SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

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	BAE SYSTEMS' RESPONSE TO SDG&E'S RESCINDMENT REQUEST

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BAE Systems San Diego Ship Repair Inc. ("BAE Systems") submits the following as its Response ("Response") to San Diego Gas & Electric's ("SDG&E") Request for Rescindment ("Rescindment Request") of Discharger Designation and Comments on Tentative Cleanup and Abatement Order No. R9-2011-001 ("TCAO") and Draft Technical Report ("DTR").

#### T. INTRODUCTION

The California Regional Water Quality Control Board, San Diego Region ("Regional Board") Cleanup Team currently identifies SDG&E as a "discharger" and "person responsible." in the TCAO based on substantial, reasonable and credible evidence that discharges from the Silver Gate Power Plant contributed to the accumulation of pollutants in marine sediments at the Shipyard Sediment Site.

SDG&E's Rescindment Request is based on two central arguments, neither of which have any merit. First, SDG&E claims that the Cleanup Team relied on "speculative" allegations in reaching its conclusion. There is nothing "speculative" about the evidence. The Silver Gate Power Plant was constructed in the 1940s and 1950s. It was a steam turbine power plant that operated at peak capacity for over thirty years. There were many sources of polychlorinated biphenyls ("PCBs"), copper, and mercury within equipment located throughout the plant. This equipment leaked and, along with other waste water, was discharged to the San Diego Bay ("Bay") via the cooling water tunnels, storm water run-off, and SDG&E's tidelands disposal ponds and oil/water separators. This is confirmed by the Administrative Record, deposition testimony of members of the Cleanup Team, data and documents prepared by SDG&E and its own consultants, and additional documents either produced by SDG&E and other parties in the pending United States District Court case or otherwise publicly available (which are filed herewith, augmenting the Administrative Record).

Second. SDG&E argues that the Cleanup Team "ignored the obvious." That is, "BAE" is solely responsible for the contamination found on the Northern portion of the Shipyard Sediment Site. In making this argument, SDG&E fails to distinguish between BAE Systems and previous, distinct, shippard entities that operated at the Northern portion of the Shippard Sediment Site since 1914. BAE Systems only operated at the Shipyard Sediment Site since 1979 and has no 1168207.1

responsibility for the discharges which occurred during the prior 65 years by other owners and operators that have no relationship to BAE Systems. Further, it is not appropriate for the Regional Board to allocate liability through these proceedings. Finally, SDG&E relies on an expert opinion from ENVIRON that TBT should be a cleanup "driver." This opinion, however, is wrong and untimely under the relevant discovery order and should be excluded. <sup>2</sup>

The Regional Board was correct to designate SDG&E as a discharger and, for the foregoing reasons, and the reasons set forth in more detail below, the Regional Board should deny the Rescindment Request.

## II. THE REGIONAL BOARD APPLIED THE PROPER LEGAL STANDARD IN DESIGNATING SDG&E AS A DISCHARGER

The Regional Board properly designated SDG&E as a discharger and responsible party under the TCAO. The Regional Board has broad latitude to issue Cleanup and Abatement Orders ("CAOs") when necessary to protect California's water resources from contamination. (Cal. Water Code §13304(a).) Specifically, the Regional Board may issue CAOs to the following: (1) "any person who has discharged or discharges waste into the waters of this state in violation of any waste discharge requirement or other order or prohibition issued by a regional board or the state board;" or (2) any person "who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance." (*Id.*)

To name SDG&E as a discharger, all the Regional Board needs is "sufficient evidence" that SDG&E caused any amount of waste to be discharged to the Shipyard Sediment Site. (See The State Board Water Quality Enforcement Policy, No. 2002-0040 (February 19, 2002).) And,

<sup>&</sup>lt;sup>1</sup> SDG&E uses the Rescindment Request to argue that the Regional Board should allocate liability to BAE Systems by conflating it with prior owners and operators and by identifying evidence that it believes supports its position. As noted above, rather than refute every instance in the Rescindment Request, BAE Systems generally objects to the singular definition of "BAE" to include prior owners and operators. Further, BAE Systems generally, and in connection with the pending litigation, reserves its rights relative to the allegations and evidence cited in the Rescindment Request. The focus of this Response is on SDG&E's status as a discharger, rather than on BAE Systems' status as a discharger.

<sup>&</sup>lt;sup>2</sup> BAE has filed herewith a Motion to Exclude ENVIRON'S Technical Comments submitted by SDG&E.

The Regional Board conducted years of investigation, and considered a vast amount of evidence before designating SDG&E as a discharger.<sup>3</sup> Its investigation and the evidence revealed that SDG&E had caused waste to be discharged to the Bay where it created a condition of pollution. As a result, the Regional Board applied the legal standard properly when it designated SDG&E as a discharger under the TCAO.

# III. THE REGIONAL BOARD'S DESIGNATION OF SDG&E AS A DISCHARGER IS SUPPORTED BY SUBSTANTIAL, REASONABLE AND CREDIBLE EVIDENCE

SDG&E contends that the findings in Section 9 of the DTR are "speculative," and not based upon substantial, reasonable and credible evidence. SDG&E is wrong. The Regional Board not only has sufficient evidence, but also substantial, reasonable and credible evidence supporting its decision to designate SDG&E as a discharger -- SDG&E caused waste to be discharged to the Bay via its cooling water tunnels, the storm drainage system, and its tidelands waste ponds and oil/water separators. And, contrary to SDG&E's claim, the Cleanup Team's designation of SDG&E as a discharger was not based upon the Cleanup Team's acquiescence to other parties' demands to "get more people on board." (Rescindment Request at 1:14-16.)

Instead, it was based upon there being "a lot of good reason to suspect that a major power plant

<sup>3</sup> Additional evidence, both direct and circumstantial, has been generated since the TCAO was issued. Some of this evidence has been added to the Administrative Record, and is discussed further below. Other evidence, including

documents subsequently produced by SDG&E and other documents from industry sources and technical studies are submitted herewith to supplement the Administrative Record. This evidence further supports the Regional Board's

designation of SDG&E as a discharger in the TCAO and DTR, and readily surpasses the applicable evidentiary

standard that must be applied here.

[that] was in operation for 50 years, plus or minus, might have had some discharges" into the Shipyard Sediment Site, and evidence that demonstrated that it did. (Deposition of Craig Carlisle ("Carlisle Depo."), Vol. II at 216:19-218:1.)

SDG&E's Silver Gate Power Plant formerly located at 1348 Sampson Street, San Diego, California, operated for forty-one years from approximately 1943 until 1984 as a steam turbine power generation plant. (ENV America, Site Assessment (July 14, 2004)( SAR193330-193348).) The facility consisted of the main power plant, which held four generating units and the equipment associated with those units, the switchyard and substation ("switchyard"), which contained seventy-five oil circuit breaker tanks and four transformers above three underground storage tanks, the cooling water deck, the cooling water tunnels, which ran from the power house beneath Belt Street and SDG&E's tidelands parcel and into the San Diego Bay ("Bay"), and the tidelands parcel. (*Id.*; Exponent Comments on 13267 Responses (September 29, 2004)(SAR193272-193329).)

### 1. The Silver Gate Main Power Plant

The main power plant contained four steam turbines, eight turbine lubricating tanks with a capacity of 2,500 to 3,000 gallons each, two transformers located beneath two of the generating units, and six boilers. (*Id.*) The transformers contained dielectric fluid, which contained PCBs. (EPA, Locating and Estimating Air Emissions From Sources of Polychlorinated Biphenyls (May 1987); Ian C.T. Nisbet et al., Rates and Routes of Transport of PCBs in the Environment in Environmental Health Perspectives (April 1972); EPA, Polychlorinated Biphenyl Inspection Manual (August 2004); EPA, An Inventory of Sources and Environmental Releases of Dioxin-Like Compounds in the United States for the Years 1987, 1995, and 2000 (November 2006).) Transformers containing PCBs were used from the 1950s until 1979 when PCBs were banned. (*Id.*) This overlaps the peak years of operation for the Silver Gate Power Plant. And, after 1979, the transformers at the Silver Gate Power Plant still contained PCBs. (EnecoTech Southwest, Inc., Phase II Investigation Services, PCB Investigation (April 29, 1997).)

Dielectric fluids typically contain from sixty to seventy percent PCBs by weight. (EPA, Locating and Estimating Air Emissions From Sources of Polychlorinated Biphenyls (May 1987).)

2	C.T. Nisbet et al., Rates and Routes of Transport of PCBs in the Environment in Environmental
3	Health Perspectives (April 1972).) According to the United States Environmental Protection
4	Agency, leaks of dielectric fluids from valves and seals on transformers were common, and leaks
5	and spills vary in size from half a pound to sixty-four pounds of dielectric fluid. (Id.; EPA,
6	Polychlorinated Biphenyl Inspection Manual (August 2004); EPA, An Inventory of Sources and
7	Environmental Releases of Dioxin-Like Compounds in the United States for the Years 1987,
8	1995, and 2000 (November 2006).)
9	PCBs also were commonly used in coolant oil, turbine lubricating oil, and hydraulic fluids
10	at steam generation power plants from the 1950s until the late 1970s because of the fire resistant
11	properties of PCBs. (W. David Phillips, The Use of a Fire-Resistant Lubricant: Europe Looks to
12	the Future in Turbine Lubrication in the 21st Century (2001); A.C. M. Wilson, Fire-Resistant
13	Fluids for General Hydraulic and Steam Turbine Systems (February 1967); see also EPA,
14	Locating and Estimating Air Emissions From Sources of Polychlorinated Biphenyls (May 1987);
15	Ian C.T. Nisbet et al., Rates and Routes of Transport of PCBs in the Environment in
16	Environmental Health Perspectives (April 1972); EPA, Polychlorinated Biphenyl Inspection
17	Manual (August 2004); EPA, An Inventory of Sources and Environmental Releases of Dioxin-
18	Like Compounds in the United States for the Years 1987, 1995, and 2000 (November 2006).)
19	The use of PCBs in various oil products typically used in steam generation power plants also
20	overlaps the primary years that the Silver Gate Power Plant operated. According to industry
21	documents and United States Environmental Protection Agency documents, leaks and disposal of
22	these types of fluids were common as the systems were only partially closed, and these fluids are
23	rarely re-used. (Id.) Typically, coolant, turbine lubrication and hydraulic oils contain PCB
24	Aroclors 1248, 1254 an 1260. (EPA, Locating and Estimating Air Emissions From Sources of
25	Polychlorinated Biphenyls (May 1987); Ian C.T. Nisbet et al., Rates and Routes of Transport of
26	PCBs in the Environment in Environmental Health Perspectives (April 1972).)
27	All leaks from the transformers, turbines, turbine lubricating tanks and any hydraulic
28	equipment collected in the trenches of the turbine side of the power plant, and were discharged

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The PCB Aroclors found in transformer dielectric fluid include Aroclors 1254 and 1260. (Id.; Ian

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via the discharge cooling water tunnel to the Bay from 1943 until 1977. (Exponent Comments on 13267 Responses (September 29, 2004)(SAR156879-156889); ENV America, Technical Report for RWQCB Investigation Order No. R9-2004-0026 (July 14, 2004) (SAR193272-193329).)

And, before 1977 when SDG&E commenced operation of a wastewater treatment facility, liquid wastes were not treated before being discharged through the discharge cooling water tunnel. (*Id.*)

Further, maintenance required the boilers to be cleaned using certain chemicals. (Dowell Vertan 675 Chemical Cleaning Instructions and Schedule for Boilers 5 and 6.) The resultant waste contained dissolved metals such as iron, copper (one of the primary constituents of concern ("COCs") in the TCAO), chromium, and nickel. (*Id.*) Boiler blowdown, bilge water from the boiler side of the plant and wastes from boiler cleaning collected in the trenches on the boiler side of the plant, and were pumped or disposed of in unlined ponds or oil/water separators located on the tidelands. (ENV America, Technical Report for RWQCB Investigation Order No. R9-2004-0026 (July 14, 2004) (SAR193272-193329).)

### 2. The Silver Gate Power Plant Switchyard

The switchyard's seventy-five oil circuit breaker tanks and four transformers also contained dielectric fluid, which contained PCBs. (SDG&E Daily PCB Inspection Reports; SDG&E Internal Correspondence PCB Cleanup (May 14, 1981); SDG&E Letter to Fire Marshall (November 27, 1985); EPA Region 9 Toxics and Waste Management Division Inspection Report (April 27, 1987).) It is well documented from the United States Environmental Protection Agency and other industry reference sources that transformers and circuit breakers contained PCBs from as early as the 1940s. (EPA, Locating and Estimating Air Emissions From Sources of Polychlorinated Biphenyls (May 1987); Ian C.T. Nisbet et al., Rates and Routes of Transport of PCBs in the Environment in Environmental Health Perspectives (April 1972); EPA, Polychlorinated Biphenyl Inspection Manual (August 2004); EPA, An Inventory of Sources and Environmental Releases of Dioxin-Like Compounds in the United States for the Years 1987, 1995, and 2000 (November 2006).)

Like the transformers in the main power plant, the transformers and oil circuit breakers in the Silver Gate Power Plant switchyard commonly leaked, releasing PCBs to the surrounding soil.

1	(SDG&E Daily PCB Inspection Reports; SDG&E Internal Correspondence PCB Cleanup (May
2	14, 1981); SDG&E Letter to Fire Marshall (November 27, 1985); EPA Region 9 Toxics and
3	Waste Management Division Inspection Report (April 27, 1987); see also EPA, Locating and
4	Estimating Air Emissions From Sources of Polychlorinated Biphenyls (May 1987); Ian C.T.
5	Nisbet et al., Rates and Routes of Transport of PCBs in the Environment in Environmental Healtl
6	Perspectives (April 1972); EPA, Polychlorinated Biphenyl Inspection Manual (August 2004);
7	EPA, An Inventory of Sources and Environmental Releases of Dioxin-Like Compounds in the
8	United States for the Years 1987, 1995, and 2000 (November 2006).)
9	For example, many of the transformers in the switchyard contained Inerteen, which was
10	Westinghouse's trade name for a dielectric fluid containing approximately sixty percent PCB
11	Aroclor 1260. (List of Substation Equipment (November 3, 2004); EPA Superfund, Explanation
12	of Significant Differences: Westinghouse Electric Corp. (February 14, 1997).) And, transformer
13	and circuit breaker fluid commonly contained PCB Aroclors 1254 and 1260. (EPA, Locating and
14	Estimating Air Emissions From Sources of Polychlorinated Biphenyls (May 1987); Ian C.T.
15	Nisbet et al., Rates and Routes of Transport of PCBs in the Environment in Environmental Health
16	Perspectives (April 1972).) As noted below, both Aroclors 1254 and 1260 were found in areas of
17	the Shipyard Sediment Site and in upland areas at the former Silver Gate Power Plant Site.
18	The Silver Gate Power Plant switchyard had inadequate containment surrounding the
19	transformers and circuit breakers, allowing PCBs to contaminate switchyard soil. (EPA Region 9
20	Toxics and Waste Management Division Inspection Report (April 27, 1987).) The switchyard
21	also housed underground storage tanks ("USTs") that stored over 75,000 gallons of oil.
22	(Woodward-Clyde Consultants, Underground Tank Assessment SDG&E Silver Gate Station
23	(November 18, 1986).) There were leaks of oil from the USTs and piping associated with the
24	USTs. (Id.; TN & Associates, Underground Storage Tank Closure Report (November 13,
25	2006)(SAR373807-374069).)
26	3. The SDG&E Silver Gate Power Plant Tidelands

unlined ponds and oil/water separators from 1950 until 1977. (ENV America, Site Assessment

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Finally, SDG&E used the land it leased on the tidelands to store untreated liquid wastes in

(July 14, 2004) (SAR193330-193348).) The ponds and oil/water separators were located in close proximity to the Bay, and often overflowed. (Id.) In addition to these unlined liquid waste disposal ponds, in the early 1950s, a trench existed that ran from a pond to the edge of the tidelands, enabling wastes from the ponds to be discharged directly to the Bay. (Letter from Walter Zitlau to M. Hjalmarson (May 1, 1950); SAR193371.) As will be discussed further below, the untreated liquid wastes SDG&E discharged to the ponds and oil/water separators located on the tidelands contained PCB Aroclors 1254, 1260 and 5460, copper, and mercury, and the PCBs, copper and mercury were discharged to the Bay via the trench, overflows of the ponds and oil/water separators, and storm water run-off. Thus, there is substantial, reasonable and credible evidence that the SDG&E Silver Gate Power Plant contributed to the contamination of sediments at the Shipyard Sediment Site.

#### DTR Sections 9.6 and 9.7 are Supported by Substantial, Reasonable and A. Credible Evidence.

DTR Sections 9.6 and 9.7 describe waste discharges from the Silver Gate Power Plant cooling water tunnels to the Bay, and contrary to SDG&E's assertion, set forth substantial, reasonable and credible evidence sufficient to support SDG&E's discharger status in the TCAO.

The Silver Gate Power Plant began operating in 1943, with the completion of construction of Unit 1 in 1943, (ENV America, Site Assessment (July 14, 2004)(SAR193330-193348), more than 30 years before SDG&E constructed its wastewater treatment system and became subject to an NPDES permit regulating its wastewater discharges to the Bay. SDG&E's wastewater treatment system was not completed until 1977. (Id.) SDG&E constructed the wastewater treatment system to bring its discharges from the cooling water tunnels into compliance with the Regional Board's rules and regulations. (SDG&E Power Plant Wastewater Treatment Facilities Project Design Guide (March 26, 1976).)

From 1943 until 1976, SDG&E did not treat any of the liquid wastes generated at the Silver Gate Power Plant before those wastes were discharged to the Bay. Diagrams of the Silver Gate Power Plant show that bilge water from the turbine side of the power plant was piped to the discharge cooling water tunnels. (ENV America, Technical Report for RWQCB Investigation 1168207.1

1	Order No. R9-2004-0026 (July 14, 2004) (SAR193272-193329).) Basement bilge water from the
2	turbine side of the power plant accumulated in the trenches of the basement of the turbine side of
3	the power plant where two transformers were housed below the Unit 3 and 4 turbines. (Id.;
4	November 27, 1985 Letter from SDG&E to the Fire Marshall.) As discussed above, leaks of
5	dielectric fluids from valves and seals on transformers were common, and leaks and spills could
6	vary in size from half a pound to sixty-four pounds of dielectric fluid. (EPA, Locating and
7	Estimating Air Emissions From Sources of Polychlorinated Biphenyls (May 1987); Ian C.T.
8	Nisbet et al., Rates and Routes of Transport of PCBs in the Environment in Environmental Health
9	Perspectives (April 1972); EPA, Polychlorinated Biphenyl Inspection Manual (August 2004);
10	EPA, An Inventory of Sources and Environmental Releases of Dioxin-Like Compounds in the
11	United States for the Years 1987, 1995, and 2000 (November 2006).) The grades of Aroclors
12	used in transformers were Aroclors 1254 and 1260. (EPA, Locating and Estimating Air
13	Emissions From Sources of Polychlorinated Biphenyls, Table 7 (May 1987); Ian C.T. Nisbet et
14	al., Rates and Routes of Transport of PCBs in the Environment in Environmental Health
15	Perspectives (April 1972).)
16	In addition, the turbine side of the power plant had eight turbine lubricating oil tanks with
17	a capacity of 2,500 to 3,000 gallons each. (Exponent Comments on Parties 13267 Responses
18	(September 29, 2004) (SAR156879-156889).) Coolant oil and turbine lubricating oil contained
19	PCBs from at least the 1940s until the 1970s, and both the coolant oil and turbine lubricating oil
20	leaked from the transformers and turbines into the bilge water in the trenches of the turbine side
21	of the power plant. (Id.; See A.C.M. Wilson, Fire-Resistant Fluids For General Hydraulic And
22	Steam Turbine Systems (1967) (documenting that the leakage of lubricants from turbine
23	hydraulic and lubrication systems was common, and that PCBs were used in those lubricants as a
24	fire resistant fluid); W. David Phillips, The Use of a Fire-Resistant Turbine Lubricant: Europe
25	Looks to the Future in Turbine Lubrication in the 21st Century (2001)(Due to the occurrence of

Estimating Air Emissions From Sources of Polychlorinated Biphenyls (May 1987) ("PCBs were

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steam turbine fires associated with hydraulic and lubricating oil leaks in steam turbines, fire-

resistant fluids containing PCBs were used from the 1940s to 1970s.); EPA, Locating and

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employed in ... hydraulic and lubricant applications because they exhibited good heat and fire resistance ....").) Hydraulic fluids and lubricants used in equipment at Silver Gate likely contained PCB Aroclors 1254 and 1260. (EPA, Locating and Estimating Air Emissions From Sources of Polychlorinated Biphenyls, Table 7 (May 1987); Ian C.T. Nisbet et al., Rates and Routes of Transport of PCBs in the Environment in Environmental Health Perspectives (April 1972).)

Environmental investigations at the Silver Gate Power Plant further demonstrate that SDG&E discharged PCBs, copper and mercury via the cooling water discharge tunnel. In March 2005, SDG&E hired RBF Consulting to conduct a Phase I Environmental Site Assessment of the Silver Gate Power Plant. (RBF Consulting, Phase I Environmental Site Assessment (March 2005).) In preparing the assessment, RBF reviewed and summarized a prior Phase I and Phase II conducted by IT Corporation in 2000 and 2001 respectively. The recognized environmental conditions identified by IT Corporation, and summarized by RBF, concluded that the plant trench system, sumps, voids and cooling water tunnels contained metals, and PCBs. (Id.)

Sampling by TN & Associates and Ninyo and Moore later confirmed the recognized environmental condition identified by IT Corporation. TN & Associates sampled the sediment in the basement trench system from the turbine side of the power plant, and issued a report of the results of its samples in December 2006. (TN & Associates, Silver Gate Power Plant Basement Trench System Sediment Sampling (December 21, 2006).) All samples showed levels of PCB Aroclors 1254 and 1260, and copper above reporting limits, and three of the four areas sampled showed levels of mercury above reporting limits. (Id.) Ninyo & Moore collected four samples from the cooling water tunnels in December 2010. (Ninyo & Moore, Subsurface Investigation San Diego Gas & Electric Tidelands Area (May 24, 2011).) Two of the three samples collected from the discharge tunnels contained PCB Aroclors 1254 and 1260 above the method detection limit, and copper and mercury above the reporting limits. (Id.) PCB Aroclors 1254 and 1260 are the same Aroclors found in the SDG&E tidelands soil in the location of the former wastewater ponds and oil/water separators (ENV America, Site Assessment (July 14, 2004); Ninyo & Moore, Subsurface Investigation San Diego Gas & Electric Tidelands Area (May 24, 2011), in soil in the 1168207.1

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switchyard (TN & Associates, Underground Storage Tank Closure Report (November 13, 2006) (SAR373807-374069), in transformer dielectric fluids in the transformers at the Silver Gate Power Plant, and in hydraulic, coolant and lubricating oils used in the plant (Environmental Protection Agency, Locating and Estimating Air Emissions From Sources of Polychlorinated Biphenyls, Table 7 (May 1987); Ian C.T. Nisbet et al., Rates and Routes of Transport of PCBs in the Environment in Environmental Health Perspectives (April 1972)).

In addition, Aroclors 1254 and 1260 tend to co-occur in approximately the same concentrations in four out of the five sediment samples collected from the cooling water tunnels. (Ninyo & Moore, Subsurface Investigation San Diego Gas & Electric Tidelands Area (May 24, 2011).) The approximate 1254 to 1260 ratio had a range of 0.9 to 1.1 of 1254 to 1 of 1260. (See id.) Sediment samples from locations in front of the discharge cooling water tunnel and covering an area extending at least 600 feet offshore and 400 feet along the shoreline had an approximate 1254 to 1260 ratio range of 0.7 to 1.3 of 1254 to 1 of 1260, which is nearly identical to that of the sediments sampled in the cooling water tunnels. (Exponent, 2003 (SAR105417-105996); Ninyo & Moore, Subsurface Investigation San Diego Gas & Electric Tidelands Area (May 24, 2011).) The nearly identical ratio of co-occurrence of Aroclors 1254 and 1260 in the cooling water tunnel sediment samples and the Bay sediments indicates that the PCBs in the sediments had a common source -- the SDG&E discharge cooling water tunnel.

In addition, the spatial distribution of PCBs in sediment North of Pier 1 also indicates that SDG&E's discharge cooling water tunnel is the source of PCBs, copper and mercury. A volume of 223 million gallons of water per day was discharged through the discharge cooling water tunnel. (ENV America, Technical Report for RWQCB Investigation Order No. R9-2004-026 (July 14, 2004)(SAR193272-193329).) The discharge cooling water tunnel was an eight foot square tunnel, making the velocity of discharge 1.6 meters per second. (Id.) Fine particles containing SDG&E wastes, including PCBs, copper and mercury, likely would not have settled in front of the cooling water outflow, but rather would have been distributed over a large area across the Shipyard Sediment Site North of Pier 1. A 1942 drawing of the dredge plan and trajectory of discharge from the discharge cooling water tunnel also indicates that discharged wastes would 1168207.1

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have been dispersed hundreds of feet from the mouth of the outflow, and to the south of the discharge tunnel near Pier 1. (Proposed Dredging & Jetty on San Diego Bay, Application by SDG&E (April 20, 1942).) This pattern of dispersion of wastes from the discharge cooling water tunnel is exhibited by PCBs in sediment located North of Pier 1. The highest concentrations of PCBs in sediments North of Pier 1 are found in sediment samples hundreds of feet from, and to the south of the discharge tunnel near Pier 1. (Exponent, 2003 (SAR105417-105996)(Samples SW01 & SW02).)

As a result, there is substantial, reasonable and credible evidence supporting the allegations in Sections 9.6 and 9.7 of the DTR that SDG&E discharged PCBs and other COCs via the discharge cooling water tunnel. Based on the substantial, reasonable, and credible evidence in these sections of the DTR alone, SDG&E was appropriately designated a discharger by the Regional Board.

#### B. The Findings in DTR Section 9.8 are Based Upon Substantial, Reasonable and Credible Evidence

Contrary to SDG&E's assertion, there is substantial, reasonable and credible evidence in the Administrative Record, and in SDG&E documents supporting the Regional Board's designation of SDG&E as a discharger based upon SDG&E's discharges of PCBs from the Silver Gate Power Plant switchyard to the storm drain system, which discharges to the Bay. DTR Section 9.8 addresses allegations by the Regional Board stemming from SDG&E's unauthorized discharge of toxic pollutants at the Silver Gate switchyard in connection with the closure in place of three 220,000 gallon concrete USTs in 2006. SDG&E's consultant, TN & Associates, collected eighteen surface soil samples above the location of the USTs, and only 900 feet from the San Diego Bay. All of these samples were reported to contain PCBs, and eleven of the eighteen samples had PCB concentrations greater than 1,000 ug/kg. DTR Section 9.8 alleges that storm water run-off carried PCBs from soil at the Silver Gate substation to the northeast into the storm drain system that drains to the Bay at MS4 based upon the following three facts: (1) Aroclor 1260 was the only PCB reported in the 18 surface soil samples; (2) Aroclor 1260 was the highest PCB concentration reported in sediment samples collected from the MS4 catch basin, and 1168207 1

(3) Aroclor 1260 was the highest PCB concentration reported in the Shipyard Sediment Site samples SW20 through SW25, which are in the vicinity of the MS4 outfall.

Despite this, SDG&E argues that the allegations in Section 9.8 are "speculative" because (1) the Silver Gate switchyard's containment structure would have prevented the PCBs from being carried to the storm drain system in storm water run-off, (2) there is no support for the transport pathway alleged by the Regional Board to the storm drain system, and (3) the concentration of PCBs in the substation soil could not be a source of PCBs to the Bay because they were many times less than those found in the sediments in the Bay. SDG&E's arguments ignore the substantial, reasonable and credible evidence supporting the allegations in Section 9.8 of the DTR.

1. The Substantial Leaks and Spills of PCBs from the Switchyard Were Not Adequately Contained.

SDG&E's Spill Prevention Control and Countermeasure Plan ("SPCC Plan") for the Silver Gate Power Plant from 1981 reveals that there were seventy-five oil circuit breaker tanks, and four transformers located in the switchyard. (SDG&E SPCC Plan (1981)(SAR193543-193544).) The transformers could hold up to 6,000 gallons of PCB-containing coolant oil, and the circuit breakers could hold up to 600 gallons of PCB-containing coolant oil. (Solid Waste Management Unit Information Data for Transformers and Circuit Breakers at Silver Gate Power Plant.) TN & Associates' November 13, 2006 Underground Storage Tank Closure Report demonstrates that there were releases of PCB Aroclor 1260 from past leaks of transformers and circuit breakers, and copper from painting operations in the switchyard area. Numerous SDG&E documents demonstrate that the transformers and circuit breakers in the switchyard continuously leaked since installation. For example, SDG&E inspections from 1981 to 1983 indicate there were leaks of coolant oil from the transformers and circuit breakers, and that SDG&E took no action to cleanup the leaks or repair the leaking transformers or circuit breakers. (SDG&E Daily

<sup>&</sup>lt;sup>4</sup> Section III.E addresses SDG&E's arguments in the Rescindment Request that lower concentrations of contaminants in upland soils could not be a source of the higher concentrations of contamination in sediments at the Shipyard Sediment Site.

PCB Inspection Reports.) And, despite the removal of 150 cubic yards of soil in 1986 in response to a leak of total extracted hydrocarbons from piping to the USTs, observation of the soil in the switchyard in 1987 and 1997 revealed PCB soil contamination from transformer and circuit breaker leaks. (Crosby & Overton, Site Assessment and Hydrocarbon Mitigation at the Silver Gate Power Plant (November 10, 1987); EPA Region 9 Toxics and Waste Management Division Inspection Report (April 27, 1987); EnecoTech Southwest, Inc., Phase II Environmental Investigation Services, PCB Investigation (April 29, 1997).)

In 1997, EnecoTech Southwest, Inc. conducted a Phase II PCB Investigation in the switchyard, and found Aroclors 1260 and 1254 in 32 soil samples collected near the transformers and circuit breakers. (EnecoTech Southwest, Inc., Phase II Environmental Investigation Services, PCB Investigation, (April 29, 1997).) Leaks from transformers and circuit breakers of the types found in the Silver Gate Power Plant switchyard occurred frequently, and industry research confirms that the average spill or leak ranged in size from one half pound to sixty four pounds, and that approximately ten percent of transformer fluid sales was to replace fluid that was leaked during the lifetime of these types of equipment. (EPA, Locating and Estimating Air Emissions from Sources of Polychlorinated Biphenyls (May 1987); Ian C.T. Nisbet et al., Rates and Routes of Transport of PCBs in the Environment in Environmental Health Perspectives (April 1972).)

Further, the inspection report from a February 5, 1987 inspection by EPA Region 9 Toxics and Waste Management Division indicated all of the following regarding the switchyard at the Silver Gate Power Plant: (1) inadequate roof and walls to prevent rain water from reaching stored PCBs; (2) inadequate floor with a minimum six inch high curb to provide containment of a volume at least twice the internal volume of the largest stored container; (3) there are floor openings that would permit liquids to flow from the curbed area; (4) floors and curbing that are not constructed of smooth and impervious materials; and (5) spilled or leaked materials are not immediately cleaned up. (EPA Region 9 Toxics and Waste Management Division TSCA §6 PCB Investigation Inspection Report (April 27, 1987).) This inspection report confirms that leaked and spilled PCBs in the switchyard were not adequately contained to prevent storm water run-off from carrying the PCBs to the storm drain system and then to the MS4 storm drain outfall. In 1168207.1

addition, this inspection report contradicts SDG&E's claim that the switchyard containment system was a "sophisticated, multifaceted containment structure." (Rescindment Request at 13:16-18.)

Finally, SDG&E misstates the Cleanup Team's testimony related to the findings in Section 9.8 of the DTR. .For example, SDG&E claims that Craig Carlisle ("Carlisle") stated that "it might be useful to know" whether or not releases from the SDG&E facility were contained "at the time the release occurred." (Rescindment Request at 13:23-24.) However, what Carlisle actually stated was that information regarding whether a release was contained at the time the release occurred "might be useful depending upon your definition of containment and the integrity of such containment." (Carlisle Depo., Vol. II at 351:22-23.) And, Carlisle continued that in making the findings in Section 9.8, he "relied on the reports submitted on behalf of SDG&E. ENV America and TN & Associates," and that he did not think the two reports show that the releases were selected within a containment area. (Id. at 352:3-4, 9-16.) Contrary to SDG&E's assertions, there were continuous leaks of PCBs from equipment in the switchyard, and inadequate containment, such that it was certainly reasonable for the Regional Board to conclude that those PCBs were carried in storm water run-off to the Bay.

#### 2. Storm Water Run-off Carried PCBs from the Switchyard to the Bay.

SDG&E argues that because storm water run-off from the switchyard does not flow through catch basin 1 ("CB-1"), a catch basin located at the northeastern corner of the Silver Gate Power Plant, the Regional Board has failed to show that PCBs in soils at the switchyard could flow to the Bay via storm water run-off. However, SDG&E ignores the ample evidence that switchyard storm water run-off enters the storm drain system at the gutter on the northwest side of Sampson Street and is transported to the Bay at the MS4 outfall.

SDG&E admits that storm water run-off from the switchyard "would have flowed ... to the gutter on the northwest side of Sampson Street," but discounts this pathway because the Regional Board has not sampled the gutter. (Rescindment Request at 14:18-21.) But, sampling of the gutter is not necessary to show that switchyard storm water run-off contributed to a condition of pollution in the Bay. SDG&E's Onsite Hydrology/Drainage Study indicates that 1168207.1

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storm water from the switchyard drains to Sampson Street and into the 30-inch storm drain. (See SDG&E Onsite Hydrology/Drainage Study (March 14, 2006.) The 30-inch storm drain connects with another storm drain that discharges to the Bay at the MS4 outfall. (City of San Diego Map of Sampson Street Storm Drain from Belt Street to Harbor Street (February 27, 1985); City of San Diego Map of Portion of Sampson Street (June 22, 1988).)

The PCB Aroclors 1254 and 1260 were detected in the soil of the switchyard through sampling by TN & Associates and EnecoTech Southwest, Inc. Sediment sampling at the Shipyard Sediment Site in the vicinity of the MS4 outfall reported the highest concentrations of PCB Aroclors 1254 and 1260. The correlation between the PCB Aroclors found in soils at the Silver Gate Power Plant switchyard and in the vicinity of the MS4 outfall, where storm water runoff from the switchyard is discharged to the Bay, indicates that SDG&E's Silver Gate Power Plant switchyard is a source of PCB Aroclors 1254 and 1260 to the Shipyard Sediment Site.<sup>5</sup> As discussed further in Section III.F below, the fact that concentrations in upland soils are lower than concentrations in sediments does not mean that those upland soils are not a source of contamination. As a result, there is substantial, reasonable and credible evidence that the SDG&E Silver Gate Power Plant switchyard was a source of PCB contamination in the vicinity of the MS4 outfall because PCBs from the switchyard were carried by storm water run-off into the 30inch storm drain running beneath Sampson Street and into the Bay at MS4. The Regional Board's findings in Section 9.8 of the DTR are, therefore, not "speculative," and SDG&E's Rescindment Request should be denied.

#### C. The Findings in DTR Section 9.9 are Based Upon Substantial, Reasonable and Credible Evidence

DTR Section 9.9 contains findings by the Regional Board that discharges from the SDG&E Silver Gate Power Plant contributed to pollution in the Shipyard Sediment Site in the

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Regional Board as evidence, and any arguments based upon it must be disregarded.

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<sup>&</sup>lt;sup>5</sup> While SDG&E relies on the report by TN & Associates entitled, "SDG&E Response to Silver Gate Power Plant 26 Storm Water Discharge NOV No. 5408" to refute the Regional Boards finding, it does not appear to be in the Administrative Record, and SDG&E did not include it with their submission of evidence supplementing the Administrative Record. If the report is not part of the Administrative Record, it cannot be considered by the

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area of the MS4 outfall. The Regional Board's findings are based upon a notice of violation issued by the City of San Diego ("City") to SDG&E after a City investigation revealed the presence of PCBs entering the storm water system at CB-1 from SDG&E's former Silver Gate Power Plant and exiting the storm water system to the Bay.

Initially, SDG&E's attack on Section 9.9 is misguided because it focuses on the fact that there are other potential sources of contamination to the Bay at the MS4 outfall. However, that fact is irrelevant to whether SDG&E should be designated a discharger by the Regional Board. As long as there is sufficient evidence demonstrating that SDG&E discharged some amount of waste to the Bay at the MS4 outfall, SDG&E should be designated a discharger. (See Cal. Water Code §13304; State Water Board Resolution No. 92-49.) Further, in arguing that DTR Section 9.9 is "speculative," SDG&E mischaracterizes the Cleanup Team's testimony on this subject. For example, SDG&E cites to Benjamin Tobler's ("Tobler") testimony, claiming that Tobler confirmed that the City's allegations against SDG&E were accepted at "face value" with no independent inquiry. (Rescindment Request at 17:5-6.) But, the Tobler testimony cited by SDG&E does not even discuss Section 9.9 of the DTR. (Deposition of Tobler ("Tobler Depo.") 57:7-59:10.) Instead, it discusses a section of the DTR containing findings related to BAE Systems. (Id.) SDG&E also cites to Craig Carlisle's testimony, claiming Carlisle "admitted that he made no effort to do such a comparison between sediments in CB-1 and sediments in the catch basins or stormwater drains on BAE Systems' property, and agreed it 'may' have been important to him." (Rescindment Request at 17:26-28.) Carlisle actually testified that a comparison "may or may have not had bearing on" Section 9.9, and called the comparison a "hypothetical." (Carlisle Depo., Vol. II at 311:17-312:3.)

Moreover, other evidence shows that SDG&E discharged wastes to CB-1 that were carried in the storm drain system to the Bay at the MS4 outfall. The City's sampling of CB-1 contained PCB Aroclors 1260 and 1254. SDG&E conducted an investigation to determine whether the Silver Gate Power Plant was a source of contaminants to CB-1. (Letter from SDG&E to the City of San Diego (October 25, 2005).) SDG&E researched the sources of the two laterals carrying storm water into CB-1, and found that the 6-inch lateral entering CB-1 drained 1168207.1

İ	the turbine roof of Generating Unit 1 of the Silver Gate Power Plant. (Letter from SDG&E to the
I	City of San Diego (December 1, 2005).) SDG&E sampled the roof of Generating Unit 1, as well
	as other areas around the Silver Gate Power Plant, and found PCBs. (Letters from SDG&E to
	the City of San Diego (January 10, 2006 & March 16, 2006).) SDG&E's findings of PCBs in
	samples taken from various locations at the Silver Gate Power Plant is consistent with other
	sampling throughout the Silver Gate Power Plant, including sampling in the switchyard, which
	indicates that both Aroclors 1254 and 1260 were present at the plant, and were a source of PCBs
	to CB-1. (See, e.g., EnecoTech Southwest, Inc., Final Report for Phase II Environmental
	Investigation Services, PCB Investigation (April 29, 1997).)
	Storm water entering CB-1 from the Silver Gate Power Plant is carried by an 18-inch
	lateral to a 30-inch storm drain culvert beneath Sampson Street, which then drains to the storm
	water outfall at MS4. (City of San Diego Map of Storm Drains.) The sediment samples in the
	area of the MS4 outfall contain PCB Aroclors 1254 and 1260, the same Aroclors found in CB-1,
	and found throughout the Silver Gate Power Plant, indicating that the Silver Gate Power Plant is a
	source of PCB Aroclors 1254 and 1260 to the Bay in the area of MS4. (Exponent, 2003
	(SAR105417-105996).) The City notice of violation, SDG&E investigation, and Exponent
	sediment sampling provide substantial, reasonable and credible evidence supporting the Regional
ĺ	Board's findings in Section 9.9 of the DTR. As a result, SDG&E's Rescindment Request should

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be denied.

D. The Findings in DTR Section 9.10 are Based Upon Substantial, Reasonable and Credible Evidence

SDG&E's claims about the findings in DTR Section 9.10 are also contrary to SDG&E's own records and consultants' reports demonstrating that SDG&E disposed of COC-containing

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<sup>&</sup>lt;sup>6</sup> It is not surprising that PCBs were found on the roof of the Silver Gate Power Plant given the ubiquitous use of PCBs in various building materials and equipment used during the peak operating years of the plant. The United States Environmental Protection Agency reports that PCBs were used in various building materials, including paints, sealing and caulking compositions to seal joints against water, additives in cement and plaster, sealing liquids, and fire retardants. (EPA, Locating and Estimating Air Emissions From Sources of Polychlorinated Biphenyls (May 1987); EPA, An Inventory of Sources and Environmental Releases of Dioxin-Like Compounds in the United States for the Years 1987, 1995, and 2000 (November 2006).) These applications were considered "open systems" due to the ease with which the PCBs may enter the atmosphere during use. (1d.)

wastes to ponds and oil/water separators immediately adjacent to the Bay, and that those wastes were released to the Bay. The Regional Board bases it findings in Section 9.10 of the DTR on two reports submitted by SDG&E's consultant, ENV America. In those reports, ENV America documents SDG&E's history of use of ponds located immediately adjacent to the Bay to dispose of wastewater composed of bilge water collected from the boiler side of the Silver Gate Power Plant. (ENV America, Site Assessment (July 14, 2004)(SAR193330-193523).) The Regional Board relies on ENV America's investigation in the areas of the former wastewater ponds, and finds that the proximity of soil contamination from the ponds to the Bay indicates the potential for discharges from the pond to contribute to pollution at the Shipyard Sediment Site. In addition, the Regional Board relies on a statement in SDG&E's July 14, 2004 response to the 13267 investigative order that stated that some water from a pond was discharged to the Bay. SDG&E's consultant's reports, in conjunction with other SDG&E documents, provide substantial, reasonable and credible evidence supporting the Regional Board's findings in Section 9.10.

1. <u>Wastes Disposed of to the Wastewater Ponds Contained PCBs and Other COCs.</u>

While SDG&E claims it "allegedly utilized" ponds at the Silver Gate Power Plant (Rescindment Request at 18:17), the evidence shows that SDG&E in fact disposed of liquid wastes to at least four separate unlined ponds and/or oil-water separators located on the SDG&E tidelands easement at different times from 1950 until 1974. (ENV America, Site Assessment (July 14, 2004)(SAR193330-193523).) In addition, SDG&E uses Cleanup Team testimony to claim that "BAE" operations on the SDG&E tidelands are responsible for the contamination of tidelands soil. (Rescindment Request at 24:17-26:5.) But, the Cleanup Team testimony cited does not support SDG&E's claim.

SDG&E alleges that Barker testified that he was unaware of aerial photographs depicting shipyard operations on the SDG&E tidelands, and that he agreed that the photos showed suspicious features that might be inconsistent with the allegations against SDG&E in Section 9.10. (Rescindment Request at 25:6-9.) Barker never testified that he was unaware of the aerial photographs. (Barker Depo., Vol IV at 715:6-742:9.) In addition, Barker never characterized 19

anything in the aerial photos as "suspicious." (*Id.*) SDG&E also alleges that Carlisle "admitted that DTR Table 9-7 attributes the listed soil contaminants to former operations of SDG&E, and that he was unaware of SWM's operations on the parcel...." (Rescindment Request at 25:14-17.) Carlisle's cited testimony actually reveals that Carlisle knew that the SDG&E tidelands were used by the shipyards, but did not know the timing of that use. (Carlisle Depo., Vol. II at 335:12-17.) SDG&E misstates the Cleanup Team's testimony to distract the Regional Board from the ample evidence that SDG&E is responsible for contaminating the tidelands soils, and the adjacent sediments through its disposal of untreated liquid wastes to ponds and oil/water separators.

Not only did SDG&E use multiple ponds from the 1940s to 1974, but it also *consistently* disposed of wastes containing PCBs and other COCs to those ponds and oil/water separators. Aerial photographs of the area leased by SDG&E on the tidelands demonstrate that SDG&E began disposing of wastes in ponds and oil/water separators in 1950 and continued this practice until at least 1974. (ENV America, Site Assessment (July 14, 2004) (SAR193330-193523).) SDG&E disposed of low volume wastes, which contained basement bilge water and water from the floor drain system at the Silver Gate Power Plant to the ponds and oil/water separators on the tidelands. (Exponent, Comments on Parties 13267 Responses (September 29, 2004)(SAR156880-156889).) The floor drains at the Silver Gate Power Plant were located in areas where large amounts of oil could be spilled. (Id.) Sampling by TN & Associates of sediments from the basement trench system, where low volume wastes were stored before being discharged to a pond or oil/water separator showed levels of PCB Aroclors 1254 and 1260, copper and mercury above reporting limits. (TN & Associates, Silver Gate Power Plant Basement Trench System Sediment Sampling (December 21, 2006).) The same PCB Aroclors, copper and mercury were found in soil samples in the areas of the former ponds and oil/water separators on the SDG&E tidelands.

The former location of SDG&E's ponds and oil/water separators were sampled by ENV America and Ninyo and Moore. In 2004, ENV America collected seven samples directly below or adjacent to the footprint of two of the former ponds. (ENV America, Site Assessment (July 14, 2004)(SAR193341).) Six of the samples were analyzed for PCBs, and two of those detected PCB

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Aroclors 1254 and 1260. (Id. (SAR193345).) In 2010, Ninyo and Moore collected 28 soil samples on the SDG&E tidelands. (Ninyo & Moore, Subsurface Investigation San Diego Gas & Electric Tidelands Area (February 28, 2011).) Ninyo and Moore submitted a revised report dated May 24, 2011 to reflect amendments to its analytical laboratory results. (Ninyo & Moore, Subsurface Investigation San Diego Gas & Electric Tidelands Area (May 24, 2011).) Ninyo and Moore's revised results showed that PCBs were detected as Aroclor 1254 in six soil samples and as Aroclor 1260 in eight soil samples. (Id.) In addition, Ninyo and Moore's results showed that PCTs were detected as Aroclor 5460 in eight soil samples. (Id.) Ninyo and Moore also found copper and mercury above reporting limits in many of the samples. All of the samples that were located in the area where a former pond, "Pond B," was located contained PCB Aroclors 1254 and 1260, consistent with ENV America's sampling. In addition, the two Aroclors tend to cooccur in approximately the same concentrations in six out of the eight samples where both were detected. (See id.) The approximate ratio range of 1254 to 1260 is 0.9 to 1.1:1. (See id.) These two sets of sampling, along with the historical aerial photographs provide substantial, reasonable and credible evidence that SDG&E disposed of wastes containing PCBs, and other COCs from the Silver Gate Power Plant to the ponds and oil/water separators located immediately adjacent to the Bay.<sup>7</sup>

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### 2. SDG&E's Wastewater Ponds Discharged Waste Directly to the Bay.

SDG&E claims that its consultant's response to the Regional Board's 13267 investigative order that "[s]ome water from the pond was discharged to the Bay" was "misplaced." SDG&E's revisionist claim ignores the ample evidence from the Administrative Record and SDG&E's own documents supporting SDG&E consultant's statement and showing there were multiple releases from the ponds and oil/water separators to the Bay covering a period of almost 25 years.

ENV America's July 14, 2004 Site Assessment Report includes internal SDG&E

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<sup>&</sup>lt;sup>7</sup> SDG&E claims that because "BAE" subleased the tidelands, it is the source of contamination to the sediments at and around Pier 1. (Rescindment Request at 24:17-28.) BAE Systems subleased a portion of the tidelands area from SDG&E for use as a parking lot. This area was never used for anything but employee parking. In addition, BAE Systems subleased an area south of the SDG&E wastewater ponds and oil-water separators. This area was used for laydown and storage of materials, but like the parking lot, was paved.

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correspondence dated September 10, 1974 as an attachment. (ENV America, Site Assessment
(July 14, 2004)(SAR193330-193523).) The correspondence discusses "Nobles Lake," an
oil/water settling pond located on the tidelands that received waste from the turbine room and
boiler room sump pumps. (Id.) The correspondence notes that Nobles Lake "is filled to the brim
and is at least 11 feet deep with a mixture of oil and earth," and in its overflowing condition,
"discharge from Silver Gate will eventually find a path to the San Diego Bay." (Id. (emphasis
added).) Photographs of the SDG&E tidelands easement from the Silver Gate Power Plant to the
Bay are evidence that Nobles Lake had been a liquid waste dumping ground for SDG&E since at
least 1955, also 20 years before the September 1974 correspondence. It is also reasonable to
conclude that September 10, 1974 was not the first time that SDG&E's use of Nobles Lake
created an overflowing condition and eventual discharge path to the Bay. In fact, photographs of
Nobles Lake from 1955, also included as attachments to the ENV America July 14, 2004 Site
Assessment Report, show that Nobles Lake had become filled to the brim in the past, and that
SDG&E's solution was to remove water and sludge and dump it onto the ground adjacent to
Nobles Lake where it likely ran into the Bay or was washed into the Bay by storm water run off.
(Id. (SAR193383).) Based upon these documents, it is SDG&E's characterization of its
consultant's statements that seems misplaced.
Further, a May 1, 1950 letter from Walter Zitlau, an engineer at the Silver Gate Power
Plant who later became President of SDG&E, states that the "water disposal lake on the tidelands
has been overflowing, and a ditch has been cut to the water's edge," which would permit "oil
[to] be admitted to the bay." (Letter from Walter Zitlau to M. Hjalmarson (May 1,
1950)(emphasis added).) The disposal pond referred to by Mr. Zitlau was located on SDG&E's
tidelands easement, and was a different pond than Nobles Lake. Aerial photographs from 1950
clearly show the trench that Mr. Zitlau refers to in his letter extending from the pond all the way
to the edge of the tidelands and into the Bay. (SAR193371.) Wastes were discharged from the
pond to the trench and into the Bay likely from at least 1950 until 1952. (Aerial Photographs,
SAR193338, SAR193375.) These documents provide substantial, reasonable and credible

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evidence that SDG&E discharged wastes containing PCBs and other COCs directly to the Bay. BAE SYSTEMS' RESPONSE TO SDG&E'S RESCINDMENT REQUEST

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#### The Aroclor Signature in the Tidelands Soils is the Same as the Aroclor 3. Signature Found in the Sediments North of Pier 1.

SDG&E claims that the PCB Aroclor signature found in the tidelands soils is substantially different than that of the sediment North of Pier 1. (Rescindment Request at 20:23-21:10.) In making this argument, SDG&E selectively relies on sediment sampling conducted by its consultant, ENV America in 2004.8 (Id.) By doing so, SDG&E ignores the sediment sampling conducted by Exponent in 2001 and 2002, making their analysis incomplete. (Exponent, 2003 (SAR105417-105996).) The data from Exponent provides a true picture of the Aroclor signature North of Pier 1 because it captures a large number of samples over a large spatial area. (SAR105417-105996.)

The Exponent data set reveals higher concentrations of PCB Aroclors 1254, 1260, and PCT Aroclor 5460 in the sediment samples collected nearest to the shore of the tidelands leased by SDG&E. (Id.) This data strongly indicates a common source of the PCBs and PCT found North of Pier 1. The same Aroclors found in the sediments also were found in samples taken from the locations of SDG&E's former ponds on the tidelands by ENV America and, more recently by Ninyo and Moore. The Aroclors in samples from the cooling water tunnels and trenches of the Silver Gate Power Plant taken by TN & Associates and Ninyo and Moore also are consistent with the Aroclors found in the sediment samples North of Pier 1. (SAR193330-193464; Ninyo & Moore, Subsurface Investigation San Diego Gas & Electric Tidelands Area (May 24, 2011); TN & Associates, Silver Gate Power Plant Basement Trench System Sediment Sampling (December 21, 2006).) In addition, multiple sediment samples had ratios of Aroclor 1254 to 1260 in the same range as those found by Ninyo and Moore in the tidelands soils. (Exponent, 2003 (SAR105417-105996).) For example, the ratio of Aroclor 1254 to Aroclor 1260 for sediment samples SW01, SW02, SW03, SW05, and SW30, which are located approximately in front of the discharge cooling water tunnel, and cover an area extending at least 600 feet

<sup>&</sup>lt;sup>8</sup> ENV America's sediment sampling report does not appear to be part of the Administrative Record. If it is not part of the Administrative Record, the Regional Board should disregard SDG&E's arguments that rely on it.

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offshore and 400 feet along the SDG&E tidelands shoreline, varied from 0.7 to 1.3:1, which is substantially similar to the ratio range between 1254 and 1260 in upland soils of 0.9 to 1.1:1. (See id.) The Aroclor signature of the tidelands soil and adjacent sediment indicates that SDG&E's tidelands ponds and oil/water separators are a source of PCBs to Shipyard Sediment Site. Therefore, there is substantial, reasonable and credible evidence that SDG&E is the source of the PCBs and PCT found in sediments North of Pier 1.

E. The Lower Concentrations of PCBs Found at the Silver Gate Power Plant and in Tidelands Soils are a Source of the Concentrations of PCBs in Bay Sediments.

SDG&E relies heavily throughout the Rescindment Request on its contention that the concentrations of PCBs and other COCs found in upland areas related to the Silver Gate Power Plant would need to be greater than the concentrations found in the sediments for SDG&E's Silver Gate Power Plant and operations to be a source of contamination to sediments in the Shipyard Sediment Site. (Rescindment Request at 10:8-11, 12:4-12, 19:13-20:9.) SDG&E supports this contention with only its own speculation that lower concentrations in the soils cannot be the source of higher concentrations in the sediments. But, SDG&E does not consider credible, technical evidence that shows the differences in Aroclor concentrations and proportions between soils in the upland area and cooling water sediments and the Shipyard Sediment Site sediments are not inconsistent.

In fact, it is not reasonable to expect the two concentrations to be the same or to expect higher concentrations in upland sources. This is for the following two reasons: (1) the manner in which PCBs sorb to materials in sediments versus materials in upland sources; and, (2) the differences in times when PCBs were released compared with when those releases were measured.

First, the differences in PCB concentrations can be explained by the character of the sediment solids versus the upland solids where the PCBs are found. PCBs preferentially sorb to organic carbon in sediment. (Schorer, M., Pollutant and organic matter content in sediment particle size fractions, Freshwater Contamination. IAHS Pub. No. 243 (1997); Estes, T. J., Fractionation Study of Natural Sediments For Determining PAH and PCB Distribution in PAH 1168207.1

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PCB Distribution in Sediment Fractions and Sorptive Phases (May 2005); Brannon, J.M., et Organic matter quality and partitioning of polychlorinated biphenyls (1997); Delle Site, A., ors affecting sorption of organic compounds in natural sorbent/water systems and sorption ficients for selected pollutants; a review, J. Phys. Chem. Ref. Data 30:187-439 (2001).) The ments near the shipyards and the SDG&E tidelands are rich in organic carbon. (Exponent, (SAR105417-105996).) In addition, PCBs sorb to fine-grained particles, and the sediments e Northern portion of the Shipyard Sediment Site have a high proportion of fine particles. orer, M., Pollutant and organic matter content in sediment particle size fractions, Freshwater amination. IAHS Pub. No. 243 (1997); Exponent, 2003 (SAR105417-105996).) The cle size and composition of the tidelands soils and soils in the switchyard is likely to have a proportion of coarser grained materials as a result of surface run-off, which carries finer cles with it. (Schorer, M., Pollutant and organic matter content in sediment particle size ions, Freshwater Contamination. IAHS Pub. No. 243 (1997).) Because PCBs do not sorb to ser grained soils found in upland areas as much as they do to fine particles found in sediment, would expect to see lower concentrations of PCBs in the SDG&E upland sources of amination, such as the tidelands and switchyard soil, than in the Shipyard Sediment Site nents.

Moreover, PCBs may have been released at different times to the tidelands and switchyard than they were released from the sources to the sediments, and were measured at different s. The Silver Gate Power Plant operated for several decades, and releases to tidelands and thyard soils likely occurred from approximately 1943 until the late 1990s. Most of the nent data was collected by Exponent in 2001, 2002. (Exponent, 2003 (SAR105417-196).) The soil data was collected in 2004 and 2010. This difference in measurement dates impact the results of sampling as a result of PCB degradation. PCB degradation in soil is likely to have occurred via volatilization, and PCB degradation in sediment is most likely to occurred via reductive dechlorination. (Chiarenzelli et al., Volatile Loss of PCB Aroclors from Subaqueous Sand in Environmental Science Technology (1997); Van Dort et al., Reductive Ortho and Meta Dechlorination of a Polychlorinated Biphenyl Cogener by Anaerobic

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Microorganisms in Applied Environmental Microbiology (1991); T.S. Hurme and J.A. Puhakka, Characterization and Fate of Polychlorinated Biphenyl Contaminants in Kernaalanjarvi Sediments in Boreal Environmental Resources (1999).) These processes are likely to occur at different rates. For example, the warm climate of San Diego likely would cause volatilization from soil to occur at the high end of the expected range.

As a result of these differences between the consistency of SDG&E tidelands and switchyard soils and the sediments, and of degradation rates in each medium, it is likely that there would be lower concentrations of PCBs in the SDG&E soils that are a source of contamination, and higher concentration of PCBs in the sediments that have been contaminated by SDG&E's releases.

# F. SDG&E Inappropriately Contends That "BAE" is the Sole Cause of Impacts in the Northern Area of the Shipyard Sediment Site

SDG&E contends that "BAE" is the sole cause of impacts in the Northern area of the Shipyard Sediment Site, argues that the Regional Board should allocate 100 percent of the liability for the Northern portion of the Shipyard Sediment Site to "BAE," and asserts through its expert's technical comments that TBT should be a cleanup driver at the Shipyard Sediment Site. SDG&E uses Cleanup Team testimony to support these contentions, but misstates and mischaracterizes that testimony.

1. <u>SDG&E's Assertions That "BAE" Was the Sole Source of Contamination to the Northern Portion of the Shipyard Sediment Site are Flawed and Not Supported by the Evidence</u>

SDG&E mistakenly uses the term "BAE" to refer to multiple different shipyards that operated on the Northern portion of the Shipyard Sediment Site from 1914 until the present, and attributes sole responsibility for contamination to "BAE," rather than distinguishing between the various shipyard entities. This is a critical conflation as BAE Systems only operated a shipyard on the Northern portion of the Shipyard Sediment Site from 1979 to the present. Many of the examples SDG&E relies on to argue that "BAE" contributed to contamination at the Northern

<sup>&</sup>lt;sup>9</sup> EPA banned the manufacture of PCBs in 1979. (EPA Press Release, EPA Bans PCB Manufacture; Phases Out Uses (April 19, 1979).)

portion of the Shipyard Sediment Site are examples of equipment used or activities of the historical shipyards unrelated to BAE Systems that operated before 1979. For example, SDG&E points to Sanborn maps from 1954 to 1959 that indicate the presence of a shipyard electric transformer approximately 20 feet from the San Diego Bay. (Rescindment Request at 12:18-20.) That transformer belonged to a prior shipyard operator. In addition, SDG&E claims "BAE" engaged in extensive shipyard maintenance, retrofitting, sandblasting and other activities on the tidelands leased by SDG&E from the 1950s until the early 1970s. (Rescindment Request at 24:17-28.) Again, SDG&E attributes to BAE Systems operations that were conducted by prior shipyards that have no relationship to BAE Systems.

SDG&E declares that "BAE's" operations are the sole source of contamination at the Northern portion of the Shipyard Sediment Site. But, BAE's operations could not be the sole source of contamination to the Northern portion of the Shipyard Sediment Site. BAE Systems never used products containing PCBs, or released any PCBs to the Shipyard Sediment Site. BAE Systems has tested all oil containing devices at the shipyard for PCBs. And, contrary to SDG&E's characterizations, BAE Systems has only one transformer containing 12 parts per million PCBs located at the southern end of the BAE Systems leasehold. And, there is no evidence that this transformer ever leaked. In addition, BAE Systems has continually improved its environmental systems since it began operating in 1979, and has eliminated storm water discharges since 2000. Any discharge of PCBs from the BAE Systems leasehold would have been from historical shipyard operations, or as a result of urban run-off. And, in overreaching to support its conclusion SDG&E ignores the substantial, reasonable and credible evidence of its own discharges of PCBs and other COCs to the Bay. Despite SDG&E's assertions, it would be impossible for BAE Systems to have been the sole source of contamination at the Northern portion of the Shipyard Sediment Site.

2. SDG&E's Argument That the Regional Board Should Allocate 100 Percent of Liability to "BAE" is Legally Improper

SDG&E errs in its Rescindment Request by arguing that the Regional Board should allocate 100 percent of the liability for the contamination in the Northern portion of the Shipyard

	Sediment Site to "BAE." As the Regional Board is aware, BAE Systems, SDG&E, and others are
	parties to a pending CERCLA action known as City of San Diego v. National Steel and
	Shipbuilding Company, et al. United States District Court, Southern District, Case number 09-
	02275-DMS (BGS) (the "District Court Action"). "It is not appropriate for the Regional Board or
-	State Board to involve itself in deciding issues of allocation of responsibility between different
	parties to a cleanup." (In re San Diego Unified Port District, Water Quality Order No. 89-12.)
	SDG&E's Rescindment Request should be denied because it is improper for the Regional Board
	to allocate responsibility between the parties to the TCAO.
	3. <u>SDG&amp;E Grossly Misstates the Cleanup Team's Testimony in Arguing That "BAE" Should be Solely Liable</u>
	Throughout SDG&E's Rescindment Request, SDG&E relies on testimony from the
	Regional Board Cleanup Team to support its arguments that "BAE" is the sole cause of
	contamination to the Northern portion of the Shipyard Sediment Site. However, in many
	instances SDG&F misstates and mischaracterizes the Cleanup Team's testimony. And

G&E misstates and mischaracterizes the Clean SDG&E's misstatements are likely to be misleading to the Regional Board, and, thus, should be disregarded. 10 For example, SDG&E cites Craig Carlisle's ("Carlisle") testimony in arguing that the

"Regional Board staff ignored sediment investigations ... which reported ... data establishing the co-occurrence or co-location of contaminant impacts that the shipyards are known to be the sole source of – such as tributyltin ("TBT") – with other COCs." (Rescindment Request at 28:9-11, 23-25.) But, Carlisle's testimony actually states that co-location "has a lot of pitfalls associated with it," and is used "to draw certain conclusions about ... allocation ...." (Carlisle Depo., Vol. II at 325:19-25.) Carlisle concludes that co-location "wasn't a line of investigation that we thought was necessary to support the allegations." (Id.)

In addition, SDG&E cites David Barker's ("Barker") testimony in claiming that "Regional

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<sup>&</sup>lt;sup>10</sup> SDG&E also ignores the numerous objections made by counsel in excerpting selected portions of deposition testimony. The Regional Board should review the actual transcript in evaluating the evidence supporting its findings. Further, while there are numerous instances in which SDG&E misstates or mischaracterizes Cleanup Team deposition testimony, BAE only provides two such examples herein.

Board staff ignored decades of sediment monitoring reports establishing the extent of SWM's impacts to the Shipyard Sediment Site sediments, including multiple investigations in and near Pier 1 marine railways, as well as numerous investigations in San Diego Bay sediment."

(Rescindment Request at 27:14-17.) In fact, Barker testified that two decades worth of sediment monitoring reports were "the primary source of information that the [Regional Board] relied upon ... as the basis for the [Regional Board's] conclusion that there were elevated contaminant levels offshore of NASSCO and Southwest." (Barker Depo., Vol. III at 655:17-656:5.) And, Barker only acknowledged that the Regional Board did not contact Ogden personnel regarding their direct observations of the condition of the sediments at the marine railways. (Barker Depo., Vol. III at 644:24-645:8.) Nowhere did Barker state that the Regional Board staff ignored decades of sediment monitoring reports, as SDG&E claims. SDG&E's mischaracterization of the Cleanup Team's testimony provides another reason for denying SDG&E's Rescindment Request.

4. SDG&E's Argument That TBT Should be a Cleanup Driver is Baseless SDG&E, through its expert, ENVIRON, submitted technical comments to the TCAO ("Technical Comments"). These Technical Comments should be excluded, and any arguments made by SDG&E that rely on them should be disregarded. In the Technical Comments, SDG&E asserts that tributyltin ("TBT") should be a cleanup driver under the TCAO. But, there is no evidence to support this argument, and neither SDG&E nor ENVIRON offer anything other than their improper opinions. And, a determination by the Regional Board that TBT is or is not a cleanup driver is neither necessary nor proper to a determination that SDG&E is a discharger at the Shipyard Sediment Site and properly named in the TCAO.

Further, the TCAO acknowledges that different COCs present different risks depending upon the receptors. For example, Paragraph 30 of the TCAO identifies PCBs, copper, and mercury as presenting a human health risk. And, Paragraph 26 of the TCAO identifies PCBs, copper, mercury and high molecular weight polynuclear aromatic hydrocarbons as presenting a risk to aquatic-dependent wildlife. Nowhere does the TCAO identify TBT as a risk driver for

<sup>&</sup>lt;sup>11</sup> BAE has filed herewith a separate Motion to Exclude the Technical Comments.

1	human health risk, aquatic-dependent wildlife risk or aquatic life. As a result, SDG&E's
2	assertion in the Technical Comments that TBT should be a cleanup driver is incorrect and
3	otherwise irrelevant to a finding that SDG&E is a discharger.
4	IV. CONCLUSION
5	The Regional Board's designation of SDG&E as a discharger in the TCAO, and its
6	findings in Section 9 of the DTR are supported by substantial, reasonable and credible evidence
7	from the Administrative Record, deposition testimony of the Cleanup Team, data and by
8	documents prepared by SDG&E and its own consultants. Additional documents submitted with
9	BAE System's Response to SDG&E Rescindment Request bolster the evidence supporting the
10	Regional Board's finding that SDG&E is a discharger to the Shipyard Sediment Site. These
11	include additional documents either produced by SDG&E in the District Court Action, power
12	plant industry documents and technical reference documents from the United States
13	Environmental Protection Agency, and other scientific journals or documents otherwise publicly
14	available. As a result, SDG&E was properly designated a discharger under California Water
15	Code section 13304.
16	For all of the foregoing reasons set forth in this Response, BAE Systems requests that the
17	Regional Board deny SDG&E's Rescindment Request.
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