

ATTACHMENT 5: WATER LEVEL MEASUREMENTS

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 third quarter 2021. Water level measurements were recorded before the sampling event on October 22, 2021, for the relatively shallow standpipe monitoring wells and October 22, 27, 28, November 3, and 4, 2021 for the Westbay™ multiport wells. Water level measurements were recorded after the sampling event on November 5, 2021, for the relatively shallow standpipe monitoring wells and 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.

Note: During the fourth quarter 2021 water level measurements after the sampling event were not measured in wells MW-11 (locked gate), MW-24 (parked vehicle), and MW-26 (locked gate).

WELL GAUGING DATA

Project # 211022145-1 Date 10/22/21 Client Tidelwater

Site JPL Pasadena

Well ID	Time	Well Size (in.)	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	Notes
MW-1	1230	4					45.27	Ded. pump	↓	
MW-5	1418	4					133.51	Ded. Pump.		
MW-6	1420	4					Dry	238.26		
MW-7	1415	4					Dry	Ded. pump		
MW-8	0835	4					Dry	202.14		
MW-9	1120	4					38.72	Ded. pump		
MW-10	1500	4					Dry	Ded. Pump.		
MW-13	0845	4					Dry	Ded. pump		
MW-15	1438	4					50.53	Ded. pump		
MW-16	1405	4					Dry	285.40		

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

WELL ID: MW-3
 DATE: 10/22/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1100.34
 WEATHER: Clear, Sunny

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L-Henderson
 ATM. PRESSURE (Patm): (start) 14.09 (finish) 14.10
 Temp: 22.48 19.37

DTU - 197.20

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 ² Outside Casing P2	mH ² O Inside Casing	Trans. Temp. (oC)				
5	653	651	212.98	215.22	212.98	22.53	464.01	188.99	653	1252
4	558	556	171.70	174.21	171.70	22.21	369.40	188.60	558	1254
3	346	344	79.43	82.41	79.43	21.45	157.61	188.39	346	1256
2	252	250	38.51	41.79	38.51	20.68	63.90	188.10	252	1257
1	172	170	14.21	15.72	14.21	19.96	3.76	168.24	172	1300

Comments: Collar Detect is 2' above sample port

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

WELL ID: MW-4
 DATE: 10/22/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING: 1082.84
 WEATHER: Clear, Sunny

PROBE TYPE: Westbay Sampler 0-500psi
 SERIAL NO.: EMS 2502
 PROJECT: JPL Pasadena
 OPERATOR(S): L. Henderson
 ATM. PRESSURE (Patm): (start) 14.07 (finish) 14.14
 Temp: 21.68 19.31

DTW - 168.58

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	513	511	164.40	164.28	164.40	21.87	346.53	166.47	513	1501
4	392	390	111.71	111.89	111.71	22.00	225.67	166.33	392	1502
3	322	320	81.20	81.58	81.20	21.89	155.75	166.25	322	1504
2	240	238	45.42	46.07	45.42	21.58	73.82	166.18	240	1505
1	150	148	14.16	14.22	14.16	19.95	0.35	149.65	150	1507

Comments: Collar Detect is 2' above sample port

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

WELL ID: MW-11
 DATE: 11/3/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING: 1139.3
 WEATHER: clear, sunny

PROBE TYPE: Westbay Sampler 0-500psi
 SERIAL NO.: EMS 2502
 PROJECT: JPL Pasadena
 OPERATOR(S): L. Henderson
 ATM. PRESSURE (Palm): (start) 25.314 (finish) 14.09
 Temp: 25.36 20.55

DTW = 214.90

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 ² Outside Casing P2	mH ² O Inside Casing	Trans. Temp. (oC)				
5	639	637	197.81	184.02	197.81	23.25	392.10	246.90	639	0922
4	524	522	148.26	149.50	148.26	22.89	312.46	211.54	524	0924
3	429	427	107.33	106.63	107.33	22.20	213.56	215.44	429	0926
2	259	257	33.57	36.33	33.57	20.53	51.38	207.62	259	0930
1	149	147	14.17	17.47	14.17	19.61	7.87	141.13	149	0932
										0924

Comments: Collar Detect is 6" above sample port

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

WELL ID: MW-12
 DATE: 10/11/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING: 1102.14
 WEATHER: clear, sunny
 DTW - 183.10

PROBE TYPE: Westbay Sampler 0-500psi
 SERIAL NO.: EMS 2502
 PROJECT: JPL Pasadena
 OPERATOR(S): L. Henderson
 ATM. PRESSURE (Patm): (start) 14.06 (finish) 14.07
 Temp: 18.78 19.13

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
			124.87		124.87					
5	548	546	173.52	158.08	173.52	20.12	332.25	215.75	548	1527
4	436	435	125.74	121.26	125.74	20.44	247.31	188.69	436	1529
3	323	322	75.69	73.72	75.69	20.28	137.64	185.36	323	1531
2	243	242	40.84	39.48	40.84	19.78	58.64	184.36	243	1533
1	140	139	14.16	14.18	14.16	19.45	0.28	139.72	140	1535

Comments: Collar Detect is 6" above sample port

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

WELL ID: MW-14
 DATE: 10/22/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1173.47
 WEATHER: clear, sunny

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.05 (finish) 14.03
 Temp: 24.65 20.86

DTW - 197.10

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	540	538	163.92	143.21	163.92	23.90	297.97	242.03	540	1432
4	456	454	128.28	106.96	128.28	23.39	214.34	241.66	456	1433
3	382	381	95.24	74.85	95.24	22.51	140.27	241.73	382	1435
2	277	275	49.54	29.23	49.54	21.82	35.02	241.98	277	1437
1	207	206	18.97	14.17	18.97	21.28	0.28	206.72	207	1438

Comments: Collar Detect is 6" above sample port

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

WELL ID: MW-17
 DATE: 10/28/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1191.21
 WEATHER: clear, sunny

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.07 (finish) 14.10

DTW - 209.63

Temp: 39.90

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 ² Outside Casing P2	mH ² O Inside Casing	Trans. Temp. (oC)				
5	726	726	238.72	205.37	238.72	25.60	441.33	284.67	726	1220
4	582	581	176.13	144.54	176.13	23.23	300.99	281.01	582	1222
3	468	467	126.63	102.41	126.63	21.53	203.80	264.20	468	1224
2	370	369	84.02	62.04	84.02	20.19	110.67	259.33	370	1226
1	250	249	31.80	18.75	31.80	18.96	10.80	239.20	250	1228

Comments: Collar Detect is 6" above sample port

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

WELL ID: MW-18
 DATE: 10/22/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1225.41
 WEATHER: - Clear, Sunny

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Hendelison
 ATM. PRESSURE (Patm): (start) 14.02 (finish) 14.05
 Temp: 20.62 18.88

DTW - 295.34

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 ² Outside Casing P2	mH ² O Inside Casing	Trans. Temp. (oC)				
5	684	682	183.53	162.32	183.53	22.69	342.13	341.87	684	1155
4	564	562	131.44	113.80	131.44	22.42	230.19	333.81	564	1157
3	424	422	70.57	60.55	70.57	20.95	107.34	316.66	424	1159
2	330	328	29.67	21.09	29.67	19.98	16.31	313.69	330	1202
1	270	268	14.19	14.20	14.19	19.46	0.42	269.58	270	1205

Comments: Collar Detect is 6" above sample port

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

WELL ID: MW-19

PROBE TYPE Westbay Sampler 0-500psi

DATE: 11/4/21

SERIAL NO. EMS 2502

LOCATION: JPL

PROJECT JPL Pasadena

ELEV. TOP OF WESTBAY CASING 1142.94

OPERATOR(S) L. Henderson

WEATHER: clear, sunny

ATM. PRESSURE (Patm): (start) 14.04 (finish) 14.06

DTW - 142.98

Temp: 23.56 21.00

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	498	496	168.95	120.77	168.95	21.48	246.23	251.77	498	0854
4	444	442	145.53	97.49	145.53	21.16	192.52	251.48	444	0856
3	392	390	122.96	83.21	122.96	20.81	159.58	232.42	392	0858
2	314	312	89.07	49.50	89.07	20.52	81.81	232.19	314	0900
1	242	240	57.80	19.00	57.80	19.99	11.44	230.56	242	0902

Comments: Collar Detect is 6" above sample port

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

WELL ID: MW-20
 DATE: 10/22/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1165.05
 WEATHER: clear, Sunny

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) i. Henderson
 ATM. PRESSURE (Patm): (start) 14.05 (finish) 14.08
 Temp: 20.66 18.62

DTW - 243.80

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	900	897	299.94	292.06	299.94	21.14	641.37	258.63	900	1111
4	700	697	213.06	196.89	213.06	21.88	421.81	278.19	700	1113
3	562	561	153.04	141.48	153.04	21.68	293.98	268.02	562	1115
2	392	390	79.13	70.00	79.13	21.00	129.08	262.92	392	1117
1	230	229	14.20	14.24	14.20	19.83	0.44	229.56	230	1119
						22				

Comments: Collar Detect is 6" above sample port

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

WELL ID: MW-21
 DATE: 10/22/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1059.10
 WEATHER: Clear, Sunny

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.09 (finish) 14.10
 Temp: 23.21 20.74

DTU - 117.85

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 ² Outside Casing P2	mH ² O Inside Casing	Trans. Temp. (oC)				
5	372	371	125.50	118.14	125.50	22.84	240.04	131.96	372	14 03
4	310	309	98.49	91.26	98.49	22.52	178.03	131.97	310	14 04
3	240	240	68.41	61.39	68.41	22.16	109.12	130.88	240	14 05
2	161	160	34.03	27.17	34.03	21.31	30.18	130.82	161	14 07
1	90	89	14.16	14.18	14.16	20.95	0.21	89.79	90	14 08

Comments: Collar Detect is 2' above sample port

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

WELL ID: MW-22
 DATE: 10/27/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1176.98
 WEATHER: clear, sunny

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) C. Henderson
 ATM. PRESSURE (Patm): (start) 14.12 (finish)
 Temp: 17.73

DTU-245.12

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	588	586	164.82	155.87	164.82	19.98	327.02	260.98	588	0909
4	467	466	112.17	105.07	112.17	21.00	209.82	257.18	467	0912
3	389	387	78.19	74.59	78.19	21.17	139.50	249.50	389	0913
2	329	327	52.00	48.50	52.00	21.12	79.31	249.69	329	0915
1	245	243	14.88	14.27	14.88	20.70	0.35	244.65	245	0917

Comments: Collar Detect is 1' above sample port

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

WELL ID: MW-23
 DATE: 10/22/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING: 1108.84
 WEATHER: Clear, Sunny

PROBE TYPE: Westbay Sampler 0-500psi
 SERIAL NO. 2502
 PROJECT: JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.63 (finish) 14.14
 Temp: 13.42°C 19.48

D.T.W. - 142.15'

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 ² Outside Casing P2	mH ² O Inside Casing	Trans. Temp. (oC)				
5	542	640	187.71	164.30	187.71	16.77	346.67	195.33	542	0918
4	445	444	145.70	122.36	145.70	18.42	249.92	195.08	445	0920
3	319	318	91.11	71.79	91.11	18.98	133.25	185.75	319	0922
2	254	253	62.97	43.57	62.97	19.36	68.15	185.85	254	0924
1	174	173	28.15	14.19	28.15	19.42	0.37	173.63	174	0926

Comments: Collar Detect is 1' above sample port

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

WELL ID: MW-24
 DATE: 10/27/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1200.94
 WEATHER: clear, sunny

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) C. Henderson
 ATM. PRESSURE (Patm): (start) 14.05 (finish) 14.07
 Temp: 21.32 23.37

DTW - 256.41

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	678	676	199.70	179.91	199.70	22.20	382.64	295.36	678	1302
4	554	552	145.97	130.38	145.97	22.32	268.37	285.63	554	1304
3	435	433	94.41	82.68	94.41	22.17	158.33	276.67	435	1306
2	373	371	67.45	55.94	67.45	22.14	96.64	276.36	373	1308
1	279	277	26.64	15.67	26.64	22.86	3.74	275.26	279	1313

Comments: Collar Detect is 1' above sample port

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

WELL ID: MW-25
 DATE: 10/22/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 934.53
 WEATHER: Clear, Sunny
 DTW - 248.56

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.19 (finish) 14.20
 Temp: 20.50 20.78

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 ² Outside Casing P2	mH ² O Inside Casing	Trans. Temp. (oC)				
5	713	711	216.14	216.31	216.14	20.88	466.29	246.71	713	1023
4	633	631	181.71	182.30	181.71	21.30	387.83	245.17	633	1024
3	503	502	125.45	126.61	125.45	21.32	259.35	243.65	503	1026
2	423	421	90.71	92.01	90.71	21.19	179.53	243.47	423	1027
1	358	356	62.51	63.69	62.51	21.07	114.20	243.80	358	1028

Comments: Collar Detect is 2' below sample port

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

WELL ID: MW-26
 DATE: 10/22/21
 LOCATION: JPL
 ELEV. TOP OF WASTBAY CASING 1059.08
 WEATHER: clear

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.14 (finish) 14.14
 Temp: 18.94 19.34

DTW - 59.63

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 ² Outside Casing P2	mH ² O Inside Casing	Trans. Temp. (oC)				
2	215	213	81.27	43.26	81.27	19.21	67.18	147.82	215	0948
1	135	132	46.48	14.22	46.48	19.24	0.18	134.82	135	0953

Comments: Collar Detect is 2' below sample port

WELL GAUGING DATA

Project # 211022HS-1 Date 11/5/21 Client Tidewater

Site JPL Pasadena

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	1330					45.10	Dcd. pump	↓
MW-5	4	0930					133.56	Dcd. pump	
MW-6	4	0850					Dry	238.26	
MW-7	4	1530					Dry	Dcd. pump	
MW-8	4	1115					Dry	202.16	
MW-9	4	1325					39.27	Dcd. pump	
MW-10	4	0915					Dry	Dcd. pump	
MW-13	4	1545					Dry	Dcd. pump	
MW-15	4	1100					50.64	Dcd. pump	
MW-16	4	1525					Dry	285.40	

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

WELL ID: MW-3
 DATE: 11/5/21
 LOCATION: JPL
 ELEV. TOP OF WASTBAY CASING 1100.34
 WEATHER: clear, sunny

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.00 (finish) 14.04
 Temp: 26.60 19.43

DTW - 188.76

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 ² Outside Casing P2	mH ² O Inside Casing	Trans. Temp. (oC)				
5	653	651	215.57	215.06	215.57	25.35	463.85	189.15	653	1351
4	558	556	174.30	174.16	174.30	24.73	369.49	188.51	558	1352
3	346	344	82.07	82.38	82.07	23.21	157.75	188.25	346	1354
2	252	250	41.14	41.73	41.14	22.25	63.97	188.03	252	1355
1	172	170	14.15	14.26	14.15	19.92	0.60	171.40	172	1359

Comments: Collar Detect is 2' above sample port

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

WELL ID: MW-4
 DATE: 11/5/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING: 1082.84
 WEATHER: clear, sunny

PROBE TYPE: Westbay Sampler 0-500psi
 SERIAL NO.: EMS 2502
 PROJECT: JPL Pasadena
 OPERATOR(S): L. Henderson
 ATM. PRESSURE (Patm): (start) 14.07 (finish) 14.09
 Temp: 20.38 19.96

DTW - 172.59

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (°C)				
			<u>162.61</u>		<u>162.61</u>	<u>20.84</u>				
5	513	<u>511</u>	162.61	<u>164.32</u>	162.61	<u>21.67</u>	346.63	166.37	513	<u>09 42</u>
4	392	<u>390</u>	<u>109.96</u>	<u>111.92</u>	<u>109.96</u>	<u>21.29</u>	225.74	166.26	392	<u>10 14</u>
3	322	<u>320</u>	<u>79.48</u>	<u>81.61</u>	<u>79.48</u>	<u>21.32</u>	155.81	166.19	322	<u>10 15</u>
2	240	<u>238</u>	<u>43.72</u>	<u>46.02</u>	<u>43.72</u>	<u>21.18</u>	73.71	166.29	240	<u>10 17</u>
1	150	<u>148</u>	<u>14.14</u>	<u>14.16</u>	<u>14.14</u>	<u>20.44</u>	0.21	149.79	150	<u>10 18</u>

Comments: Collar Detect is 2' above sample port

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

WELL ID: MW-11
 DATE: 11/5/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1139.3
 WEATHER: _____

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

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	639									
4	524		- GATE IS LOCKED -							
3	429									
2	259		- WELL IS INACCESSIBLE -							
1	149									

Comments: Collar Detect is 6" above sample port

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

WELL ID: MW-12
 DATE: 11/5/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1102.14
 WEATHER: Clear, Sunny

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.04 (finish) 14.07
 Temp: 18.82 18.77

DTU - 183.15

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	548	546	173.56	161.19	173.56	19.84	339.48	208.52	548	1042
4	436	435	124.89	122.00	124.89	20.40	249.06	186.94	436	1043
3	323	323	75.68	74.01	75.68	20.19	138.35	184.65	323	1045
2	243	242	40.79	39.59	40.79	19.68	58.94	184.06	243	1046
1	140	139	14.16	14.15	14.16	19.09	0.25	139.75	140	1048

Comments: Collar Detect is 6" above sample port

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

WELL ID: MW-14
 DATE: 11/5/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1173.47
 WEATHER: - clear, sunny
 DTU - 197.33

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.02 (finish) 14.01
 Temp: 19.72 19.93

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	540	538	163.88	146.42	163.88	20.37	305.45	234.55	540	0838
4	456	454	127.30	109.79	127.30	20.65	-9.76	465.76	456	0840
3	382	381	95.11	77.43	95.11	20.64	146.29	235.71	382	0842
2	277	275	49.32	31.92	49.32	20.45	41.30	235.70	277	0843
1	207	206	19.69	14.55	19.69	20.08	1.22	205.78	207	0844
			18.75		18.75					

Comments: Collar Detect is 6" above sample port

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

WELL ID: MW-17
 DATE: 11/5/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1191.21
 WEATHER: Clear, Sunny

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.00 (finish) 13.99

DTW - 210.60

Temp: 22.11 18.77

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	726	726	230.12	192.22	230.12	22.12	411.15	314.85	726	1319
4	582	581	175.72	136.64	175.72	21.77	282.93	299.07	582	1321
3	468	467	126.29	97.34	126.29	20.94	192.27	275.73	468	1322
2	370	369	83.73	56.18	83.73	20.21	97.31	272.69	370	1323
1	250	249	31.50	17.50	31.50	19.26	8.07	241.93	250	1325

Comments: Collar Detect is 6" above sample port

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

WELL ID: MW-18
 DATE: 11/5/21
 LOCATION: JPL
 ELEV. TOP OF WASTBAY CASING 1225.41
 WEATHER: clear, sunny
 DTW - 295.54

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 1502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.04 (finish) 14.00
 Temp: 26.71 19.99

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	684	682	183.43	164.39	183.43	23.42	346.86	337.14	684	1253
4	564	562	131.36	115.01	131.36	22.78	232.94	331.06	564	1256
3	424	422	70.40	61.14	70.40	22.07	108.66	315.34	424	1304 58
2	330	328	29.47	21.40	29.47	21.31	16.98	313.02	330	1300
1	270	268	14.13	14.15	14.13	20.65	0.25	269.75	270	1301

Comments: Collar Detect is 6" above sample port

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

WELL ID: MW-19
 DATE: 11/5/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1142.94
 WEATHER: Clear, Sunny
 DTU - 142.40

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMJ 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 13.99 (finish) 14.02
 Temp: 27.31 21.92

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 ² Outside Casing P2	mH ² O Inside Casing	Trans. Temp. (oC)				
5	498	496	168.27	124.72	168.27	26.05	255.45	242.55	498	1432
4	444	442	144.78	101.04	144.78	25.13	200.82	243.18	444	1433
3	392	390	122.18	87.66	122.18	24.33	169.96	222.04	392	1434
2	314	312	88.34	52.50	88.34	23.60	88.84	225.16	314	1435
1	242	240	57.12	22.62	57.12	22.85	19.91	222.09	242	1437

Comments: Collar Detect is 6" above sample port

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

WELL ID: MW-20
 DATE: 1/5/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1165.05
 WEATHER: clear, sunny

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.00 (finish) 14.01
 Temp: 23.50 19.82

DTW - 244.16

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 ²	mH ₂ O	Trans. Temp. (oC)				
			Inside Casing S6	Outside Casing P2	Inside Casing SC					
5	900	897	299.44	292.80	299.44	23.67	643.19	256.81	900	1218
4	700	697	212.66	199.03	212.66	23.72	426.86	273.14	700	1225
3	562	561	152.91	142.94	152.91	23.03	297.46	264.54	562	1227
2	392	390	78.92	70.94	78.92	21.93	131.36	260.64	392	1228
1	230	229	14.13	14.11	2914.13	20.59	0.25	229.75	230	1230

Comments: Collar Detect is 6" above sample port

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

WELL ID: MW-21
 DATE: 11/5/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1059.10
 WEATHER: - clear, sunny
 DTW - 117.98

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.01 (finish) 14.04
 Temp: 24.97 21.48

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 ² Outside Casing P2	mH ² O Inside Casing	Trans. Temp. (oC)				
5	372	371	125.40	119.20	125.40	24.29	242.67	129.33	372	1502
4	310	309	98.44	92.59	98.44	23.28	181.28	128.72	310	1503
3	240	240	68.43	62.25	68.43	22.90	111.29	128.71	240	1504
2	161	160	33.97	28.44	33.97	22.33	33.29	127.71	161	1505
1	90	89	14.12	14.09	14.12	21.86	0.18	89.82	90	1506

Comments: Collar Detect is 2' above sample port

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

WELL ID: MW-22
 DATE: 11/5/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1176.98
 WEATHER: clear, sunny
 DTU - 244.84

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 13.99 (finish) 14.10
 Temp: 19.79 21.05

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	588	586	164.27	155.76	164.27	20.20	327.06	260.94	588	0811
4	467	466	111.73	105.71	111.73	21.01	211.60	255.40	467	0814
3	389	387	77.86	74.88	77.86	21.15	140.47	248.53	389	0815
2	329	327	51.61	48.88	51.61	21.16	80.49	248.51	329	0816
1	245	243	14.61	14.23	14.61	20.96	0.55	244.45	245	0817

Comments: Collar Detect is 1' above sample port

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

WELL ID: MW-23
 DATE: 11/5/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1108.84
 WEATHER: Clear, Sunny

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. EMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.07 (finish) 14.07

DTW - 142.24

Temp: 19.84 20.66

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	542	540	187.66	167.18	187.66	20.74	353.22	188.78	542	0908
4	445	444	145.69	124.52	145.69	21.16	254.81	190.19	445	0910
3	319	318	91.08	73.91	91.08	21.18	138.05	180.95	319	0912
2	254	253	62.90	46.09	62.90	21.10	73.87	180.13	254	0914
1	174	173	28.09	15.41	28.09	20.88	3.09	170.91	174	0915

Comments: Collar Detect is 1' above sample port

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

WELL ID: MW-24
 DATE: 11/5/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1200.94
 WEATHER: _____

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

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	678									
4	554		- PARKED OVER							
3	435									
2	373									
1	279									

Comments: Collar Detect is 1' above sample port

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

WELL ID: MW-25
 DATE: 11/5/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 934.53
 WEATHER: clear, sunny
 DTW - 248.40

PROBE TYPE Westbay Sampler 0-500psi
 SERIAL NO. GMS 2502
 PROJECT JPL Pasadena
 OPERATOR(S) L. Henderson
 ATM. PRESSURE (Patm): (start) 14.13 (finish) 14.15
 Temp: 21.99 21.17

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 ² Outside Casing P2	mH ₂ O Inside Casing	Trans. Temp. (oC)				
5	713	711	216.19	216.35	216.19	22.55	466.52	246.48	713	1134
4	633	631	181.72	182.31	181.72	22.58	387.99	245.01	633	1136
3	503	502	125.36	126.53	125.36	22.28	259.31	243.69	503	1137
2	423	421	90.77	91.98	90.77	21.95	179.60	243.40	423	1138
1	358	356	62.52	63.63	62.52	21.49	114.20	243.80	358	1140

Comments: Collar Detect is 2' below sample port

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

WELL ID: MW-26
 DATE: 11/5/21
 LOCATION: JPL
 ELEV. TOP OF WESTBAY CASING 1059.08
 WEATHER:

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

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 ² Outside Casing P2	mH ² O Inside Casing	Trans. Temp. (oC)				
2	215									
1	135		- GATE LOCKED -							
			- COULD NOT ACCESS -							

Comments: Collar Detect is 2' below sample port