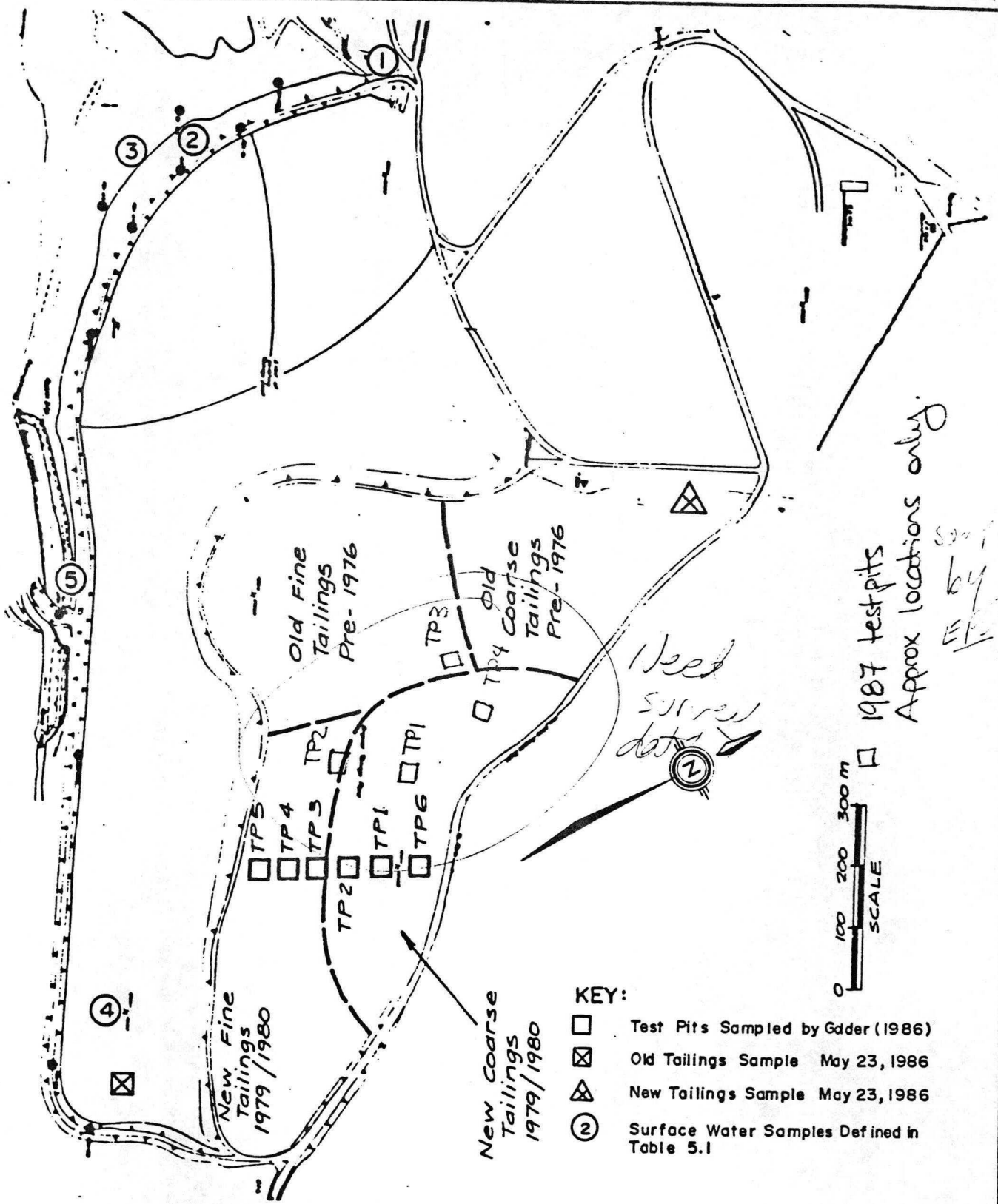
from EPs

020444



CURRAGH RESOURCES

DATE

PROJ NO

APPROVED

NO

5.12

SITE PLAN AND TEST PIT LOCATIONS

STEFFEN ROBERTSON & KIRSTEN, Consulting Engineers

FARO MINE: OLD TAILINGS STUDY - July 14/15, 1987
PASTE pH

SAMPLE #	DEPTH (m)	FIELD pH	PASTE pH 1:2	PASTE pH 1:5	PASTE pH 1:10	SHAKE FLASK (dup.)
10	0.0	DRY 3.2 WET 3.6	3.1	3.2	3.4	3.0/3.1
11	0.5	3.2	3.0	3.1	3.2	3.1/3.1
12	1.0	(very wet) 4.6	4.2	4.2	4.3	4.2/4.3
13	1.5	4.6	3.7	3.6	3.8	4.3/4.3
14	2.0	5.0	4.0	4.1	4.2	4.6/4.7
15	3.0	4.8	5.2	5.4	5.8	5.9/5.9
20	0.0	2.9	2.9	3.0	3.1	3.0/3.1
21	0.5	3.1	2.8	2.9	3.0	3.0/3.1
22	1.0	4.0	3.3	3.4	3.5	3.7/3.7
23	1.5	4.7	3.6	3.7	3.8	4.5/4.5
24	2.0	5.1	3.6	3.7	3.9	4.4/4.5
25	3.0	5.0	3.7	3.7	3.8	4.5/4.5
26	4.0	6.6	3.9	3.9	4.0	4.8/4.7
30	0.0	2.1	2.5	2.6	2.7	2.5/2.5
31	0.5	2.1	2.6	2.7	2.7	2.5/2.5
32	1.0	3.0	2.7	2.8	2.9	2.8/2.8
33	1.5	4.4	3.2	3.3	3.4	4.1/4.1
34	2.0	4.1	3.3	3.4	3.5	4.3/4.3
35	3.0	5.9	3.4	3.5	3.6	4.5/4.4
40	0.0	2.6	2.7	2.7	2.8	2.6/2.7
41	0.5	4.0	3.5	3.6	3.6	4.0/4.0
42	1.0	5.5	3.3	3.5	3.6	5.0/5.0
43	1.5	-	3.5	3.7	3.8	5.1/5.1
44	2.0	-	4.4	4.6	4.7	5.4/5.5

FARO MINE: OLD TAILINGS STUDY - July 14/15, 1987

Sample No. (1)	Depth (m)	Temp. C (field)	Moisture* (%)	Paste pH (field)	Paste pH (lab)	Thiobac. (MPN)	% Pyritic Sulphur	% Sulphate	Potential Acid Prod.	Neutral. Potential	Net NP
10	0	15	2.3	3.2	3.2	<20	30.94	1.17	967	-2.5	-969
11	.50		4.1	3.2	3.1	78	32.15	1.23	1005	-2.2	-1007
12	1	12	3.6	4.6	4.2		30.28	1.82	946	15.3	-931
13	1.50	11	8.0	4.6	3.6		29.80	1.71	931	6.2	-925
14	2	10	4.0	5.0	4.1		23.04	1.59	720	22.0	-698
15	3	5.5	19.9	4.8	5.4		11.89	2.47	372	24.4	-348
20	0	16	3.6	2.9	3.0	17000	30.67	1.31	958	-1.7	-960
21	.50		4.3	3.1	2.9	230	33.84	2.23	1058	-.5	-1058
22	1		6.9	4.0	3.4		30.91	1.84	966	3.1	-963
23	1.50		3.9	4.7	3.7		41.35	1.59	1292	19.9	-1272
24	2		3.6	5.1	3.7		33.57	1.13	1049	14.2	-1035
	2.50			5.1							
25	3		8.2	5.0	3.7		31.92	1.77	998	12.3	-986
26	4		10.9	6.6	3.9		38.53	1.11	1204	9.2	-1195
30	0	17	11.5	2.1	2.6	>2.4x10'6	41.50	3.17	1297	-12.0	-1309
31	.50	16	6.9	2.1	2.7	>2.4x10'6	30.11	2.98	941	-13.9	-955
32	1	11	4.4	3.0	2.8		32.13	2.40	1004	-8.8	-1013
33	1.50	9	8.4	4.4	3.3		35.70	1.61	1116	.5	-1116
34	2	8	5.8	4.1	3.4		40.01	2.30	1250	6.5	-1243
	2.50	8		5.2							
35	3	4	13.2	5.9	3.5		38.26	1.92	1196	12.7	-1183
40	0		13.7	2.6	2.7	>2.4x10'6	44.27	2.78	1383	-9.2	-1392
	.01			2.1							
41	.50	12	4.6	4.0	3.6	54000	26.05	1.65	814	19.5	-794
42	1	10	26.1	5.5	3.5		16.61	4.62	519	9.2	-510
43	1.50	7	25.5		3.7		18.22	3.68	569	10.6	-558
44	2	6	26.3		4.6		13.44	2.26	420	17.5	-402

* Determined in lab after transport. May not be accurate.

FARO a/b.Fw2

FARO MINE: OLD TAILINGS STUDY - July 14/15, 1987
Surface Water Samples

Sample No. (field)	pH (field)	pH (lab)	Thiobac. (MPN)	Acidity (mg/l)	Alkalinity (mg/l)	Sulphate (mg/l)	Total Metals (mg/l) Al	As	Ca	Cd	Cu	Fe	Mg	Mn	Pb	Zn
50	2.2	2.0	>2.4x10'6	5600	<1	5900	95	6.9	10	.45	8.3	40.7	149	47.6	13.3	.52
51	1.9	1.9	9.2x10'5	6500	<1	6900	90.60	12.8	12	.51	10.2	51.1	187	92	19.8	.64

WATER.fw2

Jan. 4/87.

FARO MINE: OLD TAILINGS STUDY - July 14/15, 1997
Shake Flask Test Results

Sample No. (field)	Depth (m)	pH	Acidity	Alkalinity	Sulphate mg/l	Total Hardness (Diss. Metals)	Diss mg/l Al	As	Ca	Cd	Cu	Fe	Mg	Mn	Pb	Zn
10	.0	3.0	102	-1	110	90.9	.45	-.05	.5	.033	.915	23.2	.4	.28	5.33	21.9
11	.5	3.1	135	-1	210	218	.65	-.05	34.7	.097	1.80	24.2	3.0	1.66	3.40	45.3
12	1.0	4.2	60.1	-1	200	229	.06	-.05	43.2	.170	.071	10.6	13.6	5.61	3.55	23.0
13	1.5	4.3	194	-1	390	396	.14	-.05	35.4	.211	.277	15.6	30.7	14.2	2.59	92.8
14	2.0	4.6	157	-1	290	302	.06	-.05	19.0	.261	.033	14.4	20.0	15.4	2.35	77.0
15	3.0	5.9	102	5.70	430	473	.09	-.05	47.0	.030	-.005	6.48	41.9	35.2	3.01	69.9
20	.0	3.0	116	-1	130	62.9	.63	-.05	.8	.046	.977	3.23	.6	.40	3.78	32.3
21	.5	3.0	192	-1	290	294	.96	-.05	41.9	.097	2.34	36.0	2.6	1.83	2.72	62.8
22	1.0	3.7	119	-1	310	351	.20	-.05	61.3	.173	.348	18.3	17.3	6.62	2.52	52.5
23	1.5	4.5	102	-1	270	298	-.05	-.05	37.9	.166	.106	17.2	20.5	11.5	3.16	43.6
24	2.0	4.4	131	-1	270	294	.09	-.05	14.4	.017	.071	20.6	22.0	15.9	3.20	59.3
25	3.0	4.5	159	-1	450	497	.09	-.05	35.2	.033	.099	22.3	49.3	28.3	2.47	69.2
26	4.0	4.9	34.8	-1	140	140	-.05	-.05	13.2	.012	.073	5.37	17.6	8.33	5.06	6.42
30	.0	2.5	328	-1	290	177	.58	-.05	1.2	.010	2.36	92.3	.2	.09	.61	2.7
31	.5	2.5	603	-1	650	470	2.68	-.05	26.9	.024	4.37	204	1.2	.17	1.48	11.6
32	1.0	2.8	313	-1	340	294	2.79	-.05	25.4	.076	8.09	66.0	2.3	.96	1.91	55.9
33	1.5	4.1	256	-1	530	495	.52	-.05	41.7	2.56	1.15	29.5	38.2	22.9	1.99	82.7
34	2.0	4.3	228	-1	500	463	.22	-.05	34.1	.054	.232	29.1	38.7	21.6	2.56	82.1
35	3.0	4.5	190	-1	280	314	.07	-.05	25.6	.043	.013	40.9	14.9	10.6	3.55	62.6
40	.0	2.6	273	-1	280	213	2.33	-.05	2.4	.011	.784	101	.7	.21	2.51	6.61
41	.5	4.0	48.3	-1	250	265	.10	-.05	50.1	.055	.193	16.8	21.6	7.92	4.71	3.77
42	1.0	5.0	567	2.10	1000	720	.09	-.05	97.7	.121	-.005	94.6	46.3	27.90	2.95	91.4
43	1.5	5.1	496	3.60	1000	902	.09	-.05	95.9	.139	.006	51.5	71.3	31.30	3.53	91.7
44	2.0	5.4	104	3.60	590	609	-.05	-.05	134.0	.095	-.005	5.92	46.1	2.74	4.45	44.5

FAROshak.fm2

FARO MINE: OLD TAILINGS STUDY - July 14/15, 1987
Shake Flask Test Results

ample No (field)	Depth (m)	Sulphate % wt.	% of Sediment Analyses Al	As	Ca	Cd	Cu	Fe	Mg	Mn	Pb	Zn
10	.0	.22	1.91	-.37	2.50	5.50	2.86	.11	-4	6.88	1.26	3.08
11	.5	.42	2.83	-.63	46.27	-64.67	4.44	.12	-30	26.77	.99	7.95
12	1.0	.40	.13	-.22	50.82	17.89	.11	.05	24.73	14.29	.63	2.75
13	1.5	.76	.17	-.71	44.25	46.89	1.15	.09	40.93	80.23	1.41	12.84
14	2.0	.58	.13	-.22	27.14	19.33	.08	.08	25	34.18	.61	6.64
15	3.0	.86	.05	-.91	55.29	3.53	-.02	.09	36.43	104.30	1.52	10.84
20	.0	.26	2.74	-.38	3.20	-30.67	3.81	.02	-6	10.59	1.04	5.25
21	.5	.58	2.97	-.22	69.67	-64.67	5.77	.17	-26	22.05	.51	12.95
22	1.0	.62	.33	-.42	53.30	23.07	.81	.10	34.60	34.93	.84	7.50
23	1.5	.54	-.20	-.33	37.90	55.33	.17	.08	34.17	28.61	.45	6.81
24	2.0	.54	.36	1.11	20.57	-11.33	.16	.10	44	47.89	.67	10.68
25	3.0	.90	.29	-.91	64	9.43	.20	.12	65.73	94.81	.65	16.70
26	4.0	.28	-.24	-.50	17.60	-12	.11	.03	35.20	22.27	2.08	1.76
30	.0	.58	2.58	1.25	4	-6.67	7.24	.45	-2	8	.17	6.16
31	.5	1.30	10.11	1.25	76.86	-16	20.28	1.20	12	10.12	.79	34.99
32	1.0	.68	9.15	-.83	50.80	-50.67	12.74	.31	9.20	21.11	.89	28.67
33	1.5	1.06	1.65	1.25	92.67	108.94	1.46	.15	63.67	83.67	.96	20.02
34	2.0	1.00	.86	-.67	56.83	-36	.24	.13	59.54	64.29	1.17	16.42
35	3.0	.56	.21	-.45	36.57	-28.67	.02	.20	21.29	24.88	1.22	13.52
40	.0	.56	9.91	-.77	12	-7.33	7.54	.48	-7	17.75	.60	29.91
41	.5	.50	.22	-.12	47.71	-36.67	.42	.08	72	34.36	.75	.68
42	1.0	2.00	.06	1.11	390.80	30.25	-.02	.89	71.23	120	.94	11.38
43	1.5	2.00	.04	1	137	27.80	.03	.47	43.21	68.79	1.09	9.39
44	2.0	1.16	-.03	1.25	141.05	34	-.03	.07	48.53	13.77	2.09	10.42

SHAK/SED.FW2

$$\%\text{ wt sulphate} = SO_4\ \frac{mg}{\ell} \times \frac{.5\ \ell}{25\ g} \times \frac{1\ g}{1000\ mg} \times 100 = SO_4\ \frac{mg}{\ell} \times .002$$

$$\text{Metal as ppm of Sed. Analysis} = \frac{\text{Metal } mg/\ell \times \frac{.5\ \ell}{25\ g} \times \frac{1000\ \mu g}{1\ mg}}{\text{Sed } \mu g/g} \times 100 = \frac{\text{Metal } mg/\ell \times 20}{\text{Sed } \mu g/g}$$

FARO MINE: OLD TAILINGS STUDY - July 14/15, 1987
Sediment Analyses (ug/g)

Sample No. (field)	Depth (m)	Al	As	Ca	Cd	Cu	Fe	Mg	Mn	Pb	Zn
10	.0	470	270	400	12	639	419000	-200	82	8430	14200
11	.5	460	160	1500	-3	810	414000	-200	124	6840	11400
12	1.0	910	450	1700	19	1240	388000	1100	785	11300	16700
13	1.5	1630	140	1600	9	481	346000	1500	354	3670	12900
14	2.0	890	460	1400	27	792	354000	1600	901	7760	23200
15	3.0	3260	110	1700	17	409	140000	2300	675	3960	12900
20	.0	460	260	500	-3	513	425000	-200	75	7290	12300
21	.5	580	460	1200	-3	811	417000	-200	166	10700	9700
22	1.0	1200	240	2300	15	858	356000	1000	379	6030	14000
23	1.5	500	300	2000	6	1240	420000	1200	804	14100	12800
24	2.0	450	-90	1400	-3	891	398000	1000	664	9600	11100
25	3.0	630	110	1100	7	992	378000	1500	597	7580	8170
26	4.0	420	200	1500	-3	1320	422000	1000	748	4860	7280
30	.0	450	-80	600	-3	652	409000	-200	19	6990	876
31	.5	530	-80	700	-3	431	341000	200	34	3730	663
32	1.0	610	120	1000	-3	1270	421000	500	81	4270	3900
33	1.5	630	-80	900	47	1580	404000	1200	545	4150	8260
34	2.0	510	150	1200	-3	1930	433000	1300	672	4360	10000
35	3.0	680	220	1400	-3	1600	402000	1400	852	5810	9260
40	.0	470	130	400	-3	208	422000	-200	24	8340	442
41	.5	920	820	2100	-3	871	396000	600	461	12600	11100
42	1.0	2500	-90	500	8	432	212000	1300	465	6300	14300
43	1.5	4100	-100	1400	10	410	218000	3300	910	6470	17400
44	2.0	3330	-80	1900	5	331	165000	1900	398	4260	8540

SEDIMENT.fw2