

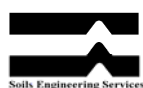
	SOIL ENGINEERING SERVICES (SES) خدمات مهندسی مکانیک خاک	
	PROJ NO: 1347-EE-PEP-GEO-001-B	REV: B
	SUBJECT: GEOTECHNICAL INVESTIGATION, PHASE I, FACTUAL REPORT, SOUTH ALUMINIUM SMELTER (SALCO) IRAN	

Enclosure R

Atterberg Limits

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-002	U1	5.00	5.50		24	26	50	26	0.08
						25			0.04
						25			0.04
BH-002	U3	10.00	10.50		22		44	22	
BH-002	U4	13.00	13.50		21	29	31	10	0.85
BH-002	U5	16.00	16.50		23	29	49	26	0.22
						25			0.08
BH-002	CB2	28.00	28.30		22	25	47	25	0.13
BH-002	CB4	34.00	34.30		21		44	23	
BH-008	U1	6.00	6.50		18	26	37	19	0.44
						27			0.46
						26			0.40
BH-008	U2	8.00	8.50		18	27	36	18	0.49
						25			0.39
BH-008	U5	14.00	14.50		20	29	37	17	0.52
						21			0.04
BH-008	U7	18.00	18.50		22		42	20	
BH-008	U10	24.00	24.50		21		41	20	
BH-013	U1	7.50	8.00		23	29	40	17	0.35
BH-013	U3	11.50	12.00		25	25	37	12	0.02
						25			-0.04
						24			-0.06
BH-018	U7	19.00	19.50		23	24	37	14	0.07
BH-018	U9	23.00	23.50		24	27	37	13	0.24
BH-021	U1	4.00	4.50		23	35	41	17	0.73
						36			0.75
						35			0.71
BH-021	U2	6.50	7.00		31	26	46	15	-0.33
						25			-0.41
BH-021	U3	9.00	9.50		24	25	41	17	0.06
BH-021	U6	16.50	17.00		23	23	41	18	0.00

TITLE : ATTERBERG LIMITS



PROJECT: SOUTH ALUMINUM SMELTER PLANT

FIG. No.: 1

CLIENT : NFC

PROJ. No. : 1347

SOIL ENGINEERING SERVICES CONSULTING ENGINEERS

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-021	U9	24.00	24.50		18	27	35	17	0.53
						25			0.41
BH-024	D3	9.00	9.45		22		31	9	
BH-024	D7	21.00	21.45		23		33	10	
BH-024	D11	33.00	33.45		25		34	9	
BH-024	D15	45.00	45.45		23		35	12	
BH-025	U1	3.00	3.50	17	21	25	37	16	0.25
						19			-0.13
BH-025	U2	5.50	6.00		22		40	18	
BH-025	U5	14.50	15.00		21		37	16	
BH-025	U7	19.50	20.00		23		43	20	
BH-027	U1	4.00	4.50		25	25	45	20	-0.03
BH-027	U2	7.00	7.50		19	23	36	17	0.21
						23			0.22
						23			0.25
BH-027	U4	11.50	12.00		24		32	8	
BH-027	U6	16.50	17.00		21		35	14	
BH-031	U1	5.00	5.50		25		52	27	
BH-031	U3	10.00	10.50		23		35	11	
BH-031	U4	12.00	12.50		25	26	35	10	0.08
BH-031	U5	14.00	14.50		23	25	39	15	0.14
						24			0.08
						23			0.01
BH-031	U6	16.00	16.50		23	26	33	10	0.30
BH-031	U7	18.00	18.50		25		48	23	
BH-031	U8	20.00	20.50		24	26	33	9	0.23
BH-031	U9	23.00	23.50		21	23	45	25	0.08
BH-031	U10	29.00	29.50		20	23	35	15	0.19
BH-031	U11	32.00	32.50		20		35	15	
BH-031	U12	36.00	36.50		21	24	30	9	0.37
BH-031	U13	39.00	39.50		20	24	33	13	0.33
BH-035	U1	5.50	6.00		23	24	36	13	0.11

TITLE : ATTERBERG LIMITS

	PROJECT: SOUTH ALUMINUM SMELTER PLANT	FIG. No.: 2
	CLIENT : NFC	PROJ. No. : 1347
SOIL ENGINEERING SERVICES CONSULTING ENGINEERS		

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-035	U3	10.00	10.50		23		40	17	
BH-035	U6	18.00	18.50		24	23	38	14	-0.05
						22			-0.12
						22			-0.13
BH-039	U5	16.00	16.50		23	27	37	14	0.29
BH-042	U1	6.00	6.50		23		39	17	
BH-042	U2	8.00	8.50		24	28	35	11	0.37
BH-042	U4	12.00	12.50		23	21	38	15	-0.13
BH-042	U5	14.00	14.50		24		44	20	
BH-042	U6	16.00	16.50		18		32	13	
BH-042	CB1	22.00	22.50		21	23	39	18	0.11
BH-042	U9	24.00	24.50		25	26	35	10	0.14
BH-042	U10	26.00	26.50		26	26	36	10	-0.04
BH-042	U12	30.00	30.50		28	20	48	20	-0.39
BH-042	U14	34.00	34.50		23		38	15	
BH-042	U17	39.50	40.00		25		41	16	
BH-044	U1	4.50	5.00		25	20	40	14	-0.33
BH-044	U2	7.00	7.50		19	25	38	19	0.32
						24			0.25
BH-044	U4	12.00	12.50		24	26	34	10	0.24
						26			0.24
						26			0.24
						27			0.30
BH-044	U6	17.00	17.50		22	26	40	18	0.19
						25			0.17
BH-048	U1	7.50	7.90		22	29	36	14	0.53
						24			0.15
BH-048	U2	10.00	10.50		23	26	34	11	0.28
BH-048	U3	12.50	13.00		19	25	28	9	0.71

TITLE : ATTERBERG LIMITS



PROJECT: SOUTH ALUMINUM SMELTER PLANT

FIG. No.: 3

CLIENT : NFC

PROJ. No. : 1347

SOIL ENGINEERING SERVICES CONSULTING ENGINEERS

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-048	U5	17.50	17.95		24	26	36	12	0.18
						26			0.19
						27			0.21
						25			0.08
BH-048	U8	25.00	25.45		23	27	35	12	0.31
						27			0.36
						27			0.30
						25			0.20
BH-048	U12	35.00	35.20		25		46	21	
BH-048	U14	40.00	40.25		21	25	33	12	0.33
						23			0.16
BH-048	U16	45.00	45.25		28	25	47	19	-0.14
						25			-0.17
BH-048	U18	50.00	50.25		25	21	37	12	-0.31
BH-049	U1	5.00	5.50		21	21	34	13	-0.01
BH-049	U3	11.00	11.50		19	21	37	18	0.11
BH-049	U4	13.00	13.50		21	27	31	10	0.60
						23			0.23
						26			0.46
BH-049	U5	15.00	15.50		23		42	19	
BH-049	U9	23.00	23.50		21	24	38	17	0.18
						21			0.02
BH-049	U11	27.00	27.50		22	24	31	9	0.21
BH-049	U13	31.00	31.50		24	24	36	12	0.02
BH-049	U15	35.00	35.50		21	24	37	17	0.20
BH-049	U16	37.00	37.50		23	28	34	11	0.49
BH-049	U17	39.00	39.50		23		45	22	
BH-052	D4	12.00	12.45		26		35	9	
BH-052	D9	27.00	27.45		21		41	20	
BH-052	D13	39.00	39.45		26		40	14	
BH-052	D16	48.00	48.45		24		41	17	

TITLE : ATTERBERG LIMITS

	PROJECT: SOUTH ALUMINUM SMELTER PLANT	FIG. No.: 4
	CLIENT : NFC	PROJ. No. : 1347
SOIL ENGINEERING SERVICES CONSULTING ENGINEERS		

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-053	U1	5.50	6.00		21	21	39	18	0.01
						23			0.09
						21			0.02
BH-053	U2	7.50	8.00		22		40	19	
BH-053	U3	9.50	10.00		22	28	29	7	0.84
BH-053	U5	13.50	14.00		20		41	21	
BH-053	U6	15.50	16.00		21		40	19	
BH-053	U7	17.50	18.00		22	26	30	8	0.53
BH-058	U2	7.50	8.00		23	26	31	8	0.41
BH-058	U5	13.50	14.00		20		42	22	
BH-058	U6	15.50	16.00		23	25	30	7	0.29
BH-058	U7	17.50	18.00		24	24	37	13	-0.02
BH-058	U8	19.50	20.00		22	20	42	20	-0.08
BH-059	U1	3.50	4.00		23	25	43	20	0.10
						24			0.04
BH-059	U2	5.50	6.00		23		34	11	
BH-059	U4	9.50	10.00		19		35	16	
BH-059	U6	13.50	14.00		20	22	36	16	0.10
BH-059	U9	20.00	20.50		23		34	12	
BH-059	U11	24.00	24.50		23	23	35	12	-0.04
BH-059	U14	29.50	30.00		22		40	19	
BH-059	U16	33.50	34.00		24	27	35	11	0.30
BH-059	U17	35.50	36.00		24	26	33	9	0.22
BH-059	U18	37.50	38.00		23	25	32	9	0.22
BH-062	U1	5.50	6.00	15	20		35	16	
BH-062	U2	7.50	8.00		21	26	27	6	0.84
BH-062	U3	9.50	10.00		25	24	44	19	-0.04
						25			-0.02
						24			-0.06
BH-062	U5	13.50	14.00		23		42	20	
BH-062	U8	19.50	20.00		22		44	22	

TITLE : ATTERBERG LIMITS



PROJECT: SOUTH ALUMINUM SMELTER PLANT

FIG. No.: 5

CLIENT : NFC

PROJ. No. : 1347

SOIL ENGINEERING SERVICES CONSULTING ENGINEERS

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-064	U2	6.50	6.95	19	24	27	33	9	0.29
						24			-0.04
BH-064	U8	18.50	18.95		20		29	9	
BH-069	D1	2.00	2.50		19		33	14	
BH-069	U1	4.00	4.50		22		41	19	
BH-069	U2	6.00	6.50		21		38	17	
BH-069	U4	10.00	10.50		22		33	11	
BH-069	U6	14.00	14.50		24	28	41	17	0.21
						27			0.18
BH-073	U2	13.00	13.75		23	25	39	16	0.15
BH-073	U4	23.00	23.45		24	24	40	16	-0.02
BH-073	U6	33.00	33.30		23	23	45	22	0.01
						24			0.05
BH-078	U2	9.00	9.50		17		29	12	
BH-078	U4	13.00	13.50		20		38	18	
BH-078	U7	19.00	19.50		21	20	44	23	-0.03
						22			0.04
						20			-0.05
BH-082	U2	8.00	8.50		21	28	29	8	0.85
BH-082	U7	18.00	18.50		23	24	36	13	0.05
BH-086	U1	5.00	5.50		21	25	31	10	0.40
BH-086	U2	7.50	8.00		27	26	47	21	-0.06
BH-086	U5	15.00	15.50		24	25	46	22	0.05
BH-086	U6	17.50	18.00		27	22	47	20	-0.26
						22			-0.25
						22			-0.24
BH-086	U7	19.50	20.00		23		38	15	
BH-095	U1	5.50	6.00		20		34	14	
BH-095	U2	7.50	8.00		20		46	27	
BH-095	U6	15.50	16.00		22	24	35	13	0.18
BH-095	U7	17.50	18.00		22		35	13	
BH-096	U16	38.00	38.50		21	23	36	15	0.13

TITLE : ATTERBERG LIMITS



PROJECT: SOUTH ALUMINUM SMELTER PLANT

FIG. No.: 6

CLIENT : NFC

PROJ. No. : 1347

SOIL ENGINEERING SERVICES CONSULTING ENGINEERS

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-096	U17	40.00	40.50		21	24	36	15	0.21
BH-096	U18	42.00	42.50		21	24	38	17	0.17
BH-096	U20	46.00	46.50		24	25	39	15	0.06
BH-096	U21	48.00	48.50		24	30	35	11	0.50
BH-096	U22	50.00	50.50		22	22	42	20	0.00
BH-098	D3	9.00	9.45		20		36	16	
BH-098	D6	18.00	18.45		22		38	16	
BH-098	D9	27.00	27.45		21		36	15	
BH-098	D12	36.00	36.45		20		35	15	
BH-100	U1	6.00	6.50	17	20	26	31	11	0.57
						26			0.51
						27			0.65
BH-100	U2	8.00	8.50		24	27	33	9	0.30
BH-100	U3	10.00	10.50		21	26	30	9	0.58
						25			0.48
						26			0.54
BH-104	U1	6.00	6.50		22	24	44	22	0.10
BH-104	U2	8.00	8.50		23		40	17	
BH-104	U4	12.00	12.50		25		36	11	
BH-104	U5	14.00	14.50		21	24	32	11	0.32
BH-104	U7	18.00	18.50		21		37	16	
BH-107	U1	4.00	4.50		26	20	45	19	-0.31
BH-107	U2	6.50	7.00		22	23	39	17	0.06
						23			0.04
						24			0.09
BH-107	U3	9.00	9.50		22	29	31	9	0.77
BH-107	U4	11.50	12.00		24		38	14	
BH-107	U5	14.00	14.50		27	26	34	7	-0.13
						26			-0.13
						26			-0.13
						27			0.07
BH-107	U7	19.00	19.50		22		37	15	

TITLE : ATTERBERG LIMITS



PROJECT: SOUTH ALUMINUM SMELTER PLANT

FIG. No.: 7

CLIENT : NFC

PROJ. No. : 1347

SOIL ENGINEERING SERVICES CONSULTING ENGINEERS

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-109	U1	7.00	7.40		24	25	31	7	0.13
						29			0.70
BH-109	U2	9.00	9.40		26	25	36	10	-0.06
						28			0.17
						26			0.05
						25			-0.14
BH-109	U3	11.50	11.90		22	23	35	13	0.10
						24			0.17
						24			0.13
BH-109	U14	33.00	33.45		21	28	41	20	0.33
BH-109	CB1	49.60	50.00		24	22	39	15	-0.11
BH-111	U1	6.50	6.95	19	23	25	40	17	0.11
						25			0.12
						24			0.03
BH-111	U4	12.50	12.95		23	29	33	10	0.58
						28			0.47
BH-112	U2	10.00	10.55		22	23	34	12	0.10
BH-112	U4	15.00	15.60		20	25	30	10	0.51
						23			0.34
						23			0.30
						24			0.44
BH-112	U6	20.00	20.75		23	26	36	13	0.27
BH-112	U9	27.50	27.80		23	24	39	16	0.08
BH-112	U12	35.00	35.35		24	27	42	18	0.14
						27			0.15
						26			0.12
BH-112	U14	40.00	40.30		23	25	36	13	0.03
BH-114	U1	5.00	5.50		24	21	44	20	-0.15
BH-114	U2	7.00	7.50		24		43	19	
BH-114	U4	11.00	11.50		20		38	18	
BH-114	U7	17.00	17.50		23		38	14	
BH-117	D4	11.50	12.00		25		44	19	

TITLE : ATTERBERG LIMITS

	PROJECT: SOUTH ALUMINUM SMELTER PLANT	FIG. No.: 8
	CLIENT : NFC	PROJ. No. : 1347
SOIL ENGINEERING SERVICES CONSULTING ENGINEERS		

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-117	D8	23.50	24.00		25		38	13	
BH-117	D12	30.00	30.45		24		42	18	
BH-117	D16	36.00	36.45		23		37	14	
BH-117	D20	42.00	42.45		24		41	17	
BH-117	D24	48.00	48.45		21		37	16	
BH-119	U2	6.00	6.50		19	26	36	17	0.42
BH-119	U3	8.50	9.00		22		36	14	
BH-119	U6	16.00	16.50		21	25	40	19	0.21
BH-119	U8	21.00	21.50		23	25	41	18	0.11
BH-119	U9	23.50	24.00		22		38	16	
BH-119	U10	26.00	26.50		22	25	43	21	0.14
						25			0.14
						25			0.14
						16			-0.28
BH-119	U12	31.00	31.50		22		38	16	
BH-119	U14	36.00	36.50		19		39	20	
BH-119	U16	41.00	41.50		23	25	39	16	0.13
BH-119	U18	46.00	46.50		22		40	17	
BH-124	U2	7.50	8.00		20		37	17	
BH-124	U6	17.50	18.00		22		43	22	
BH-125	D3	9.00	9.45		22		32	10	
BH-125	D7	21.00	21.45		21		33	12	
BH-125	D11	33.00	33.45		25		43	18	
BH-130	U1	4.00	4.50	18	23	24	37	14	0.04
						24			0.04
						25			0.16
BH-130	U2	6.00	6.50		25	23	40	15	-0.11
BH-130	U5	12.00	12.50		22	26	31	9	0.46
BH-133	U1	5.00	5.50		20	19	38	18	-0.04
						20			-0.01
						21			0.08
BH-133	U2	7.00	7.50		20	26	38	18	0.31

TITLE : ATTERBERG LIMITS

	PROJECT: SOUTH ALUMINUM SMELTER PLANT	FIG. No.: 9
	CLIENT : NFC	PROJ. No. : 1347
SOIL ENGINEERING SERVICES CONSULTING ENGINEERS		

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-133	U4	11.00	11.50		22		37	16	
BH-133	U6	15.00	15.50		22		40	18	
BH-133	U7	17.00	17.50		25	26	38	13	0.08
BH-133	U8	19.00	19.50		21	24	38	17	0.17
BH-139	U1	6.00	6.50		25		46	21	
BH-139	U2	10.00	10.50		19	25	38	19	0.33
BH-139	U3	12.00	12.50		20	29	29	9	0.97
BH-139	U4	14.00	14.50		21		36	15	
BH-139	U5	16.00	16.50		23	26	33	10	0.33
BH-139	U6	18.00	18.50		22	23	42	20	0.07
BH-139	U7	20.00	20.50		20	27	31	11	0.61
BH-139	U8	22.00	22.50		22	24	39	17	0.14
BH-139	U9	24.00	24.50		20	24	38	18	0.22
						22			0.11
						22			0.13
BH-139	U10	26.00	26.50		22	25	42	20	0.17
BH-139	U11	28.00	28.50		23	20	43	20	-0.14
						21			-0.08
						21			-0.08
BH-139	U14	34.00	34.50		15	25	39	24	0.42
BH-139	U16	38.00	38.50		19		43	24	
BH-139	U19	44.00	44.50		21		42	21	
BH-139	U21	48.00	48.50		22	26	30	8	0.53
						27			0.59
BH-139	U22	50.00	50.50		19		43	24	
BH-141	D3	9.00	9.45		26		41	15	
BH-141	D6	18.00	18.45		21		33	12	
BH-141	D9	27.00	27.45		28		41	13	
BH-141	D12	36.00	36.45		22		37	15	
BH-141	D15	45.00	45.45		22		38	16	
BH-143	U2	7.50	8.00		23		41	18	
BH-143	U3	11.50	12.00		24	25	41	17	0.06

TITLE : ATTERBERG LIMITS



PROJECT: SOUTH ALUMINUM SMELTER PLANT

FIG. No.: 10

CLIENT : NFC

PROJ. No. : 1347

SOIL ENGINEERING SERVICES CONSULTING ENGINEERS

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-143	U5	15.50	16.00		23		42	19	
BH-143	U7	19.50	20.00		23		39	16	
BH-146	D1	3.00	3.45		25		35	10	
BH-146	D4	12.00	12.45		20		35	15	
BH-146	D7	21.00	21.45		20		31	11	
BH-146	D10	30.00	30.45		22		49	27	
BH-148	U1	3.50	4.00		20	27	42	22	0.33
						27			0.32
						28			0.36
BH-148	U2	6.00	6.50		20		42	21	
BH-148	U4	11.00	11.50		21		42	21	
BH-148	U5	13.50	14.00		24	25	32	8	0.11
						25			0.15
						26			0.27
BH-151	CB1	5.20	5.60	16	23		46	23	
BH-151	U1	9.50	10.00		18	25	29	11	0.64
BH-151	U2	11.50	12.00		21	25	28	7	0.63
BH-151	U4	15.50	16.00		22	25	42	20	0.15
BH-151	U5	17.50	18.00		20		44	24	
BH-156	U1	3.50	4.00		19	22	33	14	0.19
						20			0.10
						21			0.13
BH-156	U2	6.00	6.50		21	25	38	18	0.22
BH-156	U4	11.00	11.50		22	29	30	8	0.89
BH-156	U5	13.50	14.00		21	20	37	16	-0.06
BH-156	U7	18.50	19.00		20		38	18	
BH-157	U3	10.00	10.50		20	25	38	18	0.28
BH-157	U4	12.00	12.50		22	26	30	8	0.44
BH-157	U7	18.00	18.50		22		34	12	
BH-157	U10	24.00	24.50		21		40	19	
BH-157	U14	32.00	32.50		21		29	8	
BH-157	U17	38.00	38.50		21		41	20	

TITLE : ATTERBERG LIMITS



PROJECT: SOUTH ALUMINUM SMELTER PLANT

FIG. No.: 11

CLIENT : NFC

PROJ. No. : 1347

SOIL ENGINEERING SERVICES CONSULTING ENGINEERS

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-161	U1	8.00	8.25		22	8	49	27	-0.51
BH-161	U3	13.00	13.40		31	25	55	24	-0.23
BH-161	U5	18.00	18.20		21	27	31	10	0.56
						24			0.25
BH-161	U7	23.00	23.35		24	25	37	13	0.06
						26			0.12
						27			0.20
BH-161	U9	28.00	28.55		20	25	33	13	0.40
						23			0.24
BH-161	U11	33.00	33.70		24		40	16	
BH-161	U13	38.00	38.50		22	25	34	12	0.29
BH-161	U15	43.00	43.50		20	25	32	12	0.38
						26			0.54
						24			0.37
BH-164	U1	5.50	6.00		22	25	38	16	0.16
						25			0.18
						24			0.14
BH-164	U2	7.50	8.00		21	26	32	11	0.50
BH-164	U5	13.50	14.00		23	26	31	8	0.42
BH-164	U8	19.50	20.00		22	25	36	14	0.19
						26			0.27
						26			0.29
BH-166	U1	7.00	7.50	16	22		37	15	
BH-166	U2	9.00	9.50		21	26	39	17	0.31
BH-166	U5	15.00	15.50		22	24	37	15	0.17
BH-166	U6	17.00	17.50		22		42	20	
BH-169	U1	5.50	6.00	19	25	27	42	17	0.11
						25			0.03
						24			-0.07
BH-169	U3	9.50	10.00		20	28	30	10	0.85
						27			0.71
BH-169	U6	15.50	16.00		23	26	42	19	0.17

TITLE : ATTERBERG LIMITS

	PROJECT: SOUTH ALUMINUM SMELTER PLANT	FIG. No.: 12
	CLIENT : NFC	PROJ. No. : 1347
SOIL ENGINEERING SERVICES CONSULTING ENGINEERS		

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-169	U8	19.50	20.00		21	25	31	10	0.45
BH-173	U3	10.00	10.50		19	26	42	23	0.31
BH-173	U6	16.00	16.50		22		30	8	
BH-173	U8	20.00	20.50		17		37	20	
BH-173	U10	24.00	24.50		22		32	11	
BH-173	U12	28.00	28.40		19	24	37	18	0.29
						22			0.17
BH-173	U14	32.00	32.50		22	22	36	15	-0.02
BH-175	U1	6.00	6.50		22	24	36	14	0.18
						25			0.18
						25			0.24
BH-175	U2	10.00	10.50		23		36	13	
BH-175	U5	16.00	16.50		23	26	40	17	0.20
BH-175	U7	20.00	20.50		21	25	39	18	0.22
BH-180	U1	6.00	6.50		22	24	39	17	0.12
						23			0.08
						24			0.10
BH-180	U3	10.00	10.50		23		42	19	
BH-180	U4	12.00	12.50		22		37	15	
BH-180	U6	16.00	16.50		21		37	16	
BH-180	U8	20.00	20.50		23		39	16	
BH-184	U1	5.50	6.00		24		43	19	
BH-184	U2	7.50	8.00		22		42	20	
BH-184	U4	11.50	12.00		21	27	37	16	0.39
BH-184	U6	15.50	16.00		22		41	18	
BH-184	U8	19.50	20.00		22		40	18	
BH-185	U1	3.50	4.00		22	26	29	7	0.52
						25			0.50
						26			0.55
						22			0.00
BH-185	U2	5.50	6.00		22	25	37	15	0.20
BH-185	U3	7.50	8.00		24	25	33	9	0.11

TITLE : ATTERBERG LIMITS



PROJECT: SOUTH ALUMINUM SMELTER PLANT

FIG. No.: 13

CLIENT : NFC

PROJ. No. : 1347

SOIL ENGINEERING SERVICES CONSULTING ENGINEERS

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-185	U4	9.50	10.00		20	23	37	17	0.20
BH-185	U10	21.50	22.00		25	25	39	14	0.00
BH-185	U12	25.50	26.00		21	25	34	13	0.31
						25			0.30
BH-185	U14	29.50	30.00		23	21	40	17	-0.10
BH-185	U15	31.50	32.00		24	25	40	16	0.06
BH-185	U16	33.50	34.00		23	25	35	12	0.17
BH-186	U3	9.50	10.00		20	28	29	9	0.87
BH-186	U7	17.50	18.00		26	28	43	17	0.10
BH-186	U8	19.50	20.00		22	26	42	20	0.22
BH-198	U1	5.50	6.00		22		37	15	
BH-198	U3	9.50	10.00		20	23	39	19	0.16
BH-198	U5	13.50	14.00		21		39	18	
BH-198	U7	17.50	18.00		21		38	17	
BH-199	U1	6.00	6.50		18		34	17	
BH-199	U3	11.50	12.00		20		37	17	
BH-199	U4	13.00	13.50		20	23	37	17	0.18
BH-199	U7	19.50	20.00		21	25	36	15	0.28
BH-202	U11	26.00	26.50		24	26	41	17	0.10
						22			-0.11
						26			0.14
BH-202	CB1	28.00	28.50		24	25	41	17	0.05
BH-202	CB2	30.00	30.50		23	22	36	13	-0.08
						22			-0.05
						22			-0.09
BH-202	CB3	32.00	32.50		25	20	37	12	-0.38
						21			-0.35
						20			-0.39
BH-202	CB4	34.00	34.50		22	26	33	11	0.32
BH-202	CB6	38.00	38.50		23	22	42	19	-0.03
BH-202	CB7	40.00	40.50		27	25	44	17	-0.10
BH-216	U3	12.00	12.45		23	26	33	10	0.32

TITLE : ATTERBERG LIMITS



PROJECT: SOUTH ALUMINUM SMELTER PLANT

FIG. No.: 14

CLIENT : NFC

PROJ. No. : 1347

SOIL ENGINEERING SERVICES CONSULTING ENGINEERS

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-216	U7	22.00	22.50		23	22	39	16	-0.04
BH-220	U3	14.50	15.00		21	26	37	16	0.29
BH-222	U8	20.00	20.50		23	25	37	14	0.11
BH-222	U10	24.00	24.50		23		33	10	
BH-234	U1	7.00	7.50		26		38	12	
BH-234	U7	22.00	22.50		24	23	36	12	-0.06
BH-234	U8	24.50	25.00		23	24	35	12	0.09
BH-237	U4	14.50	15.00		22	22	35	13	0.03
						27			0.36
						27			0.36
BH-243	U8	20.00	20.50		24	21	35	11	-0.27
BH-243	U9	22.00	22.50		23	26	32	9	0.35
BH-243	U10	24.00	24.50		21	23	40	19	0.08
BH-249	U1	4.00	4.50	19	26	23	43	17	-0.18
						23			-0.21
						23			-0.17
BH-249	U9	20.00	20.50		23	28	38	15	0.35
BH-249	U11	24.00	24.50		26	28	34	8	0.28
BH-251	U1	4.00	4.50	18	23	26	36	13	0.24
						24			0.07
BH-251	U5	12.00	12.50		23	24	31	8	0.15
BH-254	U1	4.00	4.50	20	24	25	46	22	0.04
						22			-0.08
						24			-0.02
BH-254	U9	20.00	20.50		22	27	32	10	0.55
						26			0.39
BH-254	U11	24.00	24.50		23	27	35	12	0.37
BH-256	U1	7.50	8.30		23	24	40	17	0.07
BH-256	U3	12.50	13.00		21	25	35	14	0.32
BH-256	U9	30.00	30.42		23		39	16	
BH-256	U15	45.00	45.50		34		45	11	

TITLE : ATTERBERG LIMITS



PROJECT: SOUTH ALUMINUM SMELTER PLANT

FIG. No.: 15

CLIENT : NFC

PROJ. No. : 1347

SOIL ENGINEERING SERVICES CONSULTING ENGINEERS

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-262	U1	6.00	6.50	19	27	25	40	13	-0.16
						22			
BH-262	U2	8.00	8.50		22	25	32	10	0.25
BH-267	U2	8.00	8.50		23	27	35	12	0.36
BH-267	U4	12.00	12.50		23	27	35	12	0.34
BH-270	D1	3.00	3.45		26		40	14	
BH-270	D4	12.00	12.45		27		38	11	
BH-270	D7	21.00	21.45		25		38	13	
BH-270	D10	30.00	30.45		25		42	17	
BH-270	D13	40.00	40.45		27		44	17	
BH-273	U1	4.50	5.00	15	21	25	40	19	0.23
						26			0.28
						27			0.30
BH-273	U3	9.50	10.00		23	23	33	10	0.05
						26			0.34
						22			-0.07
BH-273	U5	14.00	14.50		22	25	41	19	0.16
BH-273	U8	22.00	22.50		22	23	39	18	0.07
BH-273	U9	24.50	25.00		23	26	34	11	0.31
						26			
BH-277	U2	10.50	10.95		23	26	34	11	0.29
BH-277	U4	14.50	14.95		19	27	30	11	0.72
BH-279	U1	3.50	4.00	18	24	25	41	17	0.06
						23			-0.05
						24			0.00
BH-279	U12	27.00	27.50		24	24	41	17	-0.02
BH-279	U13	29.50	30.00		25	23	40	15	-0.16
BH-279	U16	37.00	37.50		24	26	39	15	0.13
BH-282	U1	4.00	4.50	16	20		33	13	
BH-282	U3	8.00	8.50		18	21	35	16	0.21
						22			0.25
						24			0.35

TITLE : ATTERBERG LIMITS



PROJECT: SOUTH ALUMINUM SMELTER PLANT

FIG. No.: 16

CLIENT : NFC

PROJ. No. : 1347

SOIL ENGINEERING SERVICES CONSULTING ENGINEERS

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-282	U7	16.00	16.50		18	24	34	15	0.40
						24			0.40
						25			0.44
BH-284	U1	6.00	6.50	18	26	26	39	13	0.04
						25			-0.10
						25			-0.08
BH-284	U3	12.00	12.50		23	28	33	10	0.46
BH-286	U4	13.50	14.00		23	27	38	15	0.28
BH-286	U9	23.50	24.00		30	21	51	21	-0.41
BH-286	U11	27.50	28.00		24	29	35	11	0.48
BH-286	U15	35.50	36.00		23	26	37	14	0.22
BH-286	U19	43.50	44.00		21	22	32	11	0.05
BH-288	U1	4.00	4.50		24	24	42	18	0.00
						23			
BH-288	U6	14.00	14.50		22	26	41	19	0.22
BH-288	U10	22.00	22.50		21		37	16	
BH-288	U12	26.00	26.50		21	24	38	17	0.16
BH-288	U14	30.00	30.50		20		39	19	
BH-288	U17	36.00	36.50		21		40	19	
BH-298	U1	8.00	8.50		21	25	41	20	0.20
BH-298	U3	12.00	12.50		21	25	35	14	0.27
BH-298	U5	16.00	16.50		22	26	40	18	0.23
BH-307	D2	6.00	6.45		22		37	15	
BH-307	D5	15.00	15.45		21		36	15	
BH-307	D8	24.00	24.45		22		36	14	
BH-307	D11	33.00	33.45		20		34	14	
BH-312	D1	3.00	3.45		22		40	18	
BH-312	D4	12.00	12.45		23		36	13	
BH-312	D9	27.00	27.45		26		37	11	
BH-312	D13	39.00	39.45		22		36	14	
BH-312	D17	50.00	50.45		23		44	21	
BH-317	U1	7.50	8.05		23	27	34	11	0.41

TITLE : ATTERBERG LIMITS



PROJECT: SOUTH ALUMINUM SMELTER PLANT

FIG. No.: 17

CLIENT : NFC

PROJ. No. : 1347

SOIL ENGINEERING SERVICES CONSULTING ENGINEERS

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-317	U3	12.50	12.85		20	28	28	8	0.98
BH-317	U6	20.00	20.45		19	29	32	13	0.75
						29			0.74
						29			0.75
						27			0.61
BH-317	U8	25.00	25.30		22	29	30	8	0.83
BH-317	U11	32.50	32.80		22	26	30	8	0.46
BH-317	U17	47.50	47.90		21	21	32	11	0.02
BH-320	U1	4.50	4.95	18	26	22	38	12	-0.30
BH-322	U1	4.00	4.50		18	19	37	19	0.06
BH-322	U2	6.00	6.50		20	25	37	17	0.31
BH-322	U4	10.00	10.50		19		41	22	
BH-322	U6	14.00	14.50		21		39	19	
BH-322	U7	16.00	16.50		18		40	22	
BH-322	U9	20.00	20.50		23		30	7	
BH-329	U1	4.00	4.50	19	30	26	42	12	-0.36
						23			-0.57
						25			-0.40
BH-329	U6	14.00	14.50		22	24	30	8	0.23
BH-329	U10	22.00	22.50		26	26	35	9	-0.05
BH-329	U13	28.00	28.50		22	25	36	14	0.23
						25			0.18
						24			0.17
BH-329	U15	32.00	32.50		22	25	34	12	0.29
BH-335	D1	3.00	3.45		23		38	15	
BH-335	D5	15.00	15.45		20		35	15	
BH-335	D8	24.00	24.45		23		35	12	
BH-335	D12	36.00	36.45		24		34	10	
BH-335	D16	48.00	48.45		26		41	15	
BH-337	U1	4.00	4.50		20	21	36	16	0.06

TITLE : ATTERBERG LIMITS



PROJECT: SOUTH ALUMINUM SMELTER PLANT

FIG. No.: 18

CLIENT : NFC

PROJ. No. : 1347

SOIL ENGINEERING SERVICES CONSULTING ENGINEERS

Boring No.	Sample NO.	Depth (m)		SL	PL	W%	LL	PI	LI
		From	To						
BH-337	U2	6.00	6.50		21	24	33	12	0.21
						25			0.36
						23			0.21
						27			0.48
BH-337	U4	10.00	10.50		21		38	18	
BH-337	U7	16.00	16.50		21	25	33	12	0.35
BH-337	U10	22.00	22.50		21	28	36	15	0.44
BH-337	U12	26.00	26.50		22	22	26	5	-0.05
BH-337	U14	30.00	30.50		22	22	36	14	-0.01
						23			0.05
						21			-0.08
BH-337	U16	34.00	34.50		22	22	44	22	-0.01
						22			-0.02
						21			-0.06
BH-337	U19	40.00	40.50		22		42	19	
BH-337	U22	46.00	46.50		21		36	15	
BH-343	U7	18.00	18.50		20		39	19	
BH-354	U2	7.50	8.00		22	25	37	15	0.20
BH-354	U4	13.50	14.00		27	25	46	19	-0.10
BH-354	U5	15.50	16.00		23	25	31	8	0.25
BH-354	U7	19.50	20.00		22	25	42	20	0.15
						24			0.15

TITLE : ATTERBERG LIMITS



PROJECT: SOUTH ALUMINUM SMELTER PLANT

FIG. No.: 19

CLIENT : NFC

PROJ. No. : 1347

SOIL ENGINEERING SERVICES CONSULTING ENGINEERS