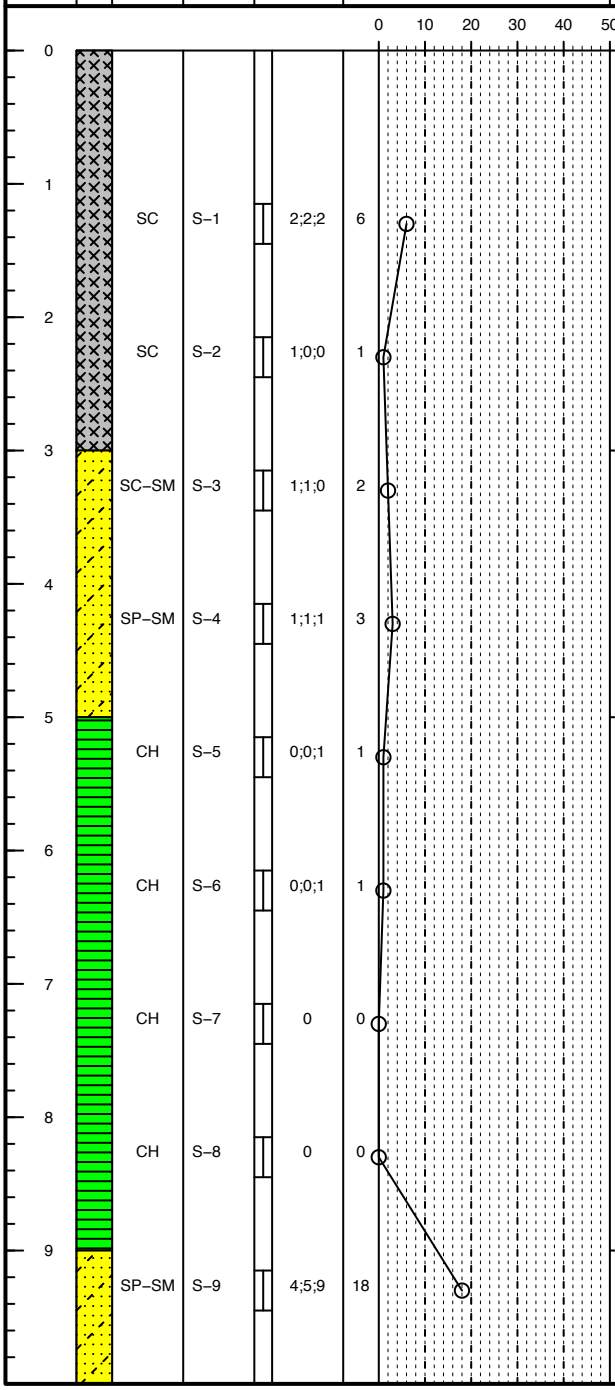
NGL Project, PEER Center				
Project Name	NGL, Phase 1	Operator	TK and YH – Jibanshikenjo Co., Ltd.
TSN	CPT–URY–SPT01	Field Log by	Akira Nemoto – Tokyo Soil Research and Allan Ng – UCLA
Location	Urayasu, Chiba–Ken, Japan	Drilling Equipment	Geoprobe 6610DT
Latitude	35.637925	SPT system	Rope, cone pulley and cathead. AW rods.
Longitude	139.93356	Drilling Method	Rotary wash
GWT (m)	1.51	Hammer Type	63.5kg Donut hammer
Elevation (m)		Hole Diameter (cm)	15
Borehole Depth (m)	15.45	Date	6/10/14
Notes	Driller pushes split–spoon sampler 15cm into bottom of borehole before conducting SPT.		



Depth Scale (m)	Lithology	USCS	Sample Type and No. (S:SPT, SH:Shleby)	SPT Blows / 10 cm	SPT blows / 30cm	Description	Casing Depth (m)	Rod Length (m)	Energy Ratio (%)*	Dry Unit Weight (kN/m^3)	Water Content (%)	Liquid Limit	Plasticity Index	%fines < 75 µm	% < 5 µm	% < 2 µm	D50 (mm)	D10 (mm)	Remark
0–1		SC	S–1	2;2;2	6	FILL. SILTY CLAYEY SAND: fine to medium, dark olive gray, very moist.		4	80.5	15.1	22.4	31.7	13.7	22.7	9.0	7.0	0.215	0.006	a
1–2		SC	S–2	1;0;0	1	very dark gray.		5	53.0	11.9	45.2	48	24.3	30.6	9.0	8.0	0.170	0.007	
2–3		SC–SM	S–3	1;1;0	2	SILTY CLAYEY SAND: fine to medium, black, with shells and few traces of organics.		6	54.0	15.0	28.5	25.8	5.8	22.5	9.5	8.0	0.172	0.006	
3–4		SP–SM	S–4	1;1;1	3	with shells.	3	7	68.2	14.9	29.5	NP	NP	9.7	2.0	0.0	0.214	0.080	
4–5		CH	S–5	0;0;1	1	CLAY: high plasticity, black.	3	8		7.9	86.3	87.8	55.6	99.3	52.0	40.0	0.004		b
5–6		CH	S–6	0;0;1	1		3	9		9.7	63.4	58.4	33	98.8	40.5	29.0	0.009		
6–7		CH	S–7	0	0	with trace of fine sand.	3	10		10.1	60.4	55.9	31.4	88.3	31.0	22.0	0.015		
7–8		CH	S–8	0	0		3	11		11.0	52.3	50.3	25.3	96.4	21.0	14.0	0.027		
8–9		SP–SM	S–9	4;5;9	18	SILTY SAND: fine poorly–graded, black, with shells, plant fragments and trace of light weight porous rocks..	3	12	74.2	15.4	27.5	NP	NP	8.7	1.0	0.0	0.216	0.097	c

* SPT blow–count energy calibration by accelerometers and strain gages

Lithology Legend

- Fill soil
- Organic soil
- Gravel w/o fines
- Gravel w/ fines
- Sand w/o fines
- Sand w/ fines
- Silt w/o coarse
- Silt w/ coarse
- Clay w/o coarse
- Clay w/ coarse

Remark

[a] GWT measured as free–standing water in borehole 1 hour after drilling with portable water level meter

[b] Driller described decrese in drilling pressure, recommended not to test with SPT energy analyzer.

[c] Driller described increase in drilling pressure, test with SPT energy analyzer resumed.

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	Borehole Depth (m)	15.45	Date	6/10/14
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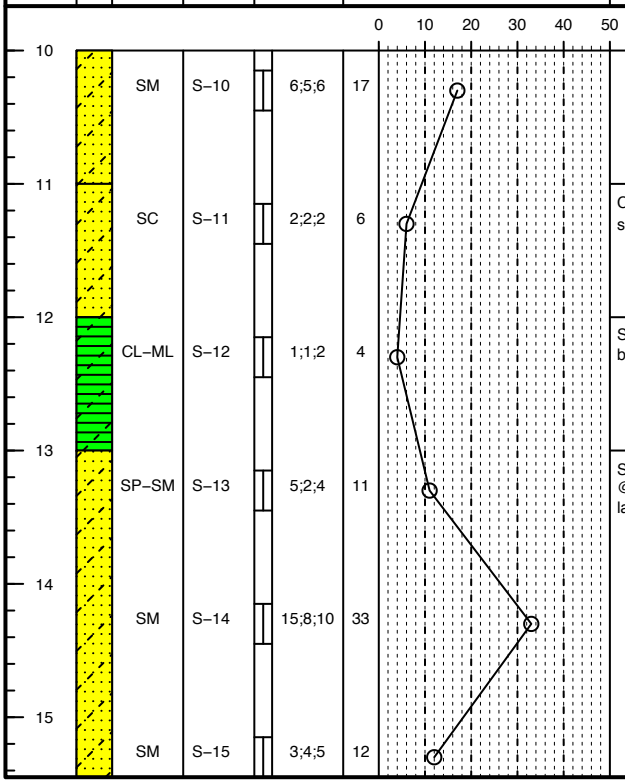

Depth Scale (m)	Lithology	USCS	Sample Type and No. (S:SPT, SH:Shleby)	SPT Blows / 10 cm	SPT blows / 30cm	Description	Casing Depth (m)	Rod Length (m)	Energy Ratio (%)*	Dry Unit Weight (kN/m^3)	Water Content (%)	Liquid Limit	Plasticity Index	%fines < 75 µm	% < 5 µm	% < 2 µm	D50 (mm)	D10 (mm)	Remark
10		SM	S–10	6;5;6	17		3	13	77.5	14.8	29.6	NP	NP	12.3	3.0	2.0	0.163	0.049	
11		SC	S–11	2;2;2	6	CLAYEY SAND: fine, black, with shells.	3	14	81.4	14.6	30.5	38.3	15.5	29.9	11.0	8.0	0.137	0.003	
12		CL–ML	S–12	1;1;2	4	SILTY CLAY: low plasticity, black, slighty sandy.	3	15	82.7	10.4	56.6	26.7	5.7	62.5	18.0	12.0	0.041	0.001	d
13		SP–SM	S–13	5;2;4	11	SILTY SAND: fine, black, moist. @13.3, poorly–graded, with thin layer of weathered rock.	3	16	77.4	13.7	34.5	NP	NP	10.2	2.0	0.0	0.165	0.070	
14		SM	S–14	15;8;10	33		3	17	79.6	15.6	26.6	NP	NP	12.5	4.0	3.0	0.144	0.041	
15		SM	S–15	3;4;5	12		3	18	81.8	11.8	45.6	36.4	7.5	49.9	8.0	6.0	0.075	0.010	e

* SPT blow–count energy calibration by accelerometers and strain gages

Lithology Legend

- Fill soil
- Organic soil
- Gravel w/o fines
- Sand w/o fines
- Silt w/o coarse
- Clay w/o coarse
- Gravel w/ fines
- Sand w/ fines
- Silt w/ coarse
- Clay w/ coarse

Remark

d Top half is sandy clay and bottom half is very fine sand.

e Top half is sand with layer of weathered rock and bottom half is silty sand.