

## **ATTACHMENT 5: WATER LEVEL MEASUREMENTS**

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This attachment contains water level measurements for the JPL relatively shallow standpipe monitoring wells (MW-1, MW-5 through MW-10, MW-13, MW-15, and MW-16) and the Westbay™ multiport wells (MW-3, MW-4, MW-11, MW-12, MW-14, and MW-17 through MW-26) obtained during the 2<sup>nd</sup> Quarter 2020. Water level measurements were recorded before the sampling event on June 8, 2020 for the relatively shallow standpipe monitoring wells and June 8, 15 and 17, 2020 for the Westbay™ multiport wells. Water level measurements were recorded after the sampling event on June 26, 2020 for the relatively shallow standpipe monitoring wells and for the Westbay™ multiport wells. Water levels for the shallow wells were measured using a Solinst™ water level meter. In the deep multiport wells, the hydraulic head at each sampling port was measured with a Westbay™ MOSDAX sampling probe. Water level measurements were conducted by Blaine Tech Services, Inc.

## WELL GAUGING DATA

Project # 200608-AH1 Date 06/08/20 Client Tidewater

Site JPL, Pasadena CA

Well ID	Well Size (in.)	Time Gauged	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC
MW-1	4	1130					24.90	D.ed pump	
MW-5	4	1430					97.23	D.ed pump	
MW-6	4	1354					221.85	D.ed pump	
MW-7	4	1630					237.01	D.ed pump	
MW-8	4	1520					161.34	D.ed pump	
MW-9	4	1134					18.62	D.ed pump	
MW-10	4	1425					120.01	D.ed pump	
MW-13									
MW-15	4	1515					30.51	D.ed pump	
MW-16	4	1635					263.71	284.72	

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-3  
 DATE: 6/8/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING: 1100.34  
 WEATHER: Sunny  
 DTW = 183.51

PROBE TYPE: Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT: JPL Pasadena  
 OPERATOR(S) L. Henderson / T. Hoang  
 ATM. PRESSURE (Patm): (start) 14.12 (finish) 14.07  
 Temp: 21.18 °C ~~24.19~~ 17.38 °C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	653	<u>652</u>	<u>218.82</u>	<u>227.43</u>	<u>218.82</u>	<u>21.71</u>	492.11	160.89	653	<u>1130</u>
4	558	<u>556</u>	<u>177.55</u>	<u>188.75</u>	<u>177.55</u>	<u>21.46</u>	402.87	155.13	558	<u>1132</u>
3	346	<u>343</u>	<u>85.35</u>	<u>97.09</u>	<u>85.35</u>	<u>20.31</u>	191.41	154.59	346	<u>1134</u>
2	252	<u>250</u>	<u>44.46</u>	<u>59.45</u>	<u>44.46</u>	<u>18.66</u>	104.58	147.42	252	<u>1136</u>
1	172	<u>170</u>	<u>14.18</u>	<u>32.42</u>	<u>14.18</u>	<u>17.93</u>	42.22	129.78	172	<u>1139</u>

Comments: Collar Detect is 2' above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-4  
 DATE: 06/08/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING: 1082.84  
 WEATHER: Clear  
 DTW - 154.04

PROBE TYPE: Westbay Sampler 0-500psi  
 SERIAL NO.: EMS 2508  
 PROJECT: JPL Pasadena  
 OPERATOR(S): T. Huan  
 ATM. PRESSURE (Patm): (start) 14.12 (finish) 14.08  
 Temp: 22.96°C 18.66°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	513	511	170.67	179.82	170.67	22.31	382.27	130.73	513	1448
4	392	390	117.98	127.41	117.98	22.17	261.36	130.64	392	1450
3	322	320	87.50	97.38	87.50	21.52	192.08	129.92	322	1451
2	240	238	51.78	63.33	51.78	21.10	113.53	126.47	240	1452
1	150	148	14.18	34.33	14.18	19.68	46.62	103.38	150	1453

Comments: Collar Detect is 2' above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-11  
 DATE: 6/8/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING 1139.3  
 WEATHER: Sunny

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson / T. Hoang  
 ATM. PRESSURE (Patm): (start) 14.15 (finish) 14.03

DTW - 180.93

Temp: 21.90°C 17.97°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	639	637	212.07	189.44	212.07	21.99	404.39	234.61	639	1550
4	524	522	162.59	161.53	162.59	20.2165	340.01	183.99	524	1557
3	429	427	121.70	120.75	121.70	19.92	245.93	183.07	429	1602
2	259	257	48.14	53.84	48.14	18.71	91.56	167.44	259	1605
1	149	148	14.14	27.18	14.14	18.22	30.06	118.94	149	1607

Comments: Collar Detect is 6" above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-12  
 DATE: 6/8/20  
 LOCATION: JPL  
 ELEV. TOP OF WASTBAY CASING 1102.14  
 WEATHER: Sunny

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson / T. Hoang  
 ATM. PRESSURE (Patm): (start) 14.11 (finish) 14.10

DTU - 133.20

Temp: 19.29°C 17.35°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	548	547	195.23	166.00	195.23	20.68	350.41	197.59	548	15:11
4	436	435	146.57	134.81	146.57	20.91	278.45	157.55	436	15:15
3	323	322	97.38	90.38	97.38	20.37	175.95	147.05	323	15:19
2	243	242	62.55	57.84	62.55	18.14	100.89	142.11	243	15:24
1	140	139	17.65	25.82	17.65	17.80	27.01	112.99	140	15:26

Comments: Collar Detect is 6" above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-14  
 DATE: 6/8/20  
 LOCATION: JPL  
 ELEV. TOP OF WASTBAY CASING 1173.47  
 WEATHER: Sunny

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson / T. Hoang  
 ATM. PRESSURE (Patm): (start) 14.13 (finish) 14.06

DTU - 193.50

Temp: 25.90°C 19.75°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	540	539	165.47	157.99	165.47	23.93	331.89	208.11	540	1353
4	456	455	128.95	121.89	128.95	21.96	248.60	207.40	456	1355
3	382	381	96.77	89.89	96.77	21.25	174.78	207.22	382	1357
2	277	276	51.07	44.58	51.07	20.56	70.25	206.75	277	1359
1	207	206	20.60	14.61	20.60	20.04	1.11	205.89	207	1402

Comments: Collar Detect is 6" above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-17  
 DATE: 6/15/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING: 1191.21  
 WEATHER: Clear, Sunny

PROBE TYPE: Westbay Sampler 0-500psi  
 SERIAL NO.: EMS 2508  
 PROJECT: JPL Pasadena  
 OPERATOR(S): L. Henderson  
 ATM. PRESSURE (Patm): (start) 14.03 (finish) 14.09  
 Temp: 25.83°C 23.02

DTW -208.82

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	726	724	240.77	188.85	240.77	21.12	403.31	322.69	726	0840
4	582	581	178.36	136.67	178.36	20.15	282.93	299.07	582	0850
3	468	467	128.90	104.59	128.90	18.63	208.92	259.08	468	0855
2	370	369	86.24	68.07	86.24	17.53	124.67	245.33	370	0857
1	250	249	34.15	28.42	34.15	16.53	33.20	216.80	250	0900

Comments: Collar Detect is 6" above sample port



**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-18  
 DATE: 06/08/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING: 1225.41  
 WEATHER: Clear

PROBE TYPE: Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT: JPL Pasadena  
 OPERATOR(S): T. Hoang  
 ATM. PRESSURE (Palm): (start) 14.04 (finish) 14.01  
 Temp: 21.77°C 17.97°C

DTW - 293.92'

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	684	682	184.16	170.13	184.16	21.81	360.10	323.90	684	1053
4	564	562	132.05	124.74	132.05	21.00	255.38	308.62	564	1055
3	424	422	71.22	76.69	71.22	19.94	144.53	279.47	424	1057
2	330	327	30.29	39.26	30.29	18.65	58.18	271.82	330	1059
1	270	265	14.15	14.31	14.15	18.22	0.62	269.38	270	1101

Comments: Collar Detect is 6" above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-19  
 DATE: 6/8/20  
 LOCATION: JPL  
 ELEV. TOP OF WASTBAY CASING 1142.94  
 WEATHER: Sunny

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson / T. Hoang  
 ATM. PRESSURE (Patm): (start) 14.10 (finish) 14.13  
 Temp: 23.81 18.19

DTU - 140.66

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sup>2</sup> O Inside Casing	Trans. Temp. (oC)				
5	498	496	1169.05	128.30	1169.05	20.81	263.46	234.54	498	1020
4	444	443	145.63	105.11	145.63	20.28	209.96	234.04	444	1023
3	392	391	123.09	96.95	123.09	19.99	191.13	200.87	392	1025
2	314	311	89.26	63.84	89.26	19.71	114.75	199.25	314	1027
1	242	240	58.06	35.67	58.06	19.33	49.76	192.24	242	1029

Comments: Collar Detect is 6" above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-20  
 DATE: 06/08/20  
 LOCATION: JPL  
 ELEV. TOP OF WASTBAY CASING: 1165.05  
 WEATHER: Clear

PROBE TYPE: Westbay Sampler 0-500psi  
 SERIAL NO.: EMS 2508  
 PROJECT: JPL Pasadena  
 OPERATOR(S): T. Hoan  
 ATM. PRESSURE (Patm): (start) 14.07 (finish) 14.05

PTW - 240.02'

Temp: 22.48 °C 17.90 °C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (°C)				
5	900	898	301.37	304.04	301.37	21.97	668.96	231.04	900	0937
4	700	698	214.62	203.13	214.62	22.29	436.16	263.84	700	0939
3	562	560	154.63	146.95	154.63	21.46	306.55	255.45	562	0941
2	392	390	80.70	80.02	80.70	20.09	152.15	239.85	392	0943
1	230	228	14.21	14.16	14.21	18.52	0.21	229.79	230	0945

Comments: Collar Detect is 6" above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-21  
 DATE: 6/6/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING: 1059.10  
 WEATHER: Sunny

PROBE TYPE: Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT: JPL Pasadena  
 OPERATOR(S): L. Henderson / T. Hoang  
 ATM. PRESSURE (Patm): (start) 14.09 (finish) 14.13

DTW - 116.64

Temp: 25.49 °C 19.12 °C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	372	371	126.02	133.78	126.02	21.86	276.12	95.88	372	1242
4	310	310	99.87	106.94	99.87	20.27	214.20	95.80	310	1245
3	240	240	69.05	77.17	69.05	19.68	145.53	94.47	240	1247
2	161	160	34.64	43.24	34.64	19.36	67.25	93.75	161	1249
1	90	89	14.18	14.16	14.18	19.13	0.16	89.84	90	1252

Comments: Collar Detect is 2' above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-22  
 DATE: 6/17/20  
 LOCATION: JPL  
 ELEV. TOP OF WASTBAY CASING 1176.98  
 WEATHER: Cloudy

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson  
 ATM. PRESSURE (Patm): (start) 14.03 (finish)  
 Temp: 22.11

215.33

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sup>2</sup> O Inside Casing	Trans. Temp. (oC)				
5	588	586	174.17	166.53	174.17	22.41	351.82	236.18	588	0830
4	467	466	121.73	117.41	121.73	22.15	238.50	228.50	467	0833
3	389	388	87.92	84.42	87.92	21.71	173.92	215.08	389	0835
2	329	328	61.83	63.47	61.83	21.21	114.06	214.94	329	0837
1	245	244	24.94	28.89	24.94	20.46	34.28	210.72	245	0840

Comments: Collar Detect is !' above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-23  
 DATE: 06/08/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING 1108.84  
 WEATHER: Clear  
DTW - 141.01

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT JPL Pasadena  
 OPERATOR(S) T. Hoag  
 ATM. PRESSURE (Patm): (start) 14.09 (finish) 14.11  
 Temp: 22.28°C 19.84°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
			188.21	177.80 <sup>2</sup>	188.21					
5	542	541	<del>177.80</del>	188.21	<del>177.80</del>	22.64	377.68	164.32	542	1422
4	445	444	146.20	135.86	146.20	22.23	280.92	164.08	445	1424
3	319	318	91.60	87.93	91.60	21.26	170.35	148.65	319	1426
2	254	253	63.42	60.22	63.42	20.80	106.42	147.58	254	1428
1	174	173	28.71	28.44	28.71	20.09	33.11	140.89	174	1430

Comments: Collar Detect is 1' above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-24  
 DATE: 6/8/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING 1200.94  
 WEATHER: Sunny

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson / T. Hoang  
 ATM. PRESSURE (Palm): (start) 14.07 (finish) 14.03

DTW - 218.60

Temp: 21.95°C 22.68°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	678	676	213.30	148.42	213.30	23.30	402.23	275.77	678	1624
4	554	552	159.59	141.34	159.59	22.62	293.61	260.39	554	1632
3	435	434	108.05	97.31	108.05	22.04	192.03	242.97	435	1635
2	373	371	81.22	72.05	81.22	21.88	133.76	239.24	373	1637
1	279	278	40.53	36.67	40.53	22.36	52.14	226.86	279	1639

Comments: Collar Detect is 1' above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-25  
 DATE: 6/8/20  
 LOCATION: JPL  
 ELEV. TOP OF WASTBAY CASING 934.53  
 WEATHER: Sunny

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. 2508  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson / T. Hoang  
 ATM. PRESSURE (Patm): (start) 14.21 (finish) 14.16

DTW - 247.46

Temp: 20.20°C 20.11°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	713	711	216.60	209.42	216.60	21.06	450.35	262.65	713	0904
4	633	632	182.12	173.70	182.12	21.68	367.94	265.06	633	0906
3	503	502	125.84	119.63	125.84	21.32	243.20	259.80	503	0908
2	423	423	91.14	87.53	91.14	20.80	169.15	253.85	423	0910
1	358	357	62.89	60.28	62.89	20.52	106.28	251.72	358	0912

Comments: Collar Detect is 2' below sample port



**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-26  
 DATE: 06/08/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING 1059.08  
 WEATHER: Clear  
DTW - 58.63'

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMSA508  
 PROJECT JPL Pasadena  
 OPERATOR(S) T. Hoay  
 ATM. PRESSURE (Patm): (start) 74.10 (finish) 14.12  
 Temp: 81.43°C 20.02

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi	kg/cm <sup>2</sup>	mH <sup>2</sup> O	Trans. Temp. (oC)				
			Inside Casing	Outside Casing P2	Inside Casing					
2	215	211	81.62	55.56	81.62	20.67	95.65	119.35	215	1205
1	135	131	46.83	20.72	46.83	20.16	15.27	119.73	135	1208

Comments: Collar Detect is 2' below sample port

## WELL GAUGING DATA

Project # \_\_\_\_\_ Date 06/26/20 Client Tidewater

Site JPL

Well ID	Well Size (in.)	Time Gauged	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB of <u>TOC</u>
MW-1	4	1115					25.35	Ded Pump	
MW-5	4	1350					104.04	Ded Pump	
MW-6	4	1540					225.44	Ded Pump	
MW-7	4	1745					243.88	Ded Pump	
MW-8	4	1720					97.51	Ded Pump	
MW-9	4	11:10					19.18	Ded Pump	
MW-10	4	1500					124.82	Ded Pump	
MW-13	4	1645					217.92	Ded Pump	
MW-15	4	1425					30.96	Ded Pump	
MW-16	4	1735					269.12	264.80	

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-3

PROBE TYPE Westbay Sampler 0-500psi

DATE: 6/26/10

SERIAL NO. EMS 2508

LOCATION: JPL

PROJECT JPL Pasadena

ELEV. TOP OF WESTBAY CASING 1100.34

OPERATOR(S) L. Henderson

WEATHER: clear sunny

ATM. PRESSURE (Patm): (start) 14.06 (finish) 14.07

DTW - 102.02

Temp: 26.09 °C 17.21 °C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	653	651	219.93	208.32	219.93	21.38	494.30	158.70	653	1109
4	558	556	178.57	187.89	178.57	21.51	401.03	156.97	558	1112
3	346	344	96.14	96.44	96.14	20.14	190.05	155.95	346	1115
2	252	250	45.19	57.45	45.19	18.93	100.10	151.90	252	1119
1	172	170	14.14	29.79	14.14	17.97	36.29	135.71	172	1123

Comments: Collar Detect is 2' above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-4  
 DATE: 6/16/10  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING: 1082.84  
 WEATHER: Clear, sunny  
 DTU - 152.00

PROBE TYPE: Westbay Sampler 0-500psi  
 SERIAL NO.: EMS 2508  
 PROJECT: JPL Pasadena  
 OPERATOR(S): L. Henderson  
 ATM. PRESSURE (Palm): (start) 14.04 (finish) 14.02  
 24.80°C Temp: ~~26.80~~ 17.39°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sup>2</sup> O Inside Casing	Trans. Temp. (oC)				
5	513	511	171.86	178.19	171.86	23.04	378.69	134.31	513	1355
4	392	390	119.08	125.80	119.08	22.50	257.83	134.17	392	1358
3	322	320	88.55	95.50	88.55	21.42	187.93	134.07	322	1402
2	240	238	52.78	61.44	52.78	21.07	109.35	130.65	240	1405
1	150	148	14.12	31.08	14.12	19.61	39.31	110.69	150	1409

Comments: Collar Detect is 2' above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-11  
 DATE: 6/26/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING 1139.3  
 WEATHER: clear, sunny

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS2508  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson  
 ATM. PRESSURE (Patm): (start) 14.04 (finish) 14.00  
 Temp: 28.87 18.03°C

DTW - 185.33

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	639	638	210.62	186.64	210.62	22.31	398.19	240.81	639	1635
4	524	523	161.04	159.80	161.04	21.63	336.27	187.73	524	1640
3	429	428	120.10	119.89	120.10	21.09	241.89	187.11	429	1644
2	259	258	46.33	51.90	46.33	19.00	87.34	171.66	259	1648
1	149	149	14.11	26.50	14.11	18.19	28.75	120.25	149	1655

Comments: Collar Detect is 6" above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-12  
 DATE: 6/26/20  
 LOCATION: JPL  
 ELEV. TOP OF WASTBAY CASING 1102.14  
 WEATHER: Clear, Sunny

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson  
 ATM. PRESSURE (Patm): (start) 14.05 (finish) 14.05  
 Temp: 20.37°C 17.48

DTW - 133.45

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	548	547	195.51	163.14	195.51	20.11	343.95	204.05	548	1425
4	436	435	146.71	132.97	146.71	20.81	274.35	161.65	436	1430
3	323	422	97.43	88.54	97.43	19.85	171.85	151.15	323	1433
2	243	242	62.57	55.83	62.57	18.84	96.39	146.61	243	1436
1	140	139	17.59	22.47	17.59	17.59	19.42	120.58	140	1440

Comments: Collar Detect is 6" above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-14  
 DATE: 6/16/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING 1173.47  
 WEATHER: Clear, Sunny

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2500  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson  
 ATM. PRESSURE (Patm): (start) 14.03 (finish) 13.98  
 Temp: 27.87°C 19.26°C

DTW - 193.48

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	540	540	165.60	156.45	165.60	22.65	328.56	211.44	540	1540
4	456	456	129.02	120.42	129.02	21.13	245.44	210.56	456	1543
3	382	382	96.77	88.41	96.77	20.53	171.59	210.41	382	1546
2	277	277	51.00	43.09	51.00	19.60	67.04	209.96	277	1549
1	207	207	20.47	14.09	20.47	19.34	0.14	206.86	207	1555

Comments: Collar Detect is 6" above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-17  
 DATE: 6/26/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING 1191.21  
 WEATHER: clear, sunny

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson  
 ATM. PRESSURE (Patm): (start) 14.03 (finish) 14.02

DTW - 268.97

Temp: 23.45°C 116.626°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	726	725	239.09	188.01	239.04	20.28	401.37	324.63	726	1017
4	582	582	176.54	135.56	176.54	19.19	280.37	301.63	582	1022
3	468	468	127.21	103.82	127.21	18.47	207.15	260.85	468	1025
2	370	369	84.61	67.13	84.61	17.55	122.50	247.50	370	1028
1	250	250	32.45	26.84	32.45	16.56	29.55	220.45	250	1030

Comments: Collar Detect is 6" above sample port



**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-18  
 DATE: 6/26/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING 1225.41  
 WEATHER: clear, sunny

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson  
 ATM. PRESSURE (Patm): (start) 14.02 (finish) 13.98

DTW - 294.33

Temp: 23.21°C 17.55°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth ( Dp ) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	684	682	184.44	167.80	184.44	21.02	354.77	329.23	684	0935
4	564	562	132.17	122.42	132.17	21.05	250.08	313.92	564	0939
3	424	423	71.25	75.10	71.25	19.71	140.91	283.09	424	0943
2	330	329	30.27	38.00	30.27	18.29	55.32	274.68	330	0947
1	270	268	14.14	14.11	14.14	17.72	0.21	269.79	270	0950

Comments: Collar Detect is 6" above sample port



**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-20  
 DATE: 6/26/26  
 LOCATION: JPL  
 ELEV. TOP OF WASTBAY CASING 1165.05  
 WEATHER: Sunny, clear  
 DTW - 1240.68

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 7508  
 PROJECT JPL Pasadena  
 OPERATOR(S) Henderson  
 ATM. PRESSURE (Palm): (start) 14.04 (finish) 14.03  
 Temp: 20.25 16.91

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (oC)				
5	900	899	301.82	303.24	301.82	22.72	667.18	232.82	900	0847
4	700	698	214.86	201.57	214.86	22.48	432.63	267.37	700	0850
3	562	560	154.74	145.00	154.74	21.15	302.12	259.88	562	0854
2	392	390	80.66	79.10	80.66	19.21	150.09	241.91	392	0858
1	230	229	14.13	14.10	14.13	17.42	0.14	229.86	230	0903

Comments: Collar Detect is 6" above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-21  
 DATE: 6/26/10  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING 1059.10  
 WEATHER: Clear, Sunny  
 DTW - 116.85'

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson  
 ATM. PRESSURE (P<sub>atm</sub>): (start) 14.05 (finish) 14.06  
 Temp: 35.29°C 19.73

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-P <sub>atm</sub> )*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sup>2</sup> O Inside Casing	Trans. Temp. (oC)				
5	372	372	126.05	132.24	126.05	24.74	272.66	99.34	372	1241
4	310	310	99.06	105.42	99.06	22.96	210.79	99.21	310	1243
3	240	240	69.00	75.69	69.00	21.55	142.20	97.80	240	1246
2	161	161	34.57	41.76	34.57	20.47	63.93	97.07	161	1249
1	90	90	14.02	14.09	14.12	19.87	0.09	89.91	90	1252

Comments: Collar Detect is 2' above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-22  
 DATE: 6/26/10  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING 1176.98  
 WEATHER: \_\_\_\_\_

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. \_\_\_\_\_  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson  
 ATM. PRESSURE (Patm): (start) \_\_\_\_\_ (finish) \_\_\_\_\_  
 Temp: \_\_\_\_\_

*DTW-*

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sup>2</sup> O Inside Casing	Trans. Temp. (oC)				
5	588									
4	467									
3	389									
2	329									
1	245									

Comments: Collar Detect is 1' above sample port

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**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-24  
 DATE: 6/16/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING 1200.94  
 WEATHER: Sunny, Clear

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 2508  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henderson  
 ATM. PRESSURE (Patm): (start) 14.01 (finish) 14.00

DTW - 219.68

Temp: 27.67 22.60

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mH <sub>2</sub> O Inside Casing	Trans. Temp. (°C)				
5	678	678	213.09	186.03	213.09	22.87	396.85	281.15	678	17:20
4	554	554	159.31	139.28	159.31	22.37	289.00	265.00	554	17:24
3	435	435	107.74	95.54	107.74	22.01	188.09	246.91	435	17:38
2	373	373	80.89	70.14	80.89	21.88	129.49	243.51	373	17:42
1	279	279	40.10	34.20	40.10	22.08	23.51	255.49	279	17:45

Comments: Collar Detect is 1' above sample port

**WESTBAY™ GROUNDWATER MONITORING WELL  
WATER LEVEL MEASUREMENT LOG SHEET**

WELL ID: MW-25  
 DATE: 6/26/20  
 LOCATION: JPL  
 ELEV. TOP OF WESTBAY CASING 834.53  
 WEATHER: Clear  
 DTW - 247.84

PROBE TYPE Westbay Sampler 0-500psi  
 SERIAL NO. EMS 7508  
 PROJECT JPL Pasadena  
 OPERATOR(S) L. Henriksen  
 ATM. PRESSURE (Patm): (start) 14.12 (finish) 14.12  
 Temp: 21.33 20.04

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm <sup>2</sup> Outside Casing P2	mh <sup>2</sup> O Inside Casing	Trans. Temp. (oC)				
5	713	712	216.90	209.16	216.90	21.75	449.96	263.04	713	0722
4	633	632	182.37	173.37	182.32	21.74	367.39	265.61	633	0727
3	503	502	125.96	119.39	125.96	21.12	242.86	260.14	503	0730
2	423	422	91.19	87.43	91.19	20.68	169.13	253.87	423	0733
1	358	357	62.90	60.18	62.90	20.14	106.26	251.74	358	0736

Comments: Collar Detect is 2' below sample port



