

**STATE OF CALIFORNIA  
REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION**

**STAFF REPORT FOR REGULAR MEETING OF DECEMBER 7-8, 2017**  
Prepared on November 15, 2017

**ITEM NUMBER:** 10

**SUBJECT:** Approval of Dynegy Morro Bay Power Plant Pipeline Pigging Project – Treated Water Spray Field Disposal per Resolution No. R3-2014-0041, General Waiver for Specific Types of Discharges

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**KEY INFORMATION**

**Location:** Morro Bay Power Plant  
1290 Embarcadero Road  
Morro Bay, San Luis Obispo County

**Type of Discharge(s):** Spray disposal of treated wastewater

**Design Capacity:** ≈ 50-100 gallons per minute, treatment system flow rate

**Treatment:** Separation, pH adjustment, filtration, and carbon absorption

**Disposal:** Sprinkler application

**Reclamation:** None

**Existing Orders:** None

**Owner/Operator:** Dynegy Morro Bay, LLC

**This Action:** Enrollment under Resolution No. R3-2014-0041, *General Waiver for Specific Types of Discharges*

**SUMMARY**

Dynegy Morro Bay, LLC owns the Morro Bay Power Plant (MBPP or discharger), which was decommissioned in 2014. This project involves the disposal of approximately 250,000 gallons of treated wastewater generated by pipeline pigging and flushing maintenance activities from 16-inch and 24-inch submarine pipelines. Dynegy anticipates that the two submarine pipelines will ultimately be opened to the ocean during the planned 2018 pipeline decommissioning work, which will include complete removal of the offshore segments of the pipelines.

Staff proposes to regulate the discharges through enrollment under Resolution No. R3-2014-0041, *General Waiver for Specific Types of Discharges*.

## DISCUSSION

### Background

The project site was originally owned and operated by Pacific Gas and Electric Company. The original MBPP onshore facilities consisted of the power plant facilities, onshore fuel tankage, and a marine terminal that included a 24-inch diameter submarine pipeline used to transfer fuel oil from tanker ships to the onshore tankage. In 1977, a 16-inch diameter oil re-circulation submarine pipeline was added to the facility's configuration.

The marine terminal was last operated in November of 1990, and many of the terminal's components have been decommissioned in subsequent decommissioning phases. From 1997 until it was officially decommissioned in 2014, the MBPP generated electrical power from natural gas delivered via a terrestrial pipeline.

The fuel oil in the two submarine pipelines was purged, and the two pipelines were flushed with groundwater when the tanker berth facility was placed in caretaker status in 1994. Sodium hydroxide was added to the groundwater in the two pipelines to provide a measure of internal corrosion protection.

The operational status of the two pipelines was changed to "caretaker" status by both the California State Lands Commission and the U.S. Coast Guard in 1997.

The current project involves the removal of the groundwater/sodium hydroxide layup solution contained in the two pipelines, along with any remaining hydrocarbon fluids possibly pooled in high points inside the pipelines. After pigging and flushing, the pipelines will be filled with clean seawater.

### Pipeline Water Quality

Water samples were collected from the two pipelines on June 16, 2017. The results of the analysis of this sampling event are shown in Table 1.

**Table 1 – 6/16/17 Pipeline(s) Sampling Results**

pH	Benzene	EC	Toluene	Ethylbenzene	Naphthalene	1,2,4-trimethylbenzene	Total xylenes
	mg/L <sup>1</sup>	µmhos/cm <sup>2</sup>	mg/L	mg/L	mg/L	mg/L	mg/L
10.9	0.81	2,000 <sup>3</sup>	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

<sup>1</sup> milligrams per liter (parts per million)

<sup>2</sup> micromhos per centimeter

<sup>3</sup> equivalent to a TDS concentration of 1,280 mg/L

### Treated Water Quality

The MBPP tank farm site is considered a cleanup site, and therefore Water Board site cleanup staff was consulted as to appropriate effluent limits, and to ensure that any legacy pollutants would not be mobilized by the proposed discharge. As a result of that analysis, the effluent limits in Table 2 were proposed:

Table 2 – Effluent Limits

Constituent	Effluent Limits ( $\mu\text{g/L}^1$ except pH)
pH	6.5-8.3
TPH (C4-C10) gasoline	100
TPH (C10-C40) Crude Oil	100
Oil & Grease	1,000
Benzene	1.0
Toluene	150
Ethylbenzene	300
Xylenes (total)	1,750
Naphthalene	21
1,2,4-Trimethylbenzene	15
2-methylnaphthalene	2.1
Phenanthrene	4.6
2,4-Dimethylphenol	100
Phenol	1.0

<sup>1</sup> micrograms per liter (parts per billion)

### Treatment and Disposal

During the planned pigging and flushing activities, pipeline water will be transferred from the two pipelines through a temporary four-inch diameter aluminum aboveground pipeline to 12 or more 21,000-gallon capacity portable storage tanks (see Figures 2 & 3). All storage tanks, equipment, and vessels will be placed within portable spill guards.

The design flow rate of the treatment system will be approximately 50 to 100 gallons per minute. Prior to pumping through the water treatment system, hydrochloric acid will be added to each storage tank through a recirculation loop equipped with a chemical injection pump to slowly add hydrochloric acid to the water. The treated water will then have small amounts of hydrochloric acid injected into the water using a chemical metering pump to adjust the pH to between 6.5 and 8.5. The pH-adjusted water will then go to an oil/water separator where separate-phase petroleum will be captured, decanted, and transferred to a poly storage tank. Once separated, water will be pumped through two or more bag filters connected in parallel to remove sediment and then through two or more 5,000-pound liquid-phase granular activated carbon (GAC) canisters connected in series (possibly with another two GAC canisters in parallel) to remove trace pollutants prior to storage within certified-clean portable water storage tanks.

The system will be operated by one to two full-time operators and will be operated up to 12 hours per day, taking approximately ten days to treat the anticipated water volume.

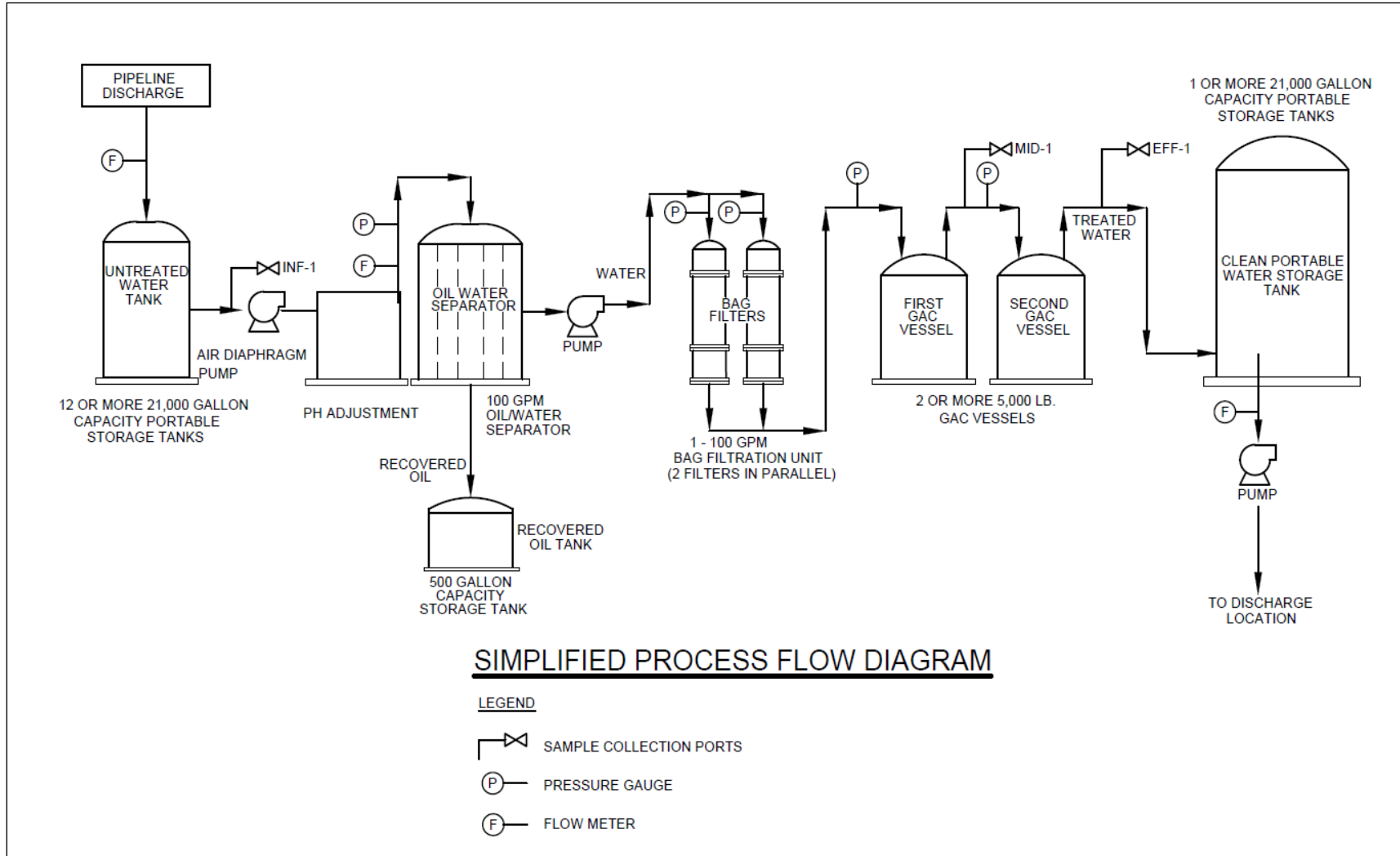
Soils at the disposal area are composed of silty sand and gravel with a relatively high hydraulic conductivity with depth to groundwater in the area ranging from three to fifteen feet.

Figure 1 is a map showing the project's location. Figure 2 illustrates the treatment system process flow, and Figure 3 illustrates the locations of various system components at the project site.

Figure 1 - Project Location



Figure 2 – Treatment System Process Flow Diagram





## Monitoring and Reporting Program

Water samples will be collected directly from dedicated sample ports installed as indicated in Figure 2, according to the schedule in Table 3.

**Table 3 – Sampling Program**

Analyte	Sample Location	Frequency
Flow	Influent/Effluent	Daily
pH	Influent/Effluent	Hourly
TPH <sup>1</sup> (C4-C10) characterized as gasoline	Influent/Mid-fluent/Effluent	Daily for first 3 days, then weekly
TPH (C10-C40) characterized as crude oil	Influent/Mid-fluent/Effluent	Daily for first 3 days, then weekly
Oil & Grease	Influent/Mid-fluent/Effluent	Daily for first 3 days, then weekly
VOCs <sup>2</sup>	Influent/Mid-fluent/Effluent	Daily for first 3 days, then weekly
SVOCs <sup>3</sup>	Influent/Mid-fluent/Effluent	Daily for first 3 days, then weekly

<sup>1</sup> Total petroleum hydrocarbon

<sup>2</sup> Volatile organic compounds

<sup>3</sup> Semi-volatile organic compounds

Following the Water Board's approval of the planned discharge, the discharger will provide the Water Board with 48-hours' notice prior to the initiation of treated wastewater discharges at the project site. The discharger will report water treatment system monitoring results, including flow rates, dates of operation, times of operations, system operation and maintenance discussion, water system analytical results, and groundwater sample analytical results to the Water Board as part of the final report on water discharge.

## CONCLUSION

The temporary discharge of this wastewater, treated to the levels specified in Table 2, meets the conditions of Resolution No. R3-2014-0041 for waiver of waste discharge requirements. Approval of temporary discharges of treated wastewater from projects such as this is an efficient way to allow low-threat discharges to proceed in a timely manner.

## RECOMMENDATION

Water Board staff recommends that the Central Coast Water Board concur with the Executive Officer's tentative enrollment of the proposed discharge under Resolution R3-2014-0041, *General Waiver for Specific Types of Discharges*.

## ATTACHMENTS

- Attachment 1: General Waiver Resolution No. R3-2014-0041

[ECM # 220808](#)

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