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Connect with the Bay Area Air District:

August 27, 2020

Ela Kerachian
City of Santa Clara Planning Division
1500 Warburton Avenue
Santa Clara, CA 95050

RE: 2905 Stender Way, CoreSite SV9 Data Center – Mitigated Negative Declaration

Dear Ms. Kerachian,

Bay Area Air Quality Management District (Air District) staff has reviewed the Mitigated Negative Declaration (MND) for the proposed 2905 Stender Way, CoreSite SV9 Data Center (Project). The Project applicant proposes to demolish the existing single-story building and construct a four-story, approximately 250,000 square foot data center on a 3.8-acre site in the City of Santa Clara. Average power consumption would be 48 megawatts (MW), and 16 backup diesel generators would be installed to provide emergency power to the data center. The Project will require Air District approval of an Authority to Construct and Permit to Operate the backup diesel generators, and, as such, the Project will be required to comply with all applicable Air District regulations. Beyond Air District regulatory requirements, however, we encourage the City to require the project applicant to adopt the use of cleaner, non-diesel technologies. Additionally, we are providing the following comments as suggestions on how the City could enhance its CEQA analysis and minimize emissions from the Project and future proposed data centers.

Consistency with Long-Term State Climate Goals

1-1 The MND states that the Project's greenhouse gas (GHG) emissions would not be significant because the Project "would not conflict with an applicable local plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs." But the MND does not evaluate, disclose, nor discuss the Project's consistency with State policies requiring long-term reductions in emissions of GHGs, including the direction in Executive Orders B-55-18 and S-3-05 to respectively achieve carbon neutrality by 2045 and to achieve GHG emissions reductions equivalent to 80 percent below 1990 levels by 2050. See *Cleveland Nat'l Forest Foundation v. San Diego Ass'n of Governments* (2017) 3 Cal.5th 497, 516 (CEQA analysis should "compare the [project's] projected greenhouse gas emissions ... from 2020 through 2050 with the Executive Order's goal of reducing emissions to 80 percent below 1990 levels by 2050."). The MND does not evaluate how the Project's use of diesel fuel would be consistent with carbon neutrality no later than 2045. Air District staff

recommends that the City augment its greenhouse gas analysis to include an evaluation, disclosure, and discussion of whether the Project will be consistent with the State's policies. Regardless of whether upon further evaluation the City deems that deployment of 16 diesel backup generators is inconsistent with the State's carbon neutrality target, the Air District recommends that the City compel the project applicant to adopt alternative zero emitting technologies, procure renewable fuel, commit to otherwise mitigate GHG emissions, or a combination of the three.

Health Risk Assessment and Cumulative Toxic Air Contaminant Impacts

1-2 The Air District's CEQA Guidelines for assessing cumulative health risk impacts recommend that a lead agency evaluate all sources of toxic air contaminants (TACs) and fine particulate matter ($PM_{2.5}$) within 1,000 feet of a proposed project. This is to ensure that the cumulative health risk from the project, plus other nearby sources, will not exceed a carcinogenic risk of 100 additional cancers per million exposed population, a chronic hazard index of 10, or annual average $PM_{2.5}$ concentration of 0.8 µg/m^3. Although Appendix B of the MND includes a health risk assessment of the Project, it does not account for the cumulative health impacts associated with all nearby sources. As discussed in the MND, CoreSite's SV3, SV4, SV5, SV6, SV7, and SV8 data centers are located immediately west of the Project site. However, the cumulative HRA does not include these data centers, which consist of a total of 32 permitted diesel backup generators, nor other nearby sources. Staff recommends that the City revise the cumulative analysis and contact the Air District to obtain updated data.

Recommendations for Achieving Additional Emissions Reductions

1-3 To the extent that further analysis concludes the Project's emissions would be cumulatively considerable or inconsistent with the State's climate goals and the City's current Climate Action Plan, the Project may need to incorporate mitigation measures to reduce emissions. Even if the revised analysis does not conclude the Project's emissions will be cumulatively considerable, the Air District encourages the City to compel the applicant to incorporate additional emission reduction measures as a condition of approval of the Project. These recommended measures will help ensure that the Project's emissions impacts are reduced to the maximum extent possible to achieve the most health protective air quality for Bay Area residents and to achieve climate change goals established by the State and the Air District.

1-4 The MND identifies the predominant source of the Project's GHG emissions as electricity use (34,521.4 $MTCO_2e$ per year), which would be provided by the city-operated, publicly-owned utility, Silicon Valley Power (SVP). Although SVP has a higher power mix of renewable energy sources than the Statewide power mix, the Project could significantly reduce GHG emissions by purchasing all its electricity from renewable sources. Specifically, Air District staff recommend that the Project join SVP's Santa Clara Green Power program and thus commit to purchase 100

1-4 Cont. percent renewable energy, or otherwise negotiate an electricity contract with SVP for 100 percent renewable energy.

1-5 According to the MND, the Project would include 16 Tier 2 diesel backup generators, designed to provide 24 hours of emergency generation at full demand. To meet State and regional climate goals, the Air District encourages projects go above and beyond permitting requirements. In September 2018, the Air District launched the *Diesel Free by '33* initiative to eliminate diesel emissions from Bay Area communities. Mayor Lisa Gillmor of the City of Santa Clara signed *Diesel Free by '33* to pledge the City's commitment to cut diesel use to zero by the end of 2033. To this end, the Air District recommends that the City compel the Project applicant to use the cleanest available technologies such as solar battery power, fuel cells, or Tier 4 generators.

1-6 Lastly, Air District staff strongly recommends that the City work with SVP, the Air District, State agencies, and the Project proponents for this and similar proposed data center projects to explore alternative options to reduce GHG emissions. For example, the Air District awarded a Climate Protection Grant of $300,000 to SVP to conduct a pilot project to demonstrate the viability of replacing data center backup diesel generators with electric energy storage systems, and CEC has previously provided Electric Program Investment Charge (EPIC) awards for data center microgrids. We also encourage proponents of the Project and future data centers to seek available grant funding for zero-emitting alternatives to diesel backup generators.

Air District staff is available to assist the City in addressing these comments. If you have any questions or would like to discuss Air District recommendations further, please contact Josephine Fong, Environmental Planner, at (415) 749-8637 or jfong@baaqmd.gov, or Jakub Zielkiewicz, Advanced Projects Advisor, at (415) 749-8429 or jzielkiewicz@baaqmd.gov.

Sincerely,

Greg Nudd
Deputy Air Pollution Control Officer

cc: BAAQMD Director Margaret Abe-Koga
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August 28, 2020

Via E-Mail and Overnight Mail

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City of Santa Clara
Community Development Department
1500 Warburton Avenue
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ekerachian@santaclaraca.gov

Re: Initial Study/Mitigated Negative Declaration: 2905 Stender Way CoreSite SV9 Data Center (CEQ2020-01075)

Dear Ms. Kerachian:

On behalf of Santa Clara Citizens for Sensible Industry ("SCCSI"), we submit these comments on the Initial Study/Mitigated Negative Declaration ("IS/MND") [1] for the 2905 Stender Way CoreSite SV9 Data Center Project ("Project") prepared pursuant to the California Environmental Quality Act ("CEQA")[2] by the City of Santa Clara ("City"). The Project, the existing one-story structure and associated parking lot would be removed and replaced with a new, four-story, approximately 250,000 square foot data center. Average power consumption would be 48-megawatts (MW). Backup diesel generators would be installed to provide emergency power to the data center. The 3.8-acre Project site is zoned PD – Planned Development and was previously zoned Light Industrial. The Project site is in Santa

[1] City of Santa Clara Community Development Department, Initial Study with Proposed Mitigated Negative Declaration 2905 Stender Way CoreSite SV9 Data Center, (July 2020) (hereafter "IS/MND").
[2] Public Resources Code § 21000 *et seq.*

Clara south of Highway US-101 and west of the San Tomas Expressway. The Project site has frontage on Stender Way. Surrounding land uses are predominantly industrial and there are no sensitive receptors within close proximity to the site.

Based on our review of the IS/MND, we have concluded that it fails to comply with CEQA. The IS/MND fails to accurately describe the existing environmental settings and underestimates and fails to adequately mitigate air quality, public health, and greenhouse gas ("GHG") impacts from the Project.

These comments were prepared with the assistance of James J.J. Clark Ph.D. of Clark & Associates Environmental Consulting, Inc. Dr. Clark's comments and curricula vitae are attached to this letter as Exhibit A.[3] For the reasons discussed herein, and in the attached expert comments, CURE urges the City to remedy the deficiencies in the IS/MND by preparing a legally adequate environmental impact report ("EIR") pursuant to CEQA.

I. STATEMENT OF INTEREST

SCCSI is an unincorporated association of individuals and labor organizations that may be adversely affected by the potential health, safety, public service, and environmental impacts of the Project. The association includes individuals and organizations, including California Unions for Reliable Energy and its local affiliates, and the affiliates' members and their families, and other individuals who live, work, recreate and raise their families in the City of Santa Clara and Santa Clara County.

SCCSI supports the development of data centers where properly analyzed and carefully planned to minimize impacts on the environment. Any proposed project should avoid impacts to public health, energy resources, sensitive species and habitats, and should take all feasible steps to ensure significant impacts are mitigated to the maximum extent feasible. Only by maintaining the highest standards can development truly be sustainable.

[3] James J.J. Clark, PhD., Comment on Initial Study with Proposed Mitigated Negative Declaration (IS/MND) for 2905 Stender Way, CoreSite SV9 Data Center, Santa Clara, California, CEQ2020-01075, Clark and Associates, (Aug. 21, 2020) (hereafter "Clark Comments") **EXHIBIT A**.

California Unions for Reliable Energy ("CURE") is a coalition of labor organizations whose members encourage sustainable development of California's energy resources. CURE's members help solve the State's energy problems by building, maintaining, and operating conventional and renewable energy power plants and transmission facilities. Since its founding in 1997, CURE has been committed to building a strong economy and a healthier environment. CURE has helped cut smog-forming pollutants in half, reduced toxic emissions, increased the use of recycled water for cooling systems, and pushed for groundbreaking pollution control equipment as the standard for all new power plants, all while helping to ensure that new power plants and transmission facilities are built with highly trained, professional workers who live and raise families in nearby communities.

Individual members of CURE, and its affiliated labor organizations live, work, recreate, and raise their families in Santa Clara. They would be directly affected by the Project's environmental and health and safety impacts. Individual members of CURE's affiliates may also work on the Project itself. They will, therefore, be first in line to be exposed to any hazardous materials, air contaminants or other health and safety hazards that exist onsite. The members of CURE have an interest in enforcing environmental laws that encourage sustainable development and ensure a safe working environment for its members.

SCCSI and its members are concerned with projects that can result in serious environmental harm without providing countervailing economic benefits such as decent wages and benefits. Environmentally determinantal projects can jeopardize future jobs by making it more difficult and more expensive for industry to expand in the City and the surrounding region, and by making it less desirable for businesses to locate and people to live and recreate in the City, including in the vicinity of the Project. Continued degradation can, and has, caused construction moratoriums and other restrictions on growth that, in turn, reduces future employment opportunities. The labor organization members of SCCSI therefore have a direct interest in enforcing environmental laws that minimize the adverse impacts of projects that would otherwise degrade the environment. CEQA provides a balancing process whereby economic benefits are weighted against significant impacts to the environment. It is for these purposes that we offer these comments.

II. LEGAL BACKGROUND

A. CEQA

CEQA is intended to provide the fullest possible protection to the environment. CEQA requires that a lead agency prepare and certify an EIR for any discretionary project that may have a significant adverse effect on the environment.[4] In order to set an accurate foundation for the analysis, an EIR must include a description of the "existing physical conditions in the affected area."[5] CEQA requires analysis of the "whole of an action," including the "direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment."[6] "Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR protects not only the environment but also informed self-government."[7]

In addition, public agencies must adopt feasible mitigation measures that will substantially lessen or avoid a project's potentially significant environmental impacts and describe those mitigation measures in the EIR.[8] A public agency may not rely on mitigation measures of uncertain efficacy or feasibility.[9] "Feasible" means capable of successful accomplishment within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.[10] Mitigation measures must be enforceable through permit conditions, agreements, or other legally binding instruments.[11]

CEQA prohibits deferring identification of mitigation measures when there is uncertainty about the efficacy of those measures or when the deferral transfers authority for approving the measures to another entity.[12] An agency may only defer

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[4] Pub. Resources Code §§ 21002.1(a), 21100(a), 21151(a); 14 C.C.R. §§ 15064(a)(1), (f)(1), 15367.
[5] *Communities for a Better Env't v. South Coast Air Quality Mgmt. Dist.* (2010) 48 Cal.4th 310, 319–322; 14 C.C.R. § 15125.
[6] Pub. Resources Code § 21065; 14 C.C.R. § 15378(a).
[7] *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564 (internal quotations omitted).
[8] Pub. Resources Code §§ 21002, 21081(a), 21100(b)(3); 14 C.C.R. § 15126.4.
[9] *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 727–728.
[10] 14 C.C.R. § 15364.
[11] *Id.* § 15126.4(a)(2).
[12] *Id.* § 15126.4(a)(1)(B); *City of Marina v. Board of Trustees of the California State University* (2006) 39 Cal.4th 341, 366; *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 308–309.

identifying mitigation measures when practical considerations prevent formulation of mitigation measures at the usual time in the planning process, the agency commits to formulating mitigation measures in the future, and that commitment can be measured against specific performance criteria the ultimate mitigation measures must satisfy.[13]

B. An EIR is Required

The EIR is the very heart of CEQA.[14] A negative declaration is improper, and an EIR must be prepared, whenever it can be fairly argued on the basis of substantial evidence that the project may have a significant environmental impact.[15] "[S]ignificant effect on the environment" is defined as "a substantial, or potentially substantial, adverse change in the environment."[16] An effect on the environment need not be "momentous" to meet the CEQA test for significance; it is enough that the impacts are "not trivial."[17] Substantial evidence, for purposes of the fair argument standard, includes "fact, a reasonable assumption predicated upon fact, or expert opinion supported by fact."[18]

2-1

[13] *POET, LLC v. California Air Res. Bd.* (2013) 218 Cal.App.4th 681, 736, 739–740, *as modified on denial of reh'g* (Aug. 8, 2013), *review denied* (Nov. 20, 2013); see also *Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260, 281 (EIR deficient for failure to specify performance standards in plan for active habitat management of open space preserve); *Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777, 794 (EIR's deferral of acoustical report demonstrating structures designed to meet noise standards without setting the actual standards is inadequate for purposes of CEQA); *Gentry v. Murrieta* (1995) 36 Cal.App.4th 1359, 1396 (negative declaration's deferral of mitigation measure improper where the measure required applicant to comply with recommendations of a report that did not exist yet with no further guidance on what mitigation was necessary).

[14] See *Pocket Protectors v. City of Sacramento* (2004) 124 Cal. App.4th 903, 926–927; *Sundstrom v. County of Mendocino* (1974) 202 Cal.App.3d 296, 304.

[15] Pub. Resources Code § 21151; 14 CCR § 15064(f); *Citizens for Responsible Equitable Envt'l Dev. v. City of Chula Vista* ("*CREED*") (2011) 197 Cal.App.4th 327, 330–331; *Communities for a Better Env't v. South Coast Air Quality Mgmt. Dist.* (2010) 48 Cal.4th 310, 319 ("*CBE v. SCAQMD*").

[16] Pub. Resources Code § 21068; 14 CCR § 15382; *County Sanitation Dist. No. 2 v. County of Kern* (2005) 127 Cal.App.4th 1544, 1581.

[17] *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 83 fn. 16.

[18] Pub. Resources Code § 21080(e)(1) (emphasis added); *CREED*, 197 Cal.App.4th at 331.

2-1 Cont.

Whether a fair argument exists is a question of law that the court reviews de novo, with a preference for resolving doubts in favor of environmental review.[19] In reviewing a decision to prepare a negative declaration rather than an EIR, courts "do not defer to the agency's determination."[20]

The fair argument standard creates a "low threshold" for requiring preparation of an EIR and affords no deference to the agency's determination.[21] Where substantial evidence supporting a fair argument of significant impacts is presented, the lead agency must prepare an EIR "even though it may also be presented with other substantial evidence that the project will not have a significant effect."[22] A reviewing court must require an EIR if the record contains any "substantial evidence" suggesting that a project "may have an adverse environmental effect"—even if contrary evidence exists to support the agency's decision.[23]

Where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the effects to be significant and prepare an EIR.[24] In short, when "expert opinions clash, an EIR should be done."[25] "It is the function of an EIR, not a negative declaration, to resolve conflicting claims, based on substantial evidence, as to the environmental effects of a project."[26] In the context of reviewing a mitigated negative declaration, "neither the lead agency nor a court may 'weigh' conflicting substantial evidence to determine whether an EIR must be prepared in the first instance."[27] Where such substantial evidence is presented, "evidence to the contrary is not sufficient to

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[19] *CREED*, 197 Cal.App.4th at 331; *Pocket Protectors,* 124 Cal.App.4th at 927.
[20] *Mejia v. City of Los Angeles* (2005) 130 Cal.App.4th 322, 332; *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th 1307, 1318.
[21] *Pocket Protectors,* 124 Cal.App.4th at 928.
[22] Pub. Resources Code § 21151(a); 14 CCR § 15064(f)(1); *Pocket Protectors*, 124 Cal.App.4th at 927; *County Sanitation Dist. No. 2*, 127 Cal.App.4th at 1579 ("where the question is the sufficiency of the evidence to support a fair argument, deference to the agency's determination is not appropriate.") (quoting *Sierra Club*).
[23] *Mejia*, 130 Cal.App.4th at 332–333.
[24] *Pocket Protectors*, 124 Cal.App.4th at 935; *Sierra Club*, 6 Cal.App.4th at 1317–1318; CEQA Guidelines § 15064(f)(5).
[25] *Pocket Protectors*, 124 Cal.App.4th at 928; *Sierra Club*, 6 Cal.App.4th at 1317–1318.
[26] *Pocket Protectors*, 124 Cal.App.4th at 935.
[27] *Id.* at 935.

2-1 Cont.

support a decision to dispense with preparation of an EIR and adopt a negative declaration, because it could be 'fairly argued' that the project might have a significant environmental impact."[28]

2-2

The fair argument test requires the preparation of an EIR whenever "there is substantial evidence that any aspect of the project, either individually or cumulatively, may cause a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial."[29] Such substantial evidence is present here and requires the preparers of this IS/MND to take a closer look at the environmental impacts of the Project in an EIR.

III. THE IS/MND FAILS TO ADEQUATELY ESTABLISH THE EXISTING ENVIRONMENTAL SETTING FOR THE PROJECT

The IS/MND describes the existing environmental setting inaccurately and incompletely, thereby skewing the County's impact analysis. The existing environmental setting is the starting point from which the lead agency must measure whether a proposed Project may cause a significant environmental impact.[30] CEQA defines the environmental setting as the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, from both a local and regional perspective.[31]

2-3

Describing the environmental setting accurately and completely for each environmental condition in the vicinity of the Project is critical to an accurate and meaningful evaluation of environmental impacts. The importance of having a stable, finite and fixed environmental setting for purposes of an environmental analysis was recognized decades ago.[32] Today, the courts are clear that "[b]efore the impacts of a Project can be assessed and mitigation measures considered, an [EIR] must describe the existing environment. It is only against this baseline that any significant environmental effects can be determined."[33]

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[28] *Sundstrom*, 202 Cal.App.3d at 310 (citation omitted).
[29] 14 C.C.R. § 15063(b)(1) (emphasis added).
[30] *See, e.g.*, *Communities for a Better Env't v. S. Coast Air Quality Mgmt. Dist.* (March 15, 2010) 48 Cal.4th 310, 316; *Fat v. City of Sacramento* (2002) 97 Cal.App.4th 1270, 1278, *citing* Remy, et al.; Guide to the Calif. Environmental Quality Act (1999) p. 165.
[31] CEQA Guidelines §15125, subd. (a); *Riverwatch v. City of San Diego* (1999) 76 Cal.App.4th 1428, 1453.
[32] *City of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185.
[33] *City of Amador v. El Dorado City Water Agency* (1999) 76 Cal.App.4th 931, 952.

An EIR must also describe the existing environmental setting in sufficient detail to enable a proper analysis of project impacts.[34] The CEQA Guidelines provide that "[k]nowledge of the regional setting is critical to the assessment of environmental impacts."[35] This level of detail is necessary to "permit the significant effects of the project to be considered in the full environmental context."[36]

Here, the IS/MND fails to describe the nearest sensitive receptor to the proposed Project site for purposes of analyzing impacts to air quality and public health. The IS/MND describes a sensitive receptor as people most likely to be affected by air pollution, such as the pregnant, children, and the elderly.[37] According to the IS/MND, the nearest sensitive receptors for the Project are residences 1,400 feet to the northwest.[38] However, Dr. Clark reviewed the Project and determined that the City failed to identify the closest sensitive receptor, which is the Grace Adult Day Health Care Center at 3010 Olcott Street – only 375 feet from the Project site.[39] This Center provides nursing, meals, transportation, and therapies for disabled adults and as such should have been considered the proper nearest sensitive receptor for the Project.[40] This failure by the City results in an improper underestimation of how emissions from the Project will impact these sensitive receptors.[41]

2-3 Cont.

IV. SUBSTANTIAL EVIDENCE SUPPORTS A FAIR ARGUMENT THAT THE PROJECT MAY RESULT IN SIGNIFICANT IMPACTS

2-4

As noted above, under CEQA, a lead agency must prepare an EIR whenever substantial evidence in the whole record before the agency supports a fair argument that a project may have a significant effect on the environment.[42] The fair argument standard creates a "low threshold" favoring environmental review

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[34] *Galante Vineyards v. Monterey Peninsula Water Mgmt. Dist.* (1997) 60 Cal.App.4th 1109, 1121-22.
[35] CEQA Guidelines § 15125, subd.(d).
[36] *Id*.
[37] IS/MND, p. 23.
[38] IS/MND, p. 23.
[39] Clark Comments, p. 6.
[40] Clark Comments, p. 6.
[41] Clark Comments, p. 9.
[42] Pub. Resources Code § 21082.2; CEQA Guidelines § 15064(f), (h); *Laurel Heights II, supra,* 6 Cal. 4th at p. 1123; *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal. 3d 68, 75, 82; *Stanislaus Audubon Society, Inc. v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 150-151; *Quail Botanical, supra,* 29 Cal.App.4th at pp. 1601-1602.

through an EIR, rather than through issuance of a negative declaration.[43] An agency's decision not to require an EIR can be upheld only when there is no credible evidence to the contrary.[44] Substantial evidence can be provided by technical experts or members of the public.[45] "If a lead agency is presented with a fair argument that a project may have a significant effect on the environment, the lead agency shall prepare an EIR even though it may also be presented with other substantial evidence that the project will not have a significant effect."[46]

2-4 Cont.

A. The IS/MND Fails to Adequately Disclose, Analyze and Mitigate the Project's Potentially Significant Air Quality Impacts

The IS/MND concludes that with implementation of Mitigation Measures AQ-1 and AQ-2, the Project will not have a significant impact from air quality emissions.[47] Dr. Clark reviewed the IS/MND and provided substantial evidence that the City underestimated the Project's criteria pollutant emissions. Thus, substantial evidence demonstrates that the Project will have significant impacts beyond what is disclosed, analyzed and mitigated in the IS/MND.

2-5

1. The City Lacks Substantial Evidence that the Project's Backup Generators will Run Only 50 Hours

The Project includes sixteen backup diesel generators that the City assumed would run fifty hours per year, which is the Bay Area Air Quality Management District's ("BAAQMD") stationary source rule's maximum allowable run time.[48] The IS/MND also notes that emergency situations, including power failures, are exempt

2-6

[43] *Citizens Action to Serve All Students v. Thornley* (1990) 222 Cal.App.3d 748, 754.
[44] *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th, 1307, 1318; *see also Friends of B Street, supra,* 106 Cal.App.3d at p. 1002 ("If there was substantial evidence that the proposed project might have a significant environmental impact, evidence to the contrary is not sufficient to support a decision to dispense with preparation of an [environmental impact report] and adopt a negative declaration, because it could be 'fairly argued' that the project might have a significant environmental impact").
[45] See, e.g., *Citizens for Responsible and Open Government v. City of Grand Terrac*e (2008) 160 Cal.App.4th 1323, 1340 (substantial evidence regarding noise impacts included public comments at hearings that selected air conditioners are very noisy); *see also Architectural Heritage Assn. v. County of Monterey*, 122 Cal.App.4th 1095, 1117-1118 (substantial evidence regarding impacts to historic resource included fact-based testimony of qualified speakers at the public hearing); *Gabric v. City of Rancho Palos Verdes* (1977) 73 Cal.App.3d 183, 199.
[46] CEQA Guidelines § 15062(f).
[47] IS/MND, pp. 22-31.
[48] IS/MND, pp. 28-29.

2-6 Cont.

from the limits in BAAQMD's rules and that the City did not calculate or analyze emissions beyond the 50 hours.[49] The IS/MND also notes that data centers require energy constantly, thereby admitting that there will be significant emissions of criteria pollutants beyond what is modeled.[50] For example, public safety power shut offs are conducted by Pacific Gas & Electric, which are expected to cause power outages of 24 to 48 hours each.[51] Nearby San Jose Clean Energy estimates that these outages may last several days a year, far beyond the 50 hours modeled in the IS/MND.[52] The IS/MND must be withdrawn, and an EIR must be prepared that considers the emissions associated with running the backup diesel generators beyond 50 hours.[53]

2. Mitigation Measure AQ-2 is Ineffective and Will Not Reduce Criteria Pollutant Emissions to a Less Than Significant Level

2-7

CEQA requires mitigation measures to be supported by substantial evidence that they will be effective.[54] The IS/MND's Mitigation Measures AQ-2 states:

> "In order to reduce NOX emissions below the BAAQMD threshold, the applicant shall limit non-emergency operation (including testing and maintenance) of each backup diesel generator to no more than 18 hours per year."[55]

According to Dr. Clark, this measure lacks substantial evidence to demonstrate it will be effective.

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[49] IS/MND, p. 29.
[50] *See* IS/MND, p. 9.
[51] *See* Pacific Gas & Electric, Public Safety Power Shutoffs, *available at* https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/public-safety-power-shutoff-faq.page; Silicon Valley Power, PG&E's Public Safety Power Shutoffs, *available at* https://www.siliconvalleypower.com/svp-and-community/safety/pg-e-s-public-safety-power-shutoff-program.
[52] *See* San Jose Clean Energy, PG&E Power Shutoffs, *available at* https://sanjosecleanenergy.org/psps/.
[53] *See* Clark Comments, p. 8.
[54] *Sacramento Old City Ass'n v. City Council* (1991) 229 Ca.3d 1011, 1027.
[55] IS/MND, p. 27.

2-7 Cont.

First, the mitigation measure does not limit non-emergency operation at all. These unmodeled emissions will remain unmitigated and thus are still significant.[56] Second, the IS/MND lacks substantial evidence to show that a maintenance schedule of only 18 hours, rather than the 50 modeled, per backup generator is feasible.[57] Dr. Clark states that it may not be possible to simply reduce necessary maintenance and testing.[58] Thus, substantial evidence shows that the mitigation measure is not feasible and significant impacts remain. Those impacts must be evaluated in an EIR.

B. The IS/MND Fails to Adequately Disclose, Analyze and Mitigate the Project's Potentially Significant Public Health Impacts

The IS/MND concludes that public health impacts, as measured in cancer risk from toxic air contaminants ("TAC"), would not be significant.[59] This conclusion suffers from two errors previously noted: the failure to identify the correct sensitive receptor for the Project and the failure to model emissions beyond 50 hours of operation of the backup generators.[60]

2-8

Based on the erroneous sensitive receptors, the IS/MND found that the Project creates a cancer risk of 6.8 in one million, below the threshold of significance of 10 in one million.[61] Dr. Clark applied the same health risk calculator as the IS/MND with the correct sensitive receptor used and determined that the actual cancer risk from the Project was 45.6 in one million, far above the threshold of significance, even assuming the Project only requires just 50 hours of operation of backup generators.[62] Dr. Clark determined that, in order to reduce impacts to less than significant, the City must require an operating restriction of 11 hours and 50 minutes per generator per year of operation, including during emergency events.[63]

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[56] Clark Comments, p. 8.
[57] Clark Comments, p. 10.
[58] Clark Comments, p. 10.
[59] IS/MND, p. 30.
[60] Clark Comments, p. 9.
[61] IS/MND, p. 31.
[62] Clark Comments, p. 9.
[63] Clark Comments, p. 10.

Based on these high emissions, Dr. Clark recommends that the City prepare a health risk assessment ("HRA") to analyze the Project's potentially significant public health impacts from TACs emitted from the diesel particulate matter.[64] These TACs can increase respiratory disease, lung cancer, and premature death.[65] Dr. Clark thus recognizes that the Project must include a site-specific HRA based on the guidelines issued by the Office of Environmental Health and Hazard Assessment.[66]

2-9

C. The IS/MND Fails to Adequately Disclose, Analyze and Mitigate the Project's Potentially Significant GHG Impacts

The CEQA Guidelines require a lead agency to compare a project's GHG emissions against a threshold of significance that the lead agency determines applies to the Project, or the extent to which the project complies with local regulations and requirements adopted to reduce GHG emissions, provided there is not evidence that GHG emissions would be cumulatively considerable.[67] Here, the City improperly bifurcated the analysis of the Project's GHG emissions. Specifically, for the part of the Project not covered by a stationary source permit, the City considered consistency with the California Air Resources Board's ("CARB") 2017 Scoping Plan, the City's Climate Action Plan ("CAP"), and Senate Bill ("SB") 350's mandate of 100 percent renewable energy by 2050.[68] For the backup generators, the City compared the GHG emissions to a numerical threshold of 10,000 metric tons of carbon dioxide equivalent ("MTCO2e") per year. Both of these analyses fail to demonstrate that Project impacts are less than significant.

2-10

1. Project Emissions from Non-Stationary Sources are Significant

The IS/MND disclosed that Project emissions will be 34,110.9 MTCO2e annually. These emissions are significant, despite any alleged consistency with GHG emission reduction plans.

2-11

[64] Clark Comments, pp. 10-11.
[65] Clark Comments, p. 11.
[66] Clark Comments, p. 11.
[67] CEQA Guidelines § 15064.4 subd. (b).
[68] IS/MND, pp. 60-61.

a. CARB's 2017 Scoping Plan

2-12 Consistency with CARB's 2017 Scoping Plan cannot be used to determine with substantial evidence that Project emissions are less than significant. The California Supreme Court ruled that local land use projects cannot rely on statewide emissions reductions plans to demonstrate a less than significant impact from GHG emissions without also providing substantial evidence to show how that statewide goal is appropriate for the local project.[69] Here, the City did not provide substantial evidence that the 2017 Scoping Plan was appropriate for this Project. Further, Dr. Clark determined that the Project's emissions of 34,110.9 MTCO2e are significant, particularly when compared to other numeric thresholds.[70]

b. The City's CAP

2-13 A CAP can be used to demonstrate that a project's GHG emissions are less than significant provided that the CAP was adopted through a public process and reduces a Project's GHG emissions.[71] Here, the City's CAP was adopted through a public process and does contain provisions that reduce the GHG emissions of data centers, but it was designed towards the state's 2020 GHG emissions targets.[72] The City admits that it must update its CAP for consistency with the State's 2030 goals.[73] For this Project that would be operating beyond 2020, the City's analysis of consistency with 2020 targets is irrelevant. Additionally, even if the Project's CAP consistency could demonstrate emissions are less than significant, Dr. Clark provided substantial evidence to the contrary based on the modeled emissions.[74]

c. SB 350

2-14 Similar to CARB's 2017 Scoping Plan, SB 350 is a statewide plan. The IS/MND does not contain substantial evidence to demonstrate that Silicon Valley Power's efforts to meet SB 350 compliance demonstrate that the Project would not

[69] *Center for Biological Diversity v. Dept. of Fish and Wildlife* (2015) 62 Cal.4th 204, 225-226.
[70] Clark Comments, p. 12.
[71] *See* CEQA Guidelines § 15064.4 subd. (b)(3).
[72] *See* City of Santa Clara, Climate Action Plan, *available at* https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan/climate-action-plan.
[73] *See* City of Santa Clara, Climate Action Plan, *available at* https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan/climate-action-plan.
[74] Clark Comments, p. 12.

2-14 Cont.

have a significant GHG emission impact. Even if Silicon Valley Power were to meet SB 350's targets, it would not do so for almost 30 years after the Project is operational. With Dr. Clark's evidence that these impacts remain significant, despite consistency with SB 350, the City's assertion that the Project's impacts are less than significant are not supported by substantial evidence.[75]

Despite compliance with plans identified in the IS/MND, Dr. Clark provided substantial evidence showing the Project's GHG emissions would be significant. Therefore, the City must prepare an EIR that analyzes and mitigates these significant GHG emissions.

2. Project Emissions from Stationary Sources are Significant

2-15

The IS/MND stated that the Project's GHG emissions from the diesel backup generators will total 8,541 MTCO2e per year, which is below BAAQMD's stationary source threshold of 10,000 MTCO2e per year.[76] First, the BAAQMD targets come from the BAAQMD guidelines designed for compliance with the State's 2020 GHG emission reduction goals, not the current 2030 goals. The City is required, but failed, to provide substantial evidence to demonstrate why using those outdated goals is appropriate. Further, the City relied on modeled emissions data based off of the faulty assumption that the backup generators will be used for 50 hours per year.[77] Dr. Clark provided substantial evidence as to why the City lacks evidence to rely on 50 hours per year of operation. A more reasonable level of use, consistent with expected power outages would demonstrate that Project GHG emissions would exceed even the outdated 10,000 MTCO2e threshold.

The City failed to adequately disclose, analyze, and mitigate all of the potentially significant Project impacts on air quality, public health, and from GHG emissions, in violation of CEQA. The City must withdraw the IS/MND and prepare an EIR that properly discloses, analyzes and mitigates these impacts.

[75] Clark Comments, p. 12.
[76] IS/MND, p. 61.
[77] IS/MND, p. 61.

V. CONCLUSION

CEQA requires that an EIR be prepared if there is substantial evidence that a project, either individually or cumulatively, may cause a significant effect on the environment.[78] As discussed above, there is substantial evidence supporting a fair argument that the Project would result in significant adverse impacts that were not identified or adequately analyzed, or mitigated in the IS/MND.

2-16

We urge the City to fulfill its responsibilities under CEQA by withdrawing the IS/MND and preparing a legally adequate EIR to address the potentially significant impacts described in this comment letter. Only by complying with all applicable laws will the City and the public be able to ensure that the Project's environmental impacts are mitigated to less than significant levels.

Sincerely,

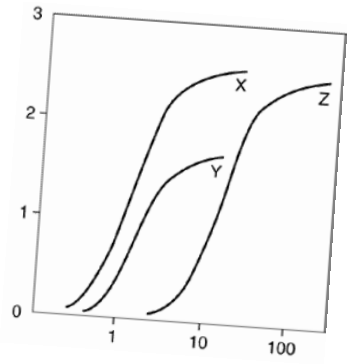
Kyle C. Jones

KCJ:ljl

Exhibits

[78] Pub. Resources Code § 21151; 14 CCR §15063(b)(1).

EXHIBIT A



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August 21, 2020

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Attn: Mr. Kyle C. Jones

Subject: Comment Letter on Initial Study With Proposed Mitigated Negative Declaration (IS/MND) for 2905 Stender Way, CoreSite SV9 Data Center, Santa Clara, California, CEQ2020-01075

Dear Mr. Jones:

At the request of Adams Broadwell Joseph & Cardozo (ABJC), Clark and Associates (Clark) has reviewed materials related to the July 2020 IS/MND for the above referenced project. The IS/MND was prepared by Circlepoint for the City of Santa Clara Community Development Department.

Clark's review of the materials in no way constitutes a validation of the conclusions or materials contained within the project record. If we do not comment on a specific item this does not constitute acceptance of the item.

General Comments:

2-17

The City's analysis of the air quality impacts of emissions from the construction and operational phases of the project are unsupported and flawed. The analysis in the IS/MND fails to quantify the total emissions in a meaningful manner in which yearly and daily emissions may be compared to relevant and appropriate standards, fails to address necessary mitigation measures to reduce significant impacts, and makes assertions about the impacts to the surrounding communities without a clear and reproducible methodology. Several mitigation measures outlined in the DEIR are merely aspirational and may not effectively reduce emissions from the project. These flaws are detailed below,

2-17 Cont.

making the conclusions in the IS/MND unsupported. The City must update their analysis as an Environmental Impact Report (EIR) to correct the unsupported conclusions presented in the IS/MND

Project Description

According to the IS/MND the project will be a four-story, 250,000 square-foot data center (SV9). At full buildout, the data center would have 48-megawatt (MW) connections to Silicon Valley Power (SVP) service. The SV9 data center would be approximately 85 feet in height and would house computer servers and supporting equipment for private clients. Sixteen standby option, backup diesel generators (backup generators) would be added to the site to provide backup power to the SV9 data center in the event of an emergency.

Since data centers rely upon a constant supply of power to allow servers to operate continuously, the project will utilize sixteen 3.5-MW backup generators. The backup generators are designed to start up quickly in the event of a power failure. All generators would be located in the equipment yard of the SV9 data center building. The generators are assumed to operate up to 50 hours per year (a total of 800 hours of operation).

The project would include nine modular chiller plants located in the chiller yard adjacent to the SV9 data center. Adiabatic fluid coolers would be installed on the roof of the data center. Each 1,575-ton chiller would be supported by five adiabatic fluid coolers, for a total of 45 adiabatic fluid chillers. The adiabatic fluid coolers require minimal make-up water and would collectively use approximately 18 acre-feet annually, or 5,865,325 gallons. The Proponent anticipates that the make- up water serving the adiabatic fluid coolers would have a single potable source. To supplement, two 15,000-gallon aboveground water storage tanks would be installed on site to provide 24-hours of make- up water in the event of temporary loss of water service. Aboveground water tanks would be installed adjacent to the modular chiller plants.

Existing Project Site

The 3.8-acre project 2-17 in the City of Santa Clara (City), in the Silicon Valley region of the larger San Francisco Bay Area. The project site is in the central part of the City, just south of US Highway 101 (US-101) and west of the San Tomas Expressway. Land use designations surrounding the project site consist of Light Industrial and Planned Industrial to the west, south, and east, Low Intensity

Office/Research and Development to the north, and High Intensity Office/Research and Development farther to the west. The project site is currently zoned as Planned Development.

Project Location Map Figure 1

Source: Google Earth, 2019

The surrounding development consists of one- to five-story buildings with large surface parking lots. Nearby uses include data centers, research and development buildings, biotech companies and other digital technology-oriented uses. Buildings are generally set back from the street by landscaped areas, fencing and surface parking. Street-side trees occur intermittently throughout the area, often breaking up views of existing buildings from the street.

The project site is bound by Central Expressway to the south, Stender Way to the west, adjacent buildings to the north, and San Tomas Aquino Creek to the east. CoreSite's SV3, SV4, SV5, SV6, SV7 & SV8 data centers are immediately west of the project site along Stender Way and Coronado Drive.

Corporate offices for ON Semiconductor (Semiconductor supplier) are immediately to the north while San Tomas Aquino Creek and bike trail is to the east. There are various offices for Allegion,

Crystal Instruments, AccuImage and Sentek Dynamics further to the east across the creek on Owen Street.

General Comments:

1. **The Conclusions of the IS/MND Regarding Air Quality, GHG and Health Risks From the Project Are Premature And Are Based On False Assumptions. The IS/MND Fails To Perform Any Significant Cumulative Impact Analyses On Air Quality.**

The SV9 Data Center will add an additional 200,000 square feet to the existing 775,000 square feet plus of data center space operated by Core Site.[1] According to the brochure, the "campus" [2] is comprised of eight operational data centers located adjacent to each other in Santa Clara. The existing campus (located at 2901 Coronado Drive, Santa Clara, CA) is adjacent to the proposed project and encompasses an area slightly more than 11 acres. The aerial footprint of the campus will increase by nearly 1/3 third (an additional 4 acres). The piecemeal construction of the campus by Core Site over the last decade has avoided the cumulative impact analysis required under CEQA. 2-18

The IS/MND asserts that there are no significant impacts from existing projects within 1,000 feet of the project site but fails to account for the existing emissions from the CoreSite campus. Emissions from Central Expressway, Universal Semiconductor Technology, ON Semiconductors, Inc., and NVIDIA are included in the cursory analysis. Emissions from the nine permitted sources at the CoreSite campus are ignored. A proper cumulative impact analysis is vital for an environmental analysis "because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that the environmental damage often occurs incrementally from a variety of small sources with which they interact."[3] The IS/MND's conclusion is flawed for the following reasons.

First, the discussion in the comments above indicates that the Project would contribute to an existing significant impact, i.e. degraded air quality in the San Francisco Bay Area air basin as evidenced by frequent violations of PM10, PM2.5 and ozone ambient air quality standards. The Project would increase the emissions of PM10, PM2.5, and ozone precursors and thus would contribute to these

[1] CoreSite. 2020. SV Online Services Brochure. https://assets-global.website-files.com/5d95bce2cfbd82fc0aa712b1/5e989bb7ef627df7ec5baf3d_0492-bro-mkt-SV-20200301_online.pdf

[2] CoreSite. 2020. SV Online Services Brochure. https://assets-global.website-files.com/5d95bce2cfbd82fc0aa712b1/5e989bb7ef627df7ec5baf3d_0492-bro-mkt-SV-20200301_online.pdf

[3] *Bakersfield Citizens* (2004) 124 Cal. App. 4th at 1214 (quoting *Communities for a Better Environment v. California Resources Agency* 103 Cal.App.4th at 116).

2-18 Cont. existing exceedances of ambient air quality standards. Thus, the Project's contribution is *per se* cumulatively significant.

2-19 Second, a cumulative impacts analysis must consider past projects, the effects of other current projects, and the effects of probable future projects."[4] The IS/MND did not identify any other closely related, past, present, or reasonably foreseeable probable future projects let alone attempt to quantify their emissions and, thus, to evaluate them cumulatively with the Project.

2. Mitigation Measure AQ-1 Does Nothing To Improve The Negative Impacts Of The Project On The Local Air Quality And Increases The Likelihood That The Area Will Become A Hot Spot For Poor Air Quality.

2-20

The City's Mitigation Measure AQ-1 is meaningless and will allow local air quality to be degraded unnecessarily. Allowing NO_x emissions above the 54 lbs per day threshold for the project (which is only a small portion of the total operational emissions of the CoreSite campus) by paying for offsets ignores the real health impacts associated with exposure to criteria pollutants. According to the U.S. EPA[5] exposure to high concentration of NO_2 can irritate airways in the human respiratory system. Such exposures over short periods can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma, as well as children and the elderly are generally at greater risk for the health effects of NO_2.

Specific Comments:

1. The IS/MND Fails To Identify The Closest Sensitive Receptor To The Site.

2-21

The IS/MND defines Sensitive Receptors as persons who are most likely to be affected by air pollution: infants, children under 18, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals,

[4] CEQA Guidelines §15355(b)

[5] U.S. EPA. 2020. Basic Information about NO2. https://www.epa.gov/no2-pollution/basic-information-about-no2#Effects

2-21 Cont.

daycare facilities, elder care facilities, elementary schools, churches and places of assembly, and parks. According to the IS/MND the closest sensitive receptors to the project site are existing residences approximately 1,400 feet northwest.

A review of the surrounding area shows that a sensitive receptor significantly closer to the proposed project. The Grace Adult Day Health Care Center is located at 3010 Olcott Street, approximately 375 feet to the north east of the site. According to the Grace Adult Day Health Care Center (ADHC) website, Grace ADHC Center is a licensed day health care program by California Department of Public Health that provides a combination of medical, social and therapy services to adults who have difficulty functioning in their own homes. Services at Grace ADHC include a "structured day program which includes nursing, meals, transportation, social services and restorative therapies such as physical, occupational and speech therapies, in a warm, caring and secure environment." This oversite significantly alters the assumptions and conclusions contained within the IS/MND. The City must re-

2-21 Cont. analyze the project impacts and present them in an EIR for the site.

2. The IS/MND's Analysis of Criteria Pollutant Emissions Is Misleading And Fails to Address The Significant NOx Emissions That Will Occur With The Operational Phase Of The Project.

Criteria Pollutants include particulate matter (PM), oxides of nitrogen (NOx), oxides of sulfur (SOx), carbon monoxide (CO), and ozone (O_3). Federally mandated standards (40 CFR pat 50) for these pollutants were established to protect public health and the environment. Santa Clara County is considered a nonattainment area for ground- level O_3 and $PM_{2.5}$ under both the federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM_{10} under the California Clean Air Act, but not under the federal Act.

2-22

According to the IS/MND, the primary emission sources of Criteria Pollutants associated with project are the 16 3,500-kW backup generators during testing and/or their maintenance. The 16 generators would have a combined diesel fuel storage capacity of 61,696 gallons. The City states that "the operation of the substation would result in negligible daily operational emissions.[8]" Footnote 8 states that operation emission from the substation were assumed to be less than one pound per day of each criteria pollutants and no modeling was conducted."

Assuming that each backup generator would be operated for up to 50 hours per year, the maximum allowed operational time under BAAQMD stationary source permits, the City calculated total emissions from the project. The City notes that criteria pollutant emissions *were not calculated for emergency use scenarios such as a power failure* (emphasis added), as BAAQMD stationary source permitting exempts emergency use. The net increase in criteria pollutant emissions on the project site was calculated by subtracting the baseline condition emissions from the total project operational emissions as shown in **Table 2-3** of the IS/MND**.**

Table 2-3 Net Project Operational Emissions (Project Minus Baseline)

Emission Source	ROG (*tpy/ (lbs/day*)	NO_X (*tpy/ (lbs/day*)	PM_{10} (*tpy/ (lbs/day*)	$PM_{2.5}$ (*tpy/ (lbs/day*)
BAAQMD Threshold	*10 (54)*	*10 (54)*	*15 (82)*	*10 (54)*
Project Operational Emissions	1.3 (7.2)	27.6 (151.1)	<0.1 (0.3)	<0.1 (0.2)
Existing Baseline Conditions	0.3 (1.8)	0.5 (2.6)	0.3 (1.7)	0.1 (0.5)
Net Project Emissions	**1.0 (5.4)**	**27.1 (148.5)**	**-0.3 (-1.4)**	**-0.1 (-0.3)**
Significant?	**No**	**Yes**	**No**	**No**

Source: Rincon, 2019
tpy = tons per year; lbs/day = pounds per day; ROG = reactive organic gases, NOX = nitrogen oxides, PM10 = particulate matter 10 microns in diameter or less, PM2.5 = particulate matter 2.5 microns or less in diameter
Note: Averages assume the project would operate 365 days per year. The first number in each cell is the annual emissions (tpy), and the second number is the daily emissions (lb/day).

2-22 Cont.

Table 2-3 shows that combined emissions from project operation would exceed BAAQMD operational emissions thresholds for NO_X. No other criteria pollutant threshold would be exceeded. The exceedance of the NO_X annual and daily thresholds is associated with the operation of the diesel generators on site, which would require issuance of a permit from BAAQMD to operate. Operation of the 16 diesel generators 50 hours per year would result in approximately 27 tons of NO_X emissions annually. **Mitigation Measure AQ-2,** requires the Proponent of the project to reduce annual and average daily NO_X emissions from the stationary sources on-site during operation to a less-than-significant level. This mitigation measure requires that generator testing and maintenance be kept to no more than 18 hours per year per generator. This measure ignores the cumulative impact from the previously permitted facilities (BAAQMD Facility Identifier (FACID) 19539-1, 19539-2, 19539-3, 19539-4, 19539-5, 19539-6, 19539-7, 19539-8, and 19539-REM), operated by CoreSite at 2901 Coronado Drive. The measure does not account for the impact from emergency use scenarios, such as power failure. Although the BAAQMD stationary source permitting exempts emergency use in the operational emissions, it misses the point that the operations at CoreSite have significant air quality impacts. Assuming the "campus" is actually one operation, the Proponent should be required to re-evaluate the emissions from the whole campus and report them in an environmental impact report (EIR).

3. The Diesel Particulate Matter (DPM) Concentration Estimated For The Maximum Exposed Individual (MEI) From The Project In The IS/MND Is Inaccurate And Significantly Underestimates The Actual Concentration.

According to the IS/MND the project will be a source of air pollutant emissions during construction and operation, with the main source being backup generator testing and maintenance. The diesel-fueled generators emit diesel particulate matter (DPM), which is a TAC. The generators are also a source of $PM_{2.5}$, which has known adverse health effects. 2-23

Based on the assumption that each of the 16 generators would operate up to 50 hours a year during testing and maintenance, the City calculated that 0.18 lbs of DPM would be emitted. Using the BAAQMD's Health Risk Calculator (Beta 4.0) spreadsheet, the City calculated a ground-level concentration of PM2.5/DPM of 0.009 µg/m3 at sensitive receptors northwest of the project site and an excess cancer risk of 6.8 in one million (below the BAAQMD Significance Threshold of 10). Having identified a closer sensitive receptor (Adult Day Care Center), and using the same Health Risk Calculator (Beta 4.0) spreadsheet, I have calculated a ground-level concentration of 5/DPM of 0.061 µg/m3 at the Grace ADHC northeast of the project site and an excess cancer risk of 45.6 in one million (well above the BAAQMD Significance Threshold of 10).

4. The Proposed Emission Controls Assumed For Project Assumes That Normal Testing And Maintenance Operations Can Be Performed In Approximately One-Third Of The Time Normally Assumed The Testing And Maintenance Is Performed.

Emissions from combustion engines for stationary uses, including diesel generators, are generally regulated by the US Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB). Engine emission standards are promulgated in a tiered system that designates maximum pollutant emissions. Unlike Off-Road Diesel Powered Engines For Mobile Sources (currently utilizing Tier 4 Interim and Final technology which reduce PM2.5 emissions by 90% plus) all new generators have U.S. EPA Tier II rating and need to be outfitted with diesel particulate filters. Diesel powered generator engines should be fueled using ultra-low sulfur diesel fuel with a maximum sulfur content of 15 parts per million (ppm). According to the City, all generator engines would be 2-24

equipped with California Air Resources Board (CARB) Level 3 verified diesel particulate filters (DPFs) with a minimum control efficiency of 85 percent removal of particulate matter.

2-24 Cont.

In the absence of stricter emission control devices, the City is proposing to reduce the number of hours of potential operation for testing and maintenance on an annual basis. Rather than assuming testing would occur for up to 50 hours per year for each generator, the City is assuming that the same types of maintenance and testing that needs to be performed to ensure the operations of the generators can be accomplished in 36% of the time generally assumed to be required (18 hours instead of 50 hours). Given the complexity of the equipment, reducing the maintenance and testing period by 64% seems like an illogical and unsustainable mitigation measure. The proponents must evaluate the emissions again considering the required maintenance period and include all of the maintenance for the whole campus in this evaluation.

5. Mitigation Measure AQ-2 Is Insufficient To Achieve The Goal Of Not Exceeding The BAAQMD Significance Threshold of 10.

2-25

Using the Mitigated Measure AQ-2 value of 18 hours per year of testing per generator, and the BAAQMD's Health Risk Calculator (Beta 4.0) spreadsheet, the calculated a ground-level concentration of PM2.5 of 0.02 μg/m3 at the Grace ADHC northeast of the project site and an excess cancer risk of 15.2 in one million (well above the BAAQMD Significance Threshold of 10). To achieve a total cancer risk less than the BAAQMD Significance Threshold of 10, the generators will have be run less than 11 hours 50 minutes per year.

6. Given The Proximity Of Sensitive Receptors To The Site And The Nature of The Toxic Air Contaminants Emitted, The City Must Prepare A Site-Specific Baseline Health Risk Assessment Using Methods From The Office of Environmental Health And Hazard Assessment (OEHHA) To Analyze Diesel Particulate Matter Emissions

2-26

The City has failed in its obligation to perform a site-specific health risk assessment for the project, as required by CEQA. The City's emissions estimates for criteria pollutants do not substitute for a health risk analysis of the cancer risk posed by exposure to toxic air contaminants (TACs), in particular diesel particulate matter (DPM), released during Project construction and operation. Diesel exhaust contains

2-26 Cont.

nearly 40 toxic substances, including TACs and may pose a serious public health risk for residents in the vicinity of the facility. TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. The current California list of TACs includes approximately 200 compounds, including particulate emissions from diesel-fueled engines.

Diesel exhaust has been linked to a range of serious health problems including an increase in respiratory disease, lung damage, cancer, and premature death.[6,7,8] Fine DPM is deposited deep in the lungs in the smallest airways and can result in increased respiratory symptoms and disease; decreased lung function, particularly in children and individuals with asthma; alterations in lung tissue and respiratory tract defense mechanisms; and premature death.[9] Exposure to DPM increases the risk of lung cancer. It also causes non-cancer effects including chronic bronchitis, inflammation of lung tissue, thickening of the alveolar walls, immunological allergic reactions, and airway constriction.[10] DPM is a TAC that is recognized by state and federal agencies as causing severe health risk because it contains toxic materials, unlike $PM_{2.5}$ and PM_{10}.[11]

The IS/MND fails to include a site-specific analysis of the Project's construction or operational health risk posed by DPM emissions. A health risk assessment (HRA), prepared in accordance with OEHHA guidance for the baseline, construction, and future years of the project, is essential.

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[6] California Air Resources Board, Initial Statement of Reasons for Rulemaking, Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Staff Report, June 1998; see also California Air Resources Board, Overview: Diesel Exhaust & Health, https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health#:~:text=Diesel%20Particulate%20Matter%20and%20Health&text=In%201998%2C%20CARB%20identified%20DPM,and%20other%20adverse%20health%20effects.

[7] U.S. EPA, Health Assessment Document for Diesel Engine Exhaust, Report EPA/600/8-90/057F, May 2002.

[8] Environmental Defense Fund, Cleaner Diesel Handbook, Bring Cleaner Fuel and Diesel Retrofits into Your Neighborhood, April 2005; http://www.edf.org/documents/4941_cleanerdieselhandbook.pdf, accessed July 5, 2020.

[9] California Air Resources Board, Initial Statement of Reasons for Rulemaking, Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Staff Report, June 1998.

[10] Findings of the Scientific Review Panel on The Report on Diesel Exhaust as adopted at the Panel's April 22, 1998 Meeting.

[11] Health & Safety Code § 39655(a) (defining "toxic air contaminant" as air pollutants "which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health. A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the federal act (42 U.S.C. Sec. 7412 (b)) is a toxic air contaminant.")

7. The IS/MND's Greenhouse Gas (GHG) Emissions Analysis Is Unsupportable And Flawed

2-27

The City used tortured logic to first ignore the 1,100 MT CO_2e per year for annual emissions (data centers are not typical land use types); reclassifying the project as a Small Power Plant with a threshold of 10,000 MT CO_2e per year for annual emissions; then assuming operational emissions from area sources, water, solid waste and energy demand (34,110.9 MT CO_2e per year for annual emissions) were merely presented for informational purposes since they exceed the 10,000 MT CO_2e per year for annual emissions is flawed at best and clearly unsupportable. The cumulative estimate of 42,641.9 MT CO_2e per year for annual emissions (direct and indirect) makes the project a significant emitter of GHGs. The City must revise their analysis and present the correct total emissions from the project in an EIR.

2-28

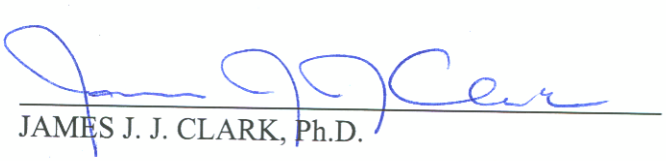
In addition, the City must evaluate the GHG emissions from the whole campus instead of presenting a piecemeal evaluation of the separate project. The cumulative emissions from the Campus have been ignored in previous assessments and the City must accurately account for the impacts.

Conclusion

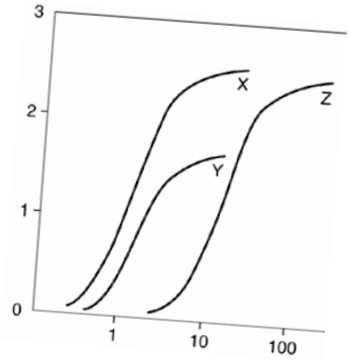
2-29

The facts identified and referenced in this comment letter lead me to conclude that the Project could result in significant unmitigated impacts if the air quality analysis is not corrected and the conditions of approval are not binding.

Sincerely,



JAMES J. J. CLARK, Ph.D.



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James J. J. Clark, Ph.D.

Principal Toxicologist

Toxicology/Exposure Assessment Modeling

Risk Assessment/Analysis/Dispersion Modeling

Education:

Ph.D., Environmental Health Science, University of California, 1995

M.S., Environmental Health Science, University of California, 1993

B.S., Biophysical and Biochemical Sciences, University of Houston, 1987

Professional Experience:

Dr. Clark is a well-recognized toxicologist, air modeler, and health scientist. He has 30 years of experience in researching the effects of environmental contaminants on human health including environmental fate and transport modeling (SCREEN3, AEROMOD, ISCST3, Johnson-Ettinger Vapor Intrusion Modeling, RESRAD, GENII); exposure assessment modeling (partitioning of contaminants in the environment as well as PBPK modeling); conducting and managing human health risk assessments for regulatory compliance and risk-based clean-up levels; and toxicological and medical literature research.

Significant projects performed by Dr. Clark include the following:

LITIGATION SUPPORT

Case: Pamela Butler Vs. Mallinckrodt, Inc. & Cotter Corporation. Case No.: 4:2018cv01701 United States District Court Eastern District of Missouri Eastern Division

Case: Kenneth Edward Koterba Vs. Mallinckrodt, Inc. & Cotter Corporation. Case No.: 4:2018cv01702 United States District Court Eastern District of Missouri Eastern Division

Case: Anthony Hines Vs. Mallinckrodt, Inc. & Cotter Corporation. Case No.: 4:2018cv01703 United States District Court Eastern District of Missouri Eastern Division

Case: Emery David Walick, III Vs. Mallinckrodt, Inc. & Cotter Corporation. Case No.: 4:2018cv01704 United States District Court Eastern District of Missouri Eastern Division

Client: Humphrey, Farrington & McClain, P.C., Independence, Missouri

Dr. Clark performed a historical dose reconstruction for community members exposed to radioactive waste released into the environment from the St. Louis Air Port Site (SLAPS) and the Hazelwood Interim Storage Site (HISS). The releases resulted in impacts to soils, sediments, surface waters, and groundwater in the vicinity of the SLAPS and HISS sites. The analysis was performed in general accordance with the methods outlined by the Agency for Toxic Substances Control (ATSDR) for assessing radiation doses from historical source areas in North St. Louis County, Missouri.

Case Result: Trial Pending

Case: Don Strong, et al. vs. Republic Services, Inc., Bridgeton Landfill, LLC, vs. Cotter Corporation, N.S.L., Case No.: 17SL-CC01632-01 Circuit Court of St. Louis County, State of Missouri, Division 17

Client: Humphrey, Farrington & McClain, P.C., Independence, Missouri

Dr. Clark performed a historical dose reconstruction for community members from radiologically impacted material (RIM) releases from the adjacent West Lake Landfill. The analysis was performed in general accordance with the methods outlined by the Agency for Toxic Substances Control (ATSDR) for assessing radiation doses from historical source areas in North St. Louis County, Missouri.

Case Result: Settlement in favor of plaintiff.

Case: Arnold Goldstein, Hohn Covas, Gisela Janette La Bella, et al.. vs. Exxon Mobil Corporation, PBF Energy Inc., Torrance Refining Company LLC, et al., Case No.: 2:17-cv-02477DSF United States District Court for the Central District of California

Client: Sher Edlging, LLP, San Francisco, California and Matern Law Group , PC., El Segundo, California

Dr. Clark performed a historical dose reconstruction for community members from an active 700 acre petroleum refinery in Los Angeles. The analysis included a multi-year dispersion model was performed in general accordance with the methods outlined by the U.S. EPA and the SCAQMD for assessing the health impacts in Torrance, California. The results of the analysis are being used as the basis for injunctive relief for the communities surrounding the refinery.

Case Result: Trial Pending

Case: Scott D. McClurg, et al. v. Mallinckrodt Inc. and Cotter Corporation. Lead Case No.: 4:12CV00361 AGF United States District Court Eastern District of Missouri Eastern Division

Client: Environmental Law Group, Birmingham, AL.

Dr. Clark performed a historical dose reconstruction for community members and workers exposed to radioactive waste released into the environment from the St. Louis Air Port Site (SLAPS) and the Hazelwood Interim Storage Site (HISS). The releases resulted in impacts to soils, sediments, surface waters, and groundwater in the vicinity of the SLAPS and HISS sites. The analysis included the incorporation of air dispersion modeling across the community to determine ground-level air concentrations and deposition of thorium and uranium isotopes and their respective daughter products. The dose reconstruction considered all relevant pathways to determine total doses of radiation received across the community from 1946 through 2017.

Case Result: Settlement in favor of plaintiff.

Case: Mary Ann Piccolo V. Headwaters Incorporated, et al. Seventh Judicial Court In and For Carbon County, State of Utah. Case No. 130700053

Client: Law Offices of Roy L. Mason. Annapolis, MD

Dr. Clark performed a dose assessment of an individual occupationally exposed to metals and silica from fly ash who later developed cancer. A review of the individual's medical and occupational history was performed to prepare opinions regarding his exposure and later development of cancer.

Case Result: Settlement in favor of plaintiff.

Case: Tracey Coleman V. Headwaters Incorporated, et al. Seventh Judicial Court In and For Carbon County, State of Utah. Case No. 140902847

Client: Law Offices of Roy L. Mason. Annapolis, MD

Dr. Clark performed a dose assessment of an individual occupationally exposed to metals and silica from fly ash who later developed cancer. A review of the individual's medical and occupational history was performed to prepare opinions regarding his exposure and later development of cancer.

Case Result: Settlement in favor of plaintiff.

Case: David Dominguez and Amanda Dominguez V. Cytec Industries, Inc et al. Superior Court of the State Of California for the County Of Los Angeles – Central Civil West. Civil Action. BC533123

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to hexavalent chromium who later developed cancer. A review of the individual's medical and occupational history was performed to prepare opinions regarding her exposure and later development of cancer.

Case Result: Settlement in favor of plaintiff.

SELECTED AIR MODELING RESEARCH/PROJECTS

Client(s) – Multiple

Indoor Air Evaluations, California: Performed multiple indoor air screening evaluations and risk characterizations consistent with California Environmental Protection Agency's (Cal/EPA) Department of Toxic Substances Control (DTSC) and Regional Water Quality Control Board (RWQCB) methodologies. Characterizations included the use of DTSC's modified Johnson & Ettinger Model and USEPA models, as well as the attenuation factor model currently advocated by Cal/EPA's Office of Environmental Health and Hazard Assessment (OEHHA).

Client – Confidential

Dr. Clark performed a comprehensive evaluation of criteria pollutants, air toxins, and particulate matter emissions from a carbon black production facility to determine the impacts on the surrounding communities. The results of the dispersion model were used to estimate acute and chronic exposure concentrations to multiple contaminants and were be incorporated into a comprehensive risk evaluation.

Client – Confidential

Dr. Clark performed a comprehensive evaluation of air toxins and particulate matter emissions from a railroad tie manufacturing facility to determine the impacts on the surrounding communities. The results of the dispersion model have been used to estimate acute and chronic exposure concentrations to multiple contaminants and have been incorporated into a comprehensive risk evaluation.

EMERGING/PERSISTENT CONTAMINANT RESEARCH/PROJECTS

Client: City of Santa Clarita, Santa Clarita, California

Dr. Clark managed the oversight of the characterization, remediation and development activities of a former 1,000 acre munitions manufacturing facility for the City of Santa Clarita. The site is impacted with a number of contaminants including perchlorate, unexploded ordinance, and volatile organic compounds (VOCs). The site is currently under a number of regulatory consent orders, including an Immanent and Substantial Endangerment Order. Dr. Clark assisted the impacted municipality with the development of remediation strategies, interaction with the responsible parties and stakeholders, as well as interfacing with the regulatory agency responsible for oversight of the site cleanup.

Client – Confidential, Los Angeles, California

Dr. Clark is performing a comprehensive review of the potential for pharmaceuticals and their by-products to impact groundwater and surface water supplies. This evaluation will include a review if available data on the history of pharmaceutical production in the United States; the chemical characteristics of various pharmaceuticals; environmental fate and transport; uptake by xenobiotics; the potential effects of pharmaceuticals on water treatment systems; and the potential threat to public health. The results of the evaluation may be used as a briefing tool for non-public health professionals.

PUBLIC HEALTH/TOXICOLOGY

Client: Brayton Purcell, Novato, California

Dr. Clark performed a toxicological assessment of residents exposed to methyl-tertiary butyl ether (MTBE) from leaking underground storage tanks (LUSTs) adjacent to the subject property. The symptomology of residents and guests of the subject property were evaluated against the known outcomes in published literature to exposure to MTBE. The study found that residents had been exposed to MTBE in their drinking water; that concentrations of MTBE detected at the site were above regulatory guidelines; and, that the symptoms and outcomes expressed by residents and guests were consistent with symptoms and outcomes documented in published literature.

Client: Covanta Energy, Westwood, California

Evaluated health risk from metals in biosolids applied as soil amendment on agricultural lands. The biosolids were created at a forest waste cogeneration facility using 96% whole tree wood chips and 4 percent green waste. Mass loading calculations were used to estimate Cr(VI) concentrations in agricultural soils based on a maximum loading rate of 40 tons of biomass per acre of agricultural soil. The results of the study were used by the Regulatory agency to determine that the application of biosolids did not constitute a health risk to workers applying the biosolids or to residences near the agricultural lands.

Client: Kaiser Venture Incorporated, Fontana, California

Prepared PBPK assessment of lead risk of receptors at a 1,100-acre former steel mill. This evaluation was used as the basis for granting closure of the site by lead regulatory agency.

RISK ASSESSMENTS/REMEDIAL INVESTIGATIONS

Kaiser Ventures Incorporated, Fontana, California

Prepared health risk assessment of semi-volatile organic chemicals and metals for a fifty-year old wastewater treatment facility used at a 1,100-acre former steel mill. This evaluation was used as the basis for granting closure of the site by lead regulatory agency.

ANR Freight - Los Angeles, California

Prepared a comprehensive Preliminary Endangerment Assessment (PEA) of petroleum hydrocarbon and metal contamination of a former freight depot. This evaluation was as the basis for reaching closure of the site with lead regulatory agency.

Kaiser Ventures Incorporated, Fontana, California

Prepared comprehensive health risk assessment of semi-volatile organic chemicals and metals for 23-acre parcel of a 1,100-acre former steel mill. The health risk assessment was used to determine clean up goals and as the basis for granting closure of the site by lead regulatory agency. Air dispersion modeling using ISCST3 was performed to determine downwind exposure point concentrations at sensitive receptors within a 1 kilometer radius of the site. The results of the health risk assessment were presented at a public meeting sponsored by the Department of Toxic Substances Control (DTSC) in the community potentially affected by the site.

Unocal Corporation - Los Angeles, California

Prepared comprehensive assessment of petroleum hydrocarbons and metals for a former petroleum service station located next to sensitive population center (elementary school). The assessment used a probabilistic approach to estimate risks to the community and was used as the basis for granting closure of the site by lead regulatory agency.

Client: Confidential, Los Angeles, California

Managed oversight of remedial investigation most contaminated heavy metal site in California. Lead concentrations in soil excess of 68,000,000 parts per billion (ppb) have been measured at the site. This State Superfund Site was a former hard chrome plating operation that operated for approximately 40-years.

Client: Confidential, San Francisco, California

Coordinator of regional monitoring program to determine background concentrations of metals in air. Acted as liaison with SCAQMD and CARB to perform co-location sampling and comparison of accepted regulatory method with ASTM methodology.

Client: Confidential, San Francisco, California

Analyzed historical air monitoring data for South Coast Air Basin in Southern California and potential health risks related to ambient concentrations of carcinogenic metals and volatile organic compounds. Identified and reviewed the available literature and calculated risks from toxins in South Coast Air Basin.

IT Corporation, North Carolina

Prepared comprehensive evaluation of potential exposure of workers to air-borne VOCs at hazardous waste storage facility under SUPERFUND cleanup decree. Assessment used in developing health based clean-up levels.

Professional Associations

American Public Health Association (APHA)
Association for Environmental Health and Sciences (AEHS)
American Chemical Society (ACS)
International Society of Environmental Forensics (ISEF)
Society of Environmental Toxicology and Chemistry (SETAC)

Publications and Presentations:

Books and Book Chapters

Sullivan, P., **J.J. J. Clark,** F.J. Agardy, and P.E. Rosenfeld. (2007). *Synthetic Toxins In The Food, Water and Air of American Cities*. Elsevier, Inc. Burlington, MA.

Sullivan, P. and **J.J. J. Clark**. 2006. *Choosing Safer Foods, A Guide To Minimizing Synthetic Chemicals In Your Diet*. Elsevier, Inc. Burlington, MA.

Sullivan, P., Agardy, F.J., and **J.J.J. Clark**. 2005. *The Environmental Science of Drinking Water*. Elsevier, Inc. Burlington, MA.

Sullivan, P.J., Agardy, F.J., **Clark, J.J.J.** 2002. *America's Threatened Drinking Water: Hazards and Solutions.* Trafford Publishing, Victoria B.C.

Clark, J.J.J. 2001. "TBA: Chemical Properties, Production & Use, Fate and Transport, Toxicology, Detection in Groundwater, and Regulatory Standards" in *Oxygenates in the Environment.* Art Diaz, Ed.. Oxford University Press: New York.

Clark, J.J.J. 2000. "Toxicology of Perchlorate" in *Perchlorate in the Environment.* Edward Urbansky, Ed. Kluwer/Plenum: New York.

Clark, J.J.J. 1995. Probabilistic Forecasting of Volatile Organic Compound Concentrations At The Soil Surface From Contaminated Groundwater. UMI.

Baker, J.; **Clark, J.J.J.**; Stanford, J.T. 1994. Ex Situ Remediation of Diesel Contaminated Railroad Sand by Soil Washing. Principles and Practices for Diesel Contaminated Soils, Volume III. P.T. Kostecki, E.J. Calabrese, and C.P.L. Barkan, eds. Amherst Scientific Publishers, Amherst, MA. pp 89-96.

Journal and Proceeding Articles

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008) A Statistical Analysis Of Attic Dust And Blood Lipid Concentrations Of Tetrachloro-p-Dibenzodioxin (TCDD) Toxicity Equialency Quotients (TEQ) In Two Populations Near Wood Treatment Facilities. Organohalogen Compounds, Volume 70 (2008) page 002254.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008) Methods For Collect Samples For Assessing Dioxins And Other Environmental Contaminants In Attic Dust: A Review. Organohalogen Compounds, Volume 70 (2008) page 000527

Hensley A.R., Scott, A., Rosenfeld P.E., **Clark, J.J.J.** (2007). "Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility." *Environmental Research.* 105:194-199.

Rosenfeld, P.E., **Clark, J. J.,** Hensley, A.R., and Suffet, I.H. 2007. "The Use Of An Odor Wheel Classification For The Evaluation of Human Health Risk Criteria For Compost Facilities" Water Science & Technology. 55(5): 345-357.

Hensley A.R., Scott, A., Rosenfeld P.E., **Clark, J.J.J.** 2006. "Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility." The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006, August 21 – 25, 2006. Radisson SAS Scandinavia Hotel in Oslo Norway.

Rosenfeld, P.E., **Clark, J. J.** and Suffet, I.H. 2005. "The Value Of An Odor Quality Classification Scheme For Compost Facility Evaluations" The U.S. Composting Council's 13th Annual Conference January 23 - 26, 2005, Crowne Plaza Riverwalk, San Antonio, TX.

Rosenfeld, P.E., **Clark, J. J.** and Suffet, I.H. 2004. "The Value Of An Odor Quality Classification Scheme For Urban Odor" WEFTEC 2004. 77th Annual Technical Exhibition & Conference October 2 - 6, 2004, Ernest N. Morial Convention Center, New Orleans, Louisiana.

Clark, J.J.J. 2003. "Manufacturing, Use, Regulation, and Occurrence of a Known Endocrine Disrupting Chemical (EDC), 2,4-Dichlorophnoxyacetic Acid (2,4-D) in California Drinking Water Supplies." National Groundwater Association Southwest Focus Conference: Water Supply and Emerging Contaminants. Minneapolis, MN. March 20, 2003.

Rosenfeld, P. and **J.J.J. Clark**. 2003. "Understanding Historical Use, Chemical Properties, Toxicity, and Regulatory Guidance" National Groundwater Association Southwest Focus Conference: Water Supply and Emerging Contaminants. Phoenix, AZ. February 21, 2003.

Clark, J.J.J., Brown A. 1999. Perchlorate Contamination: Fate in the Environment and Treatment Options. In Situ and On-Site Bioremediation, Fifth International Symposium. San Diego, CA, April, 1999.

Clark, J.J.J. 1998. Health Effects of Perchlorate and the New Reference Dose (RfD). Proceedings From the Groundwater Resource Association Seventh Annual Meeting, Walnut Creek, CA, October 23, 1998.

Browne, T., **Clark, J.J.J.** 1998. Treatment Options For Perchlorate In Drinking Water. Proceedings From the Groundwater Resource Association Seventh Annual Meeting, Walnut Creek, CA, October 23, 1998.

Clark, J.J.J., Brown, A., Rodriguez, R. 1998. The Public Health Implications of MtBE and Perchlorate in Water: Risk Management Decisions for Water Purveyors. Proceedings of the National Ground Water Association, Anaheim, CA, June 3-4, 1998.

Clark J.J.J., Brown, A., Ulrey, A. 1997. Impacts of Perchlorate On Drinking Water In The Western United States. U.S. EPA Symposium on Biological and Chemical Reduction of Chlorate and Perchlorate, Cincinnati, OH, December 5, 1997.

Clark, J.J.J.; Corbett, G.E.; Kerger, B.D.; Finley, B.L.; Paustenbach, D.J. 1996. Dermal Uptake of Hexavalent Chromium In Human Volunteers: Measures of Systemic Uptake From Immersion in Water At 22 PPM. Toxicologist. 30(1):14.

Dodge, D.G.; **Clark, J.J.J.**; Kerger, B.D.; Richter, R.O.; Finley, B.L.; Paustenbach, D.J. 1996. Assessment of Airborne Hexavalent Chromium In The Home Following Use of Contaminated Tapwater. Toxicologist. 30(1):117-118.

Paulo, M.T.; Gong, H., Jr.; **Clark, J.J.J.** (1992). Effects of Pretreatment with Ipratroprium Bromide in COPD Patients Exposed to Ozone. American Review of Respiratory Disease. 145(4):A96.

Harber, P.H.; Gong, H., Jr.; Lachenbruch, A.; **Clark, J.**; Hsu, P. (1992). Respiratory Pattern Effect of Acute Sulfur Dioxide Exposure in Asthmatics. American Review of Respiratory Disease. 145(4):A88.

McManus, M.S.; Gong, H., Jr.; Clements, P.; **Clark, J.J.J.** (1991). Respiratory Response of Patients With Interstitial Lung Disease To Inhaled Ozone. American Review of Respiratory Disease. 143(4):A91.

Gong, H., Jr.; Simmons, M.S.; McManus, M.S.; Tashkin, D.P.; Clark, V.A.; Detels, R.; **Clark, J.J.** (1990). Relationship Between Responses to Chronic Oxidant and Acute

Ozone Exposures in Residents of Los Angeles County. American Review of Respiratory Disease. 141(4):A70.

Tierney, D.F. and **J.J.J. Clark.** (1990). Lung Polyamine Content Can Be Increased By Spermidine Infusions Into Hyperoxic Rats. American Review of Respiratory Disease. 139(4):A41.