

Air Quality at the Nishi Site

I have studied the Nishi Environmental Impact Reports and some of Dr. Tom Cahill's comments concerning air quality, including associated studies, and have reached the following conclusions:

- There is no scientific basis for concluding that air quality at the Nishi site, as influenced by freeway traffic, is any more adverse than other residential locations, existing and proposed, along the I-80 corridor.
- Meteorological data included in the Draft EIR indicate that the predominant wind direction is from the North/Northwest. Accordingly, this property is generally upwind of I-80.
- There are no geographic barriers to impede the dispersion of traffic related pollutants. The Nishi site is not an area where such pollutants would be expected to unduly concentrate. In fact, the elevated roadway flanking the western-most portion of the property is likely to result in greater dispersion of traffic-related contaminants than would occur at other locations along the corridor.
- Most importantly, health risk estimates presented in the Draft EIR were based on a 70 years outdoor exposure model with no consideration of the extensive mitigation measures discussed in the Draft EIR and improved upon with the current proposal, including:
 1. The focus on student housing, which will reduce the duration of exposure to a likely average 3 years or less - a fraction of the 70 year duration assumed in the EIR.
 2. The exposure estimates did not account for the amount of time spent indoors by residents living at the Nishi site. The studies conducted for the New Harmony development indicated "people spend most of their time indoors, averaging 22.5 hours per day, not outdoors." This is important given the low level of outside air infiltration resulting

from the consequential building energy standards anticipated with this project.

3. The exposure estimates did not account for the amount of time spent away from the residence. California EPA risk assessment guidelines recommend a default assumption that residents spend 27% of the time away from their home.
4. A state of the art indoor air filtration system will eliminate approximately 95% of airborne particles.
5. A 70 to 100 foot wide continuous urban forest with foliage selections based on filtering qualities applicable to fine particulate matter will be planted between I-80 and the Nishi site.
6. With satellite parking and no driveways within building clusters, opportunities to maximize tree canopy mitigations will be enhanced.

Mitigation Summary

In addition to I-80, there are other sources of air pollutants in Davis. The mitigations being taken by the Nishi project are, in my opinion, comprehensive and will serve to also protect other nearby properties, i.e. Solano Park, while providing a model as Davis copes with the various impacts inherent to other infill opportunities. After all, it is the utilization of such infill properties, appropriately labeled “smart growth,” that are an important element of this air quality solution for everyone.

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Professional Experience

Senior Toxicologist, Pesticide and Environmental Toxicology Branch

Cal/EPA, Office of Environmental Health Hazard Assessment

5/09 – 5/17

Chief of the Pesticide Epidemiology Section, supervising a public health medical officer, three toxicologists, and an industrial hygienist. The Section's activities include development of reporting procedures for pesticide-related illness, pesticide illness education, evaluation of California's medical supervision program, health and safety regulations for agricultural workers, emergency response preparedness, and peer review of health risk assessments for pesticides.

Staff Toxicologist, Integrated Risk Assessment Branch

Cal/EPA, Office of Environmental Health Hazard Assessment

3/01 – 5/09

Developed risk-based remediation standard for surface contamination at former clandestine methamphetamine laboratories. Developed scope of work for \$150K research contract with UC San Francisco and monitored progress of the research. Prepared toxicity reviews for 13 chemicals used in illegal synthesis of methamphetamine. Prepared comprehensive review of the investigation and cleanup of contaminated soil at Midway Village housing complex (Daly City). Wrote critical reviews of risk assessments for hazardous waste sites. Co-authored a report examining health risks of used motor oil as fuel for cargo ships.

Staff Toxicologist, Human and Ecological Risk Division

Cal/EPA, Department of Toxic Substances Control

6/89 – 2/01

Reviewed site characterization reports and human health risk assessments for hazardous waste sites and facilities permitted to treat, store and dispose of hazardous wastes. From 5/92 through 1/95, was acting Senior Toxicologist supervising 4-5 staff. In cooperation with U.S EPA, organized and taught twelve 3-day "Risk and Decision Making" workshops for federal, state, and local government environmental health staff. Participated in development and implementation of the California Railroad Accident Prevention and Immediate Deployment (RAPID) plan. Evaluated health risks to children attending schools located near sources of hazardous chemicals.

Toxicologist, IBM Corporation

9/84 – 6/89

Evaluated the toxicity of chemicals used in the manufacture of new and existing products. Recommended appropriate toxicity and/or mutagenicity testing when existing toxicity database was judged incomplete. In cooperation with Eastman Kodak researchers, designed and monitored a 90-day bioassay of a ketone solvent for *n*-hexane-type neurotoxicity. Developed technical documentation for establishment of corporate-wide occupational exposure standard for airborne cobalt. Evaluated the toxicity and regulatory status of 17 solvents in support of a comprehensive plan for remediation of ground water contamination at IBM's San Jose manufacturing facility. Participated in a World Health Organization study to evaluate the mutagenicity of 2- and 4-acetylaminofluorene in the primary hepatocyte DNA repair assay.

Post-Doctoral Scientist, IBM Corporation

8/82 – 9/84

Evaluated the genotoxicity of chemicals in the Ames Salmonella mutation assay and the Chinese hamster ovary cell/sister chromatid exchange (CHO/SCE) assay. Conducted studies to compare different end-points for cytotoxicity in primary cultures of rat hepatocytes.

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Academic Background

Ph.D., Pharmacology and Environmental Toxicology, UC Davis, 1982
University of California Regents' Fellowship, Stauffer Chemical Company Fellowship,
NIEHS Traineeship in Environmental Toxicology
B.A., Psychology (Biochemistry minor), UC San Diego, 1972; Graduation with High Honors

Scientific Affiliations

Diplomate of the American Board of Toxicology, 1986; re-certified every five years thereafter
Member of the Society of Toxicology
Member and past president of the Genetic & Environmental Toxicology Association of Northern California

Scientific Presentations

“Assessing the Health Risks for Humans Exposed to Arsenic-Containing Mine Tailings.”
Symposium on Sources and Toxicity of Mining Wastes, Northern California Chapter, Society of
Environmental Toxicology and Chemistry; Sacramento, CA; June 24, 1996.

“Report from the Medical/Scientific Research Working Group.” First National Conference on
Drug Endangered Children; Denver, CO; June 29, 2004.

“Development of Cleanup Standards for Former Meth Labs.” 14th Annual Technical Training
Seminar, Clandestine Laboratory Investigating Chemists Association; Portland, OR; September
10, 2004.

“Toxicology of Methamphetamine and By-Products of its Production.” Annual Meeting of the
American Industrial Hygiene Association; Philadelphia, PA; June 3, 2007.

“Clandestine Methamphetamine Labs: Toxicity and Exposure Issues.” Fourth National
Conference of the National Alliance for Drug Endangered Children; Kansas City, MO; October
10, 2007.

“Derivation of a Risk-Based Remediation Standard for Methamphetamine.” 10th Annual
Certified Unified Program Agencies Conference; Burlingame, CA; February 5, 2008.

“Methamphetamine: New Findings and Research Needs.” Meeting of the National Alliance for
Model State Drug Laws; Santa Fe, NM; August 7, 2008.

“New Research Findings on Methamphetamine Exposure: Potential Implications for
Decontamination Protocols” and “Efforts Toward the Establishment of a Recommended
Cleanup Standard for Methamphetamine and the Potential Impact on State and Local
Regulations.” Fifth National Conference of the National Alliance for Drug Endangered Children;
Salt Lake City, UT; October 7, 2008.

“Health Risk Assessment for Mission Bay Landfill: A Retrospective Appraisal.” 11th Annual
LEA/CIWMB Partnership Conference; Napa, CA; November 3, 2008

“Derivation of a Risk-Based Cleanup Standard for Methamphetamine, and Evaluation of Clan Lab Decontamination Procedures.” 2009 Strategy-Training Conference, National Methamphetamine and Pharmaceuticals Initiative; Nashville, TN; May 20, 2009.

Other Professional Experience

- Member of an independent peer review panel charged with evaluating the September 2002 U.S. EPA report, “World Trade Center Indoor Air Assessment: Selecting Contaminants of Potential Concern and Setting Health-Based Benchmarks.” The panel was organized by Toxicology Excellence for Risk Assessment (TERA) under contract to U.S. EPA.
- Lecturer, UC Davis, for the following courses:
 - Environmental Toxicology 20 (“Introduction to Forensic Science”)
 - *Clandestine Methamphetamine Labs* (2014)
 - Environmental Toxicology 30 (“Chemical Use and Abuse”)
 - *CNS Stimulants: Phenylethylamines, Amphetamine and Meth, Ecstasy and Cocaine* (2015)
 - Environmental Toxicology 135 (“Health Risk Assessment of Toxicants”)
 - Site-Specific Risk Assessment: Challenging Issues (2013)
 - Environmental Toxicology 290 (“Filling the Gaps” seminar series)
 - *Assessing the Health Risks of Contaminants on Surfaces: A Case Study Involving Clandestine Methamphetamine Labs* (2016)

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Publications

Sinha, Y.N., Salocks, C.B., Lewis, U.J., and VanderLaan, W.P. Depletion of pituitary GH in response to nursing: An artifact of extraction procedure. Program, 56th Annual Meeting, Endocrine Soc., p. A-302, 1974 (Abstract).

Sinha, Y.N., Salocks, C.B., and VanderLaan, W.P. Basal levels of prolactin and GH in genetically obese mice. Program, 56th Annual Meeting, Endocrine Soc., p. A-302, 1974 (Abstract).

Sinha, Y.N., Salocks, C.B., Lewis, U.J., and VanderLaan, W.P. Influence of nursing on the release of prolactin and GH in mice with high and low incidence of mammary tumors. Endocrinology 95: 947-954, 1974.

Sinha, Y.N., Salocks, C.B., and VanderLaan, W.P. Abnormal prolactin and GH secretion in obese mice. Clinical Res. 23: A-129, 1975 (Abstract).

Sinha, Y.N., Salocks, C.B., and VanderLaan, W.P. Stimulatory test for PRL release in mice: Pattern characteristic of the incidence of mammary tumors. Program, 57th Annual Meeting, Endocrine Soc., p. 336, 1975 (Abstract).

Sinha, Y.N., Salocks, C.B., and VanderLaan, W.P. Pituitary and serum concentrations of prolactin and GH in Snell dwarf mice. Proc. Soc. Exptl. Biol. Med. 150: 207-210, 1975.

Sinha, Y.N., Salocks, C.B., and VanderLaan, W.P. Prolactin and growth hormone levels in different inbred strains of mice: Pattern in association with estrous cycle, time of day, and perphenazine stimulation. Endocrinology 97: 1112-1122, 1975.

Sinha, Y.N., Salocks, C.B., and VanderLaan, W.P. Prolactin and growth hormone secretion in chemically-induced and genetically obese mice. Endocrinology 97: 1386-1393, 1975.

Sinha, Y.N., Salocks, C.B., and VanderLaan, W.P. A comparison of the effects of bromocryptine and lergotriple mesylate on prolactin and growth hormone secretion in mice. Hormone Metabol. Res. 8: 332-336, 1976.

Sinha, Y.N., Salocks, C.B., and VanderLaan, W.P. Circulating levels of prolactin and growth hormone and natural incidence of mammary tumors in mice. J. Toxicol. Environ. Health, Suppl. 1: 131-160, 1976.

Sinha, Y.N., Salocks, C.B., and VanderLaan, W.P. Circulating levels of prolactin and growth hormone and natural incidence of mammary tumors in mice. *In* M. Norvell and T. Shellenberger (Eds.): Hormone Research II. Hemisphere Publ. Corp., Washington, 1976.

Sinha, Y.N., Salocks, C.B., and VanderLaan, W.P. Control of prolactin and growth hormone secretion in mice by obesity. Endocrinology 99: 881-886, 1976.

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Publications (continued)

Sinha, Y.N., Thomas, J.W., Salocks, C.B., and VanderLaan, W.P. Influence of high fat diet on prolactin and growth hormone secretion in mice. Program, 58th Annual Meeting, Endocrine Soc., p. 226, 1976 (Abstract).

Sinha, Y.N., Salocks, C.B., and VanderLaan, W.P. Prolactin secretion patterns in mice with high and low incidence of mammary tumors: Reversal by foster nursing. Fifth Intl. Congress of Endocrinology, Abstracts of Short Commun. and Poster Present., p. 140, 1976 (Abstract).

Sinha, Y.N., Salocks, C.B., Wickes, M.A., and VanderLaan, W.P. Serum and pituitary concentrations of prolactin and growth hormone in mice during a twenty-four hour period. Endocrinology 100: 786-791, 1977.

Sinha, Y.N., Thomas, J.W., Salocks, C.B., Wickes, M.A., and VanderLaan, W.P. Prolactin and growth hormone secretion in diet-induced obesity in mice. Hormone Metab. Res. 9: 277-282, 1977.

Sinha, Y.N., Salocks, C.B., VanderLaan, W.P., and Vlahakis, G. Evidence for an influence of mammary tumor virus on prolactin secretion in the mouse. J. Endocrinology 74: 383-392, 1977.

Sinha, Y.N., and Salocks, C.B. Inhibition of prolactin release by high doses of estrogen. Program, 59th Annual Meeting, Endocrine Soc., p. 224, 1977 (Abstract).

Sinha, Y.N., Wickes, M.A., Salocks, C.B., VanderLaan, W.P. Gonadal regulation of prolactin and growth hormone secretion in the mouse. Biol. Reprod. 21: 473-481, 1979.

Salocks, C.B., Hsieh, D.P.H., and Byard, J.L. Butylated hydroxytoluene pretreatment reduces cytotoxicity and covalent binding of aflatoxin B₁ in primary hepatocyte cultures. The Toxicologist 1: 108, 1981 (Abstract).

Salocks, C.B., Hsieh, D.P.H., and Byard, J.L. Butylated hydroxytoluene pretreatment protects against cytotoxicity and reduces covalent binding of aflatoxin B₁ in primary hepatocyte cultures. Toxicol. Appl. Pharmacol. 59: 331-345, 1981.

Knadle, S.A., Salocks, C.B., Nakashima, J., and Byard, J.L. Comparative rates of benzene metabolism in primary hepatocyte cultures. The Toxicologist 2: 25, 1982 (Abstract).

Salocks, C.B., Hsieh, D.P.H., and Byard, J.L. Butylated hydroxytoluene pretreatment selectively reduces covalent binding of aflatoxin B₁ to DNA and RNA in primary cultures of rat hepatocytes. Proc. Am. Assoc. Cancer Res. 24: 87, 1983 (Abstract).

Salocks, C.B., Ma, J.J., and Joachim, F.J. Comparison of lactate dehydrogenase release and malonaldehyde production for assessment of cytotoxicity in primary cultures of rat hepatocytes. The Toxicologist 4: 103, 1984 (Abstract).

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Publications (continued)

Salocks, C.B., Hsieh, D.P.H., and Byard, J.L. Effects of butylated hydroxytoluene pretreatment on the metabolism of aflatoxin B₁ in primary cultures of adult rat hepatocytes: Selective reduction of covalent binding to DNA and RNA. Toxicol. Appl. Pharmacol. 76: 498-509, 1984.

Salocks, C.B., and Decad, G.M. Induction of DNA repair and replication in rat hepatocytes after in vivo treatment with 2-acetylaminofluorene and 4-acetylaminofluorene. The Toxicologist 6: 224, 1986 (Abstract).

Salocks, C.B., and Decad, G.M. Induction of unscheduled DNA synthesis and DNA replication in rat hepatocytes following in vivo administration of 2-acetylaminofluorene and 4-acetylaminofluorene. In J. Ashby, F.J. de Serres, M.D. Shelby, B.H. Margolin, M. Ishidate, Jr., and G.C. Becking (Eds.): *Evaluation of Short-Term Tests for Carcinogens. Report of the International Programme on Chemical Safety's Collaborative Study on In Vivo Assays.* Cambridge University Press, Cambridge, 1988 (pp. 1.372-1.377).

Salocks, C.B., Topping, D.C., Vlaovic, M.S., Burrell, A.D., and O'Donoghue, J. Subchronic neurotoxicity of 5-methyl-3-heptanone in rats: Correlation of behavioral symptoms and neuropathology. The Toxicologist 10: 121, 1990 (Abstract).

Klein, A.K., Oudiz, D., Butler, E., Salocks, C.B., Carlisle, J., Becker, R., and Wong, J. Proposed California regulations for multimedia risk assessment for hazardous waste sites and hazardous waste treatment, storage and disposal facilities. The Toxicologist 12: 301, 1992 (Abstract).

Salocks, C.B., Hathaway, T.R., Ziarkowski, D., and Walker, W.J. Physical characterization, solubility, and potential bioavailability of arsenic in tailings from a former gold mine. The Toxicologist 16: 48, 1996 (Abstract).

Harnly, M., Siegel, D., Neutra, R., Parker, T., Salocks, C., and Kreutzer, R. Emergency response to chemical releases: Exposure assessment. Presentation at the American Public Health Association 1995 Annual Meeting. (Abstract).

Salocks, C.B., Wade, M.J., Oudiz, D.J., and Davis, B.K. A decision matrix for assessing health risks associated with exposure to contaminated building surfaces. The Toxicologist 17: 284, 1997 (Abstract).

Golub, M.S., Keen, C.L., Salocks, C.B., and Hathaway, T.R. Arsenic tissue concentrations of immature mice after oral exposure to gold mine tailings. Third International Conference on Arsenic Exposure and Health Effects, Society of Environmental Geochemistry and Health, 1998 (Abstract).

Golub, M.S., Keen, C.L., Commisso, J., Salocks, C.B., and Hathaway, T.R. Arsenic tissue concentrations of immature mice one hour after oral exposure to gold mine tailings. Environmental Geochemistry and Health 486: 1-11, 1999.

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Publications (continued)

Salocks, C.B., Vona, M.J., Haas, R.A., Chang, R.R. and Simmons, B.P. Evaluation of two immunoassays for analysis of methamphetamine contamination on indoor surfaces. The Toxicologist 72: 183, 2003 (Abstract).

Salocks, C.B. and Kaley, K.B. Clandestine Drug Lab Technical Support Documents for Ammonia, Coleman Fuel, Hydrogen Chloride, Iodine, Lithium, Methamphetamine, Phosphine, Red Phosphorus, Sodium, Sodium Hydroxide, Ephedrine & Pseudoephedrine, Methanol and Freon®. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, 2003. http://www.oehha.ca.gov/public_info/clanlabs.html

Kaley, K.B. and Salocks, C.B. Clandestine Drug Lab Chemical Fact Sheets for Ammonia, Coleman Fuel, Hydrogen Chloride, Iodine, Lithium, Methamphetamine, Phosphine, Red Phosphorus, Sodium, and Sodium Hydroxide. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, 2003. http://www.oehha.ca.gov/public_info/clanlabs.html

Mazur, L., Milanes, C., Randles, K., and Salocks, C. *Used Oil in Bunker Fuel: A Review of Potential Human Health Implications*. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, 2004. <http://www.oehha.ca.gov/risk/pdf/UsedOilInBunkerFuel.pdf>

Salocks, C.B. *Review of the 2001 Investigation and Cleanup of the Midway Village Residential Complex in Daly City, California*. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, 2006. <http://www.oehha.ca.gov/risk/pdf/midwayvillagereport111406.pdf>

Salocks, C.B., Smith, L., and Glen, G. Application of SHEDS-multimedia to estimate children's residential exposure to surface methamphetamine residues at former clandestine methamphetamine labs. Poster presentation at the 17th Annual Conference of the International Society of Exposure Analysis, 2007.

Hui, X., Salocks, C., Sanborn, J., and Maibach, H. In vitro studies of percutaneous absorption and surface-to-skin transfer of *d*-methamphetamine hydrochloride using human skin. The Toxicologist 320: 1558, 2008 (Abstract).

Salocks, C.B. *Development of a Reference Dose (RfD) for Methamphetamine*. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, 2009. <http://oehha.ca.gov/media/downloads/cnr/methrfdfinal022609.pdf>

Salocks, C.B. *Assessment of Children's Exposure to Surface Methamphetamine Residues in Former Clandestine Methamphetamine Labs and Identification of a Risk-Based Cleanup Standard for Surface Methamphetamine Contamination*. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, 2009. <http://oehha.ca.gov/media/downloads/cnr/exposureanalysis022709.pdf>

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Publications (continued)

Salocks, C.B., Hui, X., Lamel, S., Qiao, P., Sanborn, J.R., and Maibach, H.I. Dermal exposure to methamphetamine hydrochloride contaminated residential surfaces: Surface pH values, volatility and *in vitro* human skin. Food Chem. Toxicol. 50: 4436-4440, 2012.

Salocks, C.B., Hui, X., Lamel, S., Hafeez, F., Qiao, P., Sanborn, J.R., and Maibach, H.I. Dermal exposure to methamphetamine hydrochloride contaminated residential surfaces II. Skin surface contact and dermal transfer relationship. Food Chem. Toxicol. 66:1-6, 2014.

Laribi O., Malig B., Broadwin R., Wieland W., Woods R., Ashley K., Salocks C., Ting D. and Zeise L. Monitoring of agricultural workers exposed to cholinesterase-inhibiting pesticides. Abstract presented at the annual meeting of the Society of Toxicology, March, 2015.

Ngai, W., Salocks, C. and Bolstad, H. *Guidelines for Physicians who Supervise Workers Exposed to Cholinesterase-Inhibiting Pesticides. Fifth Edition.* California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, 2015.
<http://www.oehha.ca.gov/pesticides/pdf/DocGuide2015.pdf>

Laribi, O., Malig, B., Sutherland-Ashley, K., Broadwin, R., Wieland, W., and Salocks, C. A statewide evaluation of the California medical supervision program using cholinesterase electronic laboratory reporting data. Inquiry: J. Health Care Organization, Provision, and Financing 54:1-11, 2017.