27.8' North
Longitude	120° 30.2' West
Elevation	2098 feet
Grid Coord	235E + 444N
Observed Gravity	980778.38 mgal
C.B. Gravity	-129.83 mgal

The relative elevation of each station was calculated from the angle and slope chainage between adjoining stations. Angles were determined to instrument height on the stadia rod using a theodolite with reading accuracy of 20" of arc. Slope chainage was measured

using a standard nylon/vinyl surveyors chain to an accuracy of $\pm$ 0.3 feet for each station. Relative elevations accurate to $\pm$0.10 feet or better were determined in this manner. Absolute elevations for each station were determined by tying each line into a geodetic bench mark using the same survey technique. A listing of all data is given in the Appendix.

DATA REDUCTION

As is well known, the observed gravity field (g_0) contains much information of non-interest in exploration geophysics. Simply stated, the problem is to separate the effects caused by the earth itself (g_E) from the g_0 field. The complete Bouguer gravity value so determined is defined as follows

$$\Delta g_B = g_0 - g_E \qquad (1)$$

where

$$g_E = g_L + g_{FA} + g_{BS} + g_{TE} \qquad (2)$$

g_L: Latitude effect; g_{FA}: Free Air effect; g_{BS}: Bouguer slab effect; g_{TE}: Terrain effect

The complete Bouguer gravity values for each station were determined by solving Equation (1) above using standard procedures. Bouguer slab and terrain densities were taken as 2.20 g/cc. Terrain

effects were calculated to a radius of 4800 feet about each station using the method of Ager(1972). The complete Bouguer gravity values are all relative to station 9031-54 where the aforesaid Network value of -129.83 mgal was assigned. A complete listing of all values is given in the Appendix.

The 'elevation datum' used for data reduction was mean sea level (MSL). The choice of datum bears no special significance to the 'form' of each gravity profile, but only to its absolute amplitude. The gravity anomaly values still exist at the co-ordinates of the station and any interpretation of the data must keep this in mind.

There are two accuracies involved when considering the gravity data. They are the 'relative' accuracy between adjoining stations and the 'absolute' accuracy between any two stations within the entire survey area. As summarized by the following table, the relative accuracy is $\pm$0.14 mgal and the absolute accuracy is $\pm$ 0.28 mgal. This means that coal anomalies of less than 0.14 mgals will not be seen and basin features of less than 0.28 mgals will also not be discernable. In terms of our search problem, these errors are sufficiently small to resolve coal anomalies as well as gross basin features. The height of the 'triangle' marking each station gravity value on Figure 5 is 0.30 mgals and gives an indication of of the size of the error at each station.

TABLE 1 - SURVEY ERRORS

Source of Error	Relative Amount		Absolute Amount	
Observation		±0.02		±0.02
Drift	(10%)	0.01	(20%)	0.02
Position				
x,y	(±10')	0.002	(±200')	0.024
z	(±.10')	0.007	(±1.0')	0.066
Terrain	(10%)	0.10	(20%)	0.15
Maximum Error		± 0.14 mgal		± 0.28 mgal

Plotted profiles of survey lines are given at two scales in this report. Figures 1, 2, 3 and 4 are at scale 1:50,000 and give an overview of the basin anomaly. Figure 5 gives the data at scale 1"=1320' and indicates detailed information regarding possible coal anomalies. In each case, vertical exaggeration of the elevation profile is two times the horizontal scale. The profiles are named according to the y co-ordinate of the western segment of each line and are called 190N, 300N and 675N as shown on the accompanying illustrations.

INTERPRETATION OF RESULTS

As mentioned before, the basic intent of the survey was twofold: 1) to determine something about the gross geometry of the basin, and

2) to outline possible coal anomaly zones within the basin itself.

Because of the difference in order of magnitude of the gravity anomalies relating to each of these objectives, each interpretation is treated separately below.

1) Basin Geometry

The basin margins are marked rather well by the abrupt changes in gradient on the flanks of each profile that traverses the contact. The continuing steep gradient on the west of lines 190N and 300N is caused by the denser gabbroic units in this area (McMechan, 1975). The eastern part of line 190N terminates at a lake at the base of a steep cliff. Here it was physically impossible to extend the line due to the snow and ice at the time of the survey. However, it is anticipated that the gravity values will follow closely the effect observed in line 300N. The regional field is estimated at -116.0 mgals for lines 190N and 300N, and at -117.3 mgals for line 675N.

By assigning density of 2.20 g/cc for sedimentary rocks and 2.70 g/cc for host units, it is possible to make 'first approximations' to the thickness of various sections of each profile. These values when combined with information regarding the position of the half-width relative to the mapped contact then produce depth section estimates. The cross-sections so determined are shown on Figures 3,4 and 5. For more precise estimates, rock density measurements and more sophisticated modelling should be done. It is therefore clear that the depth values given on the cross-sections are only estimates and any interpretation of the basin structure should bear this in mind.

Inspection of the gravity/depth sections indicates several features about the gross geometry of the basin:

1) The basin is shallower in the north than in the south.
2) Of the lines surveyed, the basin is thickest (2365') under line 300N.
3) Lines 190N and 675N exhibit similar convex geometry. This indicates that the sedimentary rocks are either denser in the middle of the basin profile or the basin is shallower here (Figure 2 and 4).
4) The basin boundaries generally slope inward at moderate angles except on the east of 675N where the boundary is apparently near vertical.

LINE 190N GRAVITY/DEPTH SECTION

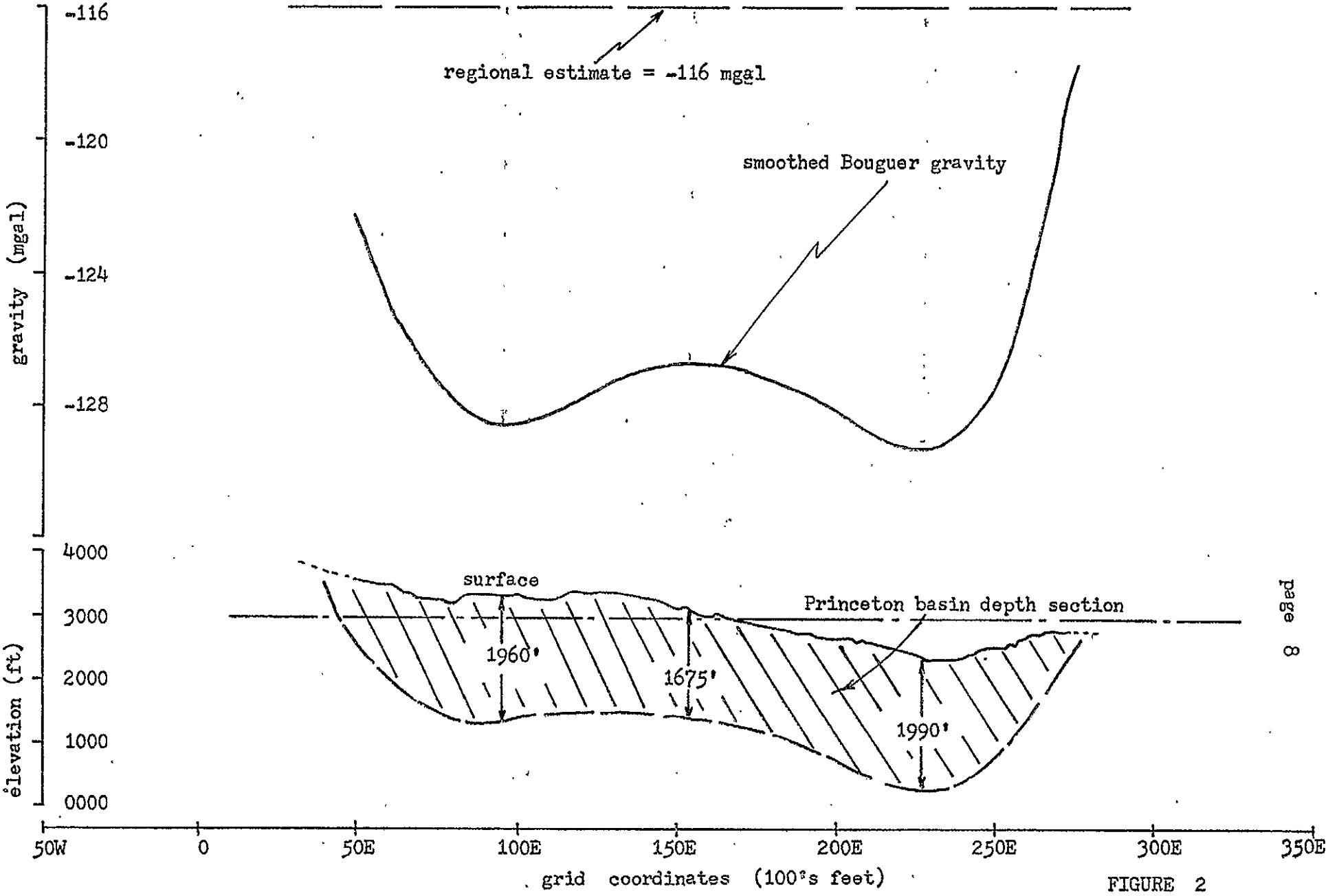


FIGURE 2

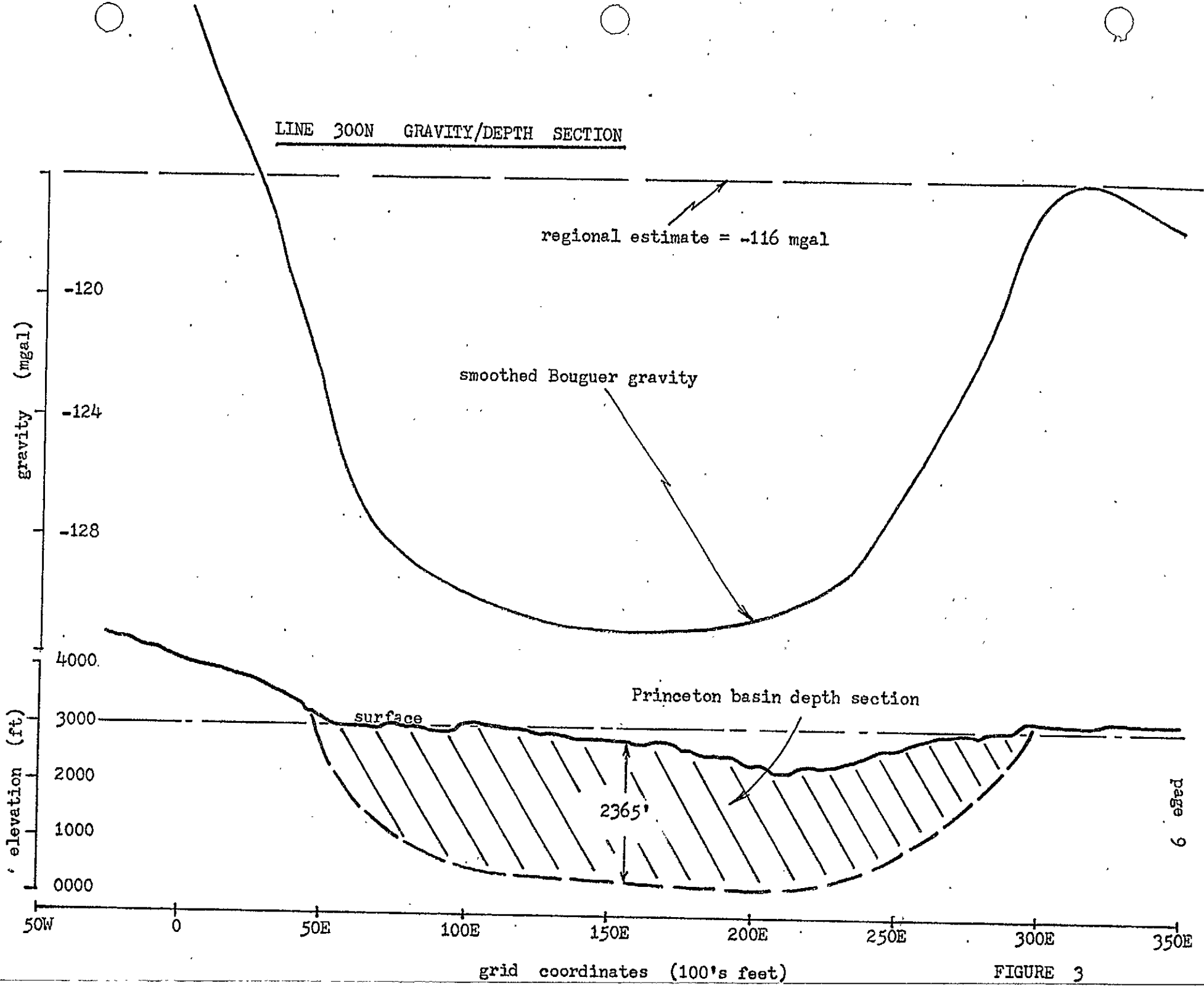

LINE 300N GRAVITY/DEPTH SECTION
regional estimate = -116 mgal
smoothed Bouguer gravity
gravity (mgal)
-120
-124
-128
4000
3000
2000
1000
0000
elevation (ft)
surface
Princeton basin depth section
2365'
50W
0
50E
100E
150E
200E
250E
300E
350E
grid coordinates (100's feet)

FIGURE 3

LINE 675N GRAVITY/DEPTH SECTION

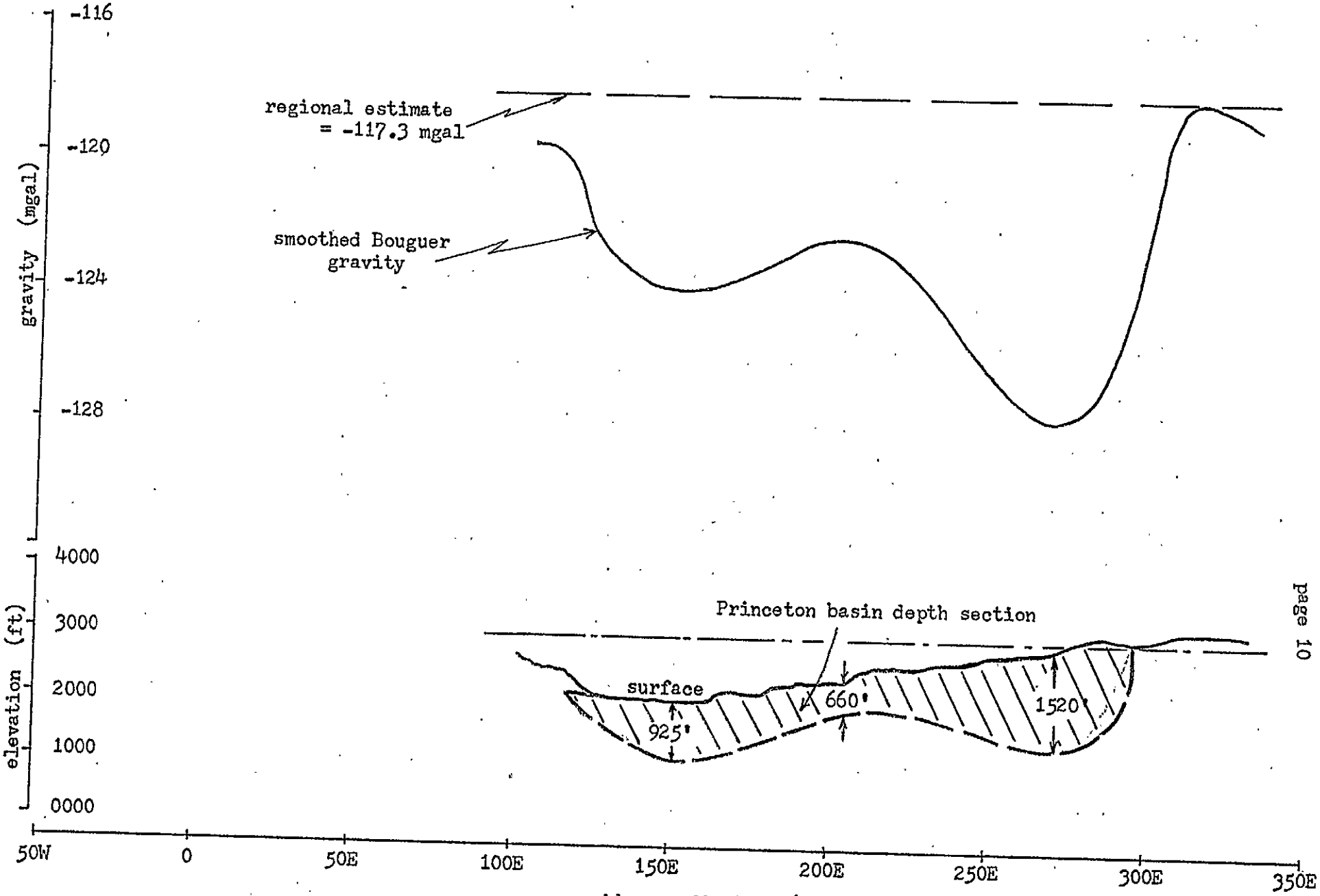


FIGURE 4

2) Coal Anomalies

Very definite density boundaries can be identified along each of the profiles. These are signified by arrows on each of the gravity profiles of Figure 5. These features are interpreted to indicate contacts or density change boundaries between adjoining interbasin sedimentary units. As well, there are several subtle, but distinct, gravity low features which have been identified by open circles on each of the profiles. These anomalies are caused by less dense geological units within or on top of the basin rocks.

Because coal is less dense than ordinary sedimentary rocks, it is expected to reveal itself as a gravity low feature. For the Princeton basin, the known coal beds are generally narrow with moderate dips. This would infer a similar narrow gravity response of probably less than 1 mgal amplitude. Coal anomalies are therefore expected to be evidenced by either small amplitude gravity low regions or by locally steep changes in the gravity gradient or by both. The areas marked by open circles and the arrows labled with 'C' on Figure 5 are therefore prime possibilities for coal locations. Several of these anomalies are in areas where changes in overburden thickness are suspect. For example, at the Similkameen River on lines 190N and 300N and under the field where

the creek presently runs (150E) on line 675N.

It is difficult to rank the possible coal anomalies in any order of economic importance. However, obvious correlation of the anomalies centered at 54E and 84E on line 300N to previously known coal deposits near the surveyed line make this area of prime importance. As well, the anomaly centered around 80E on line 190N is well situated with respect to Bethlehems proposed drill sites and should therefore be considered important. Whether an anomaly is caused by coal or some other less dense unit (such as overburden) can only be ascertained after careful on site inspection and correlation to known geology in the area.

If one anticipates locating coal deposits within the basin of the same magnitude as Hat Creek, then these would be indicated by anomalies of 5-10 mgals within the gravity low trough regions of each profile. In this regard, the most obvious and unknown possibility is the 6 mgal gravity low trough anomaly centered at about 268E on line 675N. The other trough regions hold some promise too as there are already some coal deposits known in their vicinity as previously mentioned above.

RECOMMENDATIONS & CONCLUSIONS

The gravity survey data has indicated that the Princeton basin has a thickness of about 2365' under the middle of line 300N and thins to about 660' in the north under line 675N. As well there are indications that its base geometry is convex as evidenced by the gravity data on lines 190N and 675N. The edges of the basin appear to have moderate dips inward except on the eastern boundary of the basin on line 675N where near vertical dips are indicated.

Several areas are identified which may indicate the presence of coal. Two of these anomaly zones are well located with respect to known coal deposits (line 300N) and a third is in the vicinity of proposed drill holes (line 190N). If one expects to find another Hat Creek type deposit here, then attention should be placed on the 5-10 mgal anomalies within the gravity low trough(s) of each line, especially line 675N.

It is recommended that the gravity data be correlated to all known geology about the Princeton basin. On site inspection should be made of those anomalies which cannot be readily explained by the geological information at hand. Every effort should be made to identify the geological source for each possible coal anomaly.

If the reconaissance gravity data proves to be sufficiently diagnostic for coal search, then the entire Princeton basin area should be surveyed in a similar manner as described in this report with line spacing 1000-2000 feet and station spacing 200 feet.

Respectfully submitted,

December 18, 1975

Charles A. Ager, Ph.D.
Geophysicist

REFERENCES

Ager, C.A. (1972). Gravity model for the Guichon Creek batholith, Unpubl. M.Sc. thesis, Dept of Geophysics, U.B.C.

McMechan,R. (1975). Preliminary geological sketch map, Princeton basin, B.C., Unpubl. map, BCDM.

PRINCETON BASIN GRAVITY DATA - DECEMBER 1975

X,Y, ELEV IN FEET C.B. GRAV IN MGALS

STN NO	X COORD	Y COORD	ELEV	C.B. GRAV
1	23500.	44400.	2098.00	-129.83
2	-2700.	28800.	4539.50	-101.42
3	-2200.	28700.	4459.40	-102.77
4	-1800.	28600.	4440.60	-103.89
5	-1600.	28200.	4367.50	-104.64
6	-1300.	28000.	4321.20	-105.53
7	-800.	28000.	4274.10	-107.01
8	-600.	28200.	4208.00	-108.12
9	-300.	27900.	4126.40	-109.35
10	0.	28000.	4075.60	-110.07
11	200.	28800.	4038.20	-110.89
12	400.	29000.	4015.30	-111.58
13	700.	28900.	3978.10	-112.38
14	1100.	28800.	3928.30	-113.38
15	1600.	28800.	3894.20	-114.60
16	1900.	28800.	3843.10	-114.96
17	2200.	28600.	3786.00	-116.04
18	2600.	28600.	3730.40	-116.12
19	2900.	28300.	3648.30	-117.15
20	3200.	28200.	3573.80	-117.86
21	3500.	28300.	3503.40	-118.98
22	3800.	28600.	3432.20	-119.90
23	4100.	28400.	3378.40	-121.11
24	4300.	28200.	3319.30	-122.43
25	4400.	30000.	3157.60	-121.05
26	4600.	30000.	3178.00	-121.11
27	4800.	30000.	3134.20	-123.03
28	5000.	30000.	3067.70	-124.02
29	5200.	30000.	3009.60	-124.93
30	5400.	30000.	2965.40	-125.53
31	5600.	30000.	2960.90	-125.97
32	5800.	30000.	2951.90	-125.93
33	6000.	30000.	2944.80	-126.44
34	6200.	30000.	2939.50	-126.87
35	6400.	30000.	2935.70	-127.35
36	6600.	30000.	2932.20	-127.77
37	6800.	30000.	2927.30	-127.91
38	7000.	30000.	2923.90	-128.10
39	7200.	30000.	3008.70	-129.15
40	7400.	30000.	3019.00	-129.15
41	7600.	30000.	2969.90	-129.12
42	7800.	30000.	2934.80	-129.27
43	8000.	30000.	2913.70	-129.02
44	8200.	30000.	2929.40	-129.00
45	8400.	30000.	2928.70	-129.58
46	8600.	30000.	2893.60	-129.83
47	8800.	30000.	2877.90	-129.78
48	-9000.	30000.	2875.00	-129.79
49	9200.	30000.	2873.30	-129.84

50	9400.	30000.	2871.60	-129.90
51	9600.	30000.	2928.20	-130.44
52	9800.	30000.	3042.90	-130.19
53	10000.	30000.	3044.80	-129.85
54	10200.	30000.	3044.30	-129.82
55	10400.	30000.	3031.90	-129.88
56	10600.	30000.	3009.10	-129.88
57	10800.	30000.	2978.40	-130.10
58	11000.	30000.	2955.50	-130.13
59	11200.	30000.	2947.90	-130.09
60	11400.	30000.	2934.10	-130.22
61	11600.	30000.	2933.10	-130.22
62	11800.	30000.	2937.40	-130.45
63	12000.	30000.	2912.80	-130.47
64	12200.	30000.	2893.20	-130.70
65	12400.	30000.	2864.50	-130.95
66	12600.	30000.	2830.50	-131.05
67	12800.	30000.	2832.70	-131.00
68	13000.	30000.	2833.30	-131.05
69	13200.	30000.	2808.20	-131.25
70	13400.	30000.	2815.00	-131.33
71	13600.	30000.	2799.10	-131.58
72	13800.	30000.	2750.90	-131.56
73	14000.	30000.	2748.90	-131.23
74	14200.	30000.	2757.40	-131.13
75	14400.	30000.	2752.90	-131.39
76	14600.	30000.	2753.70	-131.16
77	14800.	30000.	2754.10	-131.10
78	15000.	30000.	2755.20	-131.14
79	15200.	30000.	2754.30	-131.07
80	15400.	30000.	2746.10	-131.04
81	15600.	30000.	2732.00	-131.26
82	15800.	30000.	2696.40	-131.36
83	16000.	30000.	2695.10	-130.89
84	16200.	30000.	2675.50	-130.75
85	16400.	30000.	2707.70	-130.74
86	16600.	30000.	2739.00	-130.57
87	16800.	30000.	2730.50	-130.37
88	17000.	30000.	2708.70	-130.69
89	17200.	30000.	2683.40	-130.70
90	17400.	30000.	2644.10	-130.99
91	17600.	30000.	2592.60	-131.19
92	17800.	30000.	2588.70	-131.07
93	18000.	30000.	2550.20	-131.01
94	18200.	30000.	2501.70	-130.91
95	18400.	30000.	2506.30	-130.72
96	18600.	30000.	2503.60	-130.57
97	18800.	30000.	2489.30	-130.51
98	19000.	30000.	2475.60	-130.49
99	19200.	30000.	2493.50	-130.52
100	19400.	30000.	2447.10	-130.51
101	19600.	30000.	2396.40	-130.90
102	19800.	30000.	2337.40	-131.27
103	20000.	30000.	2319.50	-131.28
104	20200.	30000.	2358.90	-130.85
105	20400.	30000.	2285.70	-131.38
106	20600.	30000.	2263.70	-131.47
107	20700.	30000.	2215.30	-131.73
108	21000.	30000.	2218.60	-131.08
109	21200.	30300.	2213.50	-131.10

110	21400.	30700.	2231.10	-131.23
111	21600.	31000.	2295.10	-130.92
112	21800.	31000.	2321.60	-130.72
113	22000.	31000.	2334.60	-130.41
114	22200.	31000.	2320.50	-130.50
115	22400.	31000.	2322.10	-130.04
116	22600.	31000.	2323.00	-129.97
117	22800.	31000.	2315.80	-129.52
118	23000.	31000.	2342.80	-129.37
119	23200.	31000.	2395.20	-129.29
120	23400.	31000.	2425.90	-129.15
121	23600.	31000.	2452.80	-128.85
122	23800.	31000.	2478.60	-128.57
123	24000.	31000.	2526.20	-128.31
124	24200.	31000.	2566.60	-127.91
125	24400.	31000.	2608.40	-127.69
126	24600.	31000.	2619.30	-127.36
127	24800.	31000.	2619.30	-126.85
128	25000.	31000.	2622.60	-126.55
129	25200.	31000.	2660.70	-126.27
130	25400.	31000.	2700.10	-126.01
131	25600.	31000.	2737.30	-125.94
132	25800.	31000.	2791.20	-125.60
133	26000.	31000.	2815.60	-125.11
134	26200.	31000.	2837.40	-124.67
135	26400.	31000.	2862.40	-124.37
136	26600.	31000.	2891.40	-124.04
137	26800.	31000.	2896.80	-123.56
138	27000.	31000.	2914.60	-123.10
139	27200.	31000.	2923.70	-122.78
140	27400.	31000.	2925.30	-122.44
141	27600.	31000.	2916.20	-122.10
142	27800.	31000.	2918.50	-121.78
143	28000.	31000.	2884.70	-121.28
144	28200.	31000.	2910.80	-120.89
145	28400.	31000.	2949.30	-120.33
146	28600.	31000.	2954.30	-119.67
147	28800.	31000.	2974.60	-118.97
148	29000.	31000.	2979.30	-118.28
149	29200.	31000.	3009.30	-117.93
150	29400.	31000.	3101.20	-117.48
151	29600.	31000.	3141.30	-116.98
152	29800.	31000.	3142.00	-116.40
153	30000.	31000.	3143.20	-116.29
154	30200.	31300.	3112.60	-115.72
155	30400.	31600.	3104.50	-115.87
156	30800.	31800.	3106.60	-116.14
157	31100.	32100.	3099.10	-116.22
158	31500.	32200.	3079.50	-116.15
159	31800.	32400.	3082.00	-115.88
160	32100.	32700.	3091.50	-115.47
161	32400.	32300.	3112.80	-115.95
162	32600.	32100.	3141.60	-116.41
163	33000.	31900.	3148.10	-116.49
164	33400.	31700.	3123.40	-116.89
165	33800.	31600.	3098.30	-117.21
166	34000.	31600.	3111.40	-117.31
167	34200.	31600.	3109.10	-117.33
168	34400.	31600.	3110.60	-117.53
169	34600.	31600.	3103.80	-117.60

170	34800.	31600.	3105.20	-117.50
171	35000.	31600.	3099.40	-117.33
172	4800.	19000.	3550.80	-122.11
173	5000.	19000.	3516.30	-122.71
174	5200.	19000.	3498.20	-123.30
175	5400.	19000.	3488.90	-123.60
176	5600.	19000.	3485.00	-124.23
177	5800.	19000.	3481.60	-124.69
178	6000.	19000.	3455.90	-125.10
179	6200.	19000.	3422.40	-125.38
180	6400.	19000.	3353.00	-125.55
181	6600.	19000.	3306.90	-125.85
182	6800.	19000.	3284.80	-126.00
183	7000.	19000.	3249.10	-126.41
184	7200.	19000.	3228.00	-126.99
185	7400.	19000.	3212.20	-127.31
186	7600.	19000.	3203.60	-127.74
187	7800.	19000.	3196.90	-127.68
188	8000.	19000.	3194.80	-128.37
189	8200.	19000.	3247.80	-128.33
190	8400.	19000.	3304.20	-128.85
191	8600.	19000.	3294.00	-128.20
192	8800.	19000.	3290.40	-128.31
193	9000.	19000.	3287.70	-128.49
194	9200.	19000.	3286.80	-128.56
195	9400.	19000.	3288.20	-128.61
196	9600.	19000.	3279.60	-128.63
197	9800.	19000.	3299.80	-128.51
198	10000.	19000.	3304.20	-128.42
199	10200.	19000.	3259.10	-128.52
200	10400.	19000.	3238.40	-128.42
201	10600.	19000.	3231.90	-128.29
202	10800.	19000.	3232.00	-128.25
203	11000.	19000.	3231.30	-128.33
204	11200.	19000.	3244.70	-128.31
205	11400.	19000.	3297.50	-128.00
206	11600.	19000.	3350.20	-127.63
207	11800.	19000.	3344.70	-127.44
208	12000.	19000.	3324.30	-127.50
209	12200.	19000.	3320.80	-127.50
210	12400.	19000.	3329.40	-127.50
211	12600.	19000.	3330.60	-127.41
212	12800.	19000.	3332.00	-127.36
213	13000.	19000.	3326.00	-127.41
214	13200.	19000.	3325.30	-126.50
215	13400.	19000.	3318.10	-126.51
216	13600.	19000.	3300.00	-126.61
217	13800.	19000.	3275.80	-126.54
218	14000.	19000.	3244.90	-126.65
219	14200.	19000.	3223.40	-126.59
220	14400.	19000.	3212.30	-126.62
221	14600.	19000.	3188.20	-126.84
222	14800.	19000.	3121.70	-126.97
223	15000.	19000.	3086.10	-126.65
224	15200.	19000.	3117.60	-126.72
225	15400.	19000.	3089.00	-126.76
226	15600.	19000.	3031.40	-126.64
227	15800.	19000.	2981.50	-126.73
228	16000.	19000.	2986.20	-126.65
229	16200.	19000.	3016.30	-125.88

230	16400.	19300.	2982.40	-126.57
231	16600.	19300.	2967.40	-126.68
232	16800.	19300.	2934.20	-126.72
233	17000.	19300.	2905.30	-126.88
234	17200.	19300.	2876.20	-126.91
235	17400.	19300.	2854.50	-126.79
236	17600.	19300.	2840.30	-126.81
237	17800.	19300.	2824.70	-126.88
238	18000.	19300.	2807.10	-127.09
239	18200.	19300.	2791.30	-127.22
240	18400.	19300.	2757.80	-127.35
241	18500.	19300.	2740.00	-127.50
242	18800.	19300.	2711.00	-127.59
243	19000.	19300.	2718.90	-127.71
244	19200.	19300.	2694.30	-127.83
245	19400.	19300.	2672.60	-127.77
246	19600.	19300.	2647.30	-127.90
247	19800.	19300.	2622.50	-128.18
248	20000.	19300.	2621.90	-128.19
249	20200.	19300.	2620.20	-128.30
250	20400.	19300.	2655.10	-128.38
251	20600.	19300.	2586.20	-128.34
252	20800.	19300.	2597.10	-128.41
253	21000.	19300.	2552.70	-128.64
254	21200.	19300.	2542.30	-128.59
255	21400.	19300.	2525.00	-128.84
256	21600.	19300.	2506.10	-128.94
257	21800.	19300.	2480.90	-129.14
258	22000.	19300.	2442.50	-129.27
259	22200.	19300.	2416.40	-129.38
260	22400.	19300.	2372.20	-129.63
261	22600.	19300.	2354.70	-130.28
262	22800.	19300.	2287.10	-130.58
263	23000.	19300.	2289.50	-130.12
264	23200.	19300.	2297.90	-130.01
265	23400.	19300.	2299.00	-130.08
266	23600.	19300.	2302.20	-129.78
267	23800.	19300.	2309.00	-129.78
268	24000.	19300.	2337.50	-129.48
269	24200.	19300.	2402.40	-128.92
270	24400.	19300.	2426.60	-128.39
271	24600.	19300.	2461.70	-127.89
272	24800.	19300.	2493.40	-127.55
273	25000.	19300.	2490.30	-127.23
274	25200.	19300.	2478.30	-126.84
275	25400.	19300.	2563.10	-126.04
276	25600.	19300.	2543.20	-125.78
277	25800.	19300.	2617.70	-124.33
278	26000.	19300.	2640.20	-124.05
279	26200.	19300.	2703.20	-123.25
280	26400.	19300.	2695.90	-123.03
281	26600.	19300.	2732.40	-122.85
282	26800.	19300.	2750.20	-120.26
283	27000.	19300.	2725.00	-119.86
284	27200.	19300.	2759.30	-118.24
285	27400.	19300.	2745.50	-117.66
286	10200.	67500.	2970.40	-118.78
287	10400.	67500.	2896.60	-118.92
288	10600.	67500.	2847.60	-119.22
289	10800.	67500.	2830.40	-119.20

290	11000.	67500.	2816.30	-118.84
291	11200.	67500.	2817.60	-118.66
292	11400.	67500.	2804.30	-118.95
293	11600.	67500.	2760.50	-119.33
294	11800.	67500.	2691.00	-119.77
295	12000.	67500.	2617.10	-120.70
296	12200.	67500.	2550.30	-121.34
297	12400.	67500.	2460.20	-122.10
298	12600.	67500.	2412.50	-122.37
299	12800.	67500.	2397.50	-122.31
300	13000.	67500.	2346.30	-122.58
301	13200.	67500.	2332.30	-122.45
302	13400.	67500.	2332.20	-122.55
303	13600.	67500.	2343.60	-122.38
304	13800.	67500.	2339.80	-122.41
305	14000.	67500.	2335.30	-122.83
306	14200.	67500.	2336.90	-122.91
307	14400.	67500.	2318.30	-123.16
308	14600.	67500.	2323.20	-123.16
309	14800.	67500.	2323.20	-123.27
310	15000.	67500.	2320.80	-123.06
311	15200.	67500.	2320.20	-123.22
312	15400.	67500.	2317.40	-123.13
313	15600.	67500.	2317.00	-123.25
314	15800.	67500.	2315.90	-123.06
315	16000.	67500.	2315.00	-123.10
316	16200.	67500.	2315.10	-123.38
317	16400.	67500.	2388.80	-123.07
318	16600.	67500.	2443.60	-122.61
319	16800.	67500.	2458.70	-122.59
320	17000.	67500.	2455.10	-122.46
321	17200.	67500.	2454.00	-122.65
322	17400.	67500.	2456.80	-122.56
323	17600.	67500.	2461.30	-122.54
324	17800.	67500.	2462.00	-122.62
325	18000.	67500.	2492.50	-122.54
326	18200.	67500.	2537.00	-122.24
327	18400.	67500.	2554.90	-122.22
328	18600.	67500.	2582.50	-122.13
329	18800.	67500.	2584.60	-121.90
330	19000.	67500.	2633.90	-121.91
331	19200.	67500.	2617.00	-121.74
332	19400.	67500.	2598.70	-121.45
333	19600.	67500.	2621.00	-121.51
334	19800.	67500.	2651.10	-121.34
335	20000.	67500.	2652.30	-121.10
336	20200.	67500.	2651.90	-121.13
337	20400.	67500.	2641.50	-121.17
338	20600.	67500.	2666.60	-121.27
339	20800.	67500.	2746.70	-121.60
340	21000.	67500.	2830.00	-122.06
341	21200.	67500.	2841.60	-121.84
342	21400.	67500.	2874.40	-121.79
343	21600.	67500.	2887.80	-121.93
344	21800.	67500.	2902.80	-122.10
345	22000.	67500.	2915.10	-122.39
346	22200.	67500.	2911.50	-122.53
347	22400.	67500.	2899.90	-122.78
348	22600.	67500.	2890.40	-122.98
349	22800.	67500.	2891.50	-123.17

350	23000.	67500.	2897.20	-123.31
351	23200.	67500.	2921.40	-123.56
352	23400.	67500.	2935.40	-123.96
353	23600.	67500.	2934.00	-124.19
354	23800.	67500.	2950.90	-124.40
355	24000.	67500.	2964.50	-124.60
356	24200.	67500.	2975.00	-124.93
357	24400.	67500.	2999.20	-125.20
358	24600.	67500.	3019.00	-125.43
359	24800.	67500.	3028.90	-125.65
360	25000.	67500.	3069.00	-125.70
361	25200.	67500.	3084.00	-125.97
362	25400.	67500.	3082.20	-126.10
363	25600.	67500.	3080.00	-126.28
364	25800.	67500.	3095.10	-126.36
365	26000.	67500.	3112.70	-126.67
366	26200.	67500.	3121.50	-126.67
367	26400.	67500.	3130.20	-126.98
368	26600.	67500.	3152.70	-126.98
369	26800.	67500.	3172.60	-126.96
370	27000.	67500.	3184.10	-127.02
371	27200.	67500.	3212.30	-126.96
372	27400.	67500.	3229.50	-126.73
373	27600.	67500.	3261.20	-126.77
374	27800.	67500.	3297.40	-126.68
375	28000.	67500.	3347.30	-126.48
376	28200.	67500.	3381.70	-126.15
377	28400.	67500.	3391.30	-125.97
378	28600.	67500.	3396.10	-125.54
379	28800.	67500.	3381.80	-125.00
380	29000.	67500.	3367.30	-124.42
381	29200.	67500.	3356.90	-124.03
382	29400.	67500.	3359.20	-123.36
383	29600.	67500.	3348.60	-122.55
384	29800.	67500.	3346.60	-121.29
385	30000.	67500.	3360.60	-120.22
386	30200.	67500.	3377.50	-119.32
387	30400.	67500.	3401.30	-118.40
388	30600.	67500.	3424.20	-118.01
389	30800.	67500.	3439.60	-117.51
390	31000.	67500.	3463.70	-117.36
391	31200.	67500.	3477.60	-117.23
392	31400.	67500.	3482.20	-117.14
393	31600.	67500.	3481.70	-117.34
394	31800.	67500.	3477.80	-117.39
395	32000.	67500.	3472.20	-117.39
396	32200.	67500.	3474.00	-117.62
397	32400.	67500.	3480.60	-117.53
398	32600.	67500.	3483.90	-117.69
399	32800.	67500.	3484.80	-117.68
400	33000.	67500.	3468.80	-117.90
401	33200.	67500.	3445.60	-118.28

EXECUTION TERMINATED

$SIGNOFF

FIGURE 5

GRAVITY / ELEVATION PROFILES

PRINCETON BASIN

B.C. DEPT. OF MINES & P.R.

SCALE
horizontal
1" = 1320'
vertical
1" = 660'
1" = 2 mgal

DATE DEC. 1975

C.A. AGER & ASSOC. LTD.
15423 34 Ave. Surrey B.C.

LEGEND

TOPOGRAPHIC FEATURES

R road
F fence

GRAVITY FEATURES

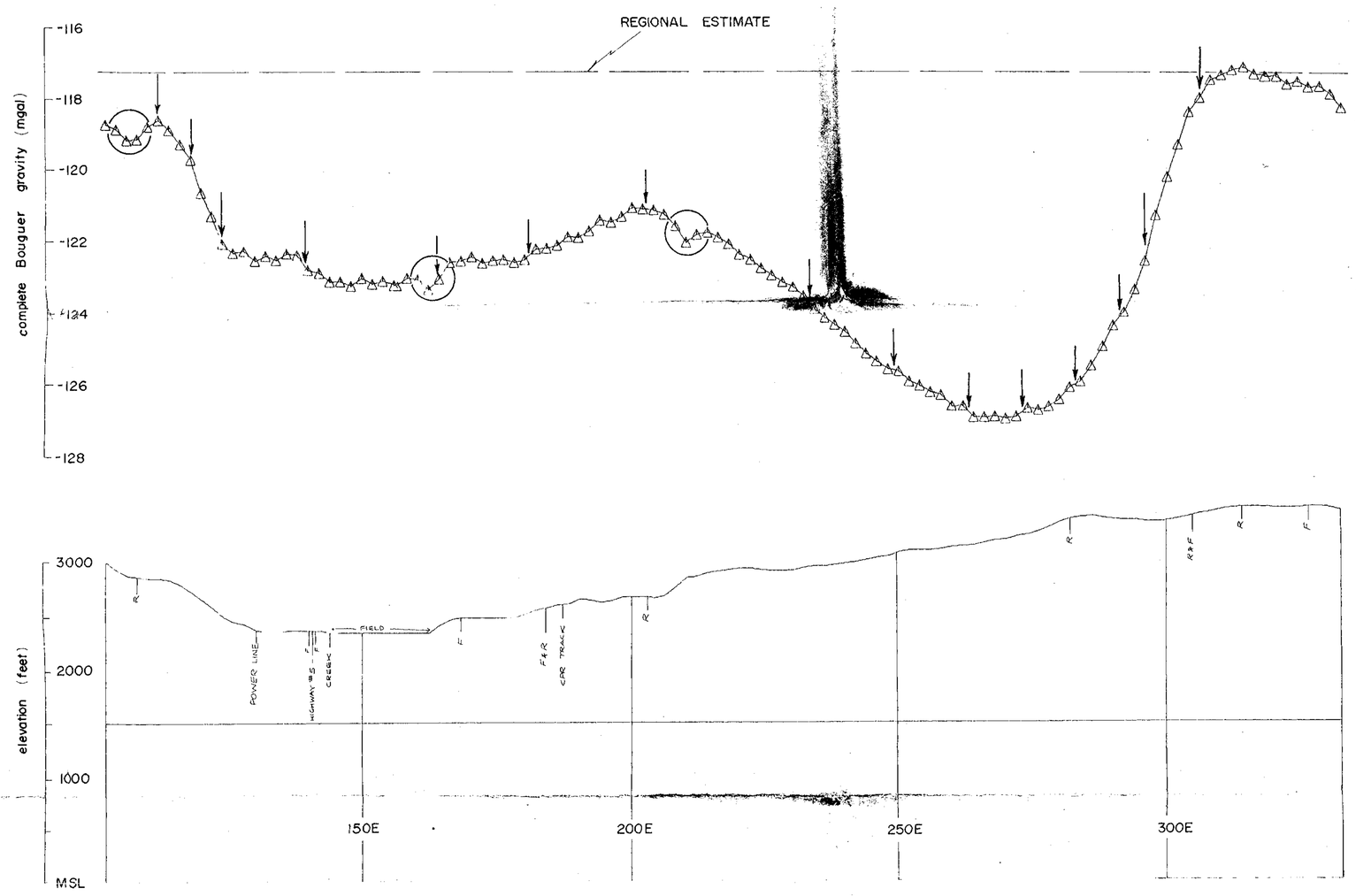
overburden or coal anomaly

density change contact

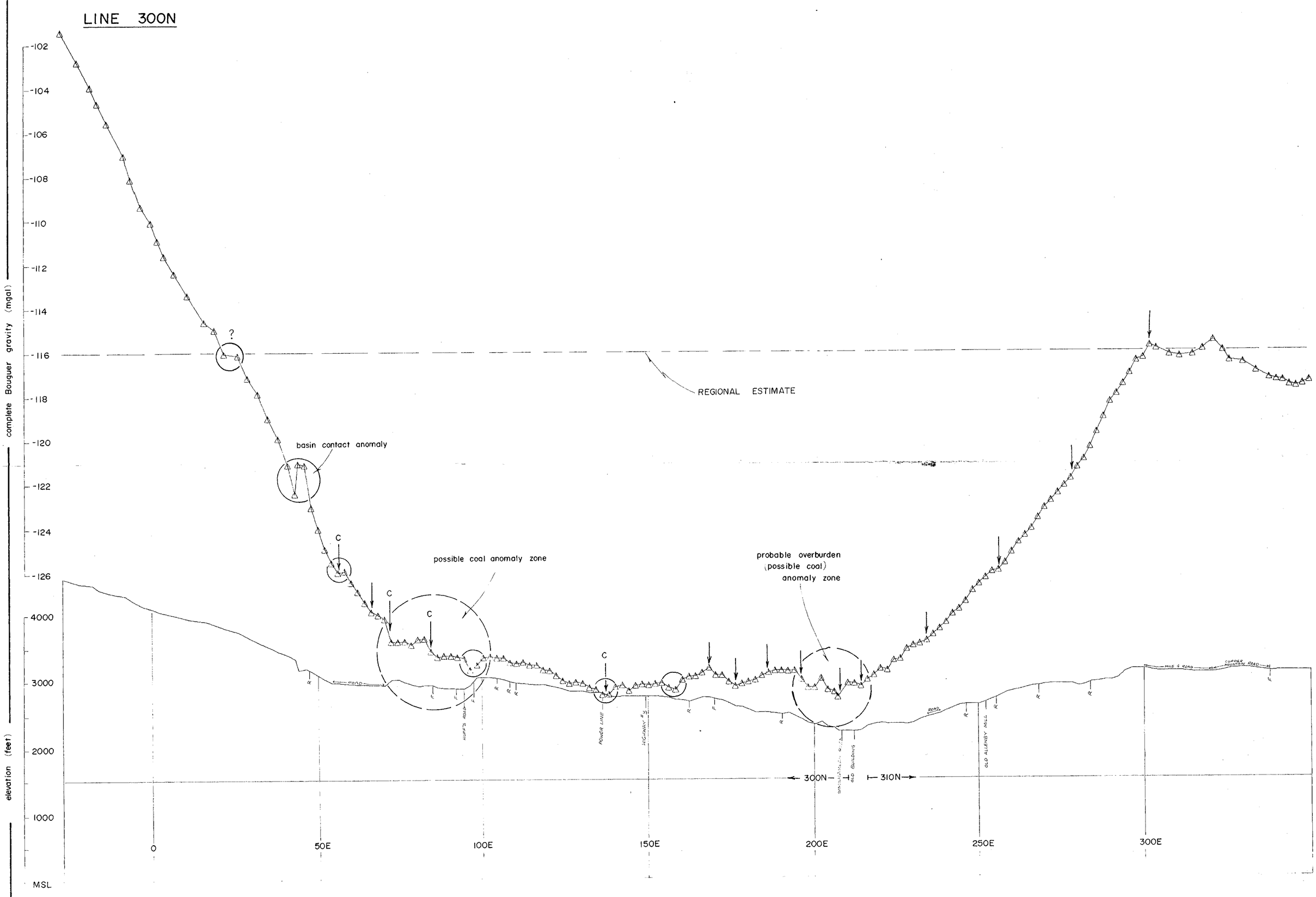
C possible coal zone contact

gravity station

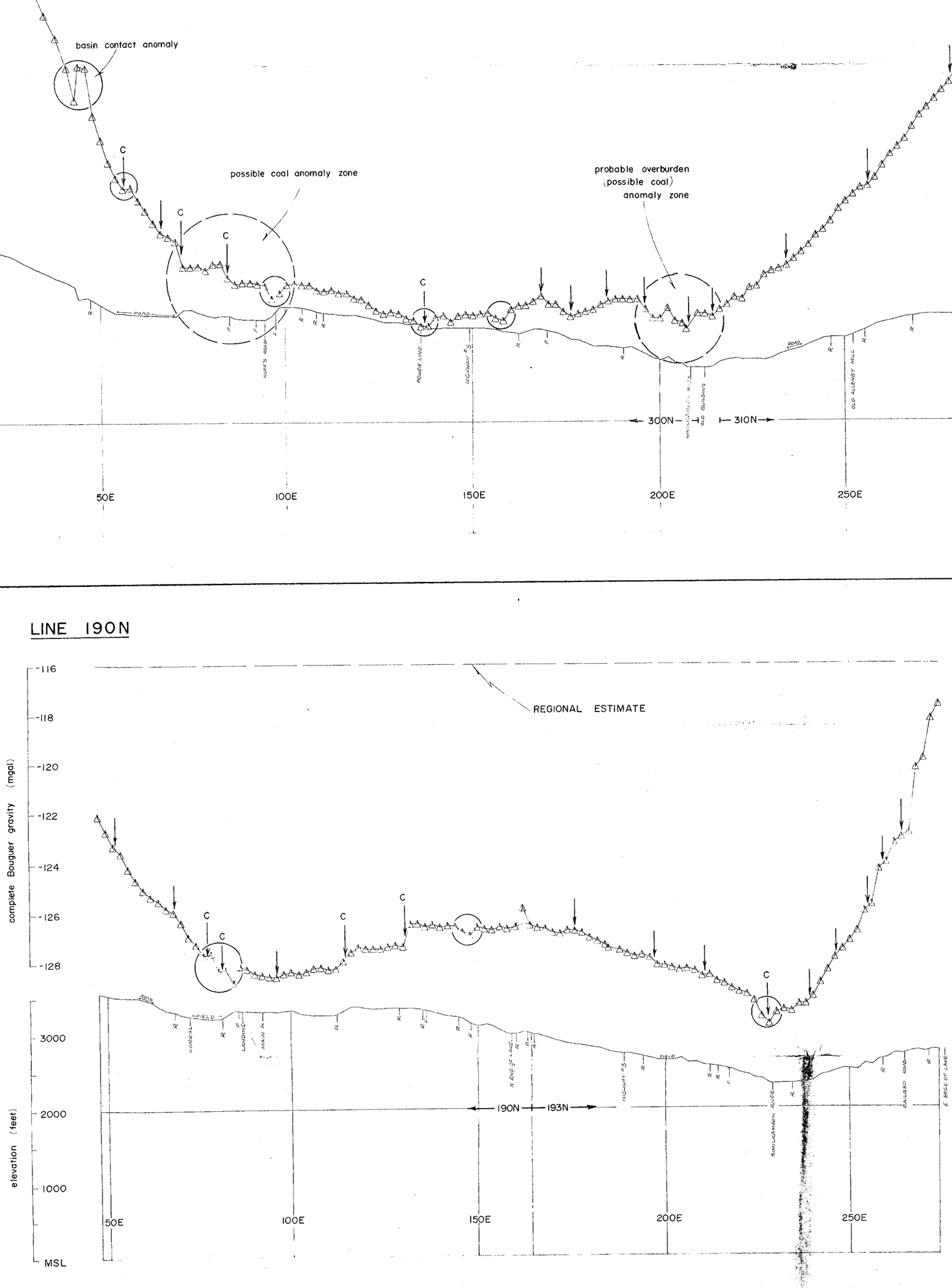
LINE 675N



LINE 300N



LINE 190N



TO ACCOMPANY REPORT TITLED
Princeton Basin
Gravity Survey
BY C.A. Ager PhD
DATED 18 Dec 75 PROJECT # Prince.