February 19, 2019

Mr. Roger Hatton, PE (FL), CCM

Construction Management Lead

HDR

Rinconada WTP Reliability Improvement Project

400 More Avenue
Los Gatos, CA 95032-1111

Subject: Hydraulic Fluid Leak Incident of December 12, 2018

Dear Mr. Hatton:

Applied Technology & Science, A-T-S, is pleased to submit this letter report as a summary of our research and investigation into the December 12, 2018, Hydraulic Fluid Leak from a Sweep-it Cleans truck at and in the vicinity of the Rinconada Water Treatment Plant (WTP) Improvement Project.

In this report, we have summarized the incident based on our review of the three written reports available (the Draft WUE O&M and Capital Timeline and the subsequent TW Ops Liaison report, both prepared by Mr. Pierre Gouley, Reliability Project Operations Liaison , South Treated Water Operations, Water Utility Operations & Maintenance Division, Santa Clara Valley Water District; and the GRAB & GO Incident report, prepared by Mr. Patrick Hays, Environmental Health & Safety Representative, Balfour Beatty Infrastructure Inc., BBII). We also contacted Mr.

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Michael Laviano, the owner of Sweep-it Cleans; Coast Oil company, LLC , the manufacturer of the Hydraulic Fluid; Ms. Debbie Sierra , the sales Representative for the distributor of the Hydraulic Fluid: SC Fuels; and Mr. Aaron Bates, the operations Manager for the SC Fuels. We have also conducted in-person and phone interviews with Mr. Mike Munson, PE, the Engineering Unit Manager, Santa Clara Valley Water District; Mr. Patrick Hays, BBII's Environmental Health & Safety Representative and Mr. Pierre Gouley, Reliability Project Operations Liaison, South Treated Water Operations, Water Utility Operations & Maintenance Division, Santa Clara Valley Water District.

The purpose of our research and this report is to identify the approximate amount of the Hydraulic Fluid leak and the type(s) of the chemical(s) compound (s) contained in the Hydraulic Fluid. With this information we researched the possible health hazards of the Hydraulic Fluid and its chemical (s) to humans and their possible environmental hazards to air, land, water and the subsequent possible adverse impact of the incident to the nearby residents' property and welfare.

1. The approximate amount of the leaked Hydraulic Fluid:
   From our research we approximated the amount of the leak to be about 1.5 to 2 gallons. The Hydraulic Fluid leak was from a broken hose connecting a 35-gallon Hydraulic Fluid tank that is nestled behind the truck cab to a motor rotating the left broom. The tank supplies Hydraulic Fluid to the hoses for the left and right brooms. The hose had probably cracked over time from contact with the hot motor and at some point, during the sweep on December 12, 2018, had started to dislodge and gradually leak the fluid. The truck sprays water from the front and the sides of the truck for dust control. The leak in this case had become mixed with the water and had left a streak with a length of roughly 200 feet and width of about 8 feet that is the total width of the truck and its two brooms, one at each side. The leak had been from the left hose.
   By the time the truck was on the site of the WTP, a BBII employee had noticed the disconnected hose and the truck had stopped. Once the truck stops, the Hydraulic Fluid will not be moved to the motor as the purpose of the Hydraulic Fluid is to lubricate the motor rotating the broom. At the time of the stop, the remaining oil in the hose had been leaked in the form of drops, an approximate amount of half a cup to one cup. The replacement Hydraulic Fluid in the tank was measured roughly in the amount of one and half to two gallons that equals the total amount of the leak from the time the hose had gotten loose to the time it was disconnected.

2. Type of the leaked Hydraulic Fluid:

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The Hydraulic Fluid is: “Coast A/W Hydraulic Oil (ISO GRADE 46)”. It is manufactured by a Privately-held petroleum products manufacturer in San Jose, California, named: Coast Oil Company, LLC. The number 46 refers to the viscosity of the oil. The Coast Oil Company, LLC. sells its products through a Fuels Distribution and Services company named SC Fuels. This Hydraulic Fluid is a mixture of three types of chemicals. The Materials Safety Data Sheet (MSDS) that accompanies any sales of these products and is for the ISO GRADES 22, 32, 46, 68, 100, 150, and 220, identifies the chemicals as: Petroleum Oil with a Chemical Abstract Service (CAS) number of 64742-58-1 in the weight percentage range of 39% to 99%. The second component is identified as Solvent Dewaxed with a CAS Number of 8012-95-1 with weight percentage range of zero to 60%. The third component is a proprietary additives mixture with a specified weight percentage range of 1 to 2 %.

3. Chemical Information of Each Component:
   a. The Petroleum Oil: The name of this compound is Lubricating Oils (Petroleum), Hydrotreated Spent. It is defined as “…. a complex combination of hydrocarbons obtained by treating a spent lube oil with hydrogen in the presence of a catalyst. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C15 through C50”. The high carbon number of this chemical makes its volatility negligible. As a result, its evaporation to air in a period of two hours (the duration from the leak to the cleanup) is negligible.
   b. The Solvent Dewaxed: The other name for this compound is Liquid Paraffin also known as *Paraffinum liquidum*. It is a highly refined mineral oil used in cosmetics and for medical purposes as an occasional laxative.
   c. Proprietary Additives: This compound is covered under the Trade Secret law. The percentage of it is very small and, in the mixture, does not lend any toxicity (according to MSDS).

4. Laws and Regulations Regarding Chemical Leaks and Emergency Response:
   The overarching Federal law regarding the report of any chemical leak or spill is the Superfund Amendments and Reauthorization Act (SARA) that became law in 1986. Title III of the law is also known as the Emergency Planning and Community Right-to-Know Act (EPCRA). SARA Title III requires the States to:
   a. Promote outreach for developing local emergency preparedness programs to respond to chemical releases.
   b. Receive reports from the regulated community.

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c. Organize, analyze and disseminate the resulting information on hazardous chemicals to local governments and the public.

Section 313 of SARA Title III is the Toxic Release Inventory consisting of a list of chemicals subject to this law.

It also establishes Threshold Planning Quantity (TPQ) for the list. The list is called: SARA 313 Chemical List.

The 40 Code of Federal Regulations (CFR) Part 372 sets forth requirements for the submission of information relating to the release of toxic chemicals under section 313 of Title III of SARA.

The information collected under 40 CFR Part 372 is intended to inform the general public and the communities surrounding covered facilities about releases of toxic chemicals, to assist research, to aid in the development of regulations, guidelines, and standards, and for other purposes.

It is worth mentioning here that SARA is an amendment to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund that was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. It established a list of hazardous substances.

Petroleum and petroleum fractions are excluded from the list of CERCLA hazardous substances by Section 101 (14) of CERCLA.

5. Hazard Exposure, Toxicity, Physical and Chemical Information on the Leaked Hydraulic Fluid:
The MSDS specifies that the leaked Hydraulic Fluid: “Coast A/W Hydraulic Oils (ISO GRADES 22, 32, 46, 68, 100, 150, 220)” does not contain toxic chemicals of Section 313 of Title III of SARA and 40 CFR Part 372. According to the MSDS, there is low risk of inhalation of this product at ambient temperatures. The volatility at 25 degrees Centigrade is negligible and its vapor pressure is less than 0.001 mmHg at 20 degrees

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Centigrade. It is insoluble in water, is an amber liquid with no odor and very viscous. The Hydraulic Fluid has a Specific Gravity of 0.87 to 0.9. Specific Gravity is a measure of heaviness of a fluid and that of water is 1. The Hydraulic Fluid has a high Molecular Weight (more than 460) and is insoluble in water.

6. Accidental Release Containment Measures Information:
   The MSDS specifies that in case of a spill or leaks, absorbents must be used and small spills to be taken up with dry chemical absorbent, rags or clay absorbent and placed into containers for later removal

7. Conclusions:

In this section, we conclude that the chance of exposure hazard of the Hydraulic Fluid leak of December 12, 2018 to humans and their possible environmental hazards to air, land, water and the subsequent possible adverse impact of the incident to the nearby residents' property and welfare have been negligible to none. Our conclusion is based on the following:

a. The amount of leak was small in the maximum quantity of approximately 2 gallons spread over an area of 1600 square feet (200 feet long and 8 feet wide) in the form of a streak and mixed with water.
b. The Hydraulic Fluid is viscous, containing paraffin with negligible volatility and a low vapor pressure and as a result, little chance of inhalation the small quantity of this virtually non-volatile Fluid and adverse effect on the air quality.
c. The high carbon numbers of the hydrocarbons in the Hydraulic Fluid and its high viscosity make it difficult for this Hydraulic Fluid to infiltrate into the ground especially at low ambient temperatures of a month of December and the small quantities of the leaked fluid.
d. For the same reasons stated in Section 7.c, above, this Hydraulic Fluid will flow slowly and not readily during a two-hour of its leak on the ground. Although the Fluid was mixed with water, because of its high Molecular Weight and insolubility in water, the chance of its migration to the surface water (a Creek nearby) is negligible.
e. The Hydraulic Fluid is not on the Right-to-Know SARA Title III 313 list of Toxic Chemicals and contains chemicals that are not hazardous especially in these small quantities. As a result, the leak did not fall under reporting requirements. Please note that as mentioned in Section 4 of this report, Petroleum and

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Petroleum fractions are excluded from the list of CERCLA (Comprehensive Environmental, Response, Compensation and Liability Act) hazardous substances list by Section 101 (14).

f. The cleanup had happened within two hours of the leak and conducted according to the leak cleanup measures specified in the MSDS. In addition, a more thorough cleanup, beyond the measures recommended by the MSDS, was conducted the day after the leak and within 24 hours of the leak incident.

Please do not hesitate to contact me if you have any questions or comments regarding this summary letter report and require more detailed information.

Sincerely,

Elahe Enssani, MSc., Meng., PhD, PE (AZ)

President

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