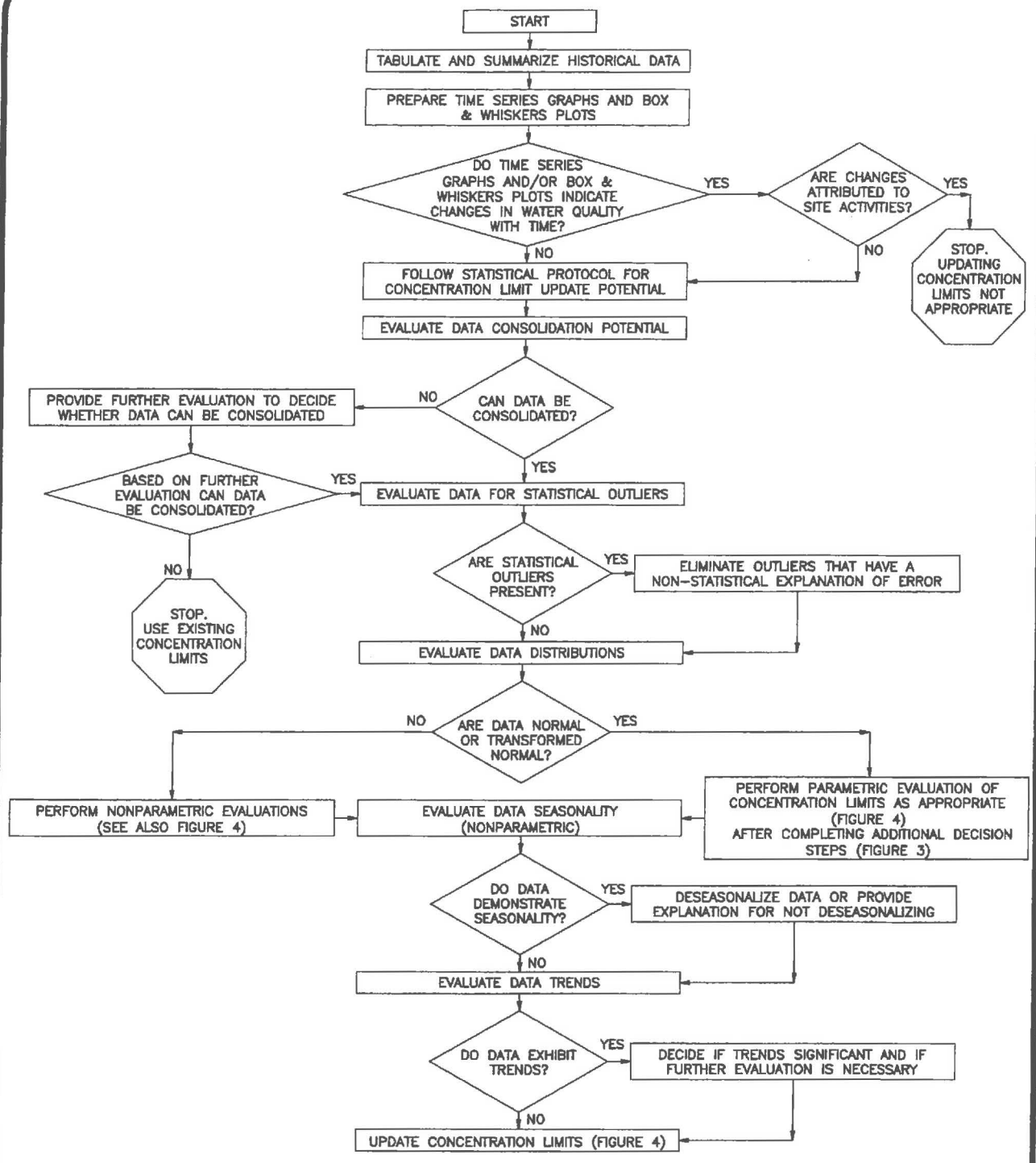
DOCKETED	
Docket Number:	99-AFC-04C
Project Title:	Duke Energy North American's Moss Landing Power Plant Modernization Project (Compliance)
TN #:	231184
Document Title:	Moss Landing Power Plant - 2018 Annual Compliance Report (Part 5)
Description:	N/A
Filer:	Mary Dyas
Organization:	California Energy Commission
Submitter Role:	Energy Commission
Submission Date:	12/12/2019 9:55:00 AM
Docketed Date:	12/12/2019

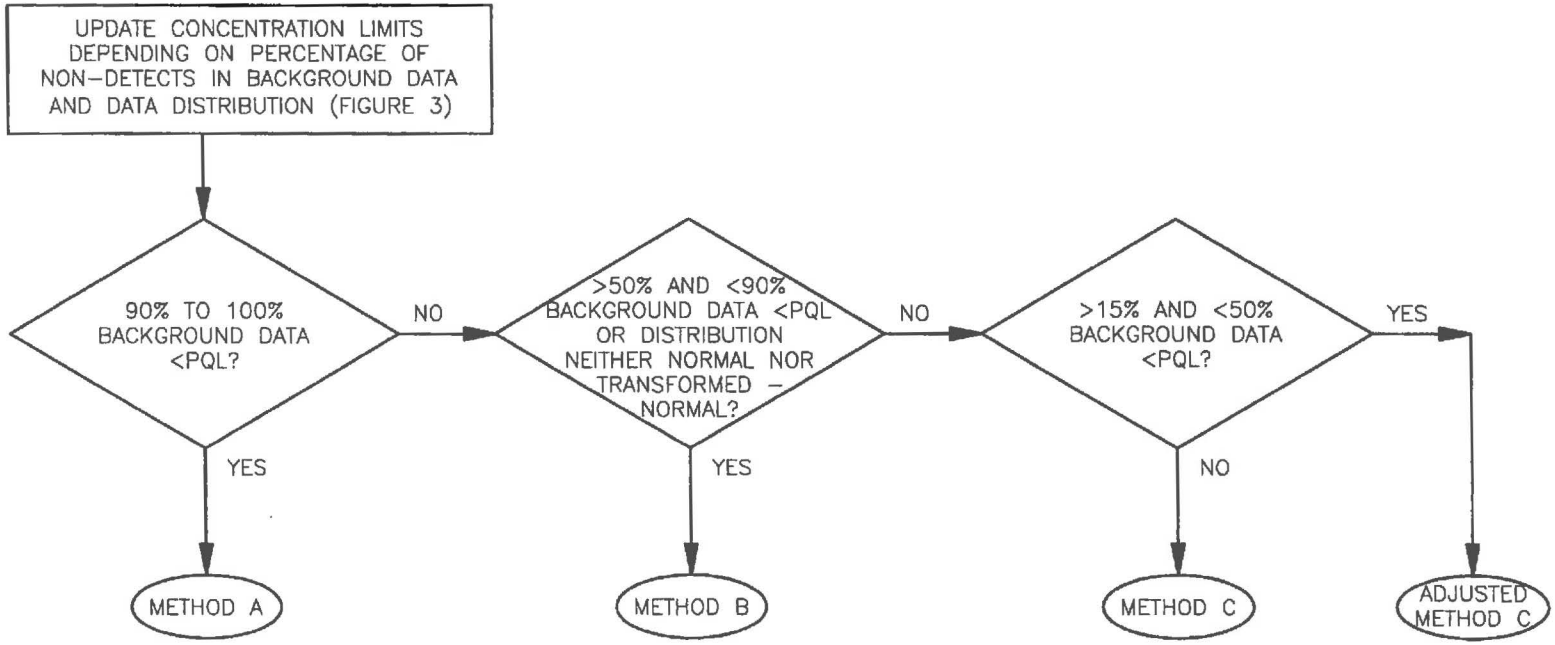
APPENDIX A
STATISTICAL ANALYTICAL METHODS



Shaw® ENVIRONMENTAL, INC.

DATE 4/14/05
DWN SJZ
APP M.B.
REV
PROJECT NO. 103067-A3

FIGURE 3
DUKE ENERGY NORTH AMERICA
MOSS LANDING POWER PLANT
STATISTICAL PROTOCOL FOR DECIDING WHETHER TO UPDATE CONCENTRATION LIMITS
STATISTICAL EVALUATION PLAN



PQL = PRACTICAL QUANTITATION LIMIT (THE LABORATORY DETECTION LIMIT BELOW WHICH THE RESULT IS REPORTED AS NON-DETECT)

METHOD A = CALIFORNIA NONSTATISTICAL METHOD (SECTION B.1.4 IN APPENDIX B)

METHOD B = NONPARAMETRIC TOLERANCE LIMIT (SECTION B.1.3 IN APPENDIX B)

METHOD C = PARAMETRIC TOLERANCE LIMIT (SECTIONS B.1.1 AND B.1.2 IN APPENDIX B)

ADJUSTED METHOD C = COHEN'S ADJUSTMENT (SECTION B.1.2 IN APPENDIX B)

Shaw® ENVIRONMENTAL, INC.

DATE 4/14/05
DWN SJZ
APP M.B.
REV
PROJECT NO. 103067-A4

FIGURE 4
DUKE ENERGY NORTH AMERICA
MOSS LANDING POWER PLANT
FLOW CHART FOR ESTABLISHING CONCENTRATION LIMITS
STATISTICAL EVALUATION PLAN

Summary Report

Constituent: Ammonia as N Analysis Run 12/15/2017 10:24 AM

North County Landfill Client: Aptim Data: Moss Sanitas-AllGWData-OutlierRemoval-12-15-17-flat

For observations made between 1/19/2010 and 10/11/2017, a summary of the selected data set:

Observations = 252
ND/Trace = 199
Wells = 8
Minimum Value = 0.000025
Maximum Value = 0.15
Mean Value = 0.0321
Median Value = 0.025
Standard Deviation = 0.01577
Coefficient of Variation = 0.4913
Skewness = 1.944

Well	#Obs.	ND/Trace	Min	Max	Mean	Median	Std.Dev.	CV	Skewness
W-1-R	31	26	0.01	0.078	0.03319	0.025	0.01605	0.4835	0.6822
W-2-R	31	25	0.01	0.055	0.03235	0.025	0.01277	0.3946	0.437
W-3-R	32	27	0.00011	0.15	0.0331	0.025	0.02536	0.7663	3.118
W-10	32	25	0.000028	0.05	0.02931	0.025	0.0132	0.4503	0.2056
W-12	31	25	0.01	0.05	0.033	0.025	0.01296	0.3928	0.2672
W-14-R	32	24	0.000089	0.087	0.031	0.025	0.01693	0.5459	1.092
W-11 (bg)	31	23	0.01	0.053	0.03316	0.025	0.0121	0.3649	0.4586
W-13 (bg)	32	24	0.000025	0.05	0.03178	0.025	0.01361	0.4284	-0.05658

Summary Report

Constituent: Barium Analysis Run 12/15/2017 10:24 AM
North County Landfill Client: Aptim Data: Moss Sanitas-AllGWData-OutlierRemoval-12-15-17-flat

For observations made between 1/19/2010 and 10/11/2017, a summary of the selected data set:

Observations = 87
ND/Trace = 0
Wells = 8
Minimum Value = 0.027
Maximum Value = 710
Mean Value = 29.04
Median Value = 0.061
Standard Deviation = 105.3
Coefficient of Variation = 3.627
Skewness = 4.408

Well	#Obs.	ND/Trace	Min	Max	Mean	Median	Std.Dev.	CV	Skewness
W-1-R	17	0	0.1	180	10.75	0.165	43.61	4.057	3.75
W-2-R	10	0	0.027	220	22.04	0.041	69.56	3.157	2.667
W-3-R	10	0	0.027	300	30.03	0.0315	94.86	3.159	2.667
W-10	10	0	0.047	190	19.05	0.0545	60.07	3.153	2.667
W-12	10	0	0.049	710	71.06	0.0665	224.5	3.159	2.667
W-14-R	10	0	0.042	170	17.04	0.0485	53.74	3.153	2.667
W-11 (bg)	10	0	0.059	430	43.07	0.078	136	3.157	2.667
W-13 (bg)	10	0	0.042	320	32.05	0.06	101.2	3.157	2.667

Summary Report

Constituent: Chromium Analysis Run 12/15/2017 10:24 AM
North County Landfill Client: Aptim Data: Moss Sanitas-AllGWData-OutlierRemoval-12-15-17-flat

For observations made between 1/19/2010 and 10/11/2017, a summary of the selected data set:

Observations = 250
ND/Trace = 27
Wells = 8
Minimum Value = 0.000075
Maximum Value = 0.015
Mean Value = 0.003317
Median Value = 0.0028
Standard Deviation = 0.002285
Coefficient of Variation = 0.6888
Skewness = 1.58

Well	#Obs.	ND/Trace	Min	Max	Mean	Median	Std.Dev.	CV	Skewness
W-1-R	31	0	0.00085	0.014	0.002939	0.0025	0.002277	0.7747	3.815
W-2-R	31	4	0.00021	0.0051	0.002145	0.0023	0.0009911	0.4621	0.4582
W-3-R	31	15	0.000075	0.0045	0.00162	0.0015	0.001126	0.6947	1.236
W-10	32	0	0.0044	0.0095	0.006369	0.00605	0.001324	0.2079	0.746
W-12	31	0	0.00053	0.0074	0.003043	0.0027	0.00187	0.6144	0.8108
W-14-R	32	0	0.0009	0.007	0.003713	0.0037	0.00138	0.3718	0.3331
W-11 (bg)	31	8	0.00017	0.015	0.003322	0.0022	0.003239	0.9752	2.126
W-13 (bg)	31	0	0.00088	0.0084	0.003279	0.0028	0.001848	0.5636	1.162

Summary Report

Constituent: Cobalt Analysis Run 12/15/2017 10:24 AM
North County Landfill Client: Aptim Data: Moss Sanitas-AllGWData-OutlierRemoval-12-15-17-flat

For observations made between 1/19/2010 and 10/11/2017, a summary of the selected data set:

Observations = 80
ND/Trace = 9
Wells = 8
Minimum Value = 0.000041
Maximum Value = 690
Mean Value = 24.78
Median Value = 0.000425
Standard Deviation = 96.31
Coefficient of Variation = 3.888
Skewness = 5.082

Well	#Obs.	ND/Trace	Min	Max	Mean	Median	Std.Dev.	CV	Skewness
W-1-R	10	0	0.00051	690	69	0.000905	218.2	3.162	2.667
W-2-R	10	0	0.00011	140	14	0.00022	44.27	3.162	2.667
W-3-R	10	0	0.00026	360	36	0.000325	113.8	3.162	2.667
W-10	10	3	0.000054	79	7.9	0.00009	24.98	3.162	2.667
W-12	10	0	0.0002	200	20	0.0005	63.25	3.162	2.667
W-14-R	10	4	0.000041	53	5.3	0.0002865	16.76	3.162	2.667
W-11 (bg)	10	2	0.000076	200	20	0.000175	63.25	3.162	2.667
W-13 (bg)	10	0	0.00039	260	26	0.00044	82.22	3.162	2.667

Summary Report

Constituent: Copper Analysis Run 12/15/2017 10:24 AM
North County Landfill Client: Aptim Data: Moss Sanitas-AllGWData-OutlierRemoval-12-15-17-flat

For observations made between 4/20/2010 and 10/11/2017, a summary of the selected data set:

Observations = 249
ND/Trace = 25
Wells = 8
Minimum Value = 0.00016
Maximum Value = 0.014
Mean Value = 0.001112
Median Value = 0.00092
Standard Deviation = 0.001129
Coefficient of Variation = 1.015
Skewness = 8.142

Well	#Obs.	ND/Trace	Min	Max	Mean	Median	Std.Dev.	CV	Skewness
W-1-R	31	2	0.00016	0.014	0.001727	0.0011	0.002411	1.396	4.465
W-2-R	31	2	0.00033	0.0023	0.0009939	0.00087	0.0004537	0.4565	1.016
W-3-R	31	0	0.0005	0.0031	0.001353	0.0012	0.0006653	0.4916	1.132
W-10	32	3	0.00016	0.0018	0.0008534	0.00077	0.0003172	0.3717	0.7314
W-12	31	2	0.00016	0.0027	0.001062	0.00094	0.0004895	0.4609	1.55
W-14-R	31	4	0.00033	0.0014	0.0008642	0.00085	0.0002598	0.3007	0.2318
W-11 (bg)	31	7	0.00016	0.01	0.001102	0.00077	0.001685	1.528	4.975
W-13 (bg)	31	5	0.0004	0.0022	0.0009465	0.00088	0.0004308	0.4552	1.081

Summary Report

Constituent: Hexchrom Analysis Run 12/15/2017 10:24 AM
North County Landfill Client: Aptim Data: Moss Sanitas-AllGWData-OutlierRemoval-12-15-17-flat

For observations made between 1/19/2010 and 10/11/2017, a summary of the selected data set:

Observations = 256
ND/Trace = 36
Wells = 8
Minimum Value = 0.0001
Maximum Value = 0.012
Mean Value = 0.003149
Median Value = 0.00285
Standard Deviation = 0.002049
Coefficient of Variation = 0.6506
Skewness = 1.075

Well	#Obs.	ND/Trace	Min	Max	Mean	Median	Std.Dev.	CV	Skewness
W-1-R	32	0	0.0012	0.0041	0.002846	0.003	0.0006239	0.2192	-0.4597
W-2-R	32	1	0.0014	0.005	0.002362	0.0022	0.0006885	0.2914	1.853
W-3-R	32	14	0.00015	0.005	0.0009678	0.001	0.0008447	0.8728	3.474
W-10	32	1	0.005	0.009	0.006891	0.0069	0.0009613	0.1395	0.2014
W-12	32	3	0.00098	0.0052	0.002601	0.00255	0.001061	0.4078	0.4151
W-14-R	32	1	0.0028	0.005633	0.004182	0.00415	0.0008148	0.1948	-0.1002
W-11 (bg)	32	15	0.0001	0.012	0.002335	0.001	0.00275	1.178	2.135
W-13 (bg)	32	1	0.0015	0.005	0.003009	0.0031	0.0006888	0.2289	0.3638

Summary Report

Constituent: Molybdenum Analysis Run 12/15/2017 10:24 AM
North County Landfill Client: Aptim Data: Moss Sanitas-AllGWData-OutlierRemoval-12-15-17-flat

For observations made between 7/20/2010 and 10/11/2017, a summary of the selected data set:

Observations = 72
ND/Trace = 2
Wells = 8
Minimum Value = 0.00012
Maximum Value = 0.0059
Mean Value = 0.001137
Median Value = 0.00061
Standard Deviation = 0.001331
Coefficient of Variation = 1.171
Skewness = 2.298

Well	#Obs.	ND/Trace	Min	Max	Mean	Median	Std.Dev.	CV	Skewness
W-1-R	9	0	0.00095	0.0031	0.001716	0.0015	0.000725	0.4226	0.6974
W-2-R	9	2	0.00012	0.0005	0.0002389	0.00019	0.0001518	0.6353	1.16
W-3-R	9	0	0.00054	0.0014	0.0007856	0.00069	0.0002775	0.3533	1.22
W-10	9	0	0.00046	0.00072	0.0005344	0.00052	0.00008819	0.165	1.253
W-12	9	0	0.0018	0.0059	0.004089	0.0042	0.001509	0.369	-0.2055
W-14-R	9	0	0.00048	0.00069	0.0005856	0.00061	0.00006425	0.1097	-0.1294
W-11 (bg)	9	0	0.00035	0.0011	0.0007289	0.00079	0.0002678	0.3674	-0.3153
W-13 (bg)	9	0	0.00036	0.00046	0.00042	0.00042	0.00003082	0.07339	-0.4347

Summary Report

Constituent: Nickel Analysis Run 12/15/2017 10:24 AM
North County Landfill Client: Aptim Data: Moss Sanitas-AllGWData-OutlierRemoval-12-15-17-flat

For observations made between 1/19/2010 and 10/11/2017, a summary of the selected data set:

Observations = 256
ND/Trace = 0
Wells = 8
Minimum Value = 0.0019
Maximum Value = 0.032
Mean Value = 0.009934
Median Value = 0.00745
Standard Deviation = 0.007162
Coefficient of Variation = 0.7209
Skewness = 1.131

Well	#Obs.	ND/Trace	Min	Max	Mean	Median	Std.Dev.	CV	Skewness
W-1-R	32	0	0.012	0.031	0.02025	0.019	0.005594	0.2762	0.5325
W-2-R	32	0	0.0041	0.01	0.007166	0.0075	0.001284	0.1791	-0.3443
W-3-R	32	0	0.0055	0.013	0.007581	0.00715	0.00178	0.2347	1.164
W-10	32	0	0.0019	0.0045	0.002491	0.0024	0.0004768	0.1914	2.648
W-12	32	0	0.0059	0.024	0.01271	0.0115	0.00482	0.3793	0.6999
W-14-R	32	0	0.0045	0.0091	0.005588	0.0051	0.001159	0.2074	1.547
W-11 (bg)	32	0	0.003	0.0075	0.004194	0.00395	0.0009537	0.2274	1.588
W-13 (bg)	32	0	0.014	0.032	0.0195	0.018	0.004853	0.2489	1.35

Summary Report

Constituent: Vanadium Analysis Run 12/15/2017 10:24 AM
North County Landfill Client: Aptim Data: Moss Sanitas-AllGWData-OutlierRemoval-12-15-17-flat

For observations made between 1/19/2010 and 10/11/2017, a summary of the selected data set:

Observations = 252
ND/Trace = 35
Wells = 8
Minimum Value = 0.000195
Maximum Value = 0.015
Mean Value = 0.002686
Median Value = 0.0024
Standard Deviation = 0.00157
Coefficient of Variation = 0.5845
Skewness = 2.909

Well	#Obs.	ND/Trace	Min	Max	Mean	Median	Std.Dev.	CV	Skewness
W-1-R	31	7	0.00097	0.0075	0.002035	0.0016	0.001392	0.6842	2.823
W-2-R	31	5	0.00082	0.0075	0.002245	0.002	0.001252	0.5578	2.421
W-3-R	31	3	0.0011	0.0075	0.002897	0.0025	0.001257	0.4341	1.566
W-10	32	4	0.00078	0.0075	0.002475	0.0023	0.0012	0.4848	2.198
W-12	31	8	0.000195	0.0075	0.002262	0.0018	0.001449	0.6407	2.088
W-14-R	32	2	0.00098	0.0075	0.002756	0.0025	0.00124	0.4498	1.566
W-11 (bg)	32	4	0.0012	0.015	0.003244	0.0026	0.002578	0.7947	3.254
W-13 (bg)	32	2	0.0015	0.0075	0.003537	0.00345	0.001192	0.3371	0.8571

Summary Report

Constituent: Zinc Analysis Run 12/15/2017 10:24 AM
North County Landfill Client: Aptim Data: Moss Sanitas-AllGWData-OutlierRemoval-12-15-17-flat

For observations made between 1/19/2010 and 10/11/2017, a summary of the selected data set:

Observations = 252
ND/Trace = 170
Wells = 8
Minimum Value = 0.0011
Maximum Value = 0.025
Mean Value = 0.003237
Median Value = 0.0025
Standard Deviation = 0.002432
Coefficient of Variation = 0.7515
Skewness = 5.064

Well	#Obs.	ND/Trace	Min	Max	Mean	Median	Std.Dev.	CV	Skewness
W-1-R	32	20	0.0011	0.0069	0.002769	0.0025	0.001127	0.4069	2.085
W-2-R	31	26	0.0011	0.0059	0.002645	0.0025	0.0009391	0.355	2.399
W-3-R	32	11	0.0011	0.0074	0.003262	0.00285	0.001332	0.4084	1.269
W-10	31	27	0.0011	0.016	0.002939	0.0025	0.002516	0.8563	4.709
W-12	32	27	0.0011	0.0097	0.002856	0.0025	0.00151	0.5286	3.095
W-14-R	31	27	0.0011	0.005	0.002445	0.0025	0.0006826	0.2791	1.118
W-11 (bg)	32	4	0.0011	0.025	0.006253	0.0047	0.004819	0.7707	2.485
W-13 (bg)	31	28	0.0011	0.0057	0.002652	0.0025	0.0008774	0.3309	1.964

APPENDIX B
FIELD SAMPLING LOG

COMPLETED 10/16, 10/17/18 Paul Weinhardt

APTIM

APTIM
FIELD REQUEST

NEED 8-9 FILTERS!!

PROJECT NAME: **DYNEGY Moss Landing Power Plant**
DATE SCHEDULED: **October 16, 17, 2018**

SPECIAL INSTRUCTIONS / CONSIDERATIONS :
4th Quarter 2018 Ground Water Quality Monitoring
Check in with Ernie at the office.
Use the field log notebook at the site / Field Sheets provided by site.
Purge water disposed of to ground surface.
Include all analytes on the sample bottle label.
Measure water levels in all piezometers and monitoring wells..
Measure & record post purge water levels.
pH Calib: 4.0 exp 2/2020 / 7.0 exp 11/2019 / 10.0 exp 10/2019
EC Calib (1413): Exp 3/2019

Geology Mngr:	**JC Isham**
Cell:	**925-457-1130**
Project No:	**631234956**
Cost Code:	**00131101**
Field/Lab Coord:	**Sheila Richgels**
Aptim Cell:	**916-616-3518**
Sampler:	**Paul Weinhardt**
Cell:	**530-391-4037**
Reporting:	**Erik Korsmo**
Cell:	**503-939-3688**

Well Locks:
Site Key: 3616

Site Contact: Ernie Bloecher 831-633-6786
E-Mail Ernie w/reminder to have all paperwork and the site key at the Guard Shack.

Well ID or Source	Casing Diameter (inches)	Depth to Bottom (feet)	Depth to Water (feet)	ANALYSES REQUESTED
MCWI wells		**1/10/17**	**7/17/2018**	**NEW 2017 PERMIT IMPLEMENTED**
Sample order (based on 2017 NEW PERMIT)				
Notebook #1 Wells:				***Metals, Diss (Ba, Cr, Co, Cu, Mo, Ni, V, Zn) Field Filter**
W-11 (#1)	4.0	35.70	25.94	***Chrom VI (218.6 method, 5-day Hold) Field Filter**
(W-11 is background well - always sample 1st!)				**Ammonia - Nitrogen (350.3)**
W-1-R (#1)	4.0	35.20	27.39	
W-12 (#1)	4.0	38.85	31.83	
				Field Measurements:
FB(#1)	(Field Blank-collect at first well sampled)			**Pre-purge & post-purge DTW, pH, EC, Temp,**
TB (#1)	(Trip Blank)			**Turbidity**
Notebook #2 Wells:				
W-13 (#2)	4.0	34.25	22.86	
W-2-R #2)	4.0	40.50	28.32	
W-3-R (#2)	4.0	65.90	25.54	
W-10 (#2)	4.0	37.10	27.34	
(Collect extra HNO3 bottle, label W-10 MS/MSD)				
W-14-R (#2)	4.0	43.65	28.29	
W-15 (#2) Duplicate (collect at W-14-R)				**(Dup needs to be at a different well each Qtr)**

Laboratory Instructions:
BC Labs - Kerrie Vaughan
4100 Atlas Court
Bakersfield, Calif 93308
(661) 327-4911 Office
kerrie.vaughan@bclabs.com

MOSS LANDING POWER PLANT
QUARTERLY GROUNDWATER SAMPLING
FIELD NOTEBOOK NO. 1

10-16 (DATE, FOURTH QUARTER 2018)

INDEX

By signing this page, members of the field sampling team certify that they have read and understand the current version of the Sampling and Analysis Plan (SAP) for Moss Landing Power Plant. All field measurements and samples were collected in accordance with the procedures described in the SAP except for the deviations described below.

Signatures of field team members:

Sampling Event: Quarterly Sampling
(circle one) Verification Sampling

Sampling Dates: 10-16 to 10-16

ANALYTICAL LABORATORY INFORMATION:

Name: BC Analytical
Address: 4100 Atlas Ct
Bakersfield CA
Phone:
Contact:

INSTRUMENT CALIBRATION INFORMATION: pH, conductivity, and turbidity meters will be calibrated prior to sampling the first well, and periodically during the day. Periodic calibrations will be performed and logged at least once (after the third well is sampled) and more often if needed to correct perceived instrument drift.

Initial calibration:

Date/Time	Model	SN:	Buffer	Result	
10-16-18 0851	ULTRAMETER	6216257	7.0	7.05	7.00
0856	↓	↓	4.0	4.09	4.00
0859			10.0	9.85	10.00
0902			1413	1412	1413
0912	HANNA	SWE007696	0	0	
0913	↓	↓	15	15	

Periodic calibrations:

Date/Time	Model	SN:	Buffer	Result
	SEE BOOK #2			
	FOR MID DAY CALIBRATION PW			

Buffer solution:	Expiration Date:	Lot No.:
pH 4.00	7-20	WY2
pH 7.00	11-19	VP1A
pH 10.00	10-19	VJ01
Conductivity 1,000 mhos	3-19-19	CC169826
Conductivity 10,000 mhos		

Initial: PW

Potentiometric Water Level Information
Moss Landing Power Plant
FOURTH QUARTER 2018

Sampling date: 12-16-18
Sampling personnel: PAUL LEINHARDT

Well Identity	Top of casing elevation	Depth to Bottom 1/10/17	Time Measured	Depth to Water (MP)	Water Table elevation (2) - (5)
(1)	(2)	(3)	(4)	(5)	(6)
Hydraulically up-gradient wells					
W-11	30.85		729	25.98	
W-13	27.72		732	22.89	
W-1-R	32.74		735	27.61	
W-12	35.56		738	31.85	
MP-12	31.88		740	27.17	
Hydraulically down-gradient wells for Impoundments					
W-2-R	33.01		743	28.35	
W-3-R	30.12		747	25.52	
W-10	31.96		750	27.37	
W-14-R	32.90		753	28.32	
Hydraulically further down-gradient wells from Impoundments					
MP-13	29.61		758	25.03	
MP-14	29.16		801	24.63	
MP-5	33.20		805	29.38	
Hydraulically further up-gradient wells from Impoundments					
MP-3	28.44		810	23.98	
W-8-R	24.54		813	20.08	
MP-10-R	24.47		816	19.92	
MP-2-R	23.88		820	20.40	

Well water levels will be measured in the order of the above table from top to bottom. Due to the proximity of the site to the ocean, all wells will be measured within the shortest practical time interval to reduce influences from tidal effects.

*Measured on_____

Monitoring Well Sampling

Well No: W-11

Sampling date: 10-16 Sampling time: 845 to 930
Sampling personnel: Dave Weinhardt
Weather condition: Sunny
Field blank samples collected: time 845, sample no. Field Blank

Well Data

Well size:	4 inch	
Well elevation:	_____ feet (MLLW)	
Well depth (a):	35.70 feet (top of cap, survey mark) Date: 1-16-18	[1]
Static water level (b):	25.98 feet (top of cap, survey mark)	

Well Purging Data

Purge volume, v gallons	=	(a-b) x 0.65	=	6.31
Three volumes	=	3 x v	=	18.95
Five volumes	=	5 x v	=	N/A [2]

Well Post Purge Data

Depth to Water level 26.12 feet (top of cap, survey mark)

Sampling Parameter Checklist

Ammonia.
Metals - filtered 0.45 micron. Ba, Co, Cu, Cr, Mo, Ni, Va, Zn, and Cr^{6+}

Comments

[1] Copy well depth and date measured from Section B, Page 1, Column 3.
[2] If field parameters have stabilized prior to 5 volumes, enter "NA".

Well No. W-11 (cont.)

Well Purging Water Quality

Time	Total gallons	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
904	6.5	6.84	17.3°	1644	5.15	
910	13.0	6.67	17.6°	1584	2.44	
916	19.5	6.68	17.7°	1568	1.40	

Purge pump flow rate: 1.0 gpm.

Sample Pump Evacuation and Sample Water Quality

Time	No. of cycles	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
920	4	6.67	17.8°	1569	1.41	

Sample time: 923 Sample name: _____

Field Blank sample collected?: yes Field Blank sample name: FIELD BLANK

initial: RW

Comments:

_____

_____

_____

_____

Monitoring Well Sampling

Well No: W-1-R

Sampling date: 10-16-18 Sampling time: 935 to 1020
Sampling personnel: Paul Weinhardt
Weather condition: Sunny

Well Data

Well size:	4 inch	
Well elevation:	32.77	feet (MLLW)
Well depth (a):	33.30	feet (top of cap, survey mark) Date: 1-16-18 [1]
Static water level (b):	27.61	feet (top of cap, survey mark)

Well Purging Data

Purge volume, v gallons	=	(a-b) x 0.65	=	4.99
Three volumes	=	3 x v	=	14.98
Five volumes	=	5 x v	=	N/A [2]

Well Post Purge Data
Depth to Water level 27.70 feet (top of cap, survey mark)

Sampling Parameter Checklist

Ammonia.
Metals - filtered 0.45 micron. Ba, Co, Cu, Cr, Mo, Ni, Va, Zn, and Cr^{6+}

Comments

[1] Copy well depth and date measured from Section B, Page 1, Column 3.
[2] If field parameters have stabilized prior to 5 volumes, enter "NA".

Well No. W-1-R (cont.)

Well Purging Water Quality

Time	Total gallons	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
945	5.0	6.44	17.5°	3910	2.67	
955	10.0	6.52	17.3°	4058	2.62	
1005	15.0	6.51	17.5°	4070	1.98	

Purge pump flow rate: .5 gpm.

Sample Pump Evacuation and Sample Water Quality

Time	No. of cycles	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
1016	4	6.50	17.4°	4073	1.91	

Sample time: 1012 Sample name: _____

Duplicate sample collected?: NO Duplicate sample name: N/A

Initial: AW

Comments:

Monitoring Well Sampling

Well No: W-12

Sampling date: 10-16-18 Sampling time: 1025 to 1110
Sampling personnel: Paul Wonhardt
Weather condition: Sunny

Well Data
Well size: 4 inch
Well elevation: _____ feet (MLLW)
Well depth (a): 38.90 feet (top of cap, survey mark) Date: 1-16-18 [1]
Static water level (b): 31.85 feet (top of cap, survey mark)

Well Purging Data

Purge volume, v gallons	=	(a-b) x 0.65	=	4.58
Three volumes	=	3 x v	=	13.74
Five volumes	=	5 x v	=	N/A [2]

Well Post Purge Data
Depth to Water level 32.04 feet (top of cap, survey mark)

Sampling Parameter Checklist

Ammonia.
Metals - filtered 0.45 micron. Ba, Co, Cu, Cr, Mo, Ni, Va, Zn, and Cr^{6+}

Comments

[1] Copy well depth and date measured from Section B, Page 1, Column 3.
[2] If field parameters have stabilized prior to 5 volumes, enter "NA".

Well No. W-12 (cont.)

Well Purging Water Quality

Time	Total gallons	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
1035	4.75	6.91	17.4°	1756	3.05	
1045	9.50	6.89	17.6°	1700	1.44	
1055	14.25	6.84	17.5°	1698	2.14	

Purge pump flow rate: 5 gpm.

Sample Pump Evacuation and Sample Water Quality

Time	No. of cycles	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
1107	5	6.83	17.4°	1694	1.97	

Sample time: 1103
Sample name: _____
Duplicate sample collected?: NO
Duplicate sample name: N/A
initial: PW

Comments:

Moss Landing Power Plant
Quarterly Groundwater Sampling
Field Notebook No. 2

10-16 / 10-17 (Date, Fourth Quarter 2018)

INDEX

By signing this page, members of the field sampling team certify that they have read and understand the current version of the Sampling and Analysis Plan (SAP) for Moss Landing Power Plant. All field measurements and samples were collected in accordance with the procedures described in the SAP except for the deviations described below.

Signatures of field team members:

Paul Wenkutt

Sampling Event: Quarterly Sampling
(circle one) Verification Sampling

Sampling Dates: 10-16 to 10-17

ANALYTICAL LABORATORY INFORMATION:

Name: BC Analytical
Address: 4100 Atlas Ct
Bakersfield CA
Phone:
Contact:

INSTRUMENT CALIBRATION INFORMATION: pH, conductivity, and turbidity meters will be calibrated prior to sampling the first well, and periodically during the day. Periodic calibrations will be performed and logged at least once (after the third well is sampled) and more often if needed to correct perceived instrument drift.

Initial calibration:

Date/Time	Model	SN:	Buffer	Result
10-16 1125	ULTRAMETER	6216257	7.0	7.03 - 7.00
1126	↓	↓	4.0	3.94 - 4.00
1127			10.0	10.05 - 10.00
1128	↓	↓	1413	1416 - 1413
1130	HANNA	SNE007656	0	0
↓ 1131	↓	↓	15	15

Periodic calibrations:

Date/Time	Model	SN:	Buffer	Result
10-17 720	ULTRAMETER	6216257	7.0	7.05 - 7.00
721	↓	↓	4.0	3.97 - 4.00
722			10.0	10.08 - 10.00
723	↓	↓	1413	1419 - 1413
725	HANNA	SNE007656	0	0
↓ 726	↓	↓	15	15

Buffer solution: Expiration Date: Lot No.:
pH 4.00
pH 7.00 SEE Book #1
pH 10.00
Conductivity 1,000 mhos
Conductivity 10,000 mhos

Initial: AW

Potentiometric Water Level Information
Moss Landing Power Plant
FOURTH QUARTER 2018

Sampling date: _____
Sampling personnel: _____

Well Identity	Top of casing elevation	Depth to Bottom 1/10/17	Time Measured	Depth to Water (MP)	Water Table elevation (2) - (5)
(1)	(2)	(3)	(4)	(5)	(6)
Hydraulically up-gradient wells					
W-11	30.85				
W-13	27.72				
W-1-R	32.74				
W-12	35.56				
MP-12	31.88				
Hydraulically down-gradient wells for Impoundments					
W-2-R	33.01				
W-3-R	30.12				
W-10	31.96				
W-14-R	32.90				
Hydraulically further down-gradient wells from Impoundments					
MP-13	29.61				
MP-14	29.16				
MP-5	33.20				
Hydraulically further up-gradient wells from Impoundments					
MP-3	28.44				
W-8-R	24.54				
MP-10-R	24.47				
MP-2-R	23.88				

Well water levels will be measured in the order of the above table from top to bottom. Due to the proximity of the site to the ocean, all wells will be measured within the shortest practical time interval to reduce influences from tidal effects.

*Measured on_____

Monitoring Well Sampling

Well No: W-13

Sampling date: 10-16-18 Sampling time: 11:40 to 12:5
Sampling personnel: Paul Weinhardt
Weather condition: Sunny

Well Data
Well size: 4 inch
Well elevation: _____ feet (MLLW)
Well depth (a): 34.30 feet (top of cap, survey mark) Date: 1-16-18 [1]
Static water level (b): 22.89 feet (top of cap, survey mark)

Well Purging Data

Purge volume, v gallons	=	(a-b) x 0.65	=	7.41
Three volumes	=	3 x v	=	22.24
Five volumes	=	5 x v	=	N/A [2]

Well Post Purge Data
Depth to Water level 22.98 feet (top of cap, survey mark)

Sampling Parameter Checklist

Ammonia.
Metals - filtered 0.45 micron. Ba, Co, Cu, Cr, Mo, Ni, Va, Zn, and Cr^{6+}

Comments

[1] Copy well depth and date measured from Section B, Page 1, Column 3.
[2] If field parameters have stabilized prior to 5 volumes, enter "NA".

Well No. W-13 (cont.)

Well Purging Water Quality

Time	Total gallons	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
1148	7.5	6.76	18.1°	1529	1.25	
1156	15.0	6.70	17.8°	1240	.89	
1209	22.5	6.67	18.0°	1226	1.22	

Purge pump flow rate: 1.0 gpm.

Sample Pump Evacuation and Sample Water Quality

Time	No. of cycles	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
1214	4	6.68	17.90	1221	1.08	

Sample time: 1216
Sample name: N/A
Duplicate sample collected?: NO
Duplicate sample name: N/A
initial: AW

Comments:

Monitoring Well Sampling

Well No: W-2-R

Sampling date: 10-16-18 Sampling time: 1225 to 1300
Sampling personnel: Paul Weinhardt
Weather condition: Sunny

Well Data

Well size:	4 inch	
Well elevation:	33.05	feet (MLLW)
Well depth (a):	40.50	feet (top of cap, survey mark) Date: 1-16-18 [1]
Static water level (b):	28.35	feet (top of cap, survey mark)

Well Purging Data

Purge volume, v gallons	=	(a-b) x 0.66	=	7.89
Three volumes	=	3 x v	=	23.69
Five volumes	=	5 x v	=	N/A [2]

Well Post Purge Data
Depth to Water level 28.96 feet (top of cap, survey mark)

Sampling Parameter Checklist

Ammonia.
Metals - filtered 0.45 micron. Ba, Co, Cu, Cr, Mo, Ni, Va, Zn, and Cr^{6+}

Comments

[1] Copy well depth and date measured from Section B, Page 1, Column 3.
[2] If field parameters have stabilized prior to 5 volumes, enter "NA".

Well No. W-2-R (cont.)

Well Purging Water Quality

Time	Total gallons	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
1233	8.0	6.69	18.5°	992.4	1.52	
1241	16.0	6.60	19.0°	956.5	2.49	
1249	24.0	6.63	19.1	961.4	1.23	

Purge pump flow rate: 1.0 gpm.

Sample Pump Evacuation and Sample Water Quality

Time	No. of cycles	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
1258	5	6.61	19.0°	959.2	1.21	

Sample time: 1271 Sample name: _____

Duplicate sample collected?: NO Duplicate sample name: N/A

initial: AW

Comments:

Monitoring Well Sampling

Well No: W-3-R

Sampling date: 10-16-18 Sampling time: 1305 to 1353
Sampling personnel: Paul Weinhardt
Weather condition: Sunny

Well Data

Well size:	4 inch	
Well elevation:	32.00 feet (MLLW)	
Well depth (a):	46.60 feet (top of cap, survey mark) Date: 1-16-18	[1]
Static water level (b):	25.50 feet (top of cap, survey mark)	

Well Purging Data

Purge volume, v gallons	=	(a-b) x 0.65	=	22.81
Three volumes	=	3 x v	=	68.4
Five volumes	=	5 x v	=	N/A [2]

Well Post Purge Data
Depth to Water level 25.61 feet (top of cap, survey mark)

Sampling Parameter Checklist

Ammonia.
Metals - filtered 0.45 micron. Ba, Co, Cu, Cr, Mo, Ni, Va, Zn, and Cr^{6+}

Comments

[1] Copy well depth and date measured from Section B, Page 1, Column 3.
[2] If field parameters have stabilized prior to 5 volumes, enter "NA".

Well No. W-3-R (cont.)

Well Purging Water Quality

Time	Total gallons	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
1316	23.0	6.48	19.9°	1765	1.13	
1327	46.0	6.65	19.4°	1841	4.04	
1339	69.0	6.62	19.7°	1838	2.54	

Purge pump flow rate: 2.0 gpm.

Sample Pump Evacuation and Sample Water Quality

Time	No. of cycles	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
1349	5	6.61	19.7°	1835	2.42	

Sample time: 1345
Sample numbers: _____
Duplicate sample collected?: NO
Duplicate sample name: N/A
initial: AW

Comments:

_____

_____

_____

Monitoring Well Sampling

Well No: W-10

Sampling date: 10-17 Sampling time: 730 to 800
Sampling personnel: Paul Weinhardt
Weather condition: Foggy

Well Data

Well size:	4 inch	
Well elevation:	32.00 feet (MLLW)	
Well depth (a):	37.10 feet (top of cap, survey mark)	Date: 1-16-18 [1]
Static water level (b):	27.37 feet (top of cap, survey mark)	

Well Purging Data

Purge volume, v gallons	=	(a-b) x 0.65	=	6.32
Three volumes	=	3 x v	=	18.97
Five volumes	=	5 x v	=	N/A [2]

Well Post Purge Data
Depth to Water level 27.46 feet (top of cap, survey mark)

Sampling Parameter Checklist

Ammonia.
Metals - filtered 0.45 micron. Ba, Co, Cu, Cr, Mo, Ni, Va, Zn, and Cr^{6+}

Comments

[1] Copy well depth and date measured from Section B, Page 1, Column 3.
[2] If field parameters have stabilized prior to 5 volumes, enter "NA".

Well Purging Water Quality

Time	Total gallons	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
736	6.5	6.59	16.0°	730.9	1.72	
743	13.0	6.57	16.3°	710.2	1.61	
749	19.5	6.69	16.4°	707.8	1.53	

Purge pump flow rate: 1.0 gpm.

Sample Pump Evacuation and Sample Water Quality

Time	No. of cycles	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
759	4	6.67	16.3°	706.1	1.43	

Sample time: 757 Sample numbers: MS/MSD

Duplicate sample collected?: MS/MSD Duplicate sample name: MS/MSD

initial: PW

Comments:

Monitoring Well Sampling

Well No: W-14-R

Sampling date: 10-17-18 Sampling time: 805 to 920
Sampling personnel: PAUL Weinbrecht
Weather condition: Foggy

Well Data
Well size: 4 inch
Well elevation: _____ feet (MLLW)
Well depth (a): 43.60 feet (top of cap, survey mark) Date: 1-16-18 [1]
Static water level (b): 28.32 feet (top of cap, survey mark)

Well Purging Data

Purge volume, v gallons	=	(a-b) x 0.65	=	9.93
Three volumes	=	3 x v	=	29.79
Five volumes	=	5 x v	=	N/A [2]

Well Post Purge Data
Depth to Water level 28.43 feet (top of cap, survey mark)

Sampling Parameter Checklist

Ammonia.
Metals - filtered 0.45 micron. Ba, Co, Cu, Cr, Mo, Ni, Va, Zn, and Cr^{6+}

Comments

[1] Copy well depth and date measured from Section B, Page 1, Column 3.
[2] If field parameters have stabilized prior to 5 volumes, enter "NA".

Well No. W-14-R (cont.)

Well Purging Water Quality

Time	Total gallons	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
830	10.0	6.40	13.7°	750.2	1.91	
835	20.0	6.52	11.9°	756.6	.85	
840	30.0	6.56	12.1°	729.4	.79	

Purge pump flow rate: .75 gpm.

Sample Pump Evacuation and Sample Water Quality

Time	No. of cycles	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
916	12	6.51	12.3°	725.8	.77	

Sample time: 836
Duplicate sample collected?: yes

Sample name: _____
Duplicate sample name: W-15
initial: PW

Comments:

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Field Services Project No– Moss Landing PP 631234956.00039318

Pre-Job Preparation	Safety Access / Location	Employee Authorization to STOP Work
1. Get Permit for Job 2. Fill out JSA 3. Review JSA (EVERYONE) 4. Sign JSA (EVERYONE)	Eye Wash / Safety Shower: First Aid Kits are located in Truck Wind Direction: Evacuation Route:	I have been given authorization, without fear of reprimand or retaliation, to immediately **STOP** any work activity that presents a danger to me, my co-worker or the public; get involved, question and rectify any situation that is identified as not being in compliance with our safety and health policies; to report any unsafe conditions or acts to supervision and question any activity that involves violation of established Safety and Health policies.
Moss Landing PP	Assembly Point:	

Job Tasks: (What are you doing?)	Potential Hazards:	Recommended Action or Procedure to eliminate / mitigate Hazards
Ground Water Sampling. Vehicle Use	Slips, trips, falls, machinery hazards, insect and/or Animal bites. Contact dermatitis Changing weather conditions Muddy conditions at the landfill Uneven Terrain, Be aware of other operating equipment Other Vehicles Around, Be aware of Backing Up	Keep Guards in Place, Isolation Electrical to Work on Equipment Wear proper PPE for task Keep Guards in Place, Isolation Electrical to Work on Equipment Take your time driving, use ATV safety flag for ID Check surroundings, defensive driving Refer to Health and Safety Manual/Binder

Crew Name Signatures

	PM: JC Isham	**925-457-1130**

Job Close Out

Any incidents / Injuries / Near miss / STOP work reported? List:	**Job Audited** Time: Supervisor / Auditor Signature:	**Recommendations:**

Before starting work: *Is this the SAFEST way to do this JOB?*

"I will not put myself or let my co-workers perform any task that I would not allow my son or daughter in, on or around."

Consider the following and check the items which apply to the job, then review with the work crew.

PERMITS

- ☐ Excavation / Trench ("One Call" made)
- ☐ Cold Work
- ☐ Hot Work
- ☐ Entry Permit / Confined Space
- ☐ Line Breaking
- ☐ Signed Off When Complete
- ☐ LO/TO
- ☐ Other

ACCESS

- ☐ Scaffold (properly inspected ____)
- ☐ Ladder (Tied off ____)
- ☐ Man lift (inspected)
- ☐ Personnel Basket (inspected & approved ____)
- ☐ Operator Training

WELDING

- ☐ Flash burns
- ☐ Combustibles
- ☐ Spark Containment
- ☐ Shields
- ☐ Grounding
- ☐ Fire Extinguisher
- ☐ Water Hose
- ☐ Fire Blanket
- ☐ Fire Watch
- ☐ Leads routed overhead 7' / not in walk way
- ☐ Sewer Covers

OVERHEAD WORK

- ☐ Barricades
- ☐ Hole Cover
- ☐ Signs
- ☐ Handrail

Worksite Stretches:

- Before shift / Pre-task / End of shift
- Stretch to a point where you feel a mild tension and relax as you hold the stretch.
- **Stretches should be held for 10-30 seconds.**
- Always stretch within your comfort limits, never to the point of pain.

HAZARDS (ENVIRONMENTAL)

- ☐ Electrical Shock
- ☐ Heat Stress
- ☐ Heavy Objects
- ☐ Hot / Cold Surf. or Mat.
- ☐ Inadequate Lighting
- ☐ Line Breaking –
- ☐ **Check List attached**
- ☒ Noise
- ☐ Sharp Objects
- ☐ Other
- ☐ Poor Access / Egress

TOOLS

- ☒ Proper Tools for the Job
- ☒ Good Tool Condition
- ☐ Qualifications
- ☐ Current Inspection
- ☐ Tool Tethers
- ☐ Tool Lanyards

ELECTRICAL

- ☐ Locked & Tagged out
- ☐ Try Start / Stop Switch
- ☐ GFCI Test
- ☐ Assured Grounding
- ☐ Extension Cord Inspection

OTHER WORK IN AREA

- ☐ Others Working Overhead
- ☐ Type Work Others Doing:
- ☐
- ☒ PPE Due to Other Work
- ☐ Other

HAZARDS / BODY

- ☐ Fall Potential
- ☐ Pinch Points
- ☐ Slip-Trip Potential
- ☐ Other

HAZARDS / CHEMICALS

- ☐ Chemical Burn Skin
- ☐ Chemical Burn Eyes
- ☐ Flammable
- ☐ Ingestion
- ☐ Other
- ☐ Inhalation
- ☐ Skin Contamination

Confined Space Know the Following:

- **Possible hazards within the confined space**
- **First signs of exposure**
- **How to summons help**
- **How to track personnel**
- **Entering and exiting the confined space**
- **Maintain contact with all entrants by voice or visual**

Do not attempt to rescue unless you are a part of a Trained in confined space rescue.
Remain at entry point; assume no duties that will take you from there.
Signs posted to identify confined space?

EMERGENCY EQUIPMENT

- ☒ Fire Extinguishers
- ☐ Safety Shower
- ☐ Evacuation Route

Lifts / Rigging

- ☐ Critical Lift
- ☐ Manual Lifting
- ☐ Softeners
- ☐ Proper Rigging Practices
- ☐ Chain fall, Come a long
- ☐ Inspected - in good condition
- ☐ Crane
- ☐ Forklift
- ☐ Operator Certificate
- ☐ Condition of Equipment – Inspection Checklist
- ☐ Rigging and Lifting JSP - Required

Barricades

- ☐ Tags on all sides
- ☐ Stands Used
- ☐ 42" high
- ☐ Caution / Yellow
- ☐ Danger / Red
- ☐ Taken down at the end of shift

PERSONAL PROTECTIVE EQUIP. (PPE)

- ☐ Rubber Gloves
- ☒ Leather Gloves
- ☐ Special Purpose Gloves
- ☐ Slicker Suit
- ☐ Acid Suit
- ☐ Rubber Boots
- ☐ Metatarsals
- ☐ Respirator
- ☐ ½ face
- ☐ Full Face
- ☐ PAPR
- ☐ Fresh Air
- ☒ Hearing Protection
- ☐ Safety Harness
- ☐ Approved Anchor Points
- ☐ Mono Goggles (vented / non-vented)
- ☐ Face Shield
- ☐ Kevlar Gloves
- ☐ Kevlar Sleeves
- ☐ Fire Retardant Clothing
- ☐ Safety glasses with ANSI app. Side Shields
- ☐ Welding hood
- ☐ Burning Goggles
- ☐ Other

COMPLETED 11/19/18 Paul Weinhardt

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FIELD REQUEST

NEW 2017 PERMIT IMPLEMENTED

4th Quarter 2018 Ground Water VERIFICATION SAMPLING

PROJECT NAME: **DYNEGY Moss Landing Power Plant**
DATE SCHEDULED: **November 19, 2018**

SPECIAL INSTRUCTIONS / CONSIDERATIONS :
4th Quarter 2018 Ground Water VERIFICATION SAMPLING
Check in with Ernie at the office.
Use the field log notebook at the site / Field Sheets provided by site.
Purge water disposed of to ground surface.
Include all analytes on the sample bottle label.
Samples to be collected ~3 min apart.

pH Calib: 4.0 exp 7/2019 / 7.0 exp 6/2019 / 10.0 exp 6/2019
EC Calib (1413): Exp 5/2019

Geology Mngr:	**JC Isham**
Cell:	**925-457-1130**
Project No:	**631234956**
Cost Code:	**00331101**
Field/Lab Coord:	**Sheila Richgels**
Aptim Cell:	**916-616-3518**
Sampler:	**Paul Weinhardt**
Cell:	**530-391-4037**
Reporting:	**Erik Korsmo**
Cell:	**503-939-3688**

Site Contact: Ernie Bloecher 831-633-6786
E-Mail Ernie w/reminder to have all paperwork and the site key at the Guard Shack.

Well Locks:
Site Key: 3616

Well ID or Source	Casing Diameter (inches)	Depth to Bottom (feet)	Depth to Water (feet)	ANALYSES REQUESTED
		VERIFICATION samples based on 4th Qtr 2018 Lab Results.		
W-13 Verif A & B	4.0	34.25	22.69	**Mo - field filtered.**
FB	(Field Blank)			
TB	(Trip Blank)			

Field Measurements:
Pre-purge & post-purge DTW, pH, EC, Temp, Turbidity

Laboratory Instructions:
BC Labs - Kerrie Vaughan
4100 Atlas Court
Bakersfield, Calif 93308
(661) 327-4911 Office
kerrie.vaughan@bclabs.com

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

APTIM

APTIM Environmental & Infrastructure
180 Promenade Circle, Suite 320, Sacramento, Ca 95834

18-36611

Purchase Order: Direct Bill to Dynegy
Lab: **BC Laboratory, Bakersfield**

Project Name: **Dynegy / Moss Landing Power Plant**
Project Number: **631234956 / 4th Quarter 2018**
VERIFICATION Samples Notebook #2
Report to Site Manager: **Ernie Bloecher /831-633-6786**
Company: **Dynegy / Moss Landing Power Plant**
Address: **Highway 1 and Dolan Road, Moss Landing, Ca 95039**
CC Report: sheila.richgels@aptim.com
cassandra.tremblay@aptim.com
erik.korsmo@aptim.com

Sampler's Signature: Paul Weinhardt

Analysis Requested

Sample I.D.	2018 Date	Time	LAB I.D.	Sample Matrix	Number of Containers	Molybdenum (field filtered)	REMARKS
						250ml Plst	Container Types
						HNO3	Preservations
W-13 Ver A -1	11-19	1225		Water	1	1	
W-13 Ver B -2	11-19	1228		Water	1	1	
TB -3	11-19	N/A		Water	1	1	
FB -4	11-19	1236		Water	1	1	

CHK BY

DISTRIBUTION

SUB-OUT

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Paul Weinhardt	Signature: Bill Benson	Signature: Bill Benson	Signature: 11-21-18
Printed Name: **Paul Weinhardt**	Printed Name: BENSON	Printed Name: BENSON	Printed Name: 09:10
Firm: **APTIM**	Firm: BC LABS	Firm: BC LABS	Firm
Date/Time: 11-20-18	Date/Time: 11/20/18 1105	Date/Time: 11/20/18 1115	Date/Time

RELINQUISHED BY	RECEIVED BY
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day
X Standard (~10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results
Requested Report Date: _____

REPORT REQUIREMENTS

___ I. Routine Report
X II. Report (includes DUP, MS MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ RWQCB (MDLs/PQLs/TRACE#)

Special Instructions/Comments:

BC Labs PM Kerri Vaughan
4100 Atlas Court
Bakersfield, Calif 93308
(661) 852-4200 Office
kerrie.vaughan@bclabs.com

MOSS LANDING POWER PLANT
QUARTERLY GROUNDWATER SAMPLING
FIELD NOTEBOOK - VERIFICATION SAMPLING
11-19-18 (DATE, FOURTH QUARTER 2018)

INDEX

By signing this page, members of the field sampling team certify that they have read and understand the current version of the Sampling and Analysis Plan (SAP) for Moss Landing Power Plant. All field measurements and samples were collected in accordance with the procedures described in the SAP except for the deviations described below.

Signatures of field team members:

Paul Winhall

Sampling Event: Verification Sampling

Sampling Dates: 11-19-18 to 11-19-18

ANALYTICAL LABORATORY INFORMATION:

Name: BC Analytical
Address: 4100 Atlas Ct
Bakersfield CA
Phone:
Contact:

INSTRUMENT CALIBRATION INFORMATION: pH, conductivity, and turbidity meters will be calibrated prior to sampling the first well, and periodically during the day. Periodic calibrations will be performed and logged at least once (after the third well is sampled) and more often if needed to correct perceived instrument drift.

Initial calibration:

Date/Time	Model	SN:	Buffer	Result
11-19-18 1131	ULTRAMETIC	62116257	7.0	7.12 / 7.00
			4.0	3.891 / 4.00
			10.0	10.28 / 10.00
			1413	1393 - 1413
	HANNA	SN1-E0074656	0	0
			15.0	15.0

Periodic calibrations:

Date/Time	Model	SN:	Buffer	Result

Buffer solution:	Expiration Date:	Lot No.:
pH 4.00	2-20	WY2
pH 7.00	11-19	VP1A
pH 10.00	10-19	VQ1
Conductivity 1,000 mhos	3-19	CC169866
Conductivity 10,000 mhos		

Initial: AW

Monitoring Well Verification Sampling

Well No: W-13

Sampling date: 11-19-18 Sampling time: 1150 to 1240
Sampling personnel: PAUL WENHARDT
Weather condition: Cloudy

Well Data

Well size: 4 inch
Well elevation: _____ feet (MLLW)
Well depth (a): 34.30 feet (top of cap, survey mark) Date: 1-16-18 [1]
Static water level (b): 22.92 feet (top of cap, survey mark)

Well Purging Data

Purge volume, v gallons	=	(a-b) x 0.65	=	7.51
Three volumes	=	3 x v	=	22.53
Five volumes	=	5 x v	=	N/A [2]

Well Post Purge Data

Depth to Water level 22.96 feet (top of cap, survey mark)

Sampling Parameter Checklist (circle ones for Verification Sampling)

Ammonia.
Metals - filtered 0.45 micron. Ba, Co, Cu, Cr, Mo, Ni, Va, Zn, and Cr^{6+}

Comments

[1] Copy well depth and date measured from Section B, Page 1, Column 3.
[2] If field parameters have stabilized prior to 5 volumes, enter "NA".

Well No. W-13 (cont.)

Well Purging Water Quality

Time	Total gallons	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
1203	7.5	6.38	17.6°	1201	2.73	
1210	15.0	6.52	17.7°	1193	2.69	
1217	22.50	6.43	17.7°	1181	2.61	

Purge pump flow rate: 1.0 gpm.

Sample Pump Evacuation and Sample Water Quality

Time	No. of cycles	pH (units)	Temp. (deg. C)	Conductivity (umhos/cm)	Turbidity (NTU)	Comments
1232	4	6.42	17.7°	1178	2.56	

Sample time: 1225
Duplicate sample collected?: NO

Sample name: _____
Duplicate sample name: Field Blank
initial: AW

Comments:

_____

_____

_____

APTIM

Field Services Project No– Moss Landing PP 631234956.00039318

Pre-Job Preparation	Safety Access / Location	Employee Authorization to STOP Work
1. Get Permit for Job 2. Fill out JSA 3. Review JSA (EVERYONE) 4. Sign JSA (EVERYONE)	Eye Wash / Safety Shower: First Aid Kits are located in Truck Wind Direction: Evacuation Route:	I have been given authorization, without fear of reprimand or retaliation, to immediately **STOP** any work activity that presents a danger to me, my co-worker or the public; get involved, question and rectify any situation that is identified as not being in compliance with our safety and health policies; to report any unsafe conditions or acts to supervision and question any activity that involves violation of established Safety and Health policies.
Moss Landing PP	Assembly Point:	

Job Tasks: (What are you doing?)	Potential Hazards:	Recommended Action or Procedure to eliminate / mitigate Hazards
Ground Water Sampling.	Slips, trips, falls, machinery hazards, insect and/or	
Vehicle Use	Animal bites.	
	Contact dermatitis	Keep Guards in Place, Isolation Electrical to Work on
		Equipment
	Changing weather conditions	Wear proper PPE for task
	Muddy conditions at the landfill	Keep Guards in Place, Isolation Electrical to Work on
		Equipment
	Uneven Terrain, Be aware of other operating equipment	Take your time driving, use ATV safety flag for ID
	Other Vehicles Around, Be aware of Backing Up	Check surroundings, defensive driving
		Refer to Health and Safety Manual/Binder

Crew Name Signatures

			PM: JC Isham	**925-457-1130**

Job Close Out

Any incidents / Injuries / Near miss / STOP work reported? List:	**Job Audited** Time: Supervisor / Auditor Signature:	**Recommendations:**

Before starting work: *Is this the SAFEST way to do this JOB?*

"I will not put myself or let my co-workers perform any task that I would not allow my son or daughter in, on or around."

Consider the following and check the items which apply to the job, then review with the work crew.

PERMITS

- ☐ Excavation / Trench ("One Call" made)
- ☐ Cold Work
- ☐ Hot Work
- ☐ Entry Permit / Confined Space
- ☐ Line Breaking
- ☐ Signed Off When Complete
- ☐ LO/TO
- ☐ Other

ACCESS

- ☐ Scaffold (properly inspected ____)
- ☐ Ladder (Tied off ____)
- ☐ Man lift (inspected)
- ☐ Personnel Basket (inspected & approved ____)
- ☐ Operator Training

WELDING

- ☐ Flash burns
- ☐ Combustibles
- ☐ Spark Containment
- ☐ Shields
- ☐ Grounding
- ☐ Fire Extinguisher
- ☐ Water Hose
- ☐ Fire Blanket
- ☐ Fire Watch
- ☐ Leads routed overhead 7' / not in walk way
- ☐ Sewer Covers

OVERHEAD WORK

- ☐ Barricades
- ☐ Hole Cover
- ☐ Signs
- ☐ Handrail

Worksite Stretches:

- Before shift / Pre-task / End of shift
- Stretch to a point where you feel a mild tension and relax as you hold the stretch.
- **Stretches should be held for 10-30 seconds.**
- Always stretch within your comfort limits, never to the point of pain.

HAZARDS (ENVIRONMENTAL)

- ☐ Electrical Shock
- ☐ Heat Stress
- ☐ Heavy Objects
- ☐ Hot / Cold Surf. or Mat.
- ☐ Inadequate Lighting
- ☐ Line Breaking –
- ☐ **Check List attached**
- ☒ Noise
- ☐ Sharp Objects
- ☐ Other
- ☐ Poor Access / Egress

TOOLS

- ☒ Proper Tools for the Job
- ☒ Good Tool Condition
- ☐ Qualifications
- ☐ Current Inspection
- ☐ Tool Tethers
- ☐ Tool Lanyards

ELECTRICAL

- ☐ Locked & Tagged out
- ☐ Try Start / Stop Switch
- ☐ GFCI Test
- ☐ Assured Grounding
- ☐ Extension Cord Inspection

OTHER WORK IN AREA

- ☐ Others Working Overhead
- ☐ Type Work Others Doing:
- ☐
- ☒ PPE Due to Other Work
- ☐ Other

HAZARDS / BODY

- ☐ Fall Potential
- ☐ Pinch Points
- ☐ Slip-Trip Potential
- ☐ Other

HAZARDS / CHEMICALS

- ☐ Chemical Burn Skin
- ☐ Chemical Burn Eyes
- ☐ Flammable
- ☐ Ingestion
- ☐ Other
- ☐ Inhalation
- ☐ Skin Contamination

Confined Space Know the Following:

- **Possible hazards within the confined space**
- **First signs of exposure**
- **How to summons help**
- **How to track personnel**
- **Entering and exiting the confined space**
- **Maintain contact with all entrants by voice or visual**

Do not attempt to rescue unless you are a part of a Trained in confined space rescue.
Remain at entry point; assume no duties that will take you from there.
Signs posted to identify confined space?

EMERGENCY EQUIPMENT

- ☒ Fire Extinguishers
- ☐ Safety Shower
- ☐ Evacuation Route

Lifts / Rigging

- ☐ Critical Lift
- ☐ Manual Lifting
- ☐ Softeners
- ☐ Proper Rigging Practices
- ☐ Chain fall, Come a long
- ☐ Inspected - in good condition
- ☐ Crane
- ☐ Forklift
- ☐ Operator Certificate
- ☐ Condition of Equipment – Inspection Checklist
- ☐ Rigging and Lifting JSP - Required

Barricades

- ☐ Tags on all sides
- ☐ Stands Used
- ☐ 42" high
- ☐ Caution / Yellow
- ☐ Danger / Red
- ☐ Taken down at the end of shift

PERSONAL PROTECTIVE EQUIP. (PPE)

- ☐ Rubber Gloves
- ☒ Leather Gloves
- ☐ Special Purpose Gloves
- ☐ Slicker Suit
- ☐ Acid Suit
- ☐ Rubber Boots
- ☐ Metatarsals
- ☐ Respirator
- ☐ ½ face
- ☐ Full Face
- ☐ PAPR
- ☐ Fresh Air
- ☒ Hearing Protection
- ☐ Safety Harness
- ☐ Approved Anchor Points
- ☐ Mono Goggles (vented / non-vented)
- ☐ Face Shield
- ☐ Kevlar Gloves
- ☐ Kevlar Sleeves
- ☐ Fire Retardant Clothing
- ☐ Safety glasses with ANSI app. Side Shields
- ☐ Welding hood
- ☐ Burning Goggles
- ☐ Other

APPENDIX C
LABORATORY ANALYTICAL TEST REPORTS
FOR MONITORING WELL SAMPLES

It should be noted that the PQLs required by the Moss Landing Power Plant MCWI Permit are defined differently than the PQLs reported in the laboratory results within this Appendix. The MCWI Permit defines PQLs are the minimum level of accuracy per specific analysis expected from the laboratory. The MDLs and PQLs as reported by the laboratory in this Appendix were determined according to "*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW 846 3rd Edition, 1996"* and as amended by "*Update III"*. These MDLs and/or PQLs are to be at least as accurate as the MCWI Permit-defined PQLs.

	Analyte	**Method Number**	**Reference**	**PQL (mg/l)**
1.	Ammonia	4500NH_3H	c	0.1
2.	Chromium, hexavalent	218.6*	c/b	0.0002
3.	Barium	200.8/6020	a/b	0.001
4.	Chromium (total)	200.8/6020	a/b	0.003
5.	Cobalt	200.8/6020	a/b	0.001
6.	Copper	200.8/6020	a/b	0.002
7.	Molybdenum	200.8/6020	a/b	0.001
8.	Nickel	200.8/6020	a/b	0.002
9.	Vanadium	200.8/6020	a/b	0.003
10.	Zinc	200.8/6020	a/b	0.002

[a.] *U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Wastes, 1999*

[b] *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, third edition, Update III, U.S. EPA, 1996.*

[c.] *Standard Methods for the Examination of Water and Wastewater, 20th Edition*

* Preserved in the field with one of the buffers described in EPA Method 218.7

Date of Report: 11/01/2018

Ernie Bloecher

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Client Project:	631234956
BCL Project:	Dynegy/Moss Landing Power Plant
BCL Work Order:	1832893
Invoice ID:	B321000

Enclosed are the results of analyses for samples received by the laboratory on 10/18/2018. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Kerrie Vaughan
Client Services

Stuart Buttram
Technical Director

Table of Contents

Chain of Custody and Cooler Receipt Form for 1832893 Page 1 of 2

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

APTIM

APTIM Environmental & Infrastructure
180 Promenade Circle, Suite 320, Sacramento, Ca 95834

18-32893

Purchase Order: Direct Bill to Dynegy
Lab: BC Laboratory, Bakersfield

Project Name: Dynegy / Moss Landing Power Plant
Project Number: 631234956/ 4th Quarter 2018
Notebook #1 Ground Water Samples
Report to Site Manager: Ernie Bloecher / 831-633-6786
Company: Dynegy / Moss Landing Power Plant
Address: Highway 1 and Dolan Road, Moss Landing, Ca 95039
CC Rpt: sheila.richels@aptim.com
cassandra.tremblay@aptim.com
erik.korsmo@aptim.com

Sampler's Signature:

Sample I.D.	2018 Date	Time	LAB I.D.	Sample Matrix	Number of Containers	Diss Metals (Field Filtered) *See list below.	Diss Chrom VI (218.6) (Field Filtered) (5-day Hold)	Ammonia-Nitrogen (EPA 350.3)	Analysis Requested							REMARKS
						250ml Plst	50ml Plst	16oz Plst								Container Types
						HNO3	Borate	H2SO4								Preservations
W-1-R	10-16	1012	1	Water	3	1	1	1								
W-11		0923	2	Water	3	1	1	1								
W-12		1103	3	Water	3	1	1	1								
TB		NA	4	Water	3	1	1	1								
FB	↓	0851	5	Water	3	1	1	1								

SHORT HOLDING TIME
On ice
NO_3 OP SS
DO P_2 BOD MEAS COT
CHK BY DISTRIBUTION
SUB-OUT

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature	Signature	Signature
Printed Name Paul Weinhardt	Printed Name	Printed Name	Printed Name
Firm APTIM	Firm	Firm	Firm
Date/Time 10-17 1637	Date/Time 10/17/18 1237	Date/Time 10/17/18 1320	Date/Time 10-18-18
RELINQUISHED BY	RECEIVED BY	Special Instructions/Comments:	
Signature	Signature	*Metals, Diss (Ba, Cr, Co, Cu, Mo, Ni, V, Zn) Field Filter	
Printed Name	Printed Name		
Firm	Firm		
Date/Time	Date/Time		

TURNAROUND REQUIREMENTS
24 hr ___ 48 hr ___ 5 day
X Standard (~10-15 working days)
Provide Verbal Preliminary Results
Provide FAX Preliminary Results
Requested Report Date: _____

REPORT REQUIREMENTS
I. Routine Report
X II. Report (includes DUP, MS MSD, as required, may be charged as samples)
III. Data Validation Report (includes All Raw Data)
RWQCB
(MDLs/PQLs/TRACE#)

BC Labs PM Kerri Vaughan
4100 Atlas Court
Bakersfield, Calif 93308
(661) 852-4281 Direct
(661) 327-4911 Office
kerrie.vaughan@bclabs.com

Chain of Custody and Cooler Receipt Form for 1832893 Page 2 of 2

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 18-32893

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐	Ice Chest ☑ None ☐ Box ☐	YES ☐ NO ☐
BC Lab Field Service ☐ Other ☑ (Specify) GSO	Other ☐ (Specify)	W / S

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 97 Container: Plastic Thermometer ID: 214 Date/Time: 10-18-18

Temperature: (A) 0.0 °C / (C) 0.0 °C Analyst Init: 10:38

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}	A	A	A	A	A					
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz	B	B	B	B	B					
PT CYANIDE										
PT NITROGEN FORMS	C	C	C	C	C					
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: AT Date/Time: 10/18 1240 Rev 21 05/23/2016

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1832893-01	**COC Number:**	---	**Receive Date:**	10/18/2018 10:38
	Project Number:	---	**Sampling Date:**	10/16/2018 10:12
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-1-R	**Lab Matrix:**	Water
	Sampled By:	Paul Weinhardt	**Sample Type:**	Water
			Metal Analysis:	1-Field Filtered and Acidified
1832893-02	**COC Number:**	---	**Receive Date:**	10/18/2018 10:38
	Project Number:	---	**Sampling Date:**	10/16/2018 09:23
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-11	**Lab Matrix:**	Water
	Sampled By:	Paul Weinhardt	**Sample Type:**	Water
			Metal Analysis:	1-Field Filtered and Acidified
1832893-03	**COC Number:**	---	**Receive Date:**	10/18/2018 10:38
	Project Number:	---	**Sampling Date:**	10/16/2018 11:03
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-12	**Lab Matrix:**	Water
	Sampled By:	Paul Weinhardt	**Sample Type:**	Water
			Metal Analysis:	1-Field Filtered and Acidified
1832893-04	**COC Number:**	---	**Receive Date:**	10/18/2018 10:38
	Project Number:	---	**Sampling Date:**	10/16/2018 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	TB	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Water
			Metal Analysis:	1-Field Filtered and Acidified
1832893-05	**COC Number:**	---	**Receive Date:**	10/18/2018 10:38
	Project Number:	---	**Sampling Date:**	10/16/2018 08:51
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	FB	**Lab Matrix:**	Water
	Sampled By:	Paul Weinhardt	**Sample Type:**	Water
			Metal Analysis:	1-Field Filtered and Acidified

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

BCL Sample ID: 1832893-01 | **Client Sample Name:** W-1-R, 10/16/2018 10:12:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Ammonia as N	**0.060**	**mg/L**	**0.10**	**0.018**	**EPA-350.1**	ND	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-350.1	10/31/18 13:14	11/01/18 10:10	JMH	SC-1	1	B028864

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1832893-01 | **Client Sample Name:** W-1-R, 10/16/2018 10:12:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Hexavalent Chromium	**3.9**	**ug/L**	**0.20**	**0.031**	**EPA-218.6**	ND		1
Dissolved Barium	**0.14**	**mg/L**	**0.0010**	**0.000066**	**EPA-200.8**	ND		2
Dissolved Chromium	**0.0050**	**mg/L**	**0.0030**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Cobalt	**0.00049**	**mg/L**	**0.0010**	**0.000011**	**EPA-200.8**	0.000021	**J**	2
Dissolved Copper	**0.0012**	**mg/L**	**0.0020**	**0.00032**	**EPA-200.8**	ND	**J**	2
Dissolved Molybdenum	**0.0012**	**mg/L**	**0.0010**	**0.000033**	**EPA-200.8**	0.000092		2
Dissolved Nickel	**0.018**	**mg/L**	**0.0020**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Vanadium	**0.0024**	**mg/L**	**0.0030**	**0.00039**	**EPA-200.8**	ND	**J**	2
Dissolved Zinc	**0.0037**	**mg/L**	**0.0050**	**0.0022**	**EPA-200.8**	0.0022	**J**	2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-218.6	10/19/18 01:00	10/19/18 04:13	SAV	IC-4	1	B027831
2	EPA-200.8	10/22/18 09:00	10/23/18 12:45	ARD	PE-EL3	1	B027939

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

BCL Sample ID: 1832893-02 | **Client Sample Name:** W-11, 10/16/2018 9:23:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Ammonia as N	**0.020**	**mg/L**	**0.10**	**0.018**	**EPA-350.1**	0.023	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-350.1	10/31/18 15:26	11/01/18 11:24	JMH	SC-1	1	B028869

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1832893-02 | **Client Sample Name:** W-11, 10/16/2018 9:23:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Hexavalent Chromium	**3.2**	**ug/L**	**0.20**	**0.031**	**EPA-218.6**	ND		1
Dissolved Barium	**0.082**	**mg/L**	**0.0010**	**0.000066**	**EPA-200.8**	ND		2
Dissolved Chromium	**0.0060**	**mg/L**	**0.0030**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Cobalt	**0.000033**	**mg/L**	**0.0010**	**0.000011**	**EPA-200.8**	0.000021	**J**	2
Dissolved Copper	**0.00066**	**mg/L**	**0.0020**	**0.00032**	**EPA-200.8**	ND	**J**	2
Dissolved Molybdenum	**0.00071**	**mg/L**	**0.0010**	**0.000033**	**EPA-200.8**	0.000092	**J**	2
Dissolved Nickel	**0.0036**	**mg/L**	**0.0020**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Vanadium	**0.0039**	**mg/L**	**0.0030**	**0.00039**	**EPA-200.8**	ND		2
Dissolved Zinc	**0.0024**	**mg/L**	**0.0050**	**0.0022**	**EPA-200.8**	0.0022	**J**	2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-218.6	10/19/18 01:00	10/19/18 04:23	SAV	IC-4	1	B027831
2	EPA-200.8	10/22/18 09:00	10/23/18 13:11	ARD	PE-EL3	1	B027939

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

BCL Sample ID: 1832893-03 | **Client Sample Name:** W-12, 10/16/2018 11:03:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Ammonia as N	**0.034**	**mg/L**	**0.10**	**0.018**	**EPA-350.1**	0.023	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-350.1	10/31/18 15:26	11/01/18 11:30	JMH	SC-1	1	B028869

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1832893-03 | **Client Sample Name:** W-12, 10/16/2018 11:03:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Hexavalent Chromium	**4.1**	**ug/L**	**0.20**	**0.031**	**EPA-218.6**	ND		1
Dissolved Barium	**0.061**	**mg/L**	**0.0010**	**0.000066**	**EPA-200.8**	ND		2
Dissolved Chromium	**0.0068**	**mg/L**	**0.0030**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Cobalt	**0.00034**	**mg/L**	**0.0010**	**0.000011**	**EPA-200.8**	0.000021	**J**	2
Dissolved Copper	**0.0010**	**mg/L**	**0.0020**	**0.00032**	**EPA-200.8**	ND	**J**	2
Dissolved Molybdenum	**0.0035**	**mg/L**	**0.0010**	**0.000033**	**EPA-200.8**	0.000092		2
Dissolved Nickel	**0.015**	**mg/L**	**0.0020**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Vanadium	**0.0026**	**mg/L**	**0.0030**	**0.00039**	**EPA-200.8**	ND	**J**	2
Dissolved Zinc	ND	mg/L	0.0050	0.0022	EPA-200.8	0.0022		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-218.6	10/19/18 01:00	10/19/18 04:33	SAV	IC-4	1	B027831
2	EPA-200.8	10/22/18 09:00	10/23/18 13:15	ARD	PE-EL3	1	B027939

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

BCL Sample ID: 1832893-04 | **Client Sample Name:** TB, 10/16/2018 12:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Ammonia as N	ND	mg/L	0.10	0.018	EPA-350.1	0.023		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-350.1	10/31/18 15:26	11/01/18 11:30	JMH	SC-1	1	B028869

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1832893-04 | **Client Sample Name:** TB, 10/16/2018 12:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Hexavalent Chromium	**0.045**	**ug/L**	**0.20**	**0.031**	**EPA-218.6**	ND	**J**	1
Dissolved Barium	ND	mg/L	0.0010	0.000066	EPA-200.8	ND		2
Dissolved Chromium	ND	mg/L	0.0030	0.00015	EPA-200.8	ND		2
Dissolved Cobalt	ND	mg/L	0.0010	0.000011	EPA-200.8	0.000021		2
Dissolved Copper	**0.00049**	**mg/L**	**0.0020**	**0.00032**	**EPA-200.8**	ND	**J**	2
Dissolved Molybdenum	**0.000053**	**mg/L**	**0.0010**	**0.000033**	**EPA-200.8**	0.000092	**J**	2
Dissolved Nickel	ND	mg/L	0.0020	0.00015	EPA-200.8	ND		2
Dissolved Vanadium	ND	mg/L	0.0030	0.00039	EPA-200.8	ND		2
Dissolved Zinc	ND	mg/L	0.0050	0.0022	EPA-200.8	0.0022		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-218.6	10/19/18 01:00	10/19/18 04:42	SAV	IC-4	1	B027831
2	EPA-200.8	10/22/18 09:00	10/23/18 13:18	ARD	PE-EL3	1	B027939

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

BCL Sample ID: 1832893-05 | **Client Sample Name:** FB, 10/16/2018 8:51:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Ammonia as N	**0.022**	**mg/L**	**0.10**	**0.018**	**EPA-350.1**	0.023	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-350.1	10/31/18 15:26	11/01/18 11:31	JMH	SC-1	1	B028869

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1832893-05 | **Client Sample Name:** FB, 10/16/2018 8:51:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Hexavalent Chromium	**0.19**	**ug/L**	**0.20**	**0.031**	**EPA-218.6**	ND	**J**	1
Dissolved Barium	**0.00015**	**mg/L**	**0.0010**	**0.000066**	**EPA-200.8**	ND	**J**	2
Dissolved Chromium	ND	mg/L	0.0030	0.00015	EPA-200.8	ND		2
Dissolved Cobalt	ND	mg/L	0.0010	0.000011	EPA-200.8	0.000021		2
Dissolved Copper	ND	mg/L	0.0020	0.00032	EPA-200.8	ND		2
Dissolved Molybdenum	ND	mg/L	0.0010	0.000033	EPA-200.8	0.000092		2
Dissolved Nickel	ND	mg/L	0.0020	0.00015	EPA-200.8	ND		2
Dissolved Vanadium	ND	mg/L	0.0030	0.00039	EPA-200.8	ND		2
Dissolved Zinc	ND	mg/L	0.0050	0.0022	EPA-200.8	0.0022		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-218.6	10/19/18 01:00	10/19/18 04:52	SAV	IC-4	1	B027831
2	EPA-200.8	10/22/18 09:00	10/23/18 13:22	ARD	PE-EL3	1	B027939

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B028864						
Ammonia as N	B028864-BLK1	ND	mg/L	0.10	0.018	
QC Batch ID: B028869						
Ammonia as N	**B028869-BLK1**	**0.022600**	**mg/L**	**0.10**	**0.018**	**J**

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B028864										
Ammonia as N	B028864-BS1	LCS	1.0085	1.0000	mg/L	101		90 - 110		
QC Batch ID: B028869										
Ammonia as N	B028869-BS1	LCS	1.0240	1.0000	mg/L	102		90 - 110		

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B028864	Used client sample: N										
Ammonia as N	DUP	1833287-03	0.34800	0.37180		mg/L	6.6		10		
	MS	1833287-03	0.34800	1.4681	1.1111	mg/L		101		90 - 110	
	MSD	1833287-03	0.34800	1.4351	1.1111	mg/L	2.3	97.8	10	90 - 110	
QC Batch ID: B028869	Used client sample: Y - Description: W-11, 10/16/2018 09:23										
Ammonia as N	DUP	1832893-02	0.020400	ND		mg/L			10		
	MS	1832893-02	0.020400	1.1189	1.1111	mg/L		98.9		90 - 110	
	MSD	1832893-02	0.020400	1.1230	1.1111	mg/L	0.4	99.2	10	90 - 110	

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B027831						
Hexavalent Chromium	B027831-BLK1	ND	ug/L	0.20	0.031	
QC Batch ID: B027939						
Dissolved Barium	B027939-BLK1	ND	mg/L	0.0010	0.000066	
Dissolved Chromium	B027939-BLK1	ND	mg/L	0.0030	0.00015	
Dissolved Cobalt	**B027939-BLK1**	**0.000021000**	**mg/L**	**0.0010**	**0.000011**	**J**
Dissolved Copper	B027939-BLK1	ND	mg/L	0.0020	0.00032	
Dissolved Molybdenum	**B027939-BLK1**	**0.000092000**	**mg/L**	**0.0010**	**0.000033**	**J**
Dissolved Nickel	B027939-BLK1	ND	mg/L	0.0020	0.00015	
Dissolved Vanadium	B027939-BLK1	ND	mg/L	0.0030	0.00039	
Dissolved Zinc	**B027939-BLK1**	**0.0022370**	**mg/L**	**0.0050**	**0.0022**	**J**

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B027831										
Hexavalent Chromium	B027831-BS1	LCS	21.072	20.000	ug/L	105		90 - 110		
QC Batch ID: B027939										
Dissolved Barium	B027939-BS1	LCS	0.041239	0.040000	mg/L	103		85 - 115		
Dissolved Chromium	B027939-BS1	LCS	0.040308	0.040000	mg/L	101		85 - 115		
Dissolved Cobalt	B027939-BS1	LCS	0.040781	0.040000	mg/L	102		85 - 115		
Dissolved Copper	B027939-BS1	LCS	0.10346	0.10000	mg/L	103		85 - 115		
Dissolved Molybdenum	B027939-BS1	LCS	0.039112	0.040000	mg/L	97.8		85 - 115		
Dissolved Nickel	B027939-BS1	LCS	0.10170	0.10000	mg/L	102		85 - 115		
Dissolved Vanadium	B027939-BS1	LCS	0.039640	0.040000	mg/L	99.1		85 - 115		
Dissolved Zinc	B027939-BS1	LCS	0.10315	0.10000	mg/L	103		85 - 115		

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B027831	Used client sample: N										
Hexavalent Chromium	DUP	1832985-01	22.126	22.261		ug/L	0.6		10		
	MS	1832985-01	22.126	43.940	20.202	ug/L		108		90 - 110	
	MSD	1832985-01	22.126	43.631	20.202	ug/L	0.7	106	10	90 - 110	
QC Batch ID: B027939	Used client sample: Y - Description: W-1-R, 10/16/2018 10:12										
Dissolved Barium	DUP	1832893-01	0.14441	0.14640		mg/L	1.4		20		
	MS	1832893-01	0.14441	0.18054	0.040816	mg/L		88.5		70 - 130	
	MSD	1832893-01	0.14441	0.18101	0.040816	mg/L	0.3	89.7	20	70 - 130	
Dissolved Chromium	DUP	1832893-01	0.0049600	0.0045840		mg/L	7.9		20		
	MS	1832893-01	0.0049600	0.042536	0.040816	mg/L		92.1		70 - 130	
	MSD	1832893-01	0.0049600	0.042745	0.040816	mg/L	0.5	92.6	20	70 - 130	
Dissolved Cobalt	DUP	1832893-01	0.00049100	0.00048300		mg/L	1.6		20		J
	MS	1832893-01	0.00049100	0.037274	0.040816	mg/L		90.1		70 - 130	
	MSD	1832893-01	0.00049100	0.037715	0.040816	mg/L	1.2	91.2	20	70 - 130	
Dissolved Copper	DUP	1832893-01	0.0012330	0.0012290		mg/L	0.3		20		J
	MS	1832893-01	0.0012330	0.098570	0.10204	mg/L		95.4		70 - 130	
	MSD	1832893-01	0.0012330	0.099165	0.10204	mg/L	0.6	96.0	20	70 - 130	
Dissolved Molybdenum	DUP	1832893-01	0.0012090	0.0012270		mg/L	1.5		20		
	MS	1832893-01	0.0012090	0.045667	0.040816	mg/L		109		70 - 130	
	MSD	1832893-01	0.0012090	0.045274	0.040816	mg/L	0.9	108	20	70 - 130	
Dissolved Nickel	DUP	1832893-01	0.018331	0.018490		mg/L	0.9		20		
	MS	1832893-01	0.018331	0.10656	0.10204	mg/L		86.5		70 - 130	
	MSD	1832893-01	0.018331	0.10871	0.10204	mg/L	2.0	88.6	20	70 - 130	
Dissolved Vanadium	DUP	1832893-01	0.0024180	0.0023110		mg/L	4.5		20		J
	MS	1832893-01	0.0024180	0.041431	0.040816	mg/L		95.6		70 - 130	
	MSD	1832893-01	0.0024180	0.041641	0.040816	mg/L	0.5	96.1	20	70 - 130	
Dissolved Zinc	DUP	1832893-01	0.0036580	0.0035090		mg/L	4.2		20		J
	MS	1832893-01	0.0036580	0.10546	0.10204	mg/L		99.8		70 - 130	
	MSD	1832893-01	0.0036580	0.10652	0.10204	mg/L	1.0	101	20	70 - 130	

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 13:26
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit

Date of Report: 11/01/2018

Ernie Bloecher

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Client Project:	631234956
BCL Project:	Dynegy/Moss Landing Power Plant
BCL Work Order:	1832894
Invoice ID:	B320997

Enclosed are the results of analyses for samples received by the laboratory on 10/18/2018. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Kerrie Vaughan
Client Services

Stuart Buttram
Technical Director

Table of Contents

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

APTIM

APTIM Environmental & Infrastructure
180 Promenade Circle, Suite 320, Sacramento, Ca 95834

18.32894

Purchase Order: Direct Bill to Dynegy
Lab: **BC Laboratory, Bakersfield**

Project Name: **Dynegy / Moss Landing Power Plant**
Project Number: **631234956 / 4th Quarter 2018**
****Notebook #2 Ground Water Samples****
Report to Site Manager: **Ernie Bloecher / 831-633-6786**
Company: **Dynegy / Moss Landing Power Plant**
Address: **Highway 1 and Dolan Road, Moss Landing, Ca 95039**
CC Report: sheila.richgels@aptim.com
cassandra.tremblay@aptim.com
erik.korsmo@aptim.com

Sampler's Signature: Paul Weinhardt

Analysis Requested

Sample I.D.	2018 Date	Time	LAB I.D.	Sample Matrix	Number of Containers	Diss Metals (Field Filtered) *See list below. 250ml Plst HNO3	Diss Chrom VI (218.6) (Field Filtered) (5-day Hold) 50ml Plst Borate	Ammonia-Nitrogen (EPA 350.3) 16oz Plst H2SO4	REMARKS Container Types Preservations
W-2-R	10-16	1291	1	Water	3	1	1	1	
W-3-R	10-16	1345	2	Water	3	1	1	1	
W-10*	10-17	757	3	Water	4	2	1	1	MS/MSD metals
W-13	10-16	1210	4	Water	3	1	1	1	
W-14-R	10-17	856	5	Water	3	1	1	1	
W-15	10-17	910	6	Water	3	1	1	1	

NO
SHORT HOLDING TIME
Cr^{+6} NO_2 NO_3 OP SS
DO Cl_2 BOD MBAS COT
CHK BY
DISTRIBUTION
SUB-OUT

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Paul Weinhardt	Signature:	Signature:	Signature:
Printed Name: Paul Weinhardt	Printed Name: STEPHEN LOVE	Printed Name: STEPHEN LOVE	Printed Name: 10-18-18
Firm: APTIM	Firm: BC LABS	Firm: BCLABS	Firm: 10:38
Date/Time: 10-17-18 12:37	Date/Time: 10/17/18 12:37	Date/Time: 10/17/18 13:30	Date/Time:
RELINQUISHED BY	RECEIVED BY		
Signature	Signature		
Printed Name	Printed Name		
Firm	Firm		
Date/Time	Date/Time		

TURNAROUND REQUIREMENTS
24 hr ____ 48 hr ____ 5 day
X Standard (~10-15 working days)
Provide Verbal Preliminary Results
Provide FAX Preliminary Results
Requested Report Date: ____

REPORT REQUIREMENTS
I. Routine Report
X II. Report (includes DUP, MS MSD, as required, may be charged as samples)
III. Data Validation Report (includes All Raw Data)
RWQCB (MDLs/PQLs/TRACE#)

Special Instructions/Comments:

***Metals, Diss (Ba, Cr, Co, Cu, Mo, Ni, V, Zn) Field Filter**
*** For W-10, extra HNO3 bottle collected for MS/MSD.**

BC Labs PM Kerri Vaughan
4100 Atlas Court
Bakersfield, Calif 93308
(661) 852-4281 Direct
(661) 327-4911 Office
kerrie.vaughan@bclabs.com

Chain of Custody and Cooler Receipt Form for 1832894 Page 2 of 2

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 18-32894

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐ BC Lab Field Service ☐ Other ☑ (Specify) GSO	Ice Chest ☑ None ☐ Box ☐ Other ☐ (Specify)	YES ☐ NO ☐ W / S

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ (Intact? Yes / No) Containers ☐ (Intact? Yes / No) None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: .97 Container: Other Thermometer ID: 274

Temperature: (A) 0.0 °C / (C) 0.0 °C

Date/Time: 10.18.18 10:38

Analyst Init: JD

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}	A	A	A	A	A	A				
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz	B	B	BC	B	B	B				
PT CYANIDE										
PT NITROGEN FORMS	C	C	C	C	C	C				
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: AT Date/Time: 10/18 1240

A = Actual / C = Corrected

Rev 21 05/23/2016

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1832894-01	**COC Number:**	---	**Receive Date:**	10/18/2018 10:38
	Project Number:	---	**Sampling Date:**	10/16/2018 12:54
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-2-R	**Lab Matrix:**	Water
	Sampled By:	Paul Weinhardt	**Sample Type:**	Water
			Metal Analysis:	1-Field Filtered and Acidified
1832894-02	**COC Number:**	---	**Receive Date:**	10/18/2018 10:38
	Project Number:	---	**Sampling Date:**	10/16/2018 13:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-3-R	**Lab Matrix:**	Water
	Sampled By:	Paul Weinhardt	**Sample Type:**	Water
			Metal Analysis:	1-Field Filtered and Acidified
1832894-03	**COC Number:**	---	**Receive Date:**	10/18/2018 10:38
	Project Number:	---	**Sampling Date:**	10/17/2018 07:57
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-10	**Lab Matrix:**	Water
	Sampled By:	Paul Weinhardt	**Sample Type:**	Water
			Metal Analysis:	1-Field Filtered and Acidified
1832894-04	**COC Number:**	---	**Receive Date:**	10/18/2018 10:38
	Project Number:	---	**Sampling Date:**	10/16/2018 12:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-13	**Lab Matrix:**	Water
	Sampled By:	Paul Weinhardt	**Sample Type:**	Water
			Metal Analysis:	1-Field Filtered and Acidified
1832894-05	**COC Number:**	---	**Receive Date:**	10/18/2018 10:38
	Project Number:	---	**Sampling Date:**	10/17/2018 08:56
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-14-R	**Lab Matrix:**	Water
	Sampled By:	Paul Weinhardt	**Sample Type:**	Water
			Metal Analysis:	1-Field Filtered and Acidified

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1832894-06	**COC Number:**	---	**Receive Date:**	10/18/2018 10:38
	Project Number:	---	**Sampling Date:**	10/17/2018 09:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-15	**Lab Matrix:**	Water
	Sampled By:	Paul Weinhardt	**Sample Type:**	Water
			Metal Analysis:	1-Field Filtered and Acidified

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

BCL Sample ID: 1832894-01 | **Client Sample Name:** W-2-R, 10/16/2018 12:54:00PM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Ammonia as N	**0.018**	**mg/L**	**0.10**	**0.018**	**EPA-350.1**	0.023	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-350.1	10/31/18 15:26	11/01/18 11:32	JMH	SC-1	1	B028869

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1832894-01 | **Client Sample Name:** W-2-R, 10/16/2018 12:54:00PM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Hexavalent Chromium	**1.5**	**ug/L**	**0.20**	**0.031**	**EPA-218.6**	ND		1
Dissolved Barium	**0.036**	**mg/L**	**0.0010**	**0.000066**	**EPA-200.8**	ND		2
Dissolved Chromium	**0.0023**	**mg/L**	**0.0030**	**0.00015**	**EPA-200.8**	ND	**J**	2
Dissolved Cobalt	**0.000053**	**mg/L**	**0.0010**	**0.000011**	**EPA-200.8**	0.000020	**J**	2
Dissolved Copper	**0.00074**	**mg/L**	**0.0020**	**0.00032**	**EPA-200.8**	ND	**J**	2
Dissolved Molybdenum	**0.00018**	**mg/L**	**0.0010**	**0.000033**	**EPA-200.8**	0.000090	**J**	2
Dissolved Nickel	**0.0049**	**mg/L**	**0.0020**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Vanadium	**0.0025**	**mg/L**	**0.0030**	**0.00039**	**EPA-200.8**	ND	**J**	2
Dissolved Zinc	ND	mg/L	0.0050	0.0022	EPA-200.8	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-218.6	10/19/18 01:00	10/19/18 05:21	SAV	IC-4	1	B027832
2	EPA-200.8	10/22/18 09:00	10/23/18 14:11	ARD	PE-EL3	1	B027975

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

BCL Sample ID: 1832894-02 | **Client Sample Name:** W-3-R, 10/16/2018 1:45:00PM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Ammonia as N	ND	mg/L	0.10	0.018	EPA-350.1	0.023		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-350.1	10/31/18 15:26	11/01/18 11:33	JMH	SC-1	1	B028869

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1832894-02 | **Client Sample Name:** W-3-R, 10/16/2018 1:45:00PM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Hexavalent Chromium	**0.39**	**ug/L**	**0.20**	**0.031**	**EPA-218.6**	ND		1
Dissolved Barium	**0.030**	**mg/L**	**0.0010**	**0.000066**	**EPA-200.8**	ND		2
Dissolved Chromium	**0.0021**	**mg/L**	**0.0030**	**0.00015**	**EPA-200.8**	ND	**J**	2
Dissolved Cobalt	**0.00032**	**mg/L**	**0.0010**	**0.000011**	**EPA-200.8**	0.000020	**J**	2
Dissolved Copper	**0.0011**	**mg/L**	**0.0020**	**0.00032**	**EPA-200.8**	ND	**J**	2
Dissolved Molybdenum	**0.00081**	**mg/L**	**0.0010**	**0.000033**	**EPA-200.8**	0.000090	**J**	2
Dissolved Nickel	**0.013**	**mg/L**	**0.0020**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Vanadium	**0.0041**	**mg/L**	**0.0030**	**0.00039**	**EPA-200.8**	ND		2
Dissolved Zinc	**0.0024**	**mg/L**	**0.0050**	**0.0022**	**EPA-200.8**	ND	**J**	2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-218.6	10/19/18 01:00	10/19/18 11:13	SAV	IC-4	1	B027832
2	EPA-200.8	10/22/18 09:00	10/23/18 14:14	ARD	PE-EL3	1	B027975

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

BCL Sample ID: 1832894-03 | **Client Sample Name:** W-10, 10/17/2018 7:57:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Ammonia as N	ND	mg/L	0.10	0.018	EPA-350.1	0.023		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-350.1	10/31/18 15:26	11/01/18 11:33	JMH	SC-1	1	B028869

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1832894-03 | **Client Sample Name:** W-10, 10/17/2018 7:57:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Hexavalent Chromium	**5.2**	**ug/L**	**0.20**	**0.031**	**EPA-218.6**	ND		1
Dissolved Barium	**0.058**	**mg/L**	**0.0010**	**0.000066**	**EPA-200.8**	ND		2
Dissolved Chromium	**0.0059**	**mg/L**	**0.0030**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Cobalt	**0.000049**	**mg/L**	**0.0010**	**0.000011**	**EPA-200.8**	0.000020	**J**	2
Dissolved Copper	**0.00079**	**mg/L**	**0.0020**	**0.00032**	**EPA-200.8**	ND	**J**	2
Dissolved Molybdenum	**0.00054**	**mg/L**	**0.0010**	**0.000033**	**EPA-200.8**	0.000090	**J**	2
Dissolved Nickel	**0.0023**	**mg/L**	**0.0020**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Vanadium	**0.0031**	**mg/L**	**0.0030**	**0.00039**	**EPA-200.8**	ND		2
Dissolved Zinc	ND	mg/L	0.0050	0.0022	EPA-200.8	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-218.6	10/19/18 01:00	10/19/18 11:23	SAV	IC-4	1	B027832
2	EPA-200.8	10/22/18 09:00	10/23/18 13:43	ARD	PE-EL3	1	B027975

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

BCL Sample ID: 1832894-04 | **Client Sample Name:** W-13, 10/16/2018 12:10:00PM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Ammonia as N	ND	mg/L	0.10	0.018	EPA-350.1	0.023		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-350.1	10/31/18 15:26	11/01/18 11:35	JMH	SC-1	1	B028869

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1832894-04 | **Client Sample Name:** W-13, 10/16/2018 12:10:00PM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Hexavalent Chromium	**3.0**	**ug/L**	**0.20**	**0.031**	**EPA-218.6**	ND		1
Dissolved Barium	**0.041**	**mg/L**	**0.0010**	**0.000066**	**EPA-200.8**	ND		2
Dissolved Chromium	**0.0035**	**mg/L**	**0.0030**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Cobalt	**0.00026**	**mg/L**	**0.0010**	**0.000011**	**EPA-200.8**	0.000020	**J**	2
Dissolved Copper	**0.00079**	**mg/L**	**0.0020**	**0.00032**	**EPA-200.8**	ND	**J**	2
Dissolved Molybdenum	**0.00064**	**mg/L**	**0.0010**	**0.000033**	**EPA-200.8**	0.000090	**J**	2
Dissolved Nickel	**0.012**	**mg/L**	**0.0020**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Vanadium	**0.0043**	**mg/L**	**0.0030**	**0.00039**	**EPA-200.8**	ND		2
Dissolved Zinc	ND	mg/L	0.0050	0.0022	EPA-200.8	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-218.6	10/19/18 01:00	10/19/18 11:33	SAV	IC-4	1	B027832
2	EPA-200.8	10/22/18 09:00	10/23/18 14:17	ARD	PE-EL3	1	B027975

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

BCL Sample ID: 1832894-05 | **Client Sample Name:** W-14-R, 10/17/2018 8:56:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Ammonia as N	ND	mg/L	0.10	0.018	EPA-350.1	0.023		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-350.1	10/31/18 15:26	11/01/18 11:35	JMH	SC-1	1	B028869

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1832894-05 | **Client Sample Name:** W-14-R, 10/17/2018 8:56:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Hexavalent Chromium	**5.3**	**ug/L**	**0.20**	**0.031**	**EPA-218.6**	ND		1
Dissolved Barium	**0.059**	**mg/L**	**0.0010**	**0.000066**	**EPA-200.8**	ND		2
Dissolved Chromium	**0.0053**	**mg/L**	**0.0030**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Cobalt	**0.000016**	**mg/L**	**0.0010**	**0.000011**	**EPA-200.8**	0.000020	**J**	2
Dissolved Copper	**0.00063**	**mg/L**	**0.0020**	**0.00032**	**EPA-200.8**	ND	**J**	2
Dissolved Molybdenum	**0.00062**	**mg/L**	**0.0010**	**0.000033**	**EPA-200.8**	0.000090	**J**	2
Dissolved Nickel	**0.0069**	**mg/L**	**0.0020**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Vanadium	**0.0034**	**mg/L**	**0.0030**	**0.00039**	**EPA-200.8**	ND		2
Dissolved Zinc	ND	mg/L	0.0050	0.0022	EPA-200.8	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-218.6	10/19/18 01:00	10/19/18 11:42	SAV	IC-4	1	B027832
2	EPA-200.8	10/22/18 09:00	10/23/18 14:21	ARD	PE-EL3	1	B027975

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

BCL Sample ID: 1832894-06 | **Client Sample Name:** W-15, 10/17/2018 9:10:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Ammonia as N	**0.025**	**mg/L**	**0.10**	**0.018**	**EPA-350.1**	0.023	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-350.1	10/31/18 15:26	11/01/18 11:37	JMH	SC-1	1	B028869

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1832894-06 | **Client Sample Name:** W-15, 10/17/2018 9:10:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Hexavalent Chromium	**5.1**	**ug/L**	**0.20**	**0.031**	**EPA-218.6**	ND		1
Dissolved Barium	**0.058**	**mg/L**	**0.0010**	**0.000066**	**EPA-200.8**	ND		2
Dissolved Chromium	**0.0054**	**mg/L**	**0.0030**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Cobalt	**0.000015**	**mg/L**	**0.0010**	**0.000011**	**EPA-200.8**	0.000020	**J**	2
Dissolved Copper	**0.00063**	**mg/L**	**0.0020**	**0.00032**	**EPA-200.8**	ND	**J**	2
Dissolved Molybdenum	**0.00061**	**mg/L**	**0.0010**	**0.000033**	**EPA-200.8**	0.000090	**J**	2
Dissolved Nickel	**0.0068**	**mg/L**	**0.0020**	**0.00015**	**EPA-200.8**	ND		2
Dissolved Vanadium	**0.0033**	**mg/L**	**0.0030**	**0.00039**	**EPA-200.8**	ND		2
Dissolved Zinc	ND	mg/L	0.0050	0.0022	EPA-200.8	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-218.6	10/19/18 01:00	10/19/18 11:52	SAV	IC-4	1	B027832
2	EPA-200.8	10/22/18 09:00	10/23/18 14:24	ARD	PE-EL3	1	B027975

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B028869						
Ammonia as N	B028869-BLK1	0.022600	mg/L	0.10	0.018	J

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B028869										
Ammonia as N	B028869-BS1	LCS	1.0240	1.0000	mg/L	102		90 - 110		

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B028869	Used client sample: Y - Description: W-11, 10/16/2018 09:23										
Ammonia as N	DUP	1832893-02	0.020400	ND		mg/L			10		
	MS	1832893-02	0.020400	1.1189	1.1111	mg/L		98.9		90 - 110	
	MSD	1832893-02	0.020400	1.1230	1.1111	mg/L	0.4	99.2	10	90 - 110	

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B027832						
Hexavalent Chromium	B027832-BLK1	ND	ug/L	0.20	0.031	
QC Batch ID: B027975						
Dissolved Barium	B027975-BLK1	ND	mg/L	0.0010	0.000066	
Dissolved Chromium	B027975-BLK1	ND	mg/L	0.0030	0.00015	
Dissolved Cobalt	**B027975-BLK1**	**0.000020000**	**mg/L**	**0.0010**	**0.000011**	**J**
Dissolved Copper	B027975-BLK1	ND	mg/L	0.0020	0.00032	
Dissolved Molybdenum	**B027975-BLK1**	**0.000090000**	**mg/L**	**0.0010**	**0.000033**	**J**
Dissolved Nickel	B027975-BLK1	ND	mg/L	0.0020	0.00015	
Dissolved Vanadium	B027975-BLK1	ND	mg/L	0.0030	0.00039	
Dissolved Zinc	B027975-BLK1	ND	mg/L	0.0050	0.0022	

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B027832										
Hexavalent Chromium	B027832-BS1	LCS	20.891	20.000	ug/L	104		90 - 110		
QC Batch ID: B027975										
Dissolved Barium	B027975-BS1	LCS	0.038850	0.040000	mg/L	97.1		85 - 115		
Dissolved Chromium	B027975-BS1	LCS	0.039704	0.040000	mg/L	99.3		85 - 115		
Dissolved Cobalt	B027975-BS1	LCS	0.040285	0.040000	mg/L	101		85 - 115		
Dissolved Copper	B027975-BS1	LCS	0.10449	0.10000	mg/L	104		85 - 115		
Dissolved Molybdenum	B027975-BS1	LCS	0.038854	0.040000	mg/L	97.1		85 - 115		
Dissolved Nickel	B027975-BS1	LCS	0.10187	0.10000	mg/L	102		85 - 115		
Dissolved Vanadium	B027975-BS1	LCS	0.039320	0.040000	mg/L	98.3		85 - 115		
Dissolved Zinc	B027975-BS1	LCS	0.096721	0.10000	mg/L	96.7		85 - 115		

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Metals Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B027832	Used client sample: Y - Description: W-2-R, 10/16/2018 12:54										
Hexavalent Chromium	DUP	1832894-01	1.5110	1.5000		ug/L	0.7		10		
	MS	1832894-01	1.5110	21.200	20.202	ug/L		97.5		90 - 110	
	MSD	1832894-01	1.5110	22.148	20.202	ug/L	4.4	102	10	90 - 110	
QC Batch ID: B027975	Used client sample: Y - Description: W-10, 10/17/2018 07:57										
Dissolved Barium	DUP	1832894-03	0.058314	0.058135		mg/L	0.3		20		
	MS	1832894-03	0.058314	0.096024	0.040816	mg/L		92.4		70 - 130	
	MSD	1832894-03	0.058314	0.097941	0.040816	mg/L	2.0	97.1	20	70 - 130	
Dissolved Chromium	DUP	1832894-03	0.0059310	0.0057350		mg/L	3.4		20		
	MS	1832894-03	0.0059310	0.043971	0.040816	mg/L		93.2		70 - 130	
	MSD	1832894-03	0.0059310	0.043783	0.040816	mg/L	0.4	92.7	20	70 - 130	
Dissolved Cobalt	DUP	1832894-03	0.000049000	0.000047000		mg/L	4.2		20		J
	MS	1832894-03	0.000049000	0.038162	0.040816	mg/L		93.4		70 - 130	
	MSD	1832894-03	0.000049000	0.037866	0.040816	mg/L	0.8	92.7	20	70 - 130	
Dissolved Copper	DUP	1832894-03	0.00079100	0.00080000		mg/L	1.1		20		J
	MS	1832894-03	0.00079100	0.10855	0.10204	mg/L		106		70 - 130	
	MSD	1832894-03	0.00079100	0.10321	0.10204	mg/L	5.0	100	20	70 - 130	
Dissolved Molybdenum	DUP	1832894-03	0.00053900	0.00054700		mg/L	1.5		20		J
	MS	1832894-03	0.00053900	0.042382	0.040816	mg/L		103		70 - 130	
	MSD	1832894-03	0.00053900	0.042815	0.040816	mg/L	1.0	104	20	70 - 130	
Dissolved Nickel	DUP	1832894-03	0.0023430	0.0022620		mg/L	3.5		20		
	MS	1832894-03	0.0023430	0.097420	0.10204	mg/L		93.2		70 - 130	
	MSD	1832894-03	0.0023430	0.096902	0.10204	mg/L	0.5	92.7	20	70 - 130	
Dissolved Vanadium	DUP	1832894-03	0.0030560	0.0030250		mg/L	1.0		20		
	MS	1832894-03	0.0030560	0.042203	0.040816	mg/L		95.9		70 - 130	
	MSD	1832894-03	0.0030560	0.041357	0.040816	mg/L	2.0	93.8	20	70 - 130	
Dissolved Zinc	DUP	1832894-03	ND	ND		mg/L			20		
	MS	1832894-03	ND	0.11128	0.10204	mg/L		109		70 - 130	
	MSD	1832894-03	ND	0.10687	0.10204	mg/L	4.0	105	20	70 - 130	

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/01/2018 12:50
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956
Project Manager: Ernie Bloecher

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit

Date of Report: 11/28/2018

Ernie Bloecher

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Client Project:	631234956 Verification Samples Notebook#2
BCL Project:	Dynegy/Moss Landing Power Plant
BCL Work Order:	1836611
Invoice ID:	B323492

Enclosed are the results of analyses for samples received by the laboratory on 11/21/2018. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Kerrie Vaughan
Client Services

Stuart Buttram
Technical Director

Table of Contents

Chain of Custody and Cooler Receipt Form for 1836611 Page 1 of 2

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

APTIM

APTIM Environmental & Infrastructure
180 Promenade Circle, Suite 320, Sacramento, Ca 95834

Purchase Order: Direct Bill to Dynegy
Lab: BC Laboratory, Bakersfield

18-36611

Project Name: Dynegy / Moss Landing Power Plant
Project Number: 631234956 / 4th Quarter 2018
VERIFICATION Samples Notebook #2
Report to Site Manager: Ernie Bloecher /831-633-6786
Company: Dynegy / Moss Landing Power Plant
Address: Highway 1 and Dolan Road, Moss Landing, Ca 95039
CC Report: sheila.richgels@aptim.com
cassandra.tremblay@aptim.com
erik.korsmo@aptim.com

Sampler's Signature: Paul Weinhardt

Sample I.D.	2018 Date	Time	LAB I.D.	Sample Matrix	Number of Containers	Molybdenum (Field filtered) 250ml Plst	Molybdenum (Field filtered) HNO3	REMARKS
								Container Types
								Preservations
W-13 Ver A	11-19	1225		Water	1	1		
W-13 Ver B	11-19	1228		Water	1	1		
TB	11-19	AIA		Water	1	1		
FB	11-19	1230		Water	1	1		

Analysis Requested

CHK BY DISTRIBUTION

SUB-OUT

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Paul Weinhardt	Signature: Bill Brown	Signature: Bill Brown	Signature: 11-21-18
Printed Name: Paul Weinhardt	Printed Name: Bill Brown	Printed Name: Bill Brown	Printed Name: 09:10
Firm: APTIM	Firm: BC LABS	Firm: BC LABS	Firm
Date/Time: 11-20-18	Date/Time: 11/20/18 1105	Date/Time: 11/20/18 1105	Date/Time

RELINQUISHED BY	RECEIVED BY
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

Special Instructions/Comments:

TURNAROUND REQUIREMENTS
24 hr ____ 48 hr ____ 5 day
X Standard (~10-15 working days)
Provide Verbal Preliminary Results
Provide FAX Preliminary Results
Requested Report Date: _____

REPORT REQUIREMENTS
I. Routine Report
X II. Report (includes DUP, MS MSD, as required, may be charged as samples)
III. Data Validation Report (includes All Raw Data)
RWQCB
(MDLs/PQLs/TRACE#)

BC Labs PM Kerri Vaughan
4100 Atlas Court
Bakersfield, Calif 93308
(661) 852-4200 Office
kerrie.vaughan@bclabs.com

Chain of Custody and Cooler Receipt Form for 1836611 Page 2 of 2

BC LABORATORIES INC. **COOLER RECEIPT FORM** Page 1 Of 1

Submission #: 18-36611

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐	Ice Chest ☑ None ☐ Box ☐	YES ☐ NO ☐
BC Lab Field Service ☐ Other ☑ (Specify) 950	Other ☐ (Specify)	W / S

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: .97 Container: Pipe Thermometer ID: 274

Temperature: (A) 0.0 °C / (C) 0.0 °C

Date/Time 11.21.18 0910

Analyst Init

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr+6										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz	A	A	A	A						
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL - 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: CAA Date/Time: 11/21/18 0945

A = Actual / C = Corrected

Rev 21 05/23/2018

S:\WPDocs\WordPerfect\LAB_DOCS\FORMS\SAMREC.rev 20)

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/28/2018 13:03
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956 Verification Samples Notebook#2
Project Manager: Ernie Bloecher

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1836611-01	**COC Number:**	---	**Receive Date:**	11/21/2018 09:10
	Project Number:	---	**Sampling Date:**	11/19/2018 12:25
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-13 Ver A	**Lab Matrix:**	Water
	Sampled By:	Paul Weinhardt	**Sample Type:**	Water
			Metal Analysis:	1-Field Filtered and Acidified
1836611-02	**COC Number:**	---	**Receive Date:**	11/21/2018 09:10
	Project Number:	---	**Sampling Date:**	11/19/2018 12:28
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	W-13 Ver B	**Lab Matrix:**	Water
	Sampled By:	Paul Weinhardt	**Sample Type:**	Water
			Metal Analysis:	1-Field Filtered and Acidified
1836611-03	**COC Number:**	---	**Receive Date:**	11/21/2018 09:10
	Project Number:	---	**Sampling Date:**	11/19/2018 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	TB	**Lab Matrix:**	Water
	Sampled By:	Paul Weinhardt	**Sample Type:**	Trip Blank
			Metal Analysis:	1-Field Filtered and Acidified
1836611-04	**COC Number:**	---	**Receive Date:**	11/21/2018 09:10
	Project Number:	---	**Sampling Date:**	11/19/2018 12:36
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	FB	**Lab Matrix:**	Water
	Sampled By:	Paul Weinhardt	**Sample Type:**	Water
			Metal Analysis:	1-Field Filtered and Acidified

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/28/2018 13:03
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956 Verification Samples Notebook#2
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1836611-01 | **Client Sample Name:** W-13 Ver A, 11/19/2018 12:25:00PM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Dissolved Molybdenum	**0.00060**	**mg/L**	**0.0010**	**0.000033**	**EPA-200.8**	0.000051	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-200.8	11/27/18 06:00	11/27/18 19:40	ARD	PE-EL4	1	B030812

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/28/2018 13:03
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956 Verification Samples Notebook#2
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1836611-02 | **Client Sample Name:** W-13 Ver B, 11/19/2018 12:28:00PM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Dissolved Molybdenum	**0.00056**	**mg/L**	**0.0010**	**0.000033**	**EPA-200.8**	0.000051	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-200.8	11/27/18 06:00	11/27/18 19:43	ARD	PE-EL4	1	B030812

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/28/2018 13:03
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956 Verification Samples Notebook#2
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1836611-03 | **Client Sample Name:** TB, 11/19/2018 12:00:00AM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Dissolved Molybdenum	ND	mg/L	0.0010	0.000033	EPA-200.8	0.000051		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-200.8	11/27/18 06:00	11/27/18 19:46	ARD	PE-EL4	1	B030812

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/28/2018 13:03
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956 Verification Samples Notebook#2
Project Manager: Ernie Bloecher

Metals Analysis

BCL Sample ID: 1836611-04 | **Client Sample Name:** FB, 11/19/2018 12:36:00PM, Paul Weinhardt

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Dissolved Molybdenum	ND	mg/L	0.0010	0.000033	EPA-200.8	0.000051		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-200.8	11/27/18 06:00	11/27/18 19:50	ARD	PE-EL4	1	B030812

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/28/2018 13:03
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956 Verification Samples Notebook#2
Project Manager: Ernie Bloecher

Metals Analysis

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B030812						
Dissolved Molybdenum	B030812-BLK1	0.000051000	mg/L	0.0010	0.000033	J

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/28/2018 13:03
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956 Verification Samples Notebook#2
Project Manager: Ernie Bloecher

Metals Analysis

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B030812										
Dissolved Molybdenum	B030812-BS1	LCS	0.040793	0.040000	mg/L	102		85 - 115		

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/28/2018 13:03
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956 Verification Samples Notebook#2
Project Manager: Ernie Bloecher

Metals Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B030812	Used client sample: N										
Dissolved Molybdenum	DUP	1836619-01	0.00040300	0.00040200		mg/L	0.2		20		J
	MS	1836619-01	0.00040300	0.042390	0.040816	mg/L		103		70 - 130	
	MSD	1836619-01	0.00040300	0.043660	0.040816	mg/L	3.0	106	20	70 - 130	

Dynegy/Moss Landing Power Plant
Highway 1 and Dolan Road/ P.O. Box 690
Moss Landing, CA 95039-0690

Reported: 11/28/2018 13:03
Project: Dynegy/Moss Landing Power Plant
Project Number: 631234956 Verification Samples Notebook#2
Project Manager: Ernie Bloecher

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit

APPENDIX D
CHAIN-OF-CUSTODY RECORD

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

APTIM

APTIM Environmental & Infrastructure
180 Promenade Circle, Suite 320, Sacramento, Ca 95834

18-32893

Purchase Order: Direct Bill to Dynegy
Lab: **BC Laboratory, Bakersfield**

Project Name: **Dynegy / Moss Landing Power Plant**
Project Number: **631234956/ 4th Quarter 2018**
****Notebook #1 Ground Water Samples****
Report to Site Manager: **Ernie Bloecher / 831-633-6786**
Company: **Dynegy / Moss Landing Power Plant**
Address: **Highway 1 and Dolan Road, Moss Landing, Ca 95039**
CC Rpt: sheila.richgels@aptim.com
cassandra.tremblay@aptim.com
erik.korsmo@aptim.com

Sampler's Signature: Paul Weinhardt

Analysis Requested

Sample I.D.	2018 Date	Time	LAB I.D.	Sample Matrix	Number of Containers	Diss Metals (Field Filtered) *See list below. 250ml Plst HNO3	Diss Chrom VI (218.6) (Field Filtered) (5-day Hold) 50ml Plst Borate	Ammonia-Nitrogen (EPA 350.3) 16oz Plst H2SO4								REMARKS Container Types / Preservations
W-1-R	10-16	1012	-1	Water	3	1	1	1								
W-11		923	-2	Water	3	1	1	1								
W-12		1103	-3	Water	3	1	1	1								
TB		N/A	-4	Water	3	1	1	1								
FB		851	-5	Water	3	1	1	1								

SHORT HOLDING TIME
Cr^{+6} NO_2 NO_3 OP SS
DO Cl_2 BOD MEAS COT

CHK BY

DISTRIBUTION
WP
SUB-OUT

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Paul Weinhardt	Signature: Stephen Cole	Signature: Stephen Cole	Signature:
Printed Name: **Paul Weinhardt**	Printed Name: STEPHEN COLE	Printed Name: STEPHEN COLE	Printed Name: 10-18-18
Firm: **APTIM**	Firm: BC LABS	Firm: BC LABS	Firm: 10:38
Date/Time: 10-17 12:37	Date/Time: 10/17/18 12:37	Date/Time: 10/17/18 1320	Date/Time:

RELINQUISHED BY	RECEIVED BY
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

Special Instructions/Comments:

***Metals, Diss (Ba, Cr, Co, Cu, Mo, Ni, V, Zn) Field Filter**

TURNAROUND REQUIREMENTS
__ 24 hr __ 48 hr __ 5 day
X Standard (~10-15 working days)
Provide Verbal Preliminary Results
Provide FAX Preliminary Results
Requested Report Date: _____

REPORT REQUIREMENTS
I. Routine Report
X II. Report (includes DUP, MS MSD, as required, may be charged as samples)
III. Data Validation Report (includes All Raw Data)
RWQCB (MDLs/PQLs/TRACE#)

BC Labs PM Kerri Vaughan
4100 Atlas Court
Bakersfield, Calif 93308
(661) 852-4281 Direct
(661) 327-4911 Office
kerrie.vaughan@bclabs.com

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

APTIM

APTIM Environmental & Infrastructure
180 Promenade Circle, Suite 320, Sacramento, Ca 95834

18.32894

Purchase Order: Direct Bill to Dynegy
Lab: **BC Laboratory, Bakersfield**

Project Name: **Dynegy / Moss Landing Power Plant**
Project Number: **631234956 / 4th Quarter 2018**
****Notebook #2 Ground Water Samples****
Report to Site Manager: **Ernie Bloecher / 831-633-6786**
Company: **Dynegy / Moss Landing Power Plant**
Address: **Highway 1 and Dolan Road, Moss Landing, Ca 95039**
CC Report: sheila.richgels@aptim.com
cassandra.tremblay@aptim.com
erik.korsmo@aptim.com

Sampler's Signature: Paul Weinhardt

Analysis Requested

Sample I.D.	2018 Date	Time	LAB I.D.	Sample Matrix	Number of Containers	Diss Metals (Field Filtered) *See list below. 250ml Plst HNO3	Diss Chrom VI (218.6) (Field Filtered) (5-day Hold) 50ml Plst Borate	Ammonia-Nitrogen (EPA 350.3) 16oz Plst H2SO4	REMARKS Container Types / Preservations
W-2-R	10-16	1234	1	Water	3	1	1	1	
W-3-R	10-16	1345	2	Water	3	1	1	1	
W-10*	10-17	757	3	Water	4	2	1	1	MS/MSD metals
W-13	10-16	1210	4	Water	3	1	1	1	
W-14-R	10-17	856	5	Water	3	1	1	1	
W-15	10-17	910	6	Water	3	1	1	1	

SHORT HOLDING TIME
Cr+6 NO_2 NO_3 OP SS
DO Cl_2 BOD MBAS COT

CHK BY
DISTRIBUTION
SUB-OUT

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Paul Weinhardt	Signature: Stephen Cole	Signature: Stephen Cole	Signature:
Printed Name: Paul Weinhardt	Printed Name: STEPHEN COLE	Printed Name: STEPHEN COLE	Printed Name: 10-18-18
Firm: APTIM	Firm: BC LABS	Firm: BC LABS	Firm: 10:38
Date/Time: 10.17.18 12:37	Date/Time: 10/17/18 12:37	Date/Time: 10/17/18 13:30	Date/Time:

RELINQUISHED BY	RECEIVED BY
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

Special Instructions/Comments:

***Metals, Diss (Ba, Cr, Co, Cu, Mo, Ni, V, Zn) Field Filter**
*** For W-10, extra HNO3 bottle collected for MS/MSD.**

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr ___ 5 day
X Standard (~10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results
Requested Report Date: _____

REPORT REQUIREMENTS
___ I. Routine Report
X II. Report (includes DUP, MS MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ RWQCB (MDLs/PQLs/TRACE#)

BC Labs PM Kerri Vaughan
4100 Atlas Court
Bakersfield, Calif 93308
(661) 852-4281 Direct
(661) 327-4911 Office
kerrie.vaughan@bclabs.com

APPENDIX E
QUARTERLY SURFACE IMPOUNDMENT ACTIVITIES FOR 2018

Surface Impoundment Activities During The First Quarter 2018

STATUS AT BEGINNING OF THE QUARTER

POND	GALLONS	CONTENTS
MCWP #1	EMPTY	Rainwater
MCWP #2	EMPTY	Rainwater
MCWP #3	EMPTY	Rainwater

INFLUENTS

None: except for rainwater.

RESULTS OF INFLUENT SAMPLING

NONE.

POND TO POND TRANSFERS

NONE.

PREPARATION FOR DISCHARGES

None: except for sampling the accumulated rainwater (Sampled on 2/8/18).

DISCHARGES

None: except for 74,214 gallons of accumulated rainwater discharged during the quarter. On 2/20/18 27,800 gallons was discharged from MCWP #1 and 27,800 gallons was discharged from MCWP #2. On 3/1/18 18,614 gallons was discharged from MCWP #3.

FILTER PRESS OPERATIONS

NONE.

STATUS AT END OF THE QUARTER

POND	GALLONS	CONTENTS
MCWP #1	27,800	Rainwater
MCWP #2	27,800	Rainwater
MCWP #3	5,584	Rainwater

NOTE: The difference between the starting and the ending volumes minus the discharges and adding the influents is due to 3,801 gallons of evaporation and 139,199 gallons of rainwater.

Surface Impoundment Activities During The Second Quarter 2018

STATUS AT BEGINNING OF THE QUARTER

POND	GALLONS	CONTENTS
MCWP #1	27,800	Rainwater
MCWP #2	27,800	Rainwater
MCWP #3	5,584	Rainwater

INFLUENTS

None: except for rainwater.

RESULTS OF INFLUENT SAMPLING

NONE.

POND TO POND TRANSFERS

NONE.

PREPARATION FOR DISCHARGES

None: except for sampling the accumulated rainwater (Sampled on 4/7/18).

DISCHARGES

None: except for 66,768 gallons of accumulated rainwater discharged during the quarter. On 4/25/18 56,158 gallons was rainwater was discharged (27,800 gallons was discharged from MCWP #1, 27,800 gallons was discharged from MCWP #2, and 558 gallons was discharged from MCWP #3). On 4/27/18 10,610 gallons was discharged from MCWP #3.

FILTER PRESS OPERATIONS

NONE.

STATUS AT END OF THE QUARTER

POND	GALLONS	CONTENTS
MCWP #1	EMPTY	
MCWP #2	EMPTY	
MCWP #3	EMPTY	

NOTE: The difference between the starting and the ending volumes minus the discharges and adding the influents is due to 5,584 gallons of rainwater and 0 (zero) gallons of evaporation.

Surface Impoundment Activities During The Third Quarter 2018

Metal Cleaning Waste Impoundments 1, 2 & 3 and the Filter Press Closure process started on 7/24/2018. The activities listed below briefly describes some of the events conducted during the closure process.

STATUS AT BEGINNING OF THE QUARTER

POND	GALLONS	CONTENTS
MCWP #1	EMPTY	Rainwater
MCWP #2	EMPTY	Rainwater
MCWP #3	EMPTY	Rainwater

INFLUENTS

Waste from the Metal Cleaning Waste Pond Closure Project includes the following:

Line Flushing Water (during the week of 7/26)

- MCWP #1 received about 9,100 gallons of wastewater from flushing out lines
- MCWP #2 received about 9,100 gallons of wastewater from flushing out lines
- MCWP #3 received about 18,614 gallons of wastewater from flushing out lines

Secondary Liner Leachability Testing Water on 8/29 (Primary Liner was removed).

- MCWP #1 received 6,000 gallons of distilled water for the Secondary Liner Leachability Test
- MCWP #2 received 6,000 gallons of distilled water for the Secondary Liner Leachability Test
- MCWP #3 received 2,000 gallons of distilled water for the Secondary Liner Leachability Test

RESULTS OF INFLUENT SAMPLING

The pH range for the Line Flushing Water was 6.11 to 9.00. The pH of the distilled water for the Secondary Liner Leachability Test was 7.35.

POND TO POND TRANSFERS

NONE.

PREPARATION FOR DISCHARGES

NONE.

DISCHARGES

NONE: 37,420 gallons of filtered wastewater (described below) discharged on 8/8. The discharge pH was 7.68.

FILTER PRESS OPERATIONS

NONE: On 8/1 the wastewater that was in the ponds from flushing out lines was processed through a large portable duplex filter system into two Frac Tanks to remove any solids from the wastewater. The process removed about 25 gallons of solids (not including the polypropylene filter bags) and used about 631 gallons of firewater.

STATUS AT END OF THE QUARTER

POND	GALLONS	CONTENTS
MCWP #1	6,000	Secondary Liner Leachability Test Water *
MCWP #2	6,000	Secondary Liner Leachability Test Water *
MCWP #3	2,000	Secondary Liner Leachability Test Water *

** The remaining Leachability Test Water will either evaporate or be pumped to ground with future rainwater.*

Surface Impoundment Activities During The Fourth Quarter 2018

Metal Cleaning Waste Impoundments 1, 2 & 3 and the Filter Press went through the Closure process during the third quarter 2018 and will never receive wastewater again, only rainwater. Wastewater activities at the impoundments have ceased.

STATUS AT BEGINNING OF THE QUARTER

POND	GALLONS	CONTENTS
MCWP #1	6,000	Secondary Liner Leachability Test Water *
MCWP #2	6,000	Secondary Liner Leachability Test Water *
MCWP #3	2,000	Secondary Liner Leachability Test Water *

INFLUENTS

RAINWATER ONLY

RESULTS OF INFLUENT SAMPLING

Non Hazardous

POND TO POND TRANSFERS

NONE.

PREPARATION FOR DISCHARGES

NONE.

DISCHARGES

RAINWATER and Leachability Water

*.*The remaining Leachability testing water was partially evaporated and partially pumped out with rainwater.*

FILTER PRESS OPERATIONS

NONE:

STATUS AT END OF THE QUARTER

POND	GALLONS	CONTENTS
MCWP #1	7 feet on wall	Rain Water & Secondary Liner Leachability Test Water *
MCWP #2	7 feet on wall	Rain Water & Secondary Liner Leachability Test Water *
MCWP #3	4 feet on wall	Rain Water & Secondary Liner Leachability Test Water *

APPENDIX F
2018 LEACHATE AND INFILTRATED GROUNDWATER RECORD

Moss Landing Power Plant
First Quarter 2018
Leachate and Infiltrated Groundwater Collected From the LDCRS[1] and the GDCRS[2] Between the Surface Impoundment Liners
No Leachate removed from any of the Surface Impoundments

Metal Cleaning Waste Impoundment No. 1 Tertiary Liner
Infiltrated Groundwater Removed from the GDCRS[2]

DATE:	1/22/2018	Gallons:	55
DATE:	1/25/2018	Gallons:	18
DATE:	2/9/2018	Gallons:	20
DATE:	3/25/2018	Gallons:	40
		Total gallons	133
AVERAGE		(per day for qtr.)	1.48

Metal Cleaning Waste Impoundment No. 2 Tertiary Liner
Infiltrated Groundwater Removed from the GDCRS[2]

No Infiltrated Groundwater detected or removed

Metal Cleaning Waste Impoundment No. 3 Tertiary Liner
Infiltrated Groundwater Removed from the GDCRS[2]

DATE:	2/9/2018	Gallons:	3
		Total gallons	3
AVERAGE		(per day for qtr.)	0.03

[1]Leachate Detection, Collection and Removal Systems

[2]Groundwater Detection, Collection and Removal Systems

Note: Infiltrated Groundwater removed from in the tertiary liner GDCRS for MCWI Nos. 1 & 3 occurs through cracks in the concrete base normally during the rainy season when groundwater rises.

Moss Landing Power Plant
Second Quarter 2018
Leachate and Infiltrated Groundwater Collected From the LDCRS[1] and the GDCRS[2] Between the Surface Impoundment Liners
No Leachate removed from any of the Surface Impoundments

Metal Cleaning Waste Impoundment No. 1 Tertiary Liner
Infiltrated Groundwater Removed from the GDCRS[2]

DATE:	4/2/2018	Gallons:	110
DATE:	4/3/2018	Gallons:	40
DATE:	4/4/2018	Gallons:	130
DATE:	4/5/2018	Gallons:	60
DATE:	5/4/2018	Gallons:	40
DATE:	5/14/2018	Gallons:	210
DATE:	5/16/2018	Gallons:	220
DATE:	6/1/2018	Gallons:	10
DATE:	6/2/2018	Gallons:	10
DATE:	6/4/2018	Gallons:	12
DATE:	6/11/2018	Gallons:	28
		Total gallons	870
AVERAGE		(per day for qtr.)	9.67

Metal Cleaning Waste Impoundment No. 2 Tertiary Liner
Infiltrated Groundwater Removed from the GDCRS[2]

No Infiltrated Groundwater detected or removed

Metal Cleaning Waste Impoundment No. 3 Tertiary Liner
Infiltrated Groundwater Removed from the GDCRS[2]

DATE:	6/11/2018	Gallons:	2
		Total gallons	2
AVERAGE		(per day for qtr.)	0.02

[1]Leachate Detection, Collection and Removal Systems

[2]Groundwater Detection, Collection and Removal Systems

Note: Infiltrated Groundwater removed from in the tertiary liner GDCRS for MCWI Nos. 1 & 3 occurs through cracks in the concrete base normally during the rainy season when groundwater rises.

Moss Landing Power Plant
Third Quarter 2018

Leachate and Infiltrated Groundwater Collected From the LDCRS[1] and the GDCRS[2] Between the Surface Impoundment Liners
No Leachate removed from any of the Surface Impoundments

NOTE: Metal Cleaning Waste Impoundments 1, 2 & 3 Primary Liners and their LDCRSs have been removed as part of the Closure activities. The secondary liners and their LDSRSs are now the Primary Liner system. The GDCRS are now the second liner and will remain in service to deal with Perched water. Closure activities on the Metal Cleaning Waste Impoundments and Filter Press began on 7/24. No waste will be discharged to the impoundments, only rainwater will enter and be discharged.

Metal Cleaning Waste Impoundment No. 2 Tertiary Liner
Infiltrated Groundwater Removed from the GDCRS[2]

No Infiltrated Groundwater detected or removed

Metal Cleaning Waste Impoundment No. 3 Tertiary Liner
Infiltrated Groundwater Removed from the GDCRS[2]

DATE:	10/2/2018	Gallons:	5
		Total gallons	5
AVERAGE		(per day for qtr.)	0.06

[1]Leachate Detection, Collection and Removal Systems
[2]Groundwater Detection, Collection and Removal Systems

Note: Infiltrated Groundwater removed from in the tertiary liner GDCRS for MCWI Nos. 1, 2 & 3 occurs through cracks in the concrete base normally during the rainy season when groundwater rises.

Moss Landing Power Plant
Fourth Quarter 2018

Leachate and Infiltrated Groundwater Collected From the LDCRS[1] and the GDCRS[2] Between the Surface Impoundment Liners

NOTE: Metal Cleaning Waste Impoundments 1, 2 & 3 Primary Liners and their LDCRSs have been removed as part of the Closure activities. The secondary liners and their LDSRSs are now the Primary Liner system. The GDCRS are now the second liner and will remain in service to deal with Perched water. Closure activities on the Metal Cleaning Waste Impoundments and Filter Press began on 7/24. No waste will be discharged to the impoundments, only rainwater will enter and be discharged.

Metal Cleaning Waste Impoundment No. 1 Tertiary Liner
Infiltrated Groundwater Removed from the GDCRS[2]

No Infiltrated Groundwater detected or removed

Metal Cleaning Waste Impoundment No. 2 Tertiary Liner
Infiltrated Groundwater Removed from the GDCRS[2]

No Infiltrated Groundwater detected or removed

Metal Cleaning Waste Impoundment No. 3 Tertiary Liner
Infiltrated Groundwater Removed from the GDCRS[2]

No Infiltrated Groundwater detected or removed

[1]Leachate Detection, Collection and Removal Systems
[2]Groundwater Detection, Collection and Removal Systems

Note: Infiltrated Groundwater removed from in the tertiary liner GDCRS for MCWI Nos. 1, 2 & 3 occurs through cracks in the concrete base normally during the rainy season when groundwater rises.

APPENDIX G
ANNUAL AND SURFACE IMPOUNDMENTS CLOSURE LINER INSPECTION REPORTS

DYNEGY MOSS LANDING, L.L.C
Moss Landing Power Plant
PO BOX 690
MOSS LANDING CA 95039
831-633-6700

CERTIFIED MAIL # 7017 1450 0000 8343 8377
RETURN RECEIPT

October 30, 2018

Mr. Gary Hammond
Department of Toxic Substances Control,
Permitting Division
8800 Cal Center Drive
Sacramento, CA 95826-3200

Mr. John M. Robertson, Executive Officer
Central Coast Regional Water Quality Control Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401

Attention: Ms. Kelsey Gerhart:

Re: 2018 Annual and Closure Surface Impoundments Liner Inspection for Dynegy Moss Landing, LLC

Dear Messrs. Hammond and Robertson:

The 2018 Annual and Closure Liner Inspection Reports for Dynegy Moss Landing, LLCs Hazardous Waste Surface Impoundment Nos. 1, 2 and 3 are attached. These reports are submitted in accordance with:

1) The California Environmental Protection Agency, Department of Toxic Substances Control, Hazardous Waste Facility Permit for Moss Landing Power Plant, EPA ID No. CAT 080011653, dated September 14, 2017.

2) The California Central Coast Regional Water Quality Control Board, Waste Discharge Requirements Order No. R3-2014-0029 for Moss Landing Power Plant, Hazardous Waste Surface Impoundments, July 31, 2014.

Dynegy Moss Landing, LLC has finished all the physical work following the Closure Plan. The primary liners were removed from all three Surface Impoundments so this liner inspection report is for the secondary liner, which now is the primary liner. This will be the final Liner Inspection Report pending the Closure letter from DTSC and the CCRWQCB rescinding the WDR.

Electronic and hard copies are being mailed and e-mailed to the Department of Toxic Substances Control. An electronic copy is being e-mailed to the California Central Coast Regional Water Quality Control Board.

I certify under the penalty of law that this document and all attachments are prepared under my directions or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. The results contained herein should not be construed to imply accuracy beyond the errors associated with equipment, instrumentation, or method capability, nor should the results be construed to represent an endorsement of the required testing methodology. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions or require additional information, please contact Ernie Bloecher, of my staff, at (831) 633-6786.

Sincerely,

REX A. LEWIS
Managing Director
Moss Landing and Oakland Power Plants

EBloecher:
Attachment

October 21, 2018 180808-01

Dynegy Moss Landing, LLC
Highway 1 and Dolan Road
PO Box 690
Moss Landing, CA 95039-0690

Attention: Mr. Ernie Bloecher

RE: 2018 INSPECTION REPORT FOR SURFACE IMPOUNDMENTS AND ENGINEERING INSPECTIONS CERTIFICATIONS, MOSS LANDING POWER PLANT

Dear Mr. Bloecher:

This letter summarizes TBI Engineering (TBI) primary liner removal inspections of the following Class I surface impoundments at the Dynegy Moss Landing, LLC facility:

- Metal Cleaning Waste Pond No. 1 (MCWP No. 1),
- Metal Cleaning Waste Pond No. 2 (MCWP No. 2); and
- Metal Cleaning Waste Pond No. 3 (MCWP No. 3).

This letter also includes TBI's October 2018 engineering inspection certifications of the primary liner of the Class I surface impoundments (Appendix A).

1.0 BACKGROUND

The three surface impoundments at Dynegy Moss Landing, LLC were constructed in 1988 and were operating under Regional Water Quality Control Board Order No. R3-2014-0029 dated July 31, 2014 and a Department of Toxic Substances Control (DTSC) Hazardous Waste Facility Permit, EPA ID Number CAT080011653, dated September 14, 2017. According to EMCON's "Certificate Report, Waste Containment Pond Units 1-4," dated October 1988, the ponds are tripled-lined Class I surface impoundments, with an 80-mil-thick, high density polyethylene (HDPE) primary (upper) liner.

The 2017 annual inspection was performed by Tim Bauters, PhD, P.E. of TBI Engineering on December 12, 2017, and described in an inspection report dated December 22, 2017 (prepared by TBI Engineering).

In early 2018 an upper management decision was made to no longer have Power Units #6 &7, operational, as a direct consequence the "need" to have the Metal Cleaning Waste Ponds No. 1, No.2, and No. 3 functional was no longer required and closure of the Class I surface impoundment was planned. As part of closure of the Class I surface impoundments, it was conservatively contemplated to remove the primary liner from the triple-lined surface impoundment. That was the final decision and International Lining Technology out of Reno, Nevada was the liner installer selected to carefully remove, or **de-construct** the upper liner and underlying geonet with the knowledge that then exposed secondary liner will become the exposed liner which will accumulate the surface waters onto the lined surface which will be gradually pumped out via sump pumps.

2.0 INSPECTION ACTIVITIES

Tim Bauters, PhD, P.E. of TBI inspected and oversaw the de-construction of the primary liner in MCWP No.'s 1, 2, & 3 by International Lining Technology on August 20 to 22, 2018 (Appendix B has relevant photos from the de-construction activity and secondary liner inspection). A Moss Landing Power Plant

representative was also present during the de-construction and inspection activities. The ponds were emptied and cleaned before the inspection, which entailed the following:

- Viewing the liner removal from the sides by a competent liner installer company
- Visually inspecting the secondary geomembrane by closely examining it from inside the pond once the liner is removed;
- Performing a focused inspection of each of the exposed seams to check for potential separation or peeling; and
- Inspecting the perimeter batten strip connection and riser pipe penetrations.

A very small amount of clear water was present in the bottom of the ponds that did not affect the inspection of the liner.

3.0 FINDINGS, RECOMMENDED REPAIRS AND INTEGRITY VERIFICATION

The newly exposed secondary geomembrane liners in MCWP No's. 1, 2 and 3 were observed to be in excellent condition. The perimeter batten strips remained in good condition, with no signs of liner material distress, it was decided in the field to leave a small strip of primary liner present to maintain the same thickness in the "liner/geonet sandwich" as of not have to re-tighting and likely re-install all the batten strips. The secondary liner in the impoundments exhibited minor to no surficial scratching, and appeared with the exception of a few areas "brand new".

TBI observed each seam for damage and/or peeling (separation) from the panel on the secondary liner. TBI did not identify areas of interest in MCWP No. 1, 2, & 3. TBI did not identify any cracks, or areas of excessive folding or bridging. Additional observations include the following:

- MCWP No. 1 – The secondary liner was found to be in excellent condition. No suspect areas were identified besides the tightening of a few bolts to secure the perimeter batten strip.
- MCWP No. 2 – The secondary liner was found to be in excellent condition. No suspect areas were identified.
- MCWP No. 3 – The secondary liner was found to be in excellent condition. No suspect areas were identified.

4.0 SUMMARY

Based on the results of TBI's de-construction observations and the follow-up visual inspection on MCWP No. 1, 2, & 3 the secondary liner appears to have excellent integrity. The October 2018 certification letters for MCWP No. 1, MCWP No. 2 and MCWP No. 3 (signed and stamped) are all attached to this exhibit.

The opinions and judgment expressed are based on the conditions existing at the time of inspection. TBI cannot guarantee, warranty or certify that any lining system is free from defects or totally impermeable.

Should you have any questions regarding these observations, please contact me at 650-515-0393.

TBI ENGINEERING

CIVIL ENVIRONMENTAL ENGINEERS

- Signed & Stamped on October 22, 2018.

Tim Bauters, PhD, PE
President

TBI Engineering
480 Tan Oak Terrace
Sunnyvale, CA 94086
650-515-0393
tbauters@me.com

Appendix A Moss Landing Power Plant Annual Engineering Inspection of Primary Liner Certifications for MCWP No. 1, MCWP No. 2., MCWP No. 3

Appendix B Relevant Photos from the Deconstruction Activity and Liner Inspection

TBI Engineering
480 Tan Oak Terrace
Sunnyvale, CA 94086
650-515-0393
tbauters@me.com

APPENDIX A

MOSS LANDING POWER PLANT
SURFACE IMPOUNDMENTS
METAL CLEANING WASTE POND NO. 1
OCTOBER 2018 ENGINEERING INSPECTION OF SECONDARY LINER

References: DTSC – Hazardous Waste Facility Permit, EPA ID Number CAT080011653, dated September 14, 2017
CCRWQCB Order No. R3-2014-0029 dated July 31, 2014

The secondary (now the top lining system) 80-mil-thick high density polyethylene (HDPE) liner of the double lining system for Metal Cleaning Waste Pond No. 1 (MCWP No. 1) was inspected on August 22, 2018. The pond was emptied of its contents and cleaned before the inspection. The inspection found:

- No holes, tears or cracks in the liner or seams.
- No excessive folds or bridging in the liner.
- Splash sheets in place at influent pipes.
- No movement of liner at the top of the ponds at the batten attachment strip.

I certify that I visually inspected the secondary lining system (now the top lining system) for the MCWP No. 1 on August 22, 2018.

Signed & Stamped on October 22, 2018.

Tim Bauters, PhD, P.E.
R.C.E. No. C 74188

Date

TBI Engineering
480 Tan Oak Terrace
Sunnyvale, CA 94086
650-515-0393
tbauters@me.com

MOSS LANDING POWER PLANT
SURFACE IMPOUNDMENTS
METAL CLEANING WASTE POND NO. 2
OCTOBER 2018 ENGINEERING INSPECTION OF SECONDARY LINER

References: DTSC – Hazardous Waste Facility Permit, EPA ID Number CAT080011653, dated September 14, 2017
CCRWQCB Order No. R3-2014-0029 dated July 31, 2014

The secondary (now the top lining system) 80-mil-thick high density polyethylene (HDPE) liner of the double lining system for Metal Cleaning Waste Pond No. 2 (MCWP No. 2) was inspected on August 22, 2018. The pond was emptied of its contents and cleaned before the inspection. The inspection found:

- No holes, tears or cracks in the liner or seams.
- No excessive folds or bridging in the liner.
- Splash sheets in place at influent pipes.
- No movement of liner at the top of the ponds at the batten attachment strip.

I certify that I visually inspected the secondary lining system (now the top lining system) for the MCWP No. 2 on August 22, 2018.

Signed & Stamped on October 22, 2018.

Tim Bauters, PhD, P.E.
R.C.E. No. C 74188

Date

TBI Engineering
480 Tan Oak Terrace
Sunnyvale, CA 94086
650-515-0393
tbauters@me.com

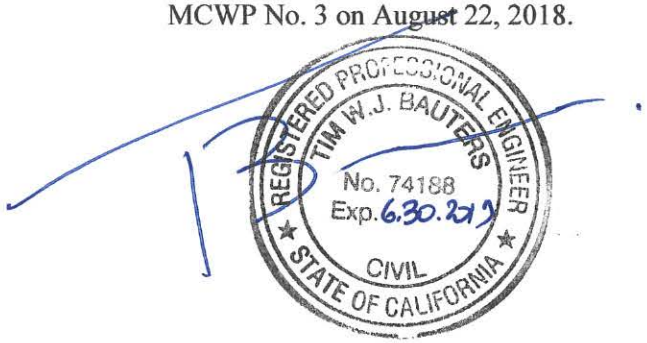
MOSS LANDING POWER PLANT
SURFACE IMPOUNDMENTS
METAL CLEANING WASTE POND NO. 3
OCTOBER 2018 ENGINEERING INSPECTION OF SECONDARY LINER

References: DTSC – Hazardous Waste Facility Permit, EPA ID Number CAT080011653, dated September 14, 2017
CCRWQCB Order No. R3-2014-0029 dated July 31, 2014

The secondary (now the top lining system) 80-mil-thick high density polyethylene (HDPE) liner of the double lining system for Metal Cleaning Waste Pond No. 3 (MCWP No. 3) was inspected on August 22, 2018. The pond was emptied of its contents and cleaned before the inspection. The inspection found:

- No holes, tears or cracks in the liner or seams.
- No excessive folds or bridging in the liner.
- Splash sheets in place at influent pipes.
- No movement of liner at the top of the ponds at the batten attachment strip.

I certify that I visually inspected the secondary lining system (now the top lining system) for the MCWP No. 3 on August 22, 2018.



Signed & Stamped on October 22, 2018.

Tim Bauters, PhD, P.E.
R.C.E. No. C 74188

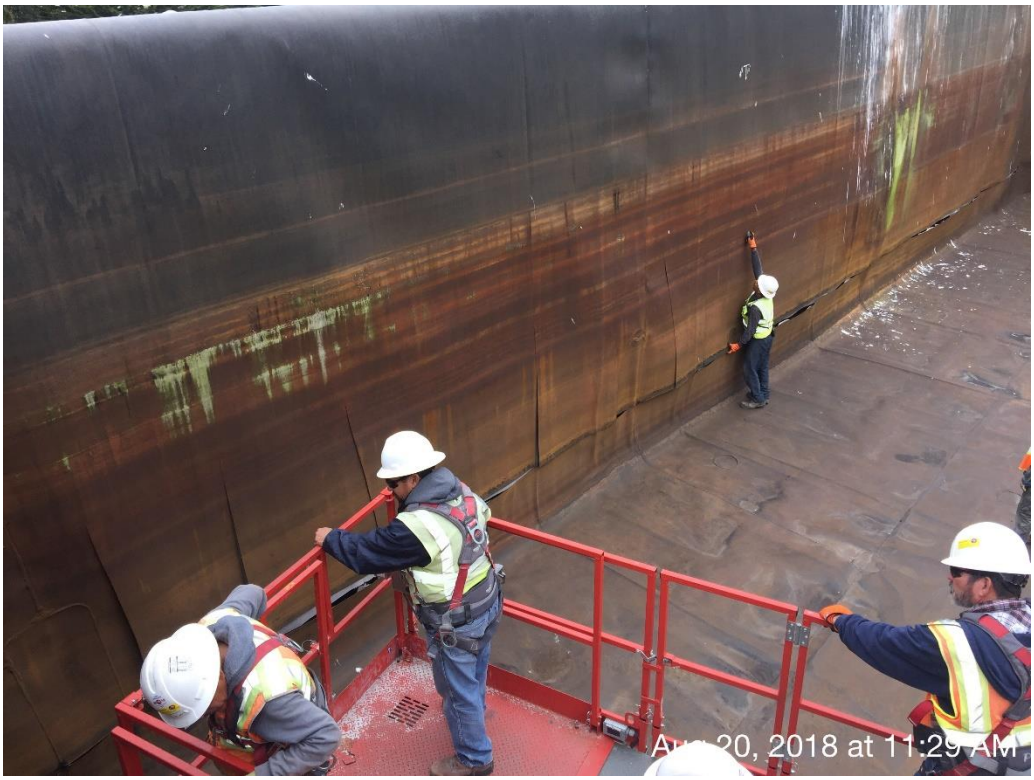
Date

TBI Engineering
480 Tan Oak Terrace
Sunnyvale, CA 94086
650-515-0393
tbauters@me.com

APPENDIX B

TBI Engineering
480 Tan Oak Terrace
Sunnyvale, CA 94086
650-515-0393
tbauters@me.com

Crane is ready after weight checks to lift boom lift into the MCWP No.3



Liner crew from International Lining Technology started cutting “strips” with a hooked blade in the upper primary liner (geomembrane) as of not to damage the underlying secondary liner.

FIGURE **A-1**

PROJECT PHOTOGRAPHS

De-construction Liner on August 20, 2018
Dynegy Moss Landing, LLC, Moss Landing

Liner crew gradually getting oriented and started the “de-construction” of the primary liner.

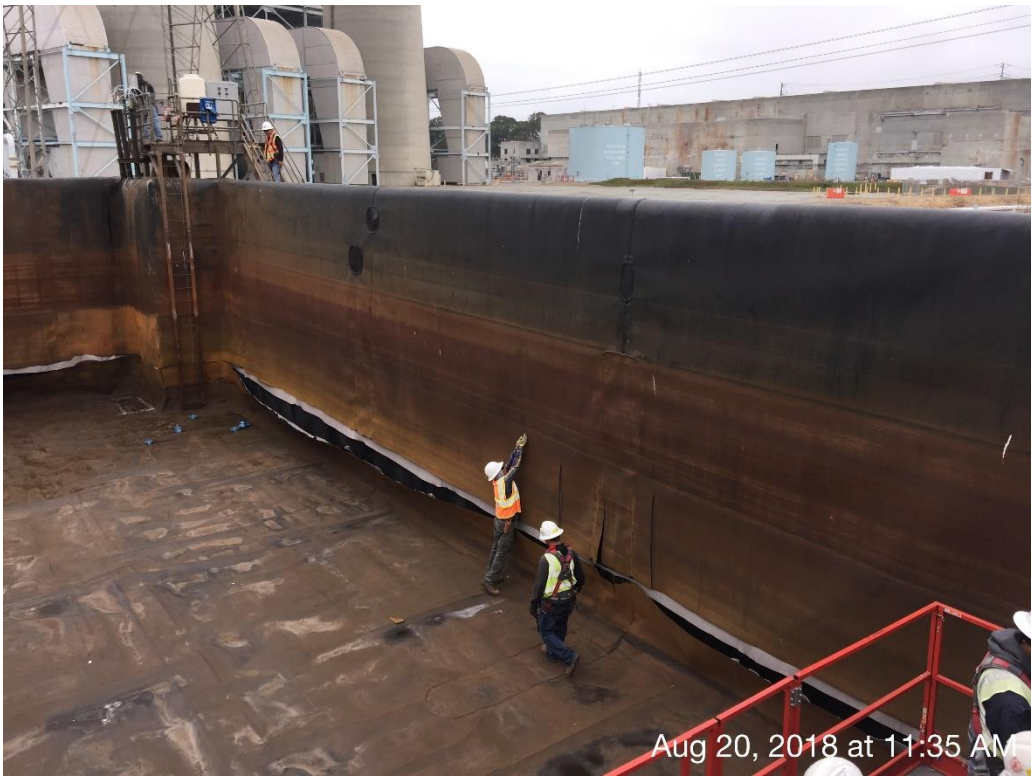
Bottom of the vertical primary liner was cut with hook blades and the liner crew gradually made vertical cuts to delineate what could be done from the bottom of MCWP No. 3

FIGURE **A-2**

PROJECT PHOTOGRAPHS

De-construction Liner on August 20, 2018
Dynegy Moss Landing, LLC, Moss Landing

View towards the west, bottom cut made alongside the vertical walls



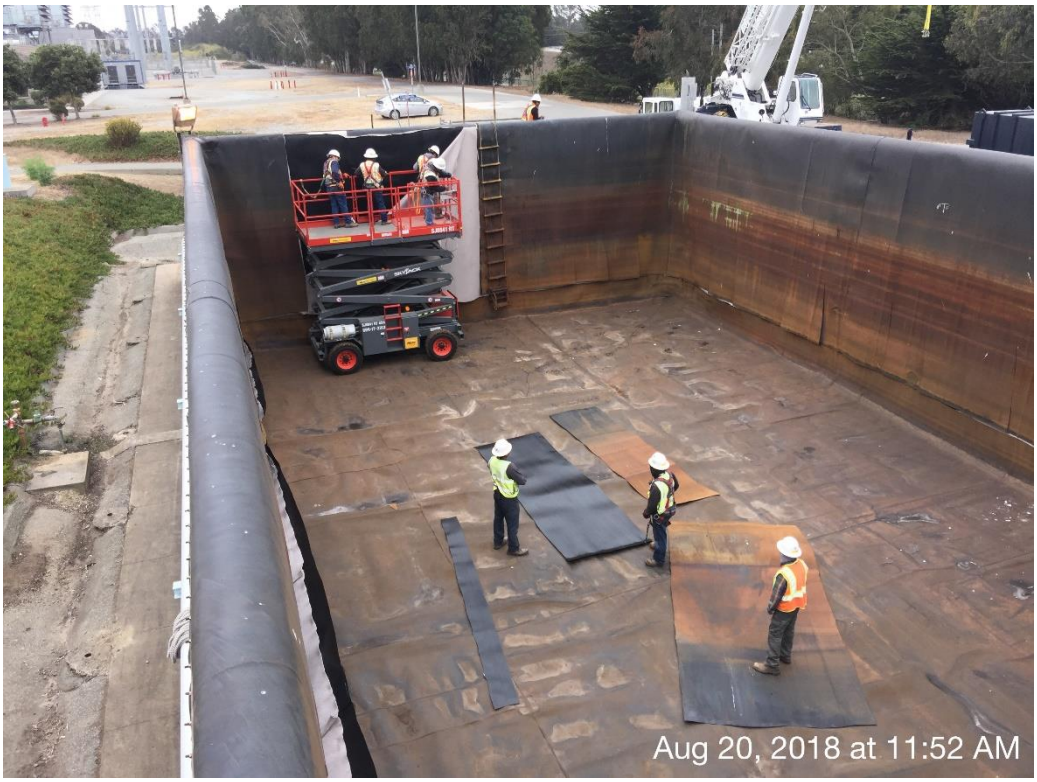
Vertical cuts starting on this side of the impoundment

FIGURE **A-3**

PROJECT PHOTOGRAPHS

De-construction Liner on August 20, 2018

Dynegy Moss Landing, LLC, Moss Landing



Cuts into the primary liner and gradually the primary liner is being de-constructed and pieces laid in the middle of the impoundment for the crane to take them out

Liner crew making nice progress with the primary liner about ½ removed and the upper geotextile overlying the geonet as well

FIGURE **A-4**

PROJECT PHOTOGRAPHS

De-construction Liner on August 20, 2018

Dynegy Moss Landing, LLC, Moss Landing

Boom lift used to make the vertical cuts in the primary liner

Detail of the batten strip, it was determined most optimal to leave the small little portion of primary liner in place and was used as a "washer" to hold the liner sandwich in place; otherwise the entire batten strip assembly would needed to be redone

FIGURE **A-5**

PROJECT PHOTOGRAPHS

De-construction Liner on August 20, 2018
Dynegy Moss Landing, LLC, Moss Landing

Removal of the primary liner from the top of the concrete walls

View of the removal progress

FIGURE **A-7**

PROJECT PHOTOGRAPHS

De-construction Liner on August 20, 2018
Dynegy Moss Landing, LLC, Moss Landing

Major progress made so far today, the pieces/strips of geotextile and primary stacked in the middle of the impoundment

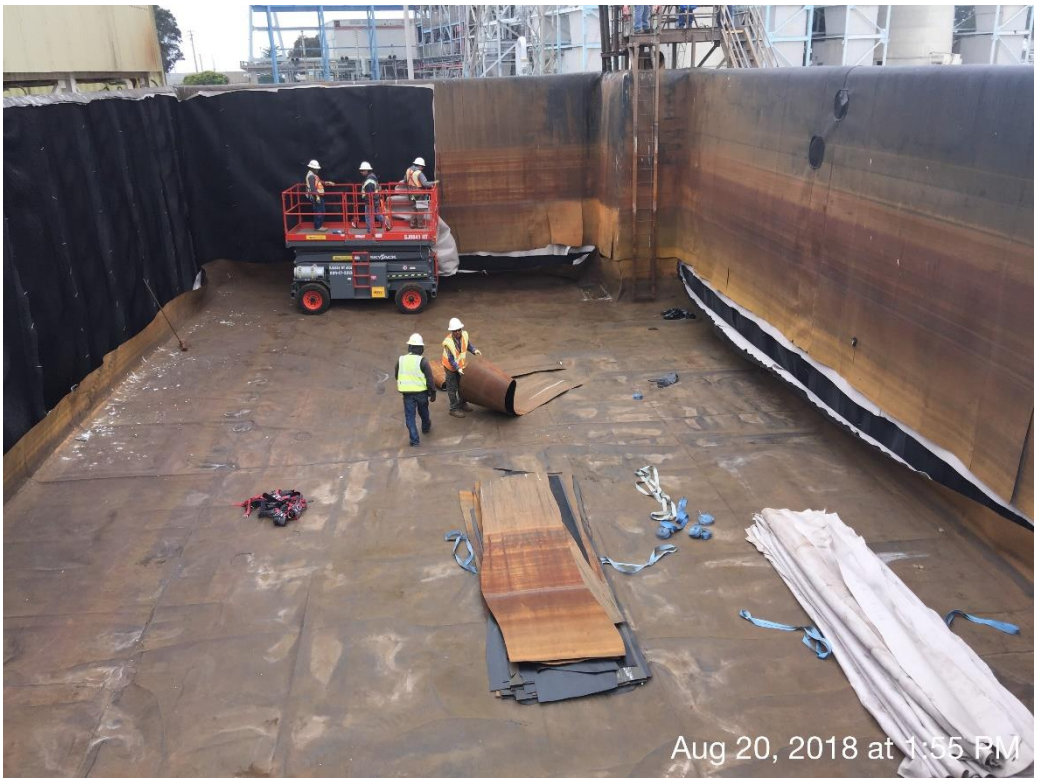
The geonet just started to be de-constructed as well on the eastern wall of the impoundment

FIGURE **A-8**

PROJECT PHOTOGRAPHS

De-construction Liner on August 20, 2018

Dynegy Moss Landing, LLC, Moss Landing



Two laborers stacking the strips of geomembrane and geotextile to be taking out with the crane

Larger piece of primary liner in the corner removed, it will be cut into smaller strip to be hauled out of the impoundment with the crane

FIGURE **A-9**

PROJECT PHOTOGRAPHS

De-construction Liner on August 20, 2018
Dynegy Moss Landing, LLC, Moss Landing

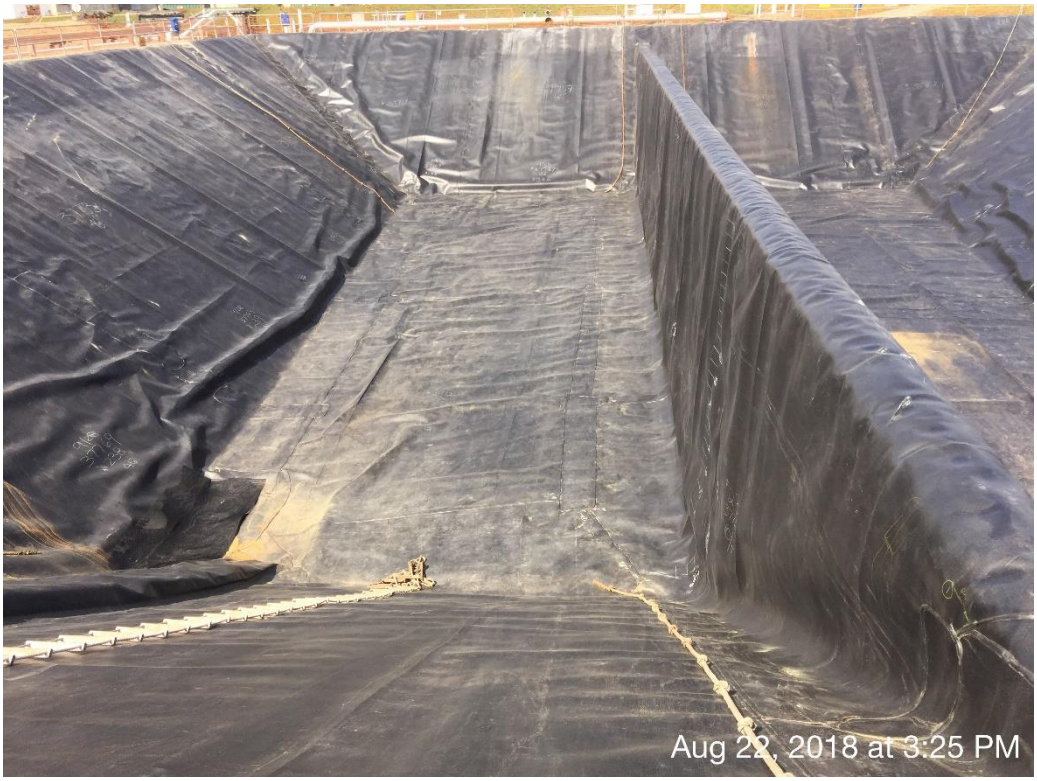
View into MCWP No.2, inspection of the "secondary liner (geomembrane). Since the primary liner was removed, this liner system now becomes a double lined system

Different view into MCWP No. 2, original geomembrane roll listed, together with the length of the "panel".

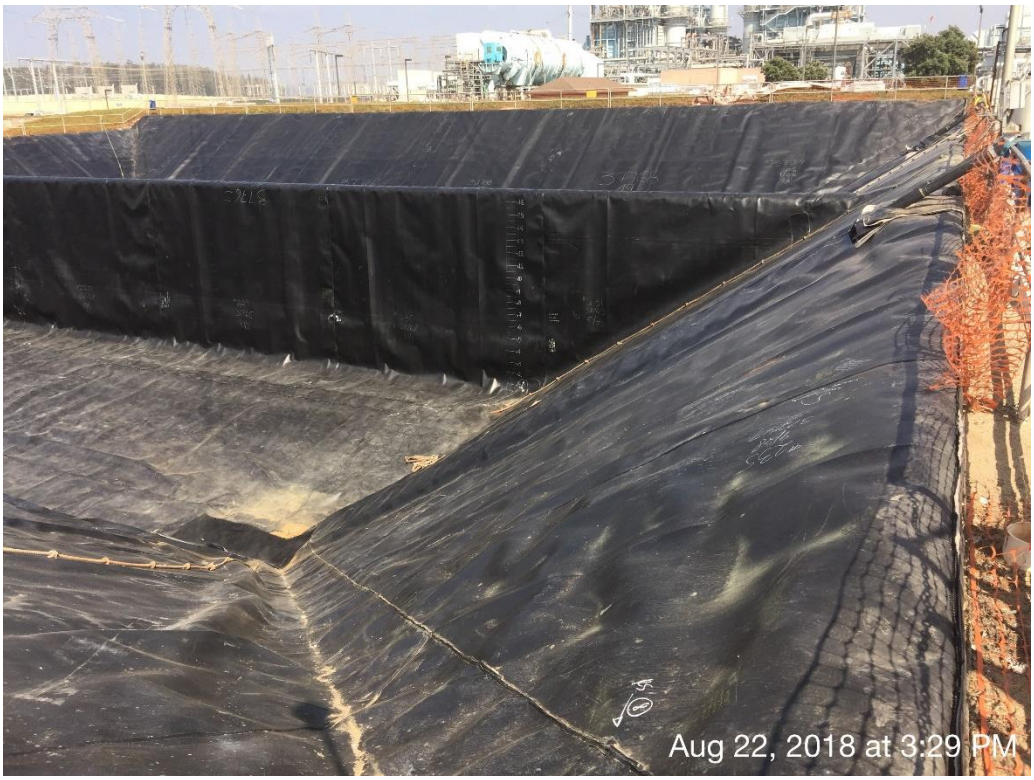
FIGURE **A-10**

PROJECT PHOTOGRAPHS

Liner Inspection of the Secondary Liner on August 22, 2018
Dynegy Moss Landing, LLC, Moss Landing



View of the MCWP No.1, as well as the dividing wall between MCWP No. 2



View from the corner of MCWP No. 1, original height delineations on the center concrete wall still visible

FIGURE **A-11**

PROJECT PHOTOGRAPHS

Liner Inspection of the Secondary Liner on August 22, 2018
Dynegy Moss Landing, LLC, Moss Landing

View towards the south, into MCWP No.1

FIGURE **A-13**

PROJECT PHOTOGRAPHS

Liner Inspection of the Secondary Liner on August 22, 2018
Dynegy Moss Landing, LLC, Moss Landing

View into MCWP No. 2 from the other side

Review of MCWP No. 2 from the outside

FIGURE **A-14**

PROJECT PHOTOGRAPHS

Liner Inspection of the Secondary Liner on August 22, 2018

Dynegy Moss Landing, LLC, Moss Landing

Review of MCWP No. 2 from the outside

Detail of the leak detection piping system, as removed from MCWP No. 1 and 2.

FIGURE **A-15**

PROJECT PHOTOGRAPHS

Liner Inspection of the Secondary Liner on August 22, 2018

Dynegy Moss Landing, LLC, Moss Landing

The pipe was sandwiched between 2 foam blocks to minimize the stress cracking of the liner surrounding the pipe

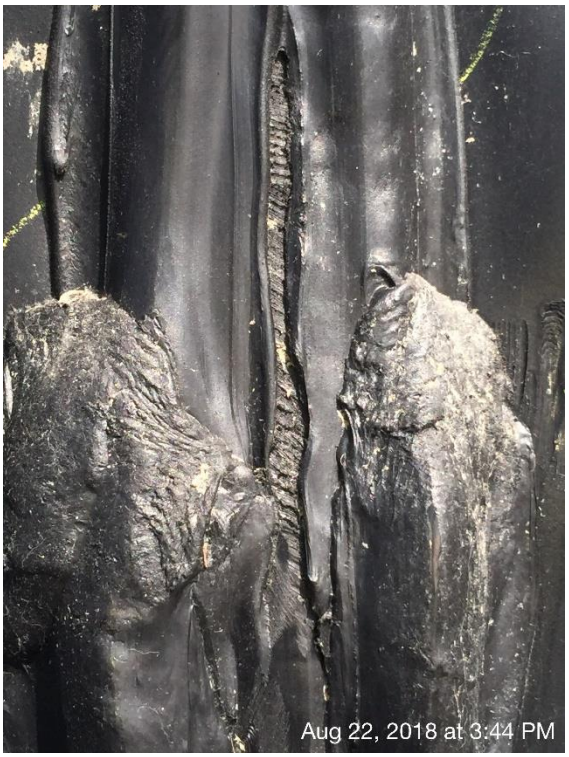
Detail of the secondary liner draped on the concrete wall

FIGURE **A-16**

PROJECT PHOTOGRAPHS

Liner Inspection of the Secondary Liner on August 22, 2018
Dynegy Moss Landing, LLC, Moss Landing

Detail of the sump area, minimal amount of water present to make the observations, a sacrificial piece of liner will be placed above it and a sump pump placed to evacuate the surface water that accumulate into the lined area



Detail of a “stretched” piece of liner in MCWP No.1. It was recommended to the liner crew that this would be repaired to ensure integrity.

FIGURE **A-17**

PROJECT PHOTOGRAPHS

Liner Inspection of the Secondary Liner on August 22, 2018
Dynegy Moss Landing, LLC, Moss Landing

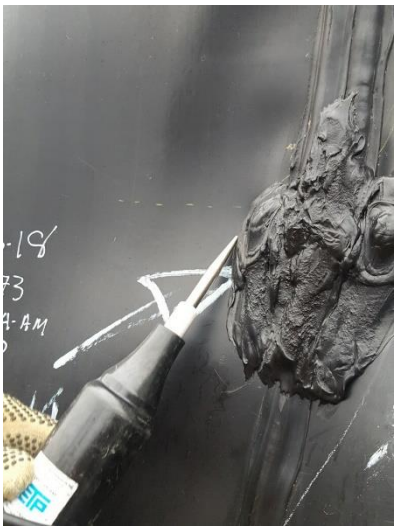


Photo showing the single repair made on the liner by placing a bead on it, the repair was checked by spark testing. The repair was successful

View inside MCWP No.1, with the detail of the repair area

FIGURE **A-18**

PROJECT PHOTOGRAPHS

Liner Inspection of the Secondary Liner on August 22, 2018
Dynegy Moss Landing, LLC, Moss Landing

Detail of the sump area MCWP No. 2, minimal amount of water present

Detail of the MCWP No. 3 detailing the "secondary liner", the original lining detail are still visible on the panels.

FIGURE **A-19**

PROJECT PHOTOGRAPHS

Liner Inspection of the Secondary Liner on August 22, 2018
Dynegy Moss Landing, LLC, Moss Landing