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07 November 2007

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MEMORANDUM THRU Director, Installation Management Command-West (IMWE),
2460 Stanley Road, Suite 101, Fort Sam Houston, TX 78234-6102

FOR Mr. Philip E Sakowitz, Executive Director, US Army Installation Management
Command (IMCOM), 2511 Jefferson Davis Highway, Arlington, VA 22202-3926

SUBJECT: Supplemental Report to AR 15-6 Report of Investigation – Fort Lewis Waste
Water Treatment Plant

1. REFERENCES:

- a. Memorandum, HQ IMCOM-LA, 6 June 2007, subject: Appointment as AR 15-6 Investigating Officer.
- b. AR 15-6.
- c. Memorandum, IMCOM-W, IMWE-ZA, 19 July 2007, subject: AR 15-6 Report of Investigation-Fort Lewis Waste Water Treatment Plant.

2. BACKGROUND:

a. On 19 July 2007, I submitted my report of investigation (reference c) related to a whistleblower complaint alleging mismanagement and misconduct at the Fort Lewis wastewater treatment plant (WWTP). I reported my findings and recommendations, which were based upon a thorough analysis of all available evidence to include witnesses who had direct knowledge of the allegations. Subsequently, the appointing authority reviewed and approved the AR 15-6 report, which was then forwarded to Department of Army, Office of General Counsel (OGC) for review.

b. On 5 September 2007, I was informally notified that OGC had reviewed the report of investigation and requested additional information. A video teleconference (VTC) was convened with OGC attorneys, HQ IMCOM staff, and IMCOM-West investigators on 14 September 2007. During that VTC, OGC explained their request and coordinated with me and others on my investigation team. On 18 September 2007, I was tasked by DA through my new organization, Army Sustainment Command, a subcommand of Army Material Command (AMC), to conduct a follow on investigation and submit a supplemental report to my original AR 15-6 report of investigation.

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c. The purpose of this supplemental report is to provide clarification on various points made in my original report, to provide additional pertinent information, and to investigate a fifth allegation not included in my original 6 June 2007 investigating officer appointment orders (Reference a). Paragraph 3, below, outlines my investigative process for this supplemental report. Paragraphs 4 and 5, below, outline the clarifications requested by Army OGC, specifically those made by (b)(6) of the Office of General Counsel in her email dated 4 September 2007. Enclosure 1 lists those areas included in this supplement to the original AR 15-6 investigation. In the fifth allegation, the whistleblowers allege that WWTP management fails to conduct proper testing and monitoring of water treated at the plant. My inquiry into this new allegation is outlined at paragraph 6, below

3. PROCESS:

a. Investigative actions:

(1) 10-14 September 2007: Reviewed OGC comments; coordinated with subject matter experts; participated in the OGC-led VTC to explain desired information required; and formed an initial assessment of actions needed to continue the investigation and prepare a supplemental report.

(2) 17-21 September 2007: After receiving authority from new command (AMC), reviewed the new allegation; gathered information and documents, coordinated with subject matter experts; developed an investigation plan, and communicated with Fort Lewis leadership to coordinate Fort Lewis witness testimonies.

(3) 24-28 September 2007: Finalized questions for witnesses; telephonically interviewed seven witnesses, including one complainant (Exhibits 163-169); reviewed original AR 15-6 report (Reference c); and gathered additional documents.

(4) 1-12 October 2007: Analyzed the hundreds of pages of documents and witness statements.

(5) 15 October-7 November 2007: Prepared and staffed supplemental report.

b. Issue clarification and supplemental information: Performed research and analysis, and then prepared responses to OGC-requested additional information.

c. Allegation issue analysis: Paragraph 6 discusses the additional allegation concerning whether WWTP management failed to conduct proper testing and monitoring of water treated at the plant. The discussion includes facts relevant to the issue, analysis, conclusions, and recommendations.

4. POINTS REQUIRING CLARIFICATION:

a. Relevant authorities concerning the operation of the Fort Lewis WWTP:

(1) Federal Water Pollution Control Act, 33 U.S.C. §§ 1251-1387: The principal law governing pollution of the nation's surface waters is the Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA). Originally enacted in 1948, it was completely revised by amendments in 1972, which gave the Act its current structure. The 1972 legislation declared as its objective the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. The legislation also set two goals: zero discharge of pollutants by 1985 and, as an interim goal, water quality that is both "fishable" and "swimmable" by July of 1983. While those dates have passed, the goals remain, and efforts to attain them continue. In order to achieve those goals, the 1972 amendments required all municipal and industrial wastewater to be treated prior to discharge into waters of the United States, and embodied the concept that all discharges into the nation's waterways are unlawful, unless specifically authorized by a permit. Thus, a wastewater treatment plant must obtain a permit under the Act's National Pollutant Discharge Elimination System (NPDES) program, authorized under section 102 of the statute.

(A) Pollutant. The CWA defines "pollutant" to include "dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal and agricultural waste discharged into water." The breadth of this definition was meant to embrace all human-induced alterations of natural water quality that may arise from both point and non-point sources.

(B) Waters of the United States. Pursuant to the CWA, federal jurisdiction is broad, and covers all "waters of the United States." While the Supreme Court continues (as recently as last summer in *Rapanos, et ux., et [b] v. United States*, 547 U.S. ____; 126 S. Ct. 2208; 165 L. Ed. 2d 159; 2006 U.S. LEXIS 4887) to debate the outer limits of what constitutes a "water of the United States," there is no debate that waters that are "navigable in fact" come within the purview of federal jurisdiction. Puget Sound, the receiving water body that is the source of this investigation, is clearly navigable in fact, and is, without question, a water of the United States.

(2) State Authority to Regulate Federal Facilities: The Environmental Protection Agency (EPA) issues regulations containing the standards applicable to categories of sources, and delegates certain elements of program responsibility to the states. Like many federal environmental laws, the CWA embodies a philosophy of federal-state partnership in which the federal government sets the agenda and standards for pollution abatement, while states often carry out many of the day-to-day responsibilities of enforcement. Among the responsibilities delegated to authorized states is the ability to issue NPDES permits for federal facilities operating within that state. Currently forty-one (41) states are authorized to regulate federal facilities. Washington State is not among the forty-one, and therefore is not approved to regulate federal facilities. As

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such, EPA retains the authority to issue NPDES permits to the federal facilities which operate inside the State of Washington, to include the wastewater treatment plant at Fort Lewis.

(3) Army Regulation 420-49, Utility Services, 19 September 2005.

(A) Army Regulation (AR) 420-49, Utility Services, establishes policies and procedures for facilities engineering responsibilities for utilities management and services at Army installations. "Utility plants" are defined by the regulation to include "heating, refrigeration, air conditioning, liquid and gas fuel storage, distribution, and dispensing, electric generating, water and waste water treatment plants, including all systems (for example, apparatus and equipment) necessary to provide utility services and to control environmental pollution." Further, at paragraph 2-4, the regulation states that: "Utility plant operators and maintenance and supervisory personnel will be provided sufficient training to operate and maintain the utility plants in a safe, reliable, and efficient manner. Utility plant operators and maintenance personnel will meet applicable Federal, State, local or host nation certification requirements for the State or host nation in which they are located."

(B) As discussed above, the ability to regulate federal facilities has not been delegated from the EPA to the State of Washington under the Clean Water Act. Therefore, only the first sentence of paragraph 2-4 of AR 420-49 has applicability, namely, that operators and supervisory personnel "be provided sufficient training to operate" utility plants in a "safe, reliable and efficient manner." The second sentence, which states that operators must meet the certification requirements of the State in which they are located, is operable only to the extent that the State requirements are "applicable." Because the regulatory standards remain vested with the Federal agency charged with enforcement, and not with the State, Washington's certification requirements for waste water treatment plant operators are not "applicable requirements." Additionally, none of the federal requirements, neither the statute, the regulations implementing the CWA, nor the NPDES permit itself, mandate a minimum level of certification or licensure for plant operators. Thus, there are no "applicable" Federal certification requirements that would trigger the requirements of the second sentence of paragraph 2-4 of AR 420-49.

b. Discussion of pollutant standards within the WWTP.

(1) The NPDES permit does not establish pollutant standards within the wastewater treatment process. However monitoring of treatment processes on a daily basis within the plant through observations, measurements and sampling are essential to ensure continued and reliable operation of the plant. As examples:

(A) The daily measurement of digester gas production is important in ensuring that the anaerobic digesters are operating normally. Any sudden change in

methane gas production would be a cause for concern and would necessitate further investigation to determine the causes for digester production changes.

(B) The operators have noted the presence of oil within the detention tanks (Exhibits 44, 45, 46, 47 and 48) and evidence in [other] wastewater treatment components (Exhibit 47). However there is no permit standard limiting the amount of oil that can be observed or measured within the treatment processes. The repeated occurrences of operator observations have led to the need for better control of oil sources both inside and outside the WWTP.

(2) The WWTP removes oil through its treatment processes as documented by the USACHPPM study (Exhibit 4). The study monitored both oil and grease and Total Petroleum Hydrocarbons (TPH) to determine the removal efficiency of the WWTP by the various treatment processes. TPH is a mixture of chemicals. The chemical concentrations are combined and reported as falling within three ranges: gasoline, diesel, and heavy oil. The primary clarifiers were found to be removing about 71 % of the oil and grease applied while the trickling filters were removing about 52% of the oil and grease applied to the filter. The evaluation did not detect any oil and grease in the final effluent within the limits of the test method used to detect the oil and grease. The primary clarifiers were found to be removing about 81% of diesel range TPH and about 77% of heavy range TPH; the trickling filters were removing about 75% of the diesel range TPH and about 44% of the heavy range TPH; while the secondary clarifiers were removing about 47% of the diesel range TPH and about 38% of the heavy range. Overall the WWTP was removing an estimated 79% of the TPH. The TPH which remains after all water treatment is discharged through the outfall. The diesel range concentrations of TPH in the effluent were 0.69 to 4 milligrams per liter (mg/l); the heavy range (such as lubricating oil) at 1.6 to 6.9 mg/l; and the gasoline range had no detection in the final effluent samples. The NPDES permit required 2 samples to be collected from the final effluent and analyzed for TPH during the wet season of the first year of the permit to determine if TPH is present at "levels of concern" but the permit does not establish mass or concentration limits for TPH in the final effluent or within the treatment plant processes (Exhibit 3). The final effluent test results from the USACHPPM study, consisting of TPH, oil and grease, and other contaminants was submitted to the EPA in March 2007 (Exhibit 207). Since the EPA has not imposed additional TPH limits in response to the submission, these TPH concentration levels are below those that the EPA considers "levels of concern". As discussed above the monitoring did not detect oil and grease in the final effluent; therefore the discharge could not have produced oil sheen on the surface of the receiving water and no violation of the NPDES permit occurred.

(3) Oil and TPH that is not discharged in the outfall is either destroyed or is captured in the biosolids. The destruction of oil and TPH within the wastewater treatment processes can occur by biological degradation and by volatilization (evaporation) in the digesters and then burned off along with methane gas. There is no

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standard establishing oil or TPH limits in the biosolids. The biosolids are discussed in paragraphs 6b(1)(e), 6b(5)(e), and 6b (5)(f) below in this report.

c. Location of WWTP compliance points for monitoring and testing:

(1) The NPDES permit establishes numerical (e.g. mass and concentration limits) and non-numerical compliance standards upon the final effluent prior to discharge into the receiving waters. The permit does not specify physical locations for collecting the samples used to determine compliance but requires the samples of the final effluent to be taken after all treatment. Thus, the sampling location for determining compliance with numerical effluent limitations would be on the discharge side of the chlorine contact chamber after dechlorination (Exhibits 170 and Exhibit 4-photo 40). For non numerical effluent limitations (i.e. floating solids and visible foam) the compliance point would be at the chlorine contact chamber effluent weir as the treated wastewater flows over the weir (Exhibits 170 and 4-Photo 40). For oil, (no visible sheen) the compliance point is the surface of the receiving water, Puget Sound (Exhibits 142 and 170).

(2) The permit establishes only one monitoring point between the influent entering the WWTP and the final effluent leaving the WWTP, which determines acute and chronic toxicity of the wastewater before chlorine is added. The point is located at the effluent discharge from the secondary clarifiers, prior to the chlorination step (Exhibit 170). The monitoring must take place once in the last summer and once in the last winter prior to submission of the permit renewal application (application is due by 1 August 2008). The monitoring result must be submitted with the permit application. The purpose of the toxicity testing is to determine if the wastewater is toxic to indicator species. For acute toxicity, test species are the fathead minnow and daphni. For chronic toxicity testing, test species are salt water species; the topsmelt minnow or silverside minnow and the mysid shrimp. The results will be used in determining if the effluent discharge is toxic which may lead to new permit stipulations such as toxicity reduction requirements and additional monitoring.

d. WWTP performance evaluation program: Wastewater treatment plant performance evaluations, such as the Fort Lewis Solo Point Wastewater Treatment Plant Performance Evaluation Study (Exhibit 4) are voluntary undertakings by the installation. Performance evaluations are not driven by any local, state or federal regulatory requirement. The US Army Center for Health Promotion and Preventative Medicine (USACHPPM) offers this reimbursable service to Army installations upon request.

e. Clarification of USACHPPM performance evaluation study intent (Exhibit 4): The study was commissioned by Fort Lewis management in 2006 to provide an independent assessment of WWTP capabilities and current performance. These are assistance visits rather than compliance inspections. The final report recommendations are for management's consideration. Fort Lewis need not report their acceptance or rejection of recommendations back to USACHPPM nor do they provide status of actions taken.

In addition to the study's assessment intent, the scope included a limited evaluation of the plant's compliance status. The USACHPPM study report contained a conclusion regarding the WWTP compliance status indicating the WWTP was in compliance with the permit effluent limits with the exception of the pH violations in May 2006 (Exhibit 4). To support my investigation, I contacted USACHPPM; (1) To verify that the study scope was intended to include an assessment of the WWTP compliance status, (2) to obtain technical clarifications of effluent test data collected during the assessment, and (3) to clarify visual observations of the final effluent made by the assessment team while on-site. A summary USACHPPM's response is provided in the Memorandum for Record at Exhibit 12.

f. Discussion of USACHPPM performance evaluation recommendations: The USACHPPM final report included WWTP modernization, staffing, system enhancements, and health and safety recommendations (Exhibit 4). These recommendations are not compliance resolution issues but are for Fort Lewis management's use in enhancing WWTP performance and for (b)(1) term planning. Fort Lewis has accepted most recommendations and is taking appropriate action such as initiating a pretreatment program. The status of recommended corrective actions relevant to this investigation is summarized in Exhibits 13 and 14. To their credit, Fort Lewis WWTP management has assessed all human health and safety recommendations, and has taken appropriate corrective action such as labeling confined space entry ways (underway), installation of the scum (grease) pit safety railings as well as additional safety railings in other parts of the WWTP identified during the scoping of the scum pit safety railing project.

g. Industrial Hygiene Workplace Assessment Evaluations: The Fort Lewis garrison commander promotes a strong occupational safety and health program, administered primarily through her Installation Safety Office (Exhibit 171). Programs exist to assist garrison directors and their staffs to perform their missions safely while providing a healthy workplace environment for employees. One such program is the Fort Lewis Industrial Hygiene Workplace Exposure Assessment (WEA). This program, whose purpose is to catalog and assess processes, and identify associated hazards, and controls, is administered by the Madigan Army Medical Center located at Fort Lewis with oversight by the Installation Safety Office. Industrial hygienists (IH) examine installation facilities and processes, and then establish reviews and inspections prioritized by exposure and risk level. Their work plan calls for semiannual assessments for high hazard processes and annual assessments for all others. Two IH technicians are assigned to perform WEAs for the Directorate of Public Works and respond to all other DPW IH requirements (Exhibit 169). Directors are responsible for taking corrective action on reported shortcomings.

(1) The WEA process uses a baseline assessment with follow up adjustment visits. For the WWTP, a 2004 WEA (Exhibit 175) served as the baseline assessment. Neither the baseline assessment nor the following visit on 7 June 2005 (Exhibit 101) identified any major shortcomings. In an August 2006 WEA, satisfying the annual

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requirement, IH technicians identified issues with both the confined space program, and the hazard communication program (Exhibits 98 and 169). All three shortcomings listed in that report have been corrected or are in the process of being corrected (Reference c; Exhibits 98, 163, and 169). The most recent IH visit on 27 June 2007 addressed three other occupational health concerns raised by WWTP management, all of which were corrected (Exhibits 169 and 176).

(2) Fort Lewis senior leadership is credited both with aggressively correcting past shortcomings and proactively seeking improved means to identify potential areas requiring attention. While acknowledging occupational health and safety program shortcomings over the past two years, both the Installation Safety Officer and the Madigan Army Medical Center senior IH report a reversal in that trend, concluding "[t]his is due to the positive actions PW has taken, such as requesting a confined space program review [and evaluation] from the USACHPPM" (Exhibit 169). Further, the report states, "Public Works (PW) is putting its systems back on track and (b) (b)(6) has those well under his oversight" (Exhibit 169). Additionally, the garrison commander approved funding to purchase an installation hazard tracking system (HTS). This system will provide a common operating picture of hazards, risk levels and corrections by facility, organization, and operation. The HTS will allow the Director of Public Works, to examine the WWTP as an organization, by facility, and possibly by work process, seeing the current risk status from each point of view. It will track hazards as well as proposed and actual corrections, such as engineering, supervision, or training.

h. Concerning potential personnel corrective actions: The Fort Lewis Garrison Commander's investigation examined circumstances surrounding the hiring of (b) (b)(6) as the WWTP supervisor. Evidence in the garrison investigation (Exhibits 9 and 10) revealed that (b) (b)(6) received preferential treatment from hiring official (b) (b)(6) Division Chief, Operations and Maintenance Division, Directorate of Public Works, and that (b) (b)(6) did not meet one of the job qualifications (Group III wastewater certification) published in the Fort Lewis vacancy announcement. My interview of (b) (b)(6) supervisors, (b) (b)(6) and (b) (b)(6) as well as the installation water program manager, (b) (b)(6) (Exhibits 32, 34, 40), and my examination of the vacancy announcement (Exhibit 17) and (b) (b)(6) certification license (Exhibit 16) corroborate the garrison's findings. This raises a question of corrective action with respect to the hiring process by (b) (b)(6) Fort Lewis acknowledges that such corrective actions are appropriate. However, the Commander is holding corrective actions in abeyance pending access to information from all pending investigations. We recently learned that the Office of Special Counsel has initiated a separate investigation into the hiring of (b) (b)(6) as an impermissible personnel practice. We understand that the Commander will continue to hold her action in abeyance pending this investigation as well. (b) intends to tailor her corrections specifically to the circumstances and the people involved. Consequently, (b) is waiting for the best and most complete information before proceeding. I find this prudent and reasonable.

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i. Concerning gross mismanagement on the part of (b) (b)(6) This investigation reveals management irregularities and deficiencies involving (b) (b)(6) For instance evidence shows that (b) (b)(6) lacked important leadership skills in communications (Exhibits 32, 33, 34, 37, 38, and 41) and interpersonal relationships (Exhibits 34, 35, 37, 38, 41, 43, 44, and 45), as well as demonstrating poor judgment at times (Exhibits 41, 43, 47). In my investigation I found that (b) (b)(6) was only minimally technically competent as a WWTP supervisor. This is evidenced by his inability to obtain a Group III level WWTP certification from the state of Washington, and by several of the eighteen witnesses interviewed who have personal knowledge of (b) (b)(6) work and management performance, in which they cited examples of technical competence deficiencies (Exhibits 29, 35, 37, 41, 42, 44, and 46). Although these management conditions are unfavorable and warrant correction, I find that they do not rise to the level of gross mismanagement. My understanding of gross mismanagement is that which applies to conduct that demonstrates persistent, flagrant, shameful disregard for the people and work objectives for which a manager or supervisor is responsible. While evidence reveals that (b) (b)(6) management and supervisory practices are lacking, they must be weighed in the context of (b) (b)(6) total performance. I found (b) (b)(6) to be a committed, hardworking employee with intentions of doing his job well. For instance, (b) (b)(6) eliminated certain inappropriate past practices such as paid breakfast and lunch on government time, thereby increasing the amount of time available to operate and maintain the plant (Exhibits 33, and 34). (b) (b)(6) also established policies to organize and clean up the plant, and tried to implement a much needed preventive maintenance program (Exhibits 33 and 34). However, it is apparent that (b) (b)(6) was promoted to a level of supervisory responsibility above his training and perhaps his abilities. It is noteworthy that (b) (b)(6) continues to serve as supervisor for the Water Treatment Plant, which includes the external water and sewer shop. Both his first line and next level supervisors report that (b) (b)(6) is performing satisfactorily in that position, but would not reassign him to the WWTP at this time (Exhibits 167 and 168). While I find (b) (b)(6) management and supervisory practices to be inadequate for the Fort Lewis WWTP requirements, I find that his conduct amounted to episodes of ineptness and mismanagement, but not gross mismanagement. (b) (b)(6) might become an appropriate WWTP supervisor with adequate supervisory training and oversight. I arrive at these conclusions after having personally served as a major installation Director of Public Works.

j. Discussion of operator in responsible charge: The term "operator on responsible charge" is a regulatory term from the Washington Administrative Code (Exhibit 177). As defined therein it "means the individual who is routinely on-site and in direct charge of the overall operation of the wastewater treatment plant." As discussed in the 19 July 2007 investigative report (Reference c), Washington State does not regulate the WWTP and the state operator certification requirements do not apply. Fort Lewis has elected not to use this term in any of their official documents such as job descriptions.

k. Discussion of WWTP supervisor certification requirements: As discussed in paragraph 4(a) (2), above, Washington state certification requirements for wastewater

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treatment plant operators are not applicable requirements. However, the Fort Lewis WWTP supervisory position description states that Group III certification is "required," and further, this has been included in the position description at least as far back as February 1994, according to position description historical data provided in the Fort Lewis Report of Investigation (Exhibit 9). State certification requires relevant education and work experience in wastewater treatment, as well as successfully passing a written examination. The lowest level of certification is Group I and the highest is Group IV. Fort Lewis' adoption of the Washington state certification requirements in their supervisory hiring actions is a reasonable means to ensure the appropriate level of technical competency is possessed in the supervision and operation of the Fort Lewis WWTP. Additionally, if Washington State were to gain primacy from the EPA for the regulation of federal facilities, the WWTP supervisor would likely become the "operator in responsible charge," as discussed in paragraph j above, and would need to have the appropriate level of state certification. Thus by including a level of state certification that would be required by the state of Washington in the position description Fort Lewis would immediately be compliant with state requirements if and when Washington obtains primacy from EPA.

I. Assignment of (b) (b)(6) as interim WWTP Supervisor: Fort Lewis senior leaders took decisive action in response to allegations of mismanagement at the WWTP by removing (b) (b)(6) and assigning (b) (b)(6) as interim plant supervisor effective 3 April 2007. (b) (b)(6) selected (b) Barto as most qualified for this temporary detail based upon (b) (b)(6) proven record in effective leadership and experience with a technical engineering background (Exhibit 168). (b)(6) graduated from the United States Military Academy, West Point, earning a degree in environmental engineering, and subsequently served as a commissioned officer in the US Army. (b) possesses a professional engineer license and is experienced as a water systems engineer with expertise in wastewater, water, and storm water systems (Exhibits 29 and 163). Tasked by his supervisors to improve WWTP operations and resolve employee discontent, (b) (b)(6) achieved remarkable results in the short six months since his assignment by aggressively attacking the most challenging and critical WWTP operational deficiencies first. (b) initiated a preventive maintenance program, repaired critical inoperable equipment as seen by replacing feed pumps in the chlorine feed system and reestablishing the gas system with correct filters, established a shop stock of equipment and parts, procured and received special tools so that operators can perform their jobs, completed a hand rail project for employee safety, and initiated a project to install fiber optic cable for enhanced information technology capabilities and electronic communications (Exhibits 29, 44, 47, 167). Furthermore, by treating operators with dignity and respect, (b) (b)(6) transformed the workplace environment into one in which morale has significantly improved. A renewed sense of teamwork and satisfaction exists due in large part to (b)(6) caring leadership style and willingness to listen (Exhibits 29, 34, 35, 44, 47, 48, 167, 168). (b) (b)(6) summarized (b) (b)(6) performance as, "[e]xcellent; (b) is systematically identifying potential failures before the event occurs and setting into place necessary repairs and maintenance to ensure the plant continues to perform at its optimal level" (Exhibit 168).

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m. Voluntary monitoring for TPH: Fort Lewis took proactive steps to assure that they were not illegally discharging excessive amounts of oil into Puget Sound when senior leaders decided to begin voluntary monitoring for TPH (gasoline, diesel and lubricating oil) in June 2006. Although neither the NPDES permit nor any other regulatory guidance requires this sampling, (b) (b)(6) Fort Lewis' water program manager, elected to take monthly investigative TPH samplings in response to WWTP operator concerns, and has reported those test results in monthly Discharge Monitoring Reports (DMR's) to the EPA (Exhibits 40, 86, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 192, 193, and 194). As reported in my investigation (Reference c), results were favorable: the data shows TPH concentrations in the effluent ranging from "not detected" to 2.79 parts per million (ppm). The EPA has not imposed any additional limits, thus, these concentration levels are below those that the EPA considers "levels of concern."

n. Explanation of certain documents given to the Investigating Officer by witnesses: During the course of interviews conducted at Fort Lewis during the period 11-15 June 2007, several documents were given to the Investigating Officer (IO) for review. In their statements, three witnesses, (b) (b)(6) (b) (b)(6) and (b) (b)(6) mentioned that they provided documents, relevant to the investigation, to the IO.

(1) In his response to question 13 ("Do you know of treatment processes and equipment that are or were not functioning properly due to inadequate maintenance or lack of necessary chemicals?"), (b)(6) current interim WWTP supervisor, stated, "Please refer to the 15 June Memo, paragraph 3, which I provided the IO" (Exhibit 29). The 15 June Memo, included as exhibit 30, provides (b) (b)(6) initial assessment of the Fort Lewis WWTP in terms of operator involvement in plant operations, and the condition of the plant's equipment maintenance. In this assessment, (b)(6) provides assurance that the WWTP meets NPDES requirements, yet opines that much improvement is needed in the areas of management, operator performance of duty, and maintenance of equipment. (b) also outlined a logical and promising concept for fixing past shortcomings. In a September 2007 statement, (b)(6) related that improvements have indeed been implemented such as completing a project to install safety railing for the scum pit and replacing two chlorine feed pumps in the past two months (Exhibit 163).

(2) In his response to questions 7, 9, and 14, (b) (b)(6) Fort Lewis Safety Office, referred to several documents given to the IO (Exhibit 31).

Question 7: "Do you have any knowledge of the headworks at the WWTP and concerns of WWTP employees about inhaling chemicals or pathogens?" (b) (b)(6) responded in part, "Please see the 30 August 2006 Industrial Hygiene Workplace Assessment memo provided to the IO." This memo, included as exhibit 98, reports findings of an annual workplace assessment, in which no exposure issue or problem was reported.

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Question 9: "Do you have any knowledge of WWTP employee safety concerns about repairs to a digester gas swing arm within the last year?" (b) (b)(6) responded in part, "Please see the 7 May 2007 memorandum for record on this subject given to the IO." This MFR, included as exhibit 102, reports on the digester gas swing arm repair and concludes, "the supervisor did not follow the internal work control SOP, but there were no apparent residual violations of OSHA standards."

Question 14: "Do you have other information relating to these matters you want to provide?" (b) (b)(6) responded, "I want to provide you the DPW safety plan, the DPW O&M Division Safety Plan, and a confined space SOP in case these could be useful to you." In my original analysis of the allegation that, "plant management does not take adequate measures to protect employees against occupational and safety risks," I reviewed these documents, included as exhibits 105, 104, and 103 respectively, and concluded in part that Fort Lewis has adequate measures such as safety SOPs in place to protect employees against occupational health and safety risks (Reference c, paragraph 7(c)(1)).

(3) In his response to question 24, ("What corrective actions have you or other local leaders taken in response to WWTP contamination, safety, and management concerns?"), (b) (b)(6) Fort Lewis DPW, responded, "We have corrected or we are in the process of correcting every validated complaint. Please see the document I gave the IO on this topic on 12 June 2007. I will also provide an updated document; we generate these action documents every two weeks." This document entitled WATER/EXT. WATER SEWER/WWTP ACTIONS, included as exhibit 7, is an internal DPW action-tracking document. It is used in conjunction with the Fort Lewis garrison senior leader's initiative to manage intensely, all significant corrective and improvement actions within the DPW WWTP and Water Treatment Plant branch. The DPW and his staff meet every two weeks to review actions and then brief the garrison commander on the status of actions. Most of the corrective actions have either been completed or are under way for completion. The DPW continues to provide bimonthly updates to the garrison commander (Exhibit 168).

5. ADDITIONAL INFORMATION:

a. Fort Lewis Garrison and WWTP organization:

(1) The Fort Lewis installation, located just south of Tacoma, Washington, is managed through a "garrison" organization (Exhibit 171) commanded by a garrison commander (an Army Colonel), and consisting of several subordinate installation Directorates and support offices. The Directorates and support offices provide all support and services required to run this 86,000 acre installation with a total military and civilian population of approximately 92,000, and with 23 million square feet of facilities. Many Fort Lewis garrison functions are similar to those found in medium size U.S. cities (offices, housing units, medical and dental clinics, schools, etc.); however, the garrison also provides many other services in support of unique military missions such as

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deployment and redeployment operational support requiring an airfield, ranges, training areas, and rail facilities.

(2) One of the seven garrison directorates is the Directorate of Public Works (Exhibit 172). The primary mission of this directorate, led by a senior Army civilian, is to provide maintenance, repair, construction, and utilities services to the installation of Fort Lewis. Organizationally, the wastewater treatment plant resides within DPW's Operation and Maintenance Division (Exhibit 173). This division's primary missions include providing maintenance and repair to real property facilities at Fort Lewis and operating the WWTP, Water Treatment Plant (WTP), and boiler plants. The WWTP and WTP (which includes an Exterior Water & Sewer shop) reside in the WWTP and Water Plant Branch (Exhibit 174). Currently led by a supervisory civil engineer, the WWTP employs one biological science lab technician and six utility system repairer-operators, who work a three shift schedule to provide 24 hours per day, 7 days a week, coverage. From September 2005 through March 2007, (b) (b)(6) served as branch supervisor for both the WWTP and Water Plant sections. In April 2007, the DPW removed (b) (b)(6) from his WWTP supervisory duties and reassigned him to supervise the WTP and Exterior Water & Sewer sections.

b. Description of Fort Lewis WWTP Process- See Exhibit 170.

c. Fort Lewis voluntary pretreatment program: On 6 June 2007, the Fort Lewis garrison commander, COL Murphy, signed a memorandum of understanding (MOU) between Fort Lewis and the Washington State Department of Ecology (Ecology) that formalized pretreatment actions the installation had been preparing to undertake voluntarily (Exhibit 178). (b) (b)(6) signed the MOU to alleviate Ecology concerns of potential discharge of hazardous waste into the wastewater system. Both parties share a common goal "to collectively develop a program which will meet Ecology's Domestic Sewage Exclusion and Permit by Rule requirements, and all applicable standards set by state law within its entire sanitary sewer service area" (Exhibit 178). Such a pretreatment program will intercept, capture and appropriately manage industrial wastes, providing an even stronger measure of protection against petroleum contaminates discharging into Puget Sound.

(1) Under the agreement, Fort Lewis will identify, sample and inspect all sources of industrial wastewater currently discharging to the WWTP. Then, through the issuance of discharge permits or other administrative controls, Fort Lewis will limit discharges to the WWTP to those pollutants that the plant can effectively treat and control. Furthermore, the garrison will ask the EPA to amend its NPDES permit upon renewal, to incorporate the pretreatment program (Exhibit 162 and 179). Fort Lewis staff has already begun to execute certain provisions of the agreement such as awarding a \$700,000 contract to an engineering firm that will develop and implement a portion of the program. I believe that this exemplary effort serves to demonstrate Fort Lewis' leadership's dedication to environmental stewardship and the protection of natural resources.

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(2) Through informal discussions with (b) (b)(6) Fort Lewis Environmental Division Chief, I learned that this MOU is already paying dividends in improving relations and cooperation between Fort Lewis and Washington State Department of Ecology. According to (b)(6) in June 2006 and December 2006, Washington State Department of Ecology inspected the Fort Lewis wastewater treatment system as a result of an anonymous tip that fuel was being disposed of in the sewer system. An outcome of the inspection is that Ecology logged four violations (Exhibit 180), which they intend to input in the EPA database as RCRA violations. These will be considered, "informal enforcement" by Ecology, who will then "close them out" by citing the MOU as the corrected action. Further evidence of progress is seen in a 10 October 2007, memo in which (b) (b)(6) Ecology compliance inspector, states, "Ecology is encouraged by the progress made to date, and commend you on your effort" (Exhibit 181). Neither the pretreatment program nor MOU are responses to any type of enforcement action and not required by the EPA. Rather, Fort Lewis' consultation and recent signing of the MOU is seen as a gesture of comity and good will toward the Department of Ecology.

d. Concerning property accountability for missing tools and repair parts: Both the Fort Lewis Garrison Commander's investigation and my original investigation examined (b) (b)(6) performance in properly maintaining and replacing plant equipment. Evidence in my investigation (Reference c) revealed that some special tools and spare parts were not available to operators and that plant management (b)(6) did not practice sufficient property accountability and employ management controls so that all necessary tools and parts were available to perform maintenance and repair work on plant equipment. Many witness statements in both investigations address missing tools and spare parts (Reference c; Exhibits 9, 10, 29, 33, 35, 37, 39, 41, 42, 43, 44, 45, 46, 47, and 48). (b) (b)(6) blames his subordinates while his subordinates blame him. For example, in one of his statements, (b) (b)(6) describes setting a policy that shop equipment should not be taken home for personal use because in the past, "equipment either did not come back or came back broken" (Exhibit 33) while (b)(6) a plant operator, states (Exhibit 42), "when (b) (b)(6) became supervisor, the tools disappeared." In response to these concerns and to management's credit, (b) (b)(6) established a property accountability system that includes a tool attendant who manages the inventory (Exhibit 163). However, suspect past practices raise a question of corrective action with respect to property accountability and whether further inquiry into the matter may be warranted. The garrison commander is holding any further investigation and corrective actions in abeyance pending access to information from all ongoing investigations. (b) (b)(6) the DPW, recently received a copy of the garrison investigation for review. Upon completion of his evaluation, (b) intends to take appropriate action if findings are validated (Exhibit 168). I find this prudent and reasonable.

e. Concerning (b) (b)(6) possible misuse of the TV: Allegations were made that (b) (b)(6) wrongly ordered a Samsung High-Definition 40 inch Flat-Panel LCD HDTV

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and stand from Sears and that (b) kept this television in his personal office (Exhibits 9, 46, and 47). As reported in the garrison AR 15-6 report (Exhibit 9), this raises a question of potential misappropriation or personal misuse of the television. However, I discovered no evidence that (b) (b)(6) purchased or used the television for personal purposes. Instead, I conclude the misuse of the television is more consistent with (b) (b)(6) having a good supervisory idea, but failing to follow through. For instance, it seems clear that (b) (b)(6) actually intended the television for training purposes, because (b) also ordered and received training videos (Exhibits 9 and 47). Initially, (b) didn't follow through by implementing a program where these training tools were actually used. However, the TV has been relocated to a training classroom at the Water Treatment Plant and is being used for its intended purpose to view training material from media such as DVDs and CDs and to view videos of sewer lines (Exhibits 163, 165, 167, and 168). Again, I think this is an example where (b) (b)(6) was well intentioned, but too overwhelmed by supervising responsibilities within the WWTP, to convert his training idea and initial actions into a useful employee program. The use of the government credit card to acquire the television also raises questions about (b) (b)(6) choosing the proper procurement process. The purchase was made openly and in such a way that I think it reflects lack of training and awareness more than intent to defraud the Army.

f. Media coverage issues: In late March 2007, reports of the whistleblower allegations appeared in three local news sources (Exhibits 182, 183, and 184). The three were KING 5 News, a Seattle, Washington based television station, whose 29 March 2007 report addressed contaminate dumping into Puget Sound (Exhibit 182); a 30 March 2007 Seattle Times article that reported on why and how it is believed that oil may be reaching Puget Sound (Exhibit 183); and KNDU-KNDO, a Yakima, Washington based television station, whose 30 March 2007 article briefly reported some of the general facts (Exhibit 184). Later, in June 2007, additional articles appeared in four other local news sources to announce signing of the Fort Lewis pretreatment program (Exhibits 185, 186, 187, and 188). These included The News Tribune, a Tacoma, Washington newspaper, whose 7 June 2007 article centered around the significance of the Fort Lewis pretreatment program Memorandum of Understanding (MOU) signing on 6 June 2007 (Exhibit 185); the Seattle Times, whose 7 June 2007 article also reported on the MOU signing and the promise of cleaner wastewater in the future (Exhibit 188); and two Fort Lewis reports: a 6 June 2007 News Release (Exhibit 186) announcing the MOU signing; and the Northwest Guardian, a Fort Lewis news publication, whose 7 June 2007 article also reported on the pretreatment program (Exhibit 187). Since news coverage can be investigative and contain supplemental information, this raises the question of whether any news investigator reported information pertinent and relevant to this investigation, and how my investigation findings and conclusions address issues surfaced by news media.

In reviewing all media coverage, I found the coverage addressed threads of three common issues listed below. Other lesser issues were mentioned, but they were not the focus of reports. In addressing all three main issues, news reporters stated

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information along with facts and quotes they received. The articles revealed little to no analysis or investigative effort. I found no substantive additional information pertinent to this investigation. Below, I address each of the main media issues with respect to findings and conclusions in my investigation.

(1) Is Fort Lewis discharging unlawful amounts of oil into Puget Sound? All six media reports address this question (Exhibits 182, 183, 184, 185, 187, and 188). None of the March 2007 reports reach a conclusion (Exhibits 182, 183, and 184). Rather, they attempt to summarize both the whistleblower complaints as well as give the Fort Lewis perspective. For example, the KING 5 News report cites (b) (b)(6) as stating, "we have test results that show it's [oil] coming in and it's going out" (Exhibit 182). This same report also provided Fort Lewis' response by stating, "The Fort is quick to point out that just because petroleum product is going into the plant, it doesn't mean it's making its way into Puget Sound." Furthermore, this report quotes the EPA: "the EPA says they are not in actual violation of the permit, but they would like to tighten that system up" (Exhibit 182). My investigation findings analyzed the same or similar sources of these reports. I reached the same conclusion of the EPA representative: "Since June 2005, there has been no discharge of oil in unacceptable or unlawful quantities into Puget Sound in compliance with the plant's permit" (Reference c).

(2) Results of oil concentration in the Fort Lewis WWTP sludge. All three March 2007 articles mention the issue of finding oil in the WWTP sludge. For example, the Seattle Times environmental reporter writes, "The pollution has triggered concerns among state and federal environmental officials, first alerted to the problem last year by a company that found sewage sludge at the treatment plant contaminated with up to 2 percent oil" (Exhibit 183). These articles make the point that 2 percent oil concentration is high for sludge and note the inference that effluent concentrations may also be high. The whistleblower documentation found in the Office of Special Counsel Memo (Exhibit 26) includes a discussion of their concerns. Primarily, they express concern that excessive amounts of oil have accumulated in the plant's sludge and "that the sludge is used as fertilizer throughout Fort Lewis; therefore, the presence of high levels of oil in the sludge poses a danger to public health, as the sludge is used to fertilize vegetable gardens and lawns where children play" (Exhibit 26). Although my investigation did not address these issues directly, some facts are available to allay these concerns. First, based upon my previous analysis, the inference that effluent oil (TPH) concentrations may be too high because sludge oil concentrations are high is incorrect. In my investigation, I concluded that, "Since June 2005, there has been no discharge of oil in unacceptable or unlawful quantities into Puget Sound in compliance with the plant's permit" (Reference c). Second, the 2005 and 2006 Fort Lewis WWTP Annual Biosolids Report coupled with (b) (b)(6) 26 September 2007 statement (Exhibits 190, 191, and 164) report that the WWTP biosolids (sludge) have not been "land applied" (e.g., used as fertilizer or for other beneficial uses). Rather, based upon this reported information and my limited inquiry, evidence indicates that the material has been properly disposed in a landfill, or in temporary storage at either the compost facility or the WWTP drying beds.

(3) Identification of the problems source (e.g., addressed how oil is getting into the WWTP influent) and the need for a Fort Lewis pretreatment program MOU. All six articles and the Fort Lewis news release discuss the need for a pretreatment program (Exhibits 182, 183, 184, 185, 186, 187, and 188). In June 2007, three articles celebrate the signing of the MOU by Fort Lewis and Washington State Department of Ecology (185, 187 and 188). For example, (b)(6) (b)(6) of the News Tribune quotes (b)(6) (b)(6) Director of Ecology, in her 7 June 2007 report: "...this agreement will help eliminate potential sources of industrial pollution to an already fragile ecosystem" (Exhibit 185). A summary of the Fort Lewis pretreatment program and the MOU is discussed in paragraph 5c of this report. This program, now being executed, will satisfy the whistleblower suggestion to establish a pretreatment program (Exhibit 26) and promises to reduce the amount of oil potentially entering the WWTP.

6. ALLEGATION ISSUE: Whether Fort Lewis plant management fails to conduct proper testing and monitoring of water treated at the plant.

a. Relevant Facts:

(1) The Fort Lewis WWTP is a federally owned and operated WWTP. It is operated under NPDES Permit WA-002195-4 issued by the EPA to Fort Lewis effective 1 February 2004 (Exhibit 3). It also operates under the general permit for biosolids management BA-0021954 issued by the State of Washington Department of Ecology effective 16 January 2004 (Exhibit 189).

(2) The NPDES permit stipulates monitoring of the influent and final effluent at specified frequencies:

(a) Daily monitoring of the influent for Total Suspended Solids (TSS), and 5 day-Biochemical Oxygen Demand (BOD₅) and daily monitoring of the final effluent for total flow, TSS, BOD₅, pH, total residual chlorine and fecal coliform bacteria.

(b) One semiannual monitoring event of the final effluent for TPH shall be performed during the first year of the permit. The samples shall be taken during the wet season, October–March. Recurring semiannual monitoring shall be completed for total nitrogen and total copper, nickel, chromium, lead, mercury, molybdenum, selenium and zinc.

(3) The NPDES permit requires the permittee to collect all effluent samples from the effluent stream prior to discharge into the receiving waters. It stipulates that samples and measurements shall be representative of the volume and nature of the monitored discharge. It stipulates the permittee shall collect additional samples at the appropriate sampling points and analyze them for the parameters limited in Part I Table 1 of the permit whenever any discharge occurs that may reasonably be expected to cause or contribute to a violation that is unlikely to be detected by a routine sample and shall

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report all additional monitoring in accordance with paragraph H. Paragraph H states that "if the permittee monitors any pollutant more frequently than required by this permit using test procedures approved under 40 CFR Part 136 or as specified in this permit, the permittee shall include the results of this monitoring in the calculation and reporting of the data submitted in the DMR" (Exhibit 3).

(4) Concerning sampling required for the reporting of routine and non-routine discharges, (a non-routine discharge is whenever any discharge occurs that may reasonably be expected to cause or contribute to a violation that is unlikely to be detected by a sample collected at a frequency established by the permit) the NPDES permit stipulates that the following monitoring information shall reported on the monthly DMR:

(a) The monthly average daily influent BOD₅ and TSS loading (in pounds) and concentration in milligrams per liter (mg/l) calculated from the daily composite samples taken of the influent entering the wastewater treatment plant. If additional non-routine samples were taken of the influent for these pollutants, the results must be considered in calculating the monthly average.

(b) The monthly average daily and maximum weekly average daily effluent BOD₅ and TSS loading (in pounds) and concentration (in mg/l) calculated from the routine daily composite sample results from the final effluent. If additional non-routine samples were taken of the final effluent and analyzed for these pollutants, the results must be considered in calculating and reporting the averages.

(c) The monthly average daily percent of BOD₅ and TSS removed by the wastewater treatment plant calculated from the daily influent and effluent concentration results. If additional non-routine samples were taken of the final effluent and analyzed for these pollutants, the results must be considered in calculating and reporting the averages.

(d) The monthly average daily and maximum weekly average daily fecal coliform bacteria concentration in number of colonies per 100 milliliters calculated from the daily grab (definition of grab sample, Exhibit 3) sample of the final effluent. If additional non-routine samples were taken from the final effluent (more than one daily sample) the results must be considered in determining and reporting the average concentrations.

(e) The maximum effluent total chlorine residual concentration in mg/l determined from the daily grab samples taken from the final effluent during the month. If additional non-routine samples were taken from the final effluent (more than one daily sample) the results must be considered in determining and reporting the maximum concentration.

(f) The minimum and maximum pH measured during the month from the routine daily grab samples taken from the final effluent. If additional non-routine pH samples were taken of the final effluent (more than one daily sample), the results must be considered in determining and reporting the minimum and maximum concentrations

(g) The monthly average daily flow of wastewater through the plant in millions of gallons per day.

(h) The concentration of total nitrogen in mg/l from a semiannual grab sample taken from the final effluent. If additional samples were taken of the final effluent (more than one grab sample semiannually), the results must be reported on the DMR.

(i) The concentration of total copper, nickel, chromium, lead, mercury, molybdenum, selenium, and zinc in mg/l from grab samples taken semiannually from the final effluent. If more than one sample was taken from the final effluent semiannually, the additional results must be reported on the DMR.

(j) The concentrations of TPH in mg/l from two grab samples taken from the final effluent during the period of October 2004 to March 2005. If additional samples are taken at any time from the final effluent, the results must be reported.

(5) Concerning monitoring required to be reported by means other than the DMR the NPDES permit stipulates the following:

(a) Acute and chronic toxicity testing. A composite wastewater sample must be taken within the wastewater treatment plant immediately prior to the chlorination (disinfection) step. The test results must be submitted with the permit renewal application which is due no later than 1 August 2008. The location would be the effluent discharge from the secondary clarifiers, prior to the chlorination step (Exhibit 170-between "Secondary Treatment" and "Disinfection Treatment").

(b) Notification to the EPA of an activity that has occurred or will occur that would result in the discharge on a routine or frequent basis of any pollutant that is not limited in the permit if that discharge may reasonably be expected to exceed five times the maximum concentration value reported in the permit application (Exhibit 1) or levels established by the EPA. For example, the NPDES permit application indicates arsenic present at 1.3 parts per billion. Arsenic is not limited by the NPDES permit nor is it a requirement that it be monitored. If a wastewater final effluent sample was taken (a sampling event) and monitored for arsenic, Fort Lewis would be required to notify the EPA if the result was more than 6.5 parts per billion of arsenic.

(6) Concerning biosolids that are land applied, the biosolids management permit (Exhibit 189) stipulates pollutant limitations, pathogen (disease-causing organisms) and vector (rodents, flies, and mosquitoes) attraction reduction requirements.

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(a) Pollutant limitations: Pollutant ceiling concentration limits (e.g. pollutant limits) in milligrams per kilogram dry weight basis are as follows: arsenic - 75; cadmium - 85; copper - 4300; lead - 840; mercury - 5; molybdenum - 75; nickel - 420; selenium - 100; and zinc - 7500. The frequency of monitoring for these pollutants is a minimum of once per year for facilities producing less than 320 US tons (dry weight) of biosolids per year. The Fort Lewis WWTP produces approximately 110 US tons, which is less than 320 US tons dry-weight of biosolids per year (Exhibits 190 and 191).

(b) Pathogen: Pathogen reduction is demonstrated by any 1 of 6 alternative means for Class A biosolids and any 1 of 3 alternative means for Class B biosolids. Class B biosolids are biosolids that have undergone a required degree of pathogen reduction so that the biosolids can be land applied with site management and access restrictions in place. Examples of the restrictions are (1) livestock must not be allowed to graze on agricultural land for thirty days after application of the Class B biosolids, and (2) public access to the agricultural land with a low potential for public exposure must be restricted for thirty days after application. Class A biosolids are a high quality product that has undergone a more substantial reduction in pathogen concentration than Class B. Class A biosolids do not have restrictions. They can be sold, given away, land applied or land disposed. The six alternative means for achieving pathogen reduction for Class A biosolids are; Time and temperature, alkaline stabilization, process verification, batch verification, and application of one of seven processes to further reduce pathogens (such as composting). The three alternative methods for achieving pathogen reduction for Class B biosolids are; verification of maximum density of fecal coliform bacterial from 7 samples, application of one of five processes to significantly reduce pathogens and an equivalency determination. Detailed descriptions of the alternative processes are provided in Exhibit 209. Fort Lewis has produced Class A biosolids by both time and temperature alternative method; and has produced Class B biosolids by three alternative methods; air drying, anaerobic digestion, and documentation of maximum density of fecal coliform bacteria from 7 samples (Exhibits 190 and 191).

(c) Vector: Vector (rodents, flies, mosquitoes) attraction reduction is achieved by meeting any 1 of 10 alternative methods consisting of; 38% volatile solids reduction, bench-scale test for anaerobically digested solids, bench-scale test for aerobically digested solids, specific oxygen uptake rate test, aerobic treatment meeting time and temperature, pH adjustment, 75% or greater solids content for biosolids containing only stabilized solids, 90% or greater solids content for biosolids containing any unstabilized solids, injection below the surface of the ground and incorporation into the soil within 6 hours after application. Detailed descriptions of each of the alternatives are provided in Exhibit 189. Fort Lewis has achieved vector attraction reduction through 38% volatile solids reduction (Exhibits 190 and 191).

(7) Concerning reporting of biosolids pollutants, pathogen reduction, and vector attraction reduction, the biosolids management permit stipulates the wastewater treatment facility shall submit an annual report by March 1 each year for the preceding

calendar year including the sampling results and other data to demonstrate compliance with the vector reduction and pathogen reduction alternatives used.

(8) I interviewed six witnesses regarding this allegation (Exhibits 163, 164, 165, 166, 167 and 168) and examined DMR's from June 2005 to August 2007 (Exhibits 74 through 97, 192, 193, 194); Facility Operating Logs from June 2005 to August 2007 (Exhibits 50 through 73, 197, 198, and 199); a USACHPPM performance evaluation report (Exhibit 4); the NPDES permit (Exhibit 3); the biosolids management permit (Exhibit 189); Annual Biosolids Reports for 2005 and 2006 (Exhibits 190 and 191) and numerous pertinent reports.

(9) Investigative approach. To determine the validity of this allegation, I examined each of the six sub-allegations presented by the complainants in support of their premise that plant management fails to conduct proper testing and monitoring of water treated at the plant (Exhibit 26).

b. Analysis:

(1) Sub-Allegation 1: Plant managers do not conduct mandatory testing of the water at the Plant.

(A) I reviewed the NPDES permit requirements for mandatory testing of the water at the wastewater treatment plant. The NPDES permit requires the influent and effluent to be monitored for specific pollutants at specified frequencies and requires additional monitoring of the effluent to characterize the nature and quantity of the pollutants (parameters listed in Part I, table 1) discharged whenever any discharge occurs that may reasonably contribute to a violation that is unlikely to be detected by a routine sample.

(B) Concerning mandatory monitoring of the influent and final effluent at specified frequencies, I reviewed the monthly Facility Engineering Operating Logs for the period of June 2005 through August 2007 (Exhibits 50 through 68, 197, 198, and 199) and compared them to the NPDES permit monitoring schedule. I determined that all required mandatory monitoring at specified frequencies was completed.

(C) Concerning acute and chronic toxicity monitoring of wastewater collected within the treatment process prior to treatment in the chlorine contact chamber (Exhibit 170), this monitoring must be completed once during the summer and once during winter before the NPDES permit application is due. The permit application is due 6 months prior to the permit expiration date. The permit expires on 1 February 2009 so the permit application must be submitted by 1 Aug 2008. This would require the toxicity monitoring to be taken during winter 2007-08 and summer 2008. This mandatory monitoring is a future requirement.

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(D) Questions arise as to whether sufficient procedures exist for monitoring the influent and effluent during non-routine discharges.

(1) I examined the monthly Facility Engineering Operating Logs for the period of Jun 2005 through Aug 2007 (Exhibits 50-68, 197, 198, and 199) and considered the current monitoring and sampling methods used to detect unusual conditions in the plant which could result in a nonroutine discharge. Such unusual conditions may require additional sampling. I found no evidence that additional samples of the final effluent for TSS, BOD₅, TRC, fecal coliform and pH had been required because the routine samples and monitoring methods sufficiently detected and quantified a non-routine discharge.

(2) The WWTP has real-time monitoring and recording of pH and total residual chlorine concentrations. The monitoring system has alarms to detect changes in the pH level and total residual chlorine concentrations that if uncorrected, may cause a nonroutine discharge of pH and/or total residual chlorine, and result in a possible permit violation. The alarms initiate the taking of additional grab samples by the operators. As an example the pH monitoring methods detected a nonroutine pH discharge on 17, 19, 20, 21, 24 and 25 May 2006 (Exhibit 61). This was caused by oil and chemicals detected in the WWTP influent that adversely affected the performance of the trickling filters. This resulted in a reported permit discharge violation for pH. This violation and impact upon effluent BOD₅ and TSS was discussed in paragraph 5(b)(12) of my July 19 2007 Investigative report.

(3) In addition to real time monitoring and recording systems, the use of 24 hour composite samplers for the influent and final effluent to monitor for TSS and BOD₅ will capture and quantify the nonroutine discharge of these two pollutants. As an example, on 6 November 2006 a mixture of solvents was detected in the WWTP as confirmed by influent testing (Exhibit 204). The routine influent and effluent composite samples (exhibit 67) showed a substantial decline in the BOD₅ removal efficiency of the WWTP on that day – only 67% removal efficiency vs. the daily average of 87% for the month. Additionally, on 9 and 10 November 2006 the final effluent BOD₅ concentration increased to 40 and 39 mg/l respectively. This represented a more than doubling in the BOD₅ pollutant discharge into Puget Sound over the 18 mg/l daily average for the month. In this case, because the composite samples detected and quantified a nonroutine discharge, no nonroutine sampling was required.

(4) I believe that routine monitoring provisions currently in place are adequate to detect the nature and quantity of the pollutants discharged for the parameters listed in Part 1, Table 1 of the permit.

(E) Concerning monitoring of the biosolids, the NPDES permit does not prescribe biosolids monitoring, monitoring frequency or reporting but it does require the permittee to comply with the standards for sewage sludge use and disposal established under section 405 of the Clean Water Act. The regulation of these standards is

implemented by the Biosolids Management permit (Exhibit 189). The discussion and analysis of Fort Lewis compliance with mandatory biosolids monitoring will be addressed in paragraph 6(b)(5) below.

(F) Five of six witnesses with direct knowledge of requirements for mandatory testing and actual testing performed, stated that they were not aware of any mandatory wastewater testing at the plant that had not been conducted since June 2005 (Exhibits 163, 164, 165, 167, and 168). Both former (b)(6) and current (b)(6) plant supervisors state that to their knowledge, they have done everything required of the permit (Exhibit 165 and 163). (b)(6) DPW, who personally reviews testing data, states that without a doubt, "we are and have been in full compliance with all previous and current testing protocols and frequencies" (Exhibit 168).

(G) One witness, (b)(6) the lab technician for the WWTP, responded "yes" to this question on whether any mandatory testing has not been conducted (Exhibit 166). The basis for her response appears to be questioning "how" testing is conducted rather than questioning "if" mandatory testing is conducted. (b)(6) argues that because monitoring is required to be representative of the flow on a 24-hour basis, "samples [should] be taken daily for at least two months after 1000 hours to catch peak flows and be done at the secondary [chlorine contact chamber]." According to (b)(6) current practice is to take a sample once a month around 0800. Regarding her statement about current practice, the only monthly sampling being conducted at this time is the voluntary grab samples collected for TPH analysis. The NPDES permit does not establish specific times for sample collection but when samples are required, the samples must be representative of the volume and nature of the monitored discharges (Exhibit 3). A review of four randomly-sampled monthly TPH Certificates of Analysis shows that the monthly voluntary effluent samples were collected as follows: 21 June 2006 at 1235; 11 Oct 2006 at 1013; 1 Nov 2006 at 0910 and 4 Dec 2006 at 0927 (Exhibits 200, 201, 202, and 203). Based upon her statement that samples should be taken after 1000 hours to catch peak flows, two of the 4 sampling events were taken within her recommended time frame and two were taken during non-peak flow time. The collection of the monthly TPH samples during both peak flow and non peak flow times would be more representative of the effluent TPH quality than sampling during only peak flow or during non peak flow.

(H) Regarding how samples are to be taken, the NPDES permit requires monitoring of the final effluent by the grab sample method for TPH, total metals (8 metals), total nitrogen, total residual chlorine, pH, and fecal coliform; whereas BOD₅ and TSS are by a 24 hour daily composite sample (Exhibit 3). The sampling method (grab) chosen by Fort Lewis for its voluntary monitoring of TPH is consistent with the sampling method required by the permit for the mandatory TPH monitoring during the first year of the permit.

(i) Furthering her argument that testing is not being conducted properly, (b)(6) states that (b)(6) feels "they are testing TPH at the wrong point, because it is after

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chlorination when it should be before chlorination" (Exhibit 166 and 170). However, the NPDES permit requires TPH samples to be taken of the final effluent, when complying with the mandatory semi-annual TPH monitoring requirement during the first year of the permit (Exhibit 3).

(J) The sampling location and method chosen by Fort Lewis in the current monthly voluntary TPH monitoring program is consistent with the location and method required by the permit to determine if TPH was present in the effluent at levels of concern. The permit required two samples to be taken of the effluent during the wet season and submitted to the EPA to determine if TPH was present at levels of concern. The submission of monthly TPH data by Fort Lewis provides the EPA with current TPH data to determine if TPH is present in effluent at levels of concern. Regardless, the permit does not require routine testing for TPH, so this point does not factor into the question of mandatory testing. Although (b) (b)(6) may have valid suggestions about how to improve testing quality, I believe that, based upon the statements given, plant management conducts mandatory testing of the water at the plant in accordance with their understanding of the permits requirements.

(2) Sub-Allegation 2: Plant managers are not properly recording (e.g., reporting) test results.

(A) The NPDES permit requires daily monitoring of the influent and final effluent for various listed pollutants for routine discharges and semiannual monitoring of the final effluent for various listed pollutants such as mercury, among other sampling requirements. However, the permit does not require all the sampling data to be reported on the monthly DMR. For example, a daily grab sample is required for total residual chlorine, but Fort Lewis is only required to report the minimum and maximum concentration during the month on the DMR. I reviewed all DMRs from June 2005 through August 2007 (Exhibits 74 through 97, 192, 193, and 194) and compared the data submitted to the summary of data required by the permit. I determined that all routine monitoring data has been submitted on the monthly DMR with the exception of "mercury" that was to be reported on the December 2006 DMR (Exhibit 92). The DMR indicated that mercury was not completed due to an error and that it would be reported on the January 2007 DMR (Exhibit 93). There was no mercury report in the January 2007 DMR. Fort Lewis is currently investigating the error and lack of a report for mercury.

(B) Five of six witnesses who have direct knowledge of requirements for properly recording test results stated that they were not aware of any wastewater test results requiring reporting that were not reported (Exhibits 163, 164, 165, 167 and 168). As an additional check, before signing the DMR, (b) (b)(6) states that (b) calls either (b) (b)(6) or (b) (b)(6) whenever (b) has any questions or reason to be concerned with the data to assure himself of the report's accuracy (Exhibit 168).

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(C) In her statement, (b) (b)(6) states the permit requires that any additional monitoring should be recorded and asserts that this includes both effluent and influent samples (Exhibit 166). (b) also references the August 2007 DMR (Exhibit 194) in which someone had blackened out both the influent of the monthly sample and a detention tank (chlorine contact chamber) sample. While stating that management records everything that is required, (b) (b)(6) acknowledges that (b) has been questioned by the lab technician on interpretation of what must appear on the DMR. As such, (b) (b)(6) Fort Lewis Water Program Manager, queried EPA, who responded that, "II.H applies only to those waste streams that are required to be sampled by the permit. Under II.H, if you were to sample those waste streams more frequently than required by the permit, you would be required to submit that result in the DMR. Influent samples that are not required to be monitored by the permit would not have to be reported in the DMR" (Exhibit 206). The paragraph of the NPDES permit cited by Chae Park, of EPA Region 10, NPDES Compliance Unit, addresses Additional Monitoring by the Permittee. Both TSS and BOD₅ are required to be monitored in the influent to show compliance with removal efficiency requirements of the permit. Management does not report influent monitoring data for other pollutants such as TPH on the DMR. Neither the NPDES permit nor EPA in subsequent clarifying instructions requires all monitoring samples to be recorded on the DMR. Management took appropriate steps to obtain clarification from the permit issuing agency, and appears to be recording test results as required.

(D) In one other case, (b) (b)(6) mentions a May, June, or July 2007 supernatant (e.g. liquid element removed from the digester) sample taken, but no results reported (Exhibit 166). Regarding the supernatant and detention tank (chlorine contact chamber) samples, neither of these samples are of final effluent or of a waste stream required to be monitored by the permit. Therefore, management does not report supernatant or chlorine contact chamber monitoring data. However, I believe that management should give (b) (b)(6) the results as well as analyze them for any appropriate action that may be required.

(E) Regarding the supernatant, influent TPH, and chlorine contact chamber TPH monitoring data cited by (b) (b)(6) and discussed above, the Retention of Records provision of the NPDES permit requires Fort Lewis to retain all monitoring information for a period of at least 5 years from the date of the sample or measurement. The EPA may require these records to be provided to them upon their request under the Duty to Provide Information provision. Therefore, the EPA has the authority to obtain the monitoring data for supernatant, influent TPH, and chlorine contact chamber TPH at their discretion.

(3) Sub-Allegation 3: The NPDES permit requires the plant to test the level of oil and grease in the effluent every six months.

(A) The NPDES permit does not list oil and grease as a pollutant requiring monitoring in the final effluent. It requires TPH monitoring of the final effluent

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semiannually during the first year of the permit during the wet season of October through March (Exhibit 3).

(B) All four witnesses who have a direct responsibility for testing concur that no requirement exists to test the level of oil and grease in the effluent every six months (Exhibits 163, 164, 165, and 166). (b) (b)(6) references "loose guidance" in the permit that every six months certain elements be tested (Exhibit 48). At times, some wastewater treatment practitioners interchange the terms "oil and grease" with TPH. Even in her statement in response to the oil and grease question, (b) (b)(6) while acknowledging that "the permit does not require oil or grease to be sampled," stated that "[s]ampling is done on a semi-annual basis" (Exhibit 164). However, both (b)(6) and (b) (b)(6) elaborate that TPH monitoring was required twice during the first year of the permit and that requirement was satisfied by reporting in the 2003 and 2004 Inflow & Infiltration (I&I) reports to EPA (Exhibits 163, 164, 195, and 196). I believe all four witnesses correctly state that no NPDES permit requirements exists for oil and grease testing in the effluent every six months.

(4) Sub-Allegation 4: The NPDES permit requires the plant to test the level of oil and grease whenever an operator requests additional testing.

(A) The NPDES permit requires the collection of additional samples at the appropriate sampling points and the analysis of these samples for the parameters limited in Part I, table 1, of the permit whenever any discharge occurs that may reasonably be expected to cause or contribute to a violation that is unlikely to be detected by a routine sample (Exhibit 3). Operators represent a key source with the knowledge and experience to determine suspect discharges. Therefore, whenever an operator suspects a discharge may contribute to a violation, his or her request for additional non-routine testing should be seriously considered by plant management and appropriate action taken.

(B) In paragraph 6(b)(3)(A) above, expert witnesses established that no requirement exists to test the level of oil and grease. This is corroborated by my examination of the NPDES permit (Exhibit 3). However, the question of management response to operator requested testing surfaces from this allegation. Three of the four witnesses who have direct responsibility for testing state that operators may request testing, and in specific situations, their requests will be honored (Exhibits 163, 164, and 165). Testing would be required in cases in which there was a question of water quality in the effluent. The fourth witness, (b) (b)(6) merely states that (b) does not perform non-routine testing at the request of other operators (Exhibit 166). (b) (b)(6) requested testing in a situation where (b) felt contaminants were being discharged. Specifically, (b) requested a six week testing study to establish a baseline of constituents being discharged and alleges that (b) has received no leadership response (Exhibit 48). (b) Barto acknowledged (b) (b)(6) request to sample several points within the process and explained that "we did not respond as requested because we discovered the source of the oil in the WWTP process" (Exhibit 163). As plant

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supervisor, (b) decided that since the source had been identified and actions taken to eliminate or reduce the source, no further testing was required. This appears to be a reasonable conclusion. Regardless, Fort Lewis continues to monitor the influent and final effluent monthly for TPH to determine the effectiveness of actions taken to reduce TPH entering the waste stream. I believe that operator-requested non-routine testing would be considered by plant management; however no written guidance exists to specify how such requests are handled.

(5) Sub-allegation 5: The plant is not recording the levels of any toxic pollutant found in the water or in the biosolids on the monthly DMR as required by the plant's NPDES permit.

(A) Concerning toxic pollutants found in the water. The NPDES permit states; "the Permittee shall monitor the final effluent as specified below, subject to the other monitoring and reporting requirements set forth in this permit;" and "the permittee shall summarize monitoring results each month on the discharge monitoring report;" and "if a permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the permittee shall include the results of this monitoring in the calculation and report of the data submitted in the DMR". Specific toxic pollutants required to be monitored at a frequency established in the NPDES permit include TPH and metals such as total mercury and total cadmium.

(B) As an example of non-routine, additional sampling, the USACHPPM performance evaluation report (Exhibit 4) included monitoring of the final effluent for TPH and metals as well as other pollutants. The additional monitoring of the final effluent is required to be reported on the monthly DMR if the pollutant is identified to be monitored at a specific frequency in the NPDES permit. A review of the December 2006 DMR (Exhibit 92) revealed that the DMR did not include the USACHPPM performance evaluation monitoring results for those pollutants, (e.g. TPH and listed total metals), required to be reported on the DMR. However Fort Lewis did report the final effluent monitoring results to the EPA in a memorandum dated 30 March 2007 (Exhibit 207). The report included all contaminants monitored in the final effluent such as pesticides and PCB's.

(C) Concerning the reporting of toxic pollutants specifically listed to be routinely monitored at a specified frequency in the NPDES permit, such as total mercury. See the discussion in paragraph 6.b(2)(a) above. I determined that all routine monitoring data has been submitted on the monthly DMR with the exception of the mercury that was to be reported on the December 2006 DMR (Exhibit 92).

(D) Concerning the recording of toxic pollutants found in the water, three of four witnesses with direct responsibility for recording these contaminants state that they have not encountered a situation in which criteria for recording toxic pollutants has been met (Exhibits 163, 164, and 165). The fourth witness, (b) (b)(6) cites one example:

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about June 2005, "when a landfill leachate came through the plant and took out the trickling filter" (Exhibit 166). Fort Lewis properly identified landfill leachate as waste stream in the NPDES permit application (Exhibit 1). In reviewing all investigative documents, particularly Facility Operating Logs (Exhibits 50, 51, 52) and DMR's (Exhibits 74, 75, and 76) for this time period, I found no anomalies that would substantiate the presence of toxic pollutants that required reporting on the DMR.

(E) Concerning toxic pollutants found in the biosolids sludge. As discussed in paragraph 6(b)(1)(D) above, the NPDES permit (Exhibit 3) does not specify biosolids monitoring, monitoring frequency or reporting. Thus the monthly DMR is not the required means of reporting mandatory biosolids monitoring data. The biosolids management permit (Exhibit 189) prescribes required monitoring and reporting of biosolids data. It requires annual monitoring for 9 listed metals and reporting the results through the Annual Biosolids Report. The report is due by 1 March for the preceding calendar year. I reviewed the annual reports for calendar years 2005 and 2006 (Exhibits 190 and 191) and determined that the mandatory monitoring requirement for metals was met. Additionally Fort Lewis actually reported two (b)(6) of metals monitoring in each annual report as well as other toxics monitoring data such as PCB's and pesticides. The annual reports also show that Fort Lewis completed the required monitoring for pathogen and vector attraction reduction and provided the calculations to demonstrate compliance. Based upon my review of the annual reports, I believe that Fort Lewis has completed all mandatory biosolids monitoring required by the Biosolids Management Permit. Furthermore, I found that the annual report is the proper report for recording mandatory biosolids monitoring and not the NPDES monthly DMR.

(F) In her statement concerning the recording of toxic pollutants found in the biosolid sludge, (b) (b)(6) reports an incident in June 2005 when oil was detected in the digester as an example in which toxic pollutants exceeded the permit threshold but were not recorded as required by the permit (Exhibit 166). This material in the digester is considered biosolids sludge rather than wastewater. As discussed in paragraphs 6.b. (5)(e) of this report, biosolids are not reportable under the NPDES permit. Thus, no requirement exists to record or report the presence of this oil in the DMR. Both (b) (b)(6) and (b) (b)(6) note that sludge and biosolids information should not be included in the DMRs (Exhibits 164 and 165). (b) (b)(6) stated that three incidences occurred when the lab tech would include information that was not required in the DMR like sludge reports. (b) stopped submitting that information upon the request from upper management. (b) (b)(6) explains that 40 CFR 503 requires a permit for biosolids (sludge), but the EPA Region 10 does not have a permit available for biosolids (sludge). Therefore, Fort Lewis voluntarily complies with the Washington State General Permit for Biosolids Management (Exhibit 164 and 189). I found no evidence in the witness statements that would substantiate the assertion that toxic pollutants found in the biosolids sludge should be reported in the DMR.

(6) Sub-Allegation 6: Whether the Fort Lewis Environmental Division fails to report the test results of lab tests to the operators or the lab technician as required by the plant's NPDES permit.

(A) The NPDES permit (Exhibit 3) does not establish internal reporting requirements within the Fort Lewis organization.

(B) All four witnesses who have direct knowledge of operator access to Lab test results of lab tests state that operators do have access to lab test results (Exhibits 163, 164, 165, and 166). (b) (b)(6) qualifies her response by stating that "historically we had not been receiving them" and "it is only recently that I have been receiving the results" [from the Environmental Division for outside laboratory sampling and results] (Exhibit 166). This is corroborated by (b) (b)(6) who states that during the April-July 2006 timeframe, "at first there was a disconnect but once it was brought to the attention of the Director, the Director ensured that the information was available to both the lab tech and operators" (Exhibit 165). Clarifying regulatory guidance, (b) (b)(6) noted that there is no requirement in the permit to report pollutant test results to WWTP operators or the lab technician.

(C) Fort Lewis leadership has directed that lab test results be made available and operators may request and receive copies of lab test results by contacting either the environmental division in DPW or the WWTP lab technician (Exhibits 164 and 165). This policy directive has the potential to enhance WWTP operations by enabling operators to make necessary adjustments in treatment, such as determining the correct amount of chemicals to add to the water. I believe this was a prudent decision by local leaders to correct a past shortcoming.

(D) (b) (b)(6) provided with her sworn statement (Exhibit 166), a laboratory services chain of custody form (Exhibit 205) for the analysis of WWTP effluent for total metals and total nitrogen. These pollutants are required to be monitored semiannually and are reported on the June and December DMR's. The form shows that the samples were taken 1 June 2006. The form has been annotated with "No Test Results." In reviewing the June 2006 DMR (Exhibit 86) the metals were reported and 3 of the 4 total nitrogen components were reported. The remaining component ammonia nitrogen was not reported and the DMR is annotated "Lab error - will be reported in next months DMR." The July 2006 DMR (Exhibit 87) reports the ammonia nitrogen concentration. Since (b) (b)(6) is the sole preparer of the DMR's (Exhibit 166) it would appear that the laboratory information was made available to (b) (b)(6)

c. Conclusion: Based on analysis above (Exhibit 208), I conclude that:

(1) Since June 2005, plant managers conduct required monitoring at specified frequencies in compliance with the plant's NPDES permit.

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(2) Since June 2005, with one exception in December 2006, plant managers properly recorded and reported test results on the monthly DMRs in compliance with the NPDES permit.

(3) The NPDES permit does not require the plant to test the level of oil and grease in the effluent every six months.

(4) The NPDES permit does not require the plant to test the level of oil and grease whenever an operator requests additional testing.

(5) Plant management has not published nor given WWTP operators written policy guidance on operator-requested testing. Written guidance may be needed in order to comply with the NPDES permit requirement for additional sampling whenever any suspect discharge occurs that may cause a violation and is not detected by a routine sampling.

(6) Since June 2005, Fort Lewis is in substantial compliance with the NPDES permit requirement to record and report toxic pollutants found in the final effluent. Of the two exceptions, one has been corrected (e.g., USACHPPM monitoring results reported by memorandum in March 2007 rather than the December 2006 DMR) and the other is being investigated (e.g. mercury should have been reported in the December 2006 or January 2007 DMR, but was not).

(7) The NPDES permit does not require recording and reporting toxic pollutants found in the biosolids in the monthly DMR's.

(8) Plant management is properly and correctly monitoring and reporting reportable toxic pollutants found in the biosolids annually in the Annual Biosolids Report in compliance with the Biosolids Management Permit issued by the state of Washington.

(9) The NPDES permit does not require plant management or Fort Lewis Leadership to report the results of lab tests to the WWTP operators or the lab technician.

(10) In the summer of 2006, Fort Lewis leadership made a prudent decision by granting operators access to test results thus potentially enhancing plant operations.

d. Recommendations: Based upon the analysis and conclusions above, I recommend:

(1) That plant management take action to correct their error of not reporting mercury in the December 2006 DMR.

(2) That plant management review any existing policy guidance on monitoring and testing, and/or establish and publish revised written policy guidance on monitoring

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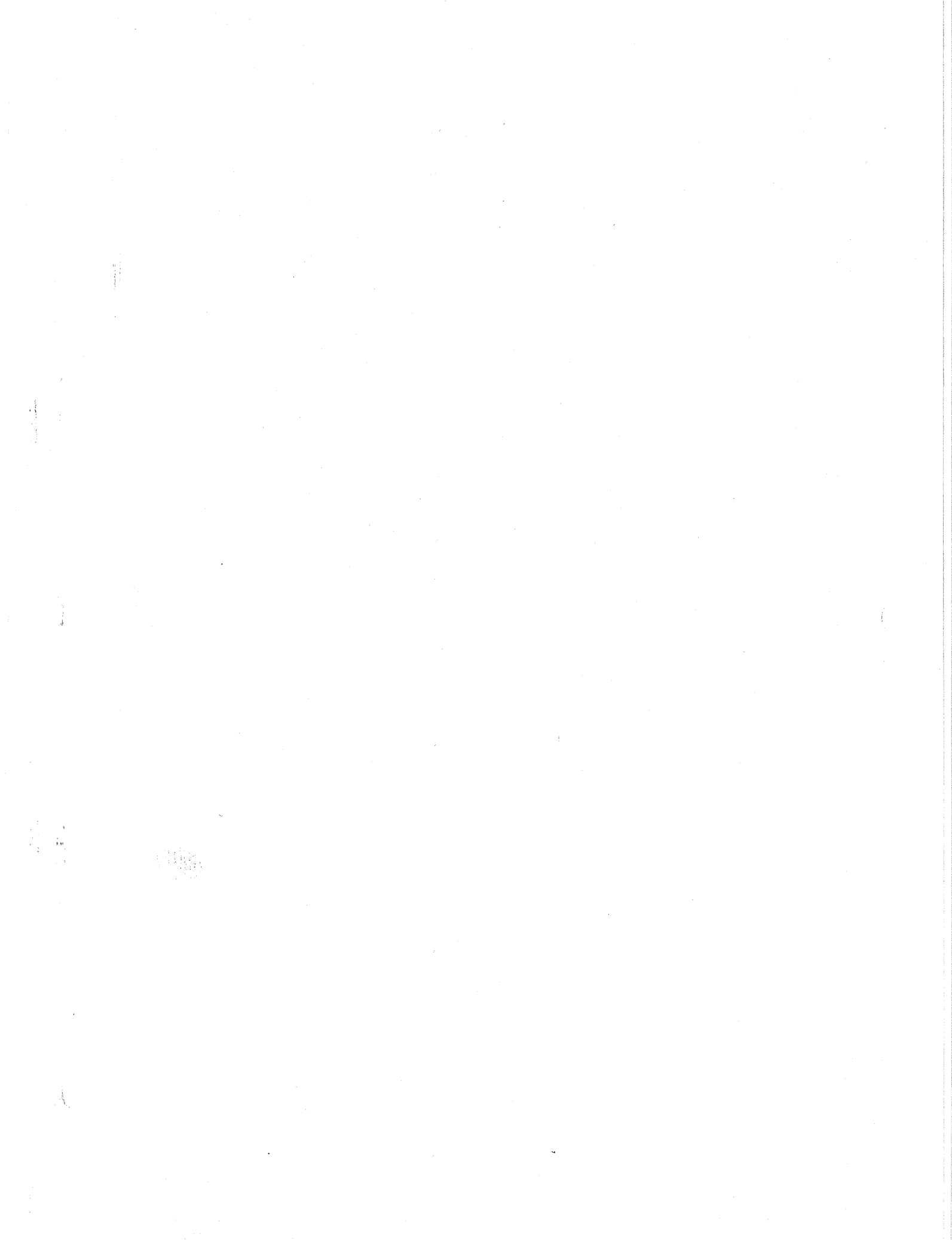
Subject: Supplemental Report to AR 15-6 Report of Investigation-Fort Lewis Waste Water Treatment Plant

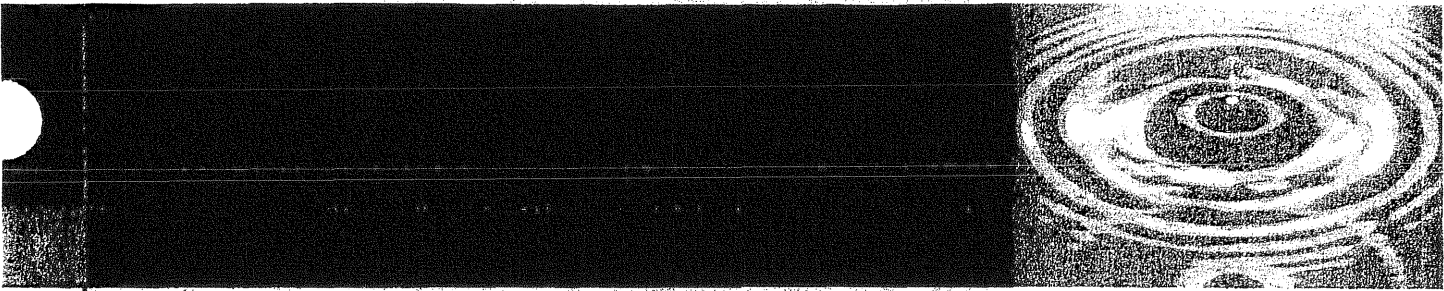
and testing of both wastewater and biosolids to include operator involvement such as operator requested testing.

7. Point of contact is (b) Thomas Hodgini, (309) 782-4531 or DSN 793-4531, email: Thomas.J.Hodgini@us.army.mil.

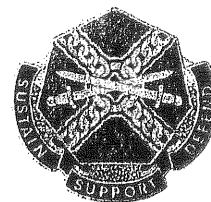
(b)(6)

Investigating Officer





Supplemental Report to
AR 15-6 Report of Investigation
Fort Lewis Waste Water Treatment
Plant



Enclosures and Exhibits

VOL III

Fort Lewis WWTP AR 15-6 Investigation Supplement

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Enclosure 1

Supplemental Information to the Original AR 15-6 Investigation

(FT. Lewis WWTP AR 15-6 Investigation)

Enclosure 1

**Supplemental information to the original
AR 15-6 Investigation
(Fort Lewis WWTP AR 15-6 Investigation)**

Clarification

- Relevant authorities concerning the operation of the Fort Lewis WWTP (a)
- Discussion of pollutant standards within the WWTP (b)
- Location of WWTP compliance points for monitoring and testing (c)
- WWTP performance evaluation program (d)
- Clarification of USACHPPM performance evaluation study intent (e)
- Discussion of USACHPPM performance evaluation recommendations (f)
- Industrial Hygiene Workplace Assessment Evaluations (g)
- Concerning potential personnel corrective actions (h)
- Concerning gross mismanagement on the part of (b) (b)(6) (i)
- Discussion of operator in responsible charge (j)
- Discussion of WWTP supervisor certification requirements (k)
- Assignment of (b)(6) as interim WWTP Supervisor (l)
- Voluntary monitoring for TPH (m)
- Explanation of certain documents given to the Investigating Officer by witnesses (n)

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- Fort Lewis Garrison and WWTP organization (a)
- Description of Fort Lewis WWTP process (b)
- Fort Lewis voluntary pretreatment program (c)
- Concerning property accountability for missing tools and repair parts (d)
- Concerning (b) (b)(6) possible misuse of the TV (e)
- Media coverage issues (f)

Enclosure 2

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Enclosure 2

Enclosure 2.txt

-----Original Message-----

From: (b)(6) CIV USA AMC
Sent: Tuesday, September 18, 2007 5:27 PM
To: (b)(6) MIL USA AMC; (b)(6); Hodgini, Thomas J
CIV USA AMC
Subject: FW: Request for Assistance/Mr. Hodgini

Gentlemen,

See email traffic below. Mr. Hodgini's services are requested for special project regarding continued efforts on previous 15-6 while at IMCOM. Appears no travel but phone contact/office work for approximately 40 hours of effort. CG has directed we support this request/requirement.

Appreciate your cooperation.

(b)(6)

U.S. Army Sustainment Command
email (b)(6)
DSN 703-6531

-----Original Message-----

From: (b)(6) M MG MIL USA AMC
Sent: Tuesday, September 18, 2007 5:12 PM
To: (b)(6); (b)(6) CIV USA AMC; (b)(6)
 MIL USA AMC
Subject: Re: Request for Assistance/Mr. Hodgini

Ma'am:

As I read the note it looks as if we are being asked to make available Hodgini for up to 1 week working from Rock Island...starting yesterday...if is working at Rock Island this week, we will make him available.

Chief: Please make it happen...

v/b

(b)(6)

----- Original Message -----

From: (b)(6) (b)(6)
To: (b)(6) M MG MTL USA AMC
Cc: (b)(6)
Sent: Tue Sep 18 16:09:49 2007
Subject: FW: Request for Assistance/Mr. Hodgini

(b)(6) Army GC sent this request for help to me...this guy now works for you and they need his assistance for a special Counsel case.

-----Original Message-----

From: (b)(6)
Sent: Tuesday, September 18, 2007 5:03 PM
To: (b)(6)
Subject: FW: Request for Assistance/Mr. Hodgini

Enclosure 2.txt

-----Original Message-----

From: (b)(6)
Sent: Friday, September 14, 2007 6:13 PM
To: (b)(6)
Cc: (b)(6) T (b)(6) (b)(6)
Subject: Request for Assistance/Mr. Hodgini

(b)(6)

Pursuant to our conversation of earlier this evening, request your assistance in securing the services of Mr. Thomas Hodgini. Effective Monday, September 17, 2007, Mr. Hodgini will report to Army Sustainment Command, Rock Island Arsenal, Illinois, where we believe he will be assigned to work in logistics.

Mr. Hodgini formerly served as the Assistant to the Deputy, IMCOM, North West Office, also at Rock Island. In that capacity, he was appointed as the investigating officer in an AR 15-6 investigation chartered to investigate allegations forwarded by the Office of Special Counsel (OSC) into whistleblower assertions that operations at the Fort Lewis, Washington, Waste-Water Treatment Plant were resulting in serious violations of law and regulation and the creation of significant health and safety concerns.

As you know, (b)(6), manages OSC referrals involving the Department of the Army on behalf of the Secretary and the General Counsel. The Army is bound by law to investigate OSC-referred allegations and to correct any deficiencies such investigations reveal. Completed Army reports of investigation are forwarded to the President and to the SASC and HASC for review. Past Army investigations that have not been deemed sufficient have been returned to the Army over the personal signature of the White House Counsel.

In this vein, Mr. Hodgini's assistance is imperative to ensuring the resolution of complex, outstanding issues related to the Fort Lewis investigation. We have engaged in detailed coordination with IMCOM to ensure that both the operational and legal components of this investigation are aware of what we believe to be required to render the Fort Lewis investigation legally sufficient and acceptable to the OSC and the President. IMCOM is prepared to work, with Mr. Hodgini's assistance, to complete this report.

Mr. Hodgini would need only to work with his IMCOM legal advisor, Mr. Richard Prins via telephone or VTC to assist in completion of the report. We do estimate that completion of the report could require as much as 40 hours, or one week of work, on Mr. Hodgini's behalf.

Would very much appreciate any assistance you are able to render to make (b)(6) Hodgini available for this critical Army mission.

Enclosure 2.txt

Please do not hesitate to contact me should you have any questions or concerns.

I very much appreciate any assistance you can provide.

VR/GP

S (b)(6)


A rectangular box with a thin black border, containing the text "(b)(6)" in the top left corner and a small "S" to its left. The rest of the box is empty, indicating a redacted signature.

EXHIBIT 163

VOL III

Exhibit 163

(b)(6)

Interview Record

AR 15-6

Fort Lewis Waste Water Treatment Plant

The questions below are asked by Mr. Tom Hodgini who is the Investigating Officer appointed to assist the Office of Special Counsel in collecting facts about the Fort Lewis Waste Water Treatment Plant (WWTP). Your answers may help determine whether plant management fails to conduct proper testing and monitoring of the water treated at the plant. After the questions below, you may provide additional information. At the conclusion, Mr. Hodgini will ask you to review information you provided. Mr. Hodgini's investigation is being conducted pursuant to Army Regulation 15-6 and his 6 June 2007 appointment memorandum. (b)(6) Hodgini is assisted by Environmental Engineer (b)(6) and Legal Advisor (b)(6)

Q1: Do you have any questions about the purpose of this interview and the process?

(b)(6) No

Q2: Please state your name.

A1: (b)(6)

Q3: Your work email address?

A3: (b)(6)

Q4: Are you aware of any mandatory wastewater testing at the plant that has not been conducted since June 2005?

A4: No

Q5: If so, please describe. In either case, please discuss the basis for your response above.

A5: Would you know if WWTP should have been monitored but was not? Yes, but I also rely heavily on the (b)(6) Environmental Division Water Program, to keep me compliant on regulatory issues and testing requirements. To my knowledge we have done everything we were supposed to do. There might have been confusion among the employees, because of additional sampling required as part of the permit renewal application process. One of those points of contention is the Toxicity Testing, which the plant previous sampled annually, but have not done in the past several years. The existing Permit only calls for two tests – once each from last summer and winter, prior to the submission of the application for permit renewal. As part of the new permit renewal process, however, it calls for additional Toxicity Tests that was equivalent to the annual testing that was done as per old plant SOP, which would have met the renewal applicable requirements, but did not violate the existing permit.

Q6: Are you aware of any wastewater test results required to be reported, but were not?

A6: No

Q7: If so, please describe the situation.

A7: We report only what is necessary and required. There are some questions from the lab tech on interpretation of what must be on the DMR. We have asked and received recent email clarifications that state that we only report effluent data. The only influent data we must report is those data necessary to show compliance with the removal efficiency requirements. Emails regarding the EPA guidance are attached to this record.

Q8: Where are you currently assigned and what is your engineering position?

A8: I am currently a Civil Engineer, assigned to the Operations and Maintenance Division. I am currently dual hatted as the WWTP Supervisor and the Water Systems Manager.

How much time do you spend in each job? Not enough, split probably 50-50.

When working WWTP business are you located at the plant? I spend Mon-Tues half a day in the mornings at WWTP and a couple hours each day the rest of the week in the afternoons.

Q9: Who is your current supervisor?

A9: (b)(6)

Q10: What Division & Branch did you work in prior to your current detail?

A10: I worked in the Business Operations and Integration Division for Paula Wofford.

Q11: Why do you feel you were selected for this detail assignment? What are your credentials?

A11: I don't know if there was any selection process more of who was willing and able to take the job. I feel that I am best qualified. I know that several others were considered.

Did someone sit down and discuss responsibilities? Yes that is what happened basically.

Credentials, I have decent knowledge of WWTP operations from my educational background, as an Environmental engineer and was assigned as water systems manager in October 2006 and have systems knowledge. Also I have leadership training in the military and a recognized Professional Engineer license.

Q12: To your knowledge, does the permit require testing of the effluent for oil and grease every six months?

A12: Only TPH was required for the first year of the permit, not oil and grease.

Do you know has it been done? Yes.

Q13: What instructions exist for conducting routine and non-routine sampling at the WWTP?

A13: We have several SOPs that involve testing and sampling. These are the SOP's that CHPPM has recently reviewed and partially revised. I had the operators and lab tech review both the CHPPM performance evaluation reports and respond with comments. The SOP's do not distinguish between routine and non-routine sampling. Routine is required by permit, Non-Routine is considered engineering analysis.

Q14: If they exist, do these instructions address testing requested by the operators?

A14: The SOP's do not address specific operator requested sampling. We collect samples as an engineering sample for suspicious materials in the influent. It is an unwritten SOP. I have given verbal standing order to sample anything that is a suspect material coming into the plant. For example, within a year to 18 months, a slew of greenish substance came through the plant and resulted in a pH drop. We sampled and did not find anything abnormal. That was the pH excursion incident.

I have not denied any operator requested sampling. However, I have received requests from (b)(6) to sample several points within the process, to help determine the cause and impact of oil within the plant. I did not immediately respond as requested because I wanted to some time to personally evaluate the situation, as well as work or other more pressing issues, since recently being reassigned. Since then, I believe we have discovered the main source of the oil in the biosolids to be the gas compressor oil that the plant was injecting into the digester at a high rate, without taking it out for the past several years.

Q15: The Permit requires notification to EPA whenever pollutants, including toxic pollutants exceed five times the value in the permit application or a limit established by the EPA. To your knowledge, have any samples for toxic pollutants met that reporting criteria since June 2005?

A15: Not to my knowledge.

Q16: Is so, when did this occur, have these been reported, and by what means?

A16: NA

Q17: Have any samples for other pollutants such as TPH, met that reporting criteria since June 2005?

A17: Not to my knowledge

Q18: What is your role in the preparation and review in the Discharge Monitoring Reports?

A18: I have assigned (b)(6) to prepare the DMR that accompanies the DMR package. I would review and sign the engineer block on the daily operating log. I then forward it to Environmental for their review and then to signature by the Director. Environmental then sends it out to EPA. The daily operating log does accompany the DMR submission to EPA.

Q19: Do operators and the lab technician have access to test results provided by the Environmental Division?

A19: Yes, (b)(6) sends the lab results back to me for incorporation into the DMR and I give them to the lab tech. The operators do have access to the test records of every DMR submitted. The DMR package is available at the plant.

Do they request copies? No they don't. But they can access them when they want, it is an open file.

Q20: What is the status of the safety railing project for the scum pit?

A20: They were installed last month along with other railings that we found missing when we were scoping the project.

Q21: What is the status of the additional confined space entry signs?

A21: I have tasked (b)(6) to review the safety report that identified the sign issue and provide recommendations back to me. (b)(6) found that most of the signs were in fact there. However, many were either faded and/or were installed in improper locations. We are in the ordering process now for replacing the signs.

Q22: What is the status of calibration of the in-line magnetic flow meters?

A22: I don't have a good status for that. To my knowledge they have not been calibrated in the last year or possibly three years. But the plan is to get them calibrated before the calendar year is over.

Q23: What is the status of the chlorine feed system?

A23: The two feed pumps have been replaced in the last two months but we need a project to evaluate the whole system. There might be some leakage along the way where chlorine is stored and ejected.

Q24: Previously, there were indications that WWTP tools and spare parts were missing. To your knowledge, have any property accountability actions been taken?

A24: No, I have decided to wipe the slate clean and start from the beginning. What I have ordered gives us a nice inventory and there a tool attendant who will manage this inventory from now on.

Q25: Is the recently purchased 40 inch LCD HDTV being used? If so, for what purpose?

A25: It is being used for training for all of the water utilities section employees. The TV is at the Water Treatment Plant in a classroom environment and is being used for training such as confined space entry training given by (b) (b)(6)

Q26: What is the status of the inactive Polymer System?

A26: It is still off-line. Originally I wanted to include the installation as part of a bigger task order that included other repair work associated with the primary clarifiers, just awarded last week. However, during the scoping process, I did not feel confident enough of its design to pursue it using that contract. In addition, since it was fast approaching the fiscal year-end, I didn't want this one item to risk other items in the task order from contract award. In addition, the Environmental Division has a new contract to conduct a feasibility study to produce Class A reuse wastewater under a contract with Army Environmental Center and SAIC. As part of reuse standards, a coagulant system is required. That report will be completed in

December, and will include a concept design for the new coagulation process for the plant.

Q27: Do you have other information relating to these matters you want to provide?

A27: No

This is an accurate summary of information I provided to the Investigating

(b)(6)

Interviewee Signature

27 Sep 07
Date

(b)(6)

Recorder:

IO: John J. Hodgini

EXHIBIT 164

VOL III
Exhibit 164

(b)(6)

Interview Record

AR 15-6

Fort Lewis Waste Water Treatment Plant

The questions below are asked by (b)(6) Tom Hodgini who is the Investigating Officer appointed to assist the Office of Special Counsel in collecting facts about the Fort Lewis Waste Water Treatment Plant (WWTP). Your answers may help determine whether plant management fails to conduct proper testing and monitoring of the water treated at the plant. After the questions below, you may provide additional information. At the conclusion, Mr. Hodgini will ask you to review information you provided. Mr. Hodgini's investigation is being conducted pursuant to Army Regulation 15-6 and his 6 June 2007 appointment memorandum. (b)(6) Hodgini is assisted by Environmental Engineer (b)(6) and Legal Advisor Mr. Jeff Hatch.

Q1: Do you have any questions about the purpose of this interview and the process?

A1: Not at this time

Q2: Please state your name.

A2: (b)(6)

Q3: Your work email address?

A3: (b)(6)

Q4: Are you aware of any mandatory wastewater testing at the plant that has not been conducted since June 2005?

A4: Not to my knowledge.

Q5: If so, please describe. In either case, please discuss the basis for your response above.

A5: NA

Q6: Are you aware of any test results required to be reported, but were not?

A6: Not to my knowledge.

Q7: If so, please describe the situation.

A7: NA

Q8: Previously you explained that the TPH monitoring was required twice during the first year of the permit. Were these results submitted in the Inflow and Infiltration report or the DMR?

A8: That was done prior to me working at Fort Lewis but to my knowledge they were completed or it would have been a violation. According to file documents, the TPH results were reported on the 2003 and 2004 I&I reports. The DMRs note that the results were being submitted on the I&I reports.

Q9: Does the Permit or a modification to the Permit require testing of oil and/or grease in the effluent every six months?

A9: No it does not. There has been no modification to the permit, just the original.

The requirement for the first year was testing twice for TPH.

Q10: Does the Permit require testing of oil and/or grease whenever an operator requests testing?

A10: Depends on the situation, if it concerns the discharge effluent above a quantity that would interfere with water quality, it would be required. It would not be required for the influent or within the plant. Additional monitoring would be required if visible sheen or visible floating solids at the discharge were present.

Q11: Does the Permit require testing of any other contaminants whenever an operator requests testing?

A11: Similar to the answer to the last question.

Q12: If so, please explain.

A12: If there were a question of water quality in the effluent it would require testing. The permit distinguishes between routine and non-routine testing. This situation would be classified as non-routine testing.

Q13: The Permit requires notification to EPA whenever pollutants, including toxic pollutants exceed five times the value in the permit application or a limit established by the EPA. Have any samples for toxic pollutants met that reporting criteria since June 2005?

A13: To my knowledge Fort Lewis did not have any effluent samples that exceed those criteria. According to the past NPDES application and effluent data, the effluent data appears to be consistent over the past few years.

Q14: Is so, when did this occur, have these been reported, and by what means?

A14: NA

Q15: Have any samples for other pollutants such as TPH, met that reporting criteria since June 2005?

A15: Not to my knowledge. If there were violation, it would be reported on the DMR and the EPA would have been notified.

Q16: If so, when did this occur, have they been reported, and by what means?

A16: NA

Q17: What kind of permit do you have, if any, for your biosolids (sludge)?

A17: We voluntarily comply with Washington State General Permit for Biosolids Management. This is because EPA Region 10 does not have a permit available. 40 CFR 503 requires a permit for Biosolids and the EPA allowed Fort Lewis to use the Washington State permit.

Q18: What is the monitoring requirement for biosolids (sludge)?

A18: In general terms, the frequency of monitoring is based on the amount of annual biosolids produced. Our current requirement is to conduct at least one sampling event per year. However, Fort Lewis conducts two sample tests per year for metals. Monitoring for vector reduction and pathogens reduction is conducted on an on-going basis. We monitor metals twice a year to ensure no issue exists half way thru the year.

Q19: What is the reporting requirement for biosolids (sludge)?

A19: By March 1 of every year an annual report is submitted to the State Department of Ecology (DOE), EPA and Dept of Health. We have submitted these on time every year.

Q20: Have there been any cases in which toxic pollutants in the sludge should have been reported and did that occur properly?

A20: This gets complicated with sludge. Sludge can be considered Biosolids as long as it meets the requirements in the Washington Administrative Code and the permit for Biosolids. There is no standard for TPH in the Biosolids, but there are other regulations outside of this regulation that come into play. These regulations are Solid Waste, Model Toxics Control Act (MDCA) and RCRA.

Q21: Is there a requirement in the Permit or any other local policy or SOP, for the Environmental Division to report pollutant test results to WWTP operators or the lab technician?

A21: There is no requirement in the permit for that. When I receive the results from the lab, I give them to the Supervisor of the WWTP.

Q22: We understand that the sludge/biosolid's are now being disposed as solid waste in a landfill rather than land applied. When did that change take place and why?

A22: Last summer, because of TPH.

Q23: Does the sludge meet all the requirements for landfill disposal?

A23: Yes, it falls under solid waste management and we have solid waste authorizations.

Q24: Who prepares the DMRs that you review monthly?

A24: Normally, (b) (b)(6) prepared the DMR's. They are reviewed by the plant Supervisor and Environmental Division. Next, they are signed and mailed to the EPA. They are signed by (b)(6) and sometimes in the past by (b)(6) (b)(6)

Q25: To your knowledge, do operators and the lab technician have access to test results?

A25: Yes, because the operators list results on the DMR every month.

Q26: Do you have other information relating to these matters you want to provide?

A26: We have previously discussed it in the past and I do not have anything new.

This is an accurate summary of information I provided to the Investigating Officer:

(b)(6)

Interviewee Signature

26 Sept 07
Date

Recorder (b)(6)

IO: Thomas J Hodgini

VOL III
Exhibit 165

EXHIBIT 165

VOL III
Exhibit 165

(b)(6)

Interview Record
AR 15-6
Fort Lewis Waste Water Treatment Plant

The questions below are asked by Mr. Tom Hodgini who is the Investigating Officer appointed to assist the Office of Special Counsel in collecting facts about the Fort Lewis Waste Water Treatment Plant (WWTP). Your answers may help determine whether plant management fails to conduct proper testing and monitoring of the water treated at the plant. After the questions below, you may provide additional information. At the conclusion, Mr. Hodgini will ask you to review information you provided. Mr. Hodgini's investigation is being conducted pursuant to Army Regulation 15-6 and his 6 June 2007 appointment memorandum. (b)(6) Hodgini is assisted by Environmental Engineer (b)(6) and Legal Advisor Mr. Jeff Hatch.

Q1: Do you have any questions about the purpose of this interview and the process?

A1: No.

Q2: Please state your name.

A2: (b)(6)

Q3: Your work email address?

A3: (b)(6)

Q4: Are you aware of any mandatory wastewater testing at the plant that has not been conducted since June 2005?

A4: No

Q5: If so, please describe. In either case, please discuss the basis for your response above.

A5: NA

Q6: Are you aware of any wastewater test results required to be reported, but were not?

A6: No

Q7: If so, please describe the situation.

A7: NA

Q8: What is your current position?

A8: I am currently a Utility Systems Repairer/Operator Supervisor. I supervise the Water Treatment Plant and the Outside Water and Sewer shop.

Q9: Who is your supervisor?

A9: (b)(6)

Q10: To your knowledge, does the permit require testing of the effluent for oil and grease every six months?

A10: No, it does not. It does not require testing for oil and grease at all. That is a requirement for the storm water. We are required to test the storm water for oil and grease because they empty into Puget Sound. This is IAW the storm water permit.

Q11: What instructions existed for conducting routine and non-routine sampling at the WWTP while you were the supervisor?

A11: Everything was spelled out in the permit on what samples and frequency of routine and non-routine samples were to be taken. The permit was readily available to all operators in the plant. No, there was no SOP it was spelled out in the permit when samples should be taken (routine and non-routine). It is clearly stated in the permit.

Q12: If they existed, do these instructions address testing requested by the operators?

A12: No, it was more or less a verbal understanding that concerns should have been brought to myself or management and that any testing that we would take has to be included in the monthly DMR. It states clearly in the permit that any sampling must be reported with results in the monthly DMR. All sampling that we do has to be reported and counted at the end of the month.

Q13: The Permit requires notification to EPA whenever pollutants, including toxic pollutants exceed five times the value in the permit application or a limit established by the EPA. To your knowledge, have any samples for toxic pollutants met that reporting criteria since June 2005?

A13: To my knowledge no. I would have known that information because it would have been a red flag with the EPA.

Q14: If so, when did this occur, have these been reported, and by what means?

A14: NA

Q15: Have any samples for other pollutants such as TPH, met that reporting criteria since June 2005?

A15: No, and there is no limit on TPH. EPA has not established a limit on TPH at all.

Q16: What was your role in the preparation and review in the Discharge Monitoring Reports?

A16: My role, initially when I took over, was to review the DMR before it was submitted to the EPA after the preparer (the lab tech) prepared it. I would check it and see if anything needed to be added or deleted.

What happened if error were found?

The report would go back to the lab tech for discussion and the concerns would need to be addressed or removed. Then the report would be resubmitted. The lab tech would sometimes include information that was not required in the DMR like sludge reports.

How often did that happen?

Three times until upper management spoke to her and requested that she stop or would be reprimanded.

Q17: Did operators and the lab technician have access to test results provided by the Environmental Division?

A17: Yes they did. At first there was a disconnect but once it was brought to the attention of the Director, the Director ensured that the information was available to both the lab tech and operators. This occurred in the April-July period of 2006. At the time contractor complained that there was a large amount of oil in the digester. The operators and lab tech felt that they were not privy to the results. I felt that the information should be made available to the operators.

How was this information made available?

They could contact (b)(6) and (b) would bring them a copy of the test results. Every test that was taken had to be set up with the lab tech and then (b) or an operator took the sample. The personnel at the plant took the actual sample and provided it to the environmental person to be sent to the lab. When the lab results came back they would go to the environmental division (it was paid for with Envir Div money).

Were you notified of results?

Yes. I would be cc'd a copy for my files to keep.

Did you share your copy?

I just filed it.

What form was the information?

These were actual test results from the lab that we would send samples to. The lab tech had the misconception that she had to report all samples.

Is it your understanding that the non-routine testing should be on the DMR? Anything that has to do with the permit requirements had to be on the DMR.

Q18: Previously, you testified that WWTP tools were missing and that you had seen some of them in at least one employee's garage. Did you initiate any property accountability actions such as report of survey?

A18: I did on certain items that were missing. I put out a stern warning to all of the employees that the government does not provide the tools for their personal use and if a piece of equipment was again removed there would be harsh penalties. I did a report of survey for several items that were missing off of the property book and were no where to be found when I took the property book over.

About when was that?

January 2006

Q19: I have testimony that a 40 inch LCD HDTV was purchased sometime last year for the WWTP. Did you purchase such a TV? If so, for what intended purpose?

A19: I did purchase such a TV. But it was not purchased only for the WWTP. It was purchased for all 3 sections and was approved by (b)(6) (b)(6) I gave full reason why I wanted to purchase the TV versus the overheard projection system. The TV was purchased for training purposes because of the type of training material received (VHS, DVD, Photos). I needed to convert VHS to DVD or CD. It was purchased for all three shops to include water and external water and sewer. We also use it to view tapes of water reservoir inspections and sewer line inspections.

Do you know has it been used for training?

Yes, I am currently using it for confined entry space training. I use it all the time.

Where is the TV located.

In the back room of the WTP, that is where the classroom is located.

Q20: Do you have other information relating to these matters you want to provide?

A20: I think the only thing I would like to provide is...when I became the supervisor it really set some people off because they thought that they were better qualified, however they did not understand my past qualifications.

I also had the WWTP area cleaned up for safety reasons and organization of tools and equipment because this cut down on productivity.

Examples:

Pumps that had been sitting out for years, rusted shut and could not have been started. I had the electrical shop supervisor review the pumps before tossing to determine if it was salvageable. ^{they} (b) said it was now junk because of exposure. It had become unserviceable because of prior improper storage in the elements.

This is an accurate summary of information I provided to the Investigating Officer:

(b)(6)

Interviewee Signature

09/25/2007
Date

Recorder: (b)(6)

IO: Thomas J. Hodgini

EXHIBIT 166

VOL III

Exhibit 166

(b)(6)

Interview Record

AR 15-6

Fort Lewis Waste Water Treatment Plant

The questions below are asked by Mr. Tom Hodgini who is the Investigating Officer appointed to assist the Office of Special Counsel in collecting facts about the Fort Lewis Waste Water Treatment Plant (WWTP). Your answers may help determine whether plant management fails to conduct proper testing and monitoring of the water treated at the plant. After the questions below, you may provide additional information. At the conclusion, Mr. Hodgini will ask you to review information you provided. Mr. Hodgini's investigation is being conducted pursuant to Army Regulation 15-6 and his 6 June 2007 appointment memorandum. Mr. Hodgini is assisted by Environmental Engineer (b)(6) and Legal Advisor Mr. Jeff Hatch.

Q1: Do you have any questions about the purpose of this interview and the process?

(b)(6) No

Q2: Please state your name.

A2: (b)(6) (p)(6) real name: (b)(6)

Q3: Your work email address?

A3: (b)(6)

Q4: Are you aware of any mandatory wastewater testing at the plant that has not been conducted since June 2005?

A4: Yes.

Q5: If so, please describe. In either case, please discuss the basis for your response above.

A5: Monitoring is required to be representative of the flow on a 24 hour basis. But the monitoring for TPH & DX is not. They only take a grab sample once a month around 8:00 am. I suggested that the sample be taken daily for at least two months after 10:00 am to catch the peak flows and be done at the secondary.

Environmental sends a contractor to pick up the sample for immediate shipment because there is about a 6 or 8 hour window to get it tested. I take the grab sample for the analysis for both the influent and effluent.

Under the permit, it says any additional monitoring must be recorded. If I take both an effluent and an influent sample, which is extra monitoring, it should be recorded and reported on the DMR. I was told not to include the influent by (b)(6) and (b)(6). This happened in the last 6 months. (b)(6) talked to (b)(6) the Compliance Officer for the permit at the EPA in Seattle, (b)(6) wrote an email to (b)(6) which conveyed EPA guidance that stated that more or less but less is better. Then they decided that I should only report the lesser which is the effluent results.

I feel that they are testing for TPH at the wrong point, because it is after chlorination when it should be before chlorination. It should be grabbed at high flow (after 10 am) to get a true reading when it comes into the plant, and it should be taken at the secondary. This will show you the true reading of oil within the plant, but does not mean it will go out into the Sound. I am only permitted to do the monthly grabs and only in the effluent for TPH.

Q6: Are you aware of any wastewater test results required to be reported, but were not?

A6: Yes

Q7: If so, please describe the situation.

A7: I had a problem two weeks ago, through water and sewer. They were cleaning lines (b)(6) and (b)(6) when they came upon an open manhole that was full of oil and the contractor that opened it was overwhelmed. The manhole was near a construction site. I did not see it but was told about it. It was excessive.

They came down and reported it to me. The following day I checked the detention tank and found oil and reported it to (b)(6). There were other witnesses that saw this. I asked (b)(6) to get a sample. I was told not to worry about it. I told (b)(6) I was going to send it out and I did

send it. I never got a contact from (b)(6) as a follow up. I did report it on last month's DMR and it was blacked out by someone but I do not know who. Both the influent of the monthly grab and what was in the detention tank were possible pollution. Both of these things had been blacked out after I had prepared the DMR. I was not aware of this until after it was done. It was the DMR for August. Blackening out the DMR was a unique case, but it is not unique to have had other things dumped into the system in the past. Samples have been taken in the past, from other situations and not reported. I never did get test results for sludge removed from the drying beds. Some tests, but not all have been reported. When there is no other monitoring such as on weekends, then we may not even get samples for testing.

(b)(6): Listed specific dates for testing that were and were not recorded on the DMR.)

In May, June or July of 07, a sample was taken from the supernate coming off the #2 digester to see how much was contaminated. I expected to see the results of that test. I believe that the results went to the health dept. I was splashed with the stuff and I did not hear any result from the testing on identification of the contaminate.

Q8: Do instructions exist for conducting non-routine sampling of wastewater at the plant? Please explain.

A8: No. There is an SOP somewhere that the operators and managers had designed. Aside from the permit there is no written instruction.

Q9: To your knowledge, does the Permit or a modification to the Permit require testing of oil and/or grease in the effluent every six months?

A9: No. Sampling is done on a semi-annual basis for TPH and it is a grab sample. This requirement is on page 5 of the permit. The permit does not require oil or grease to be sampled, only if it is expected to be in high concentrations.

Q10: Do you perform non-routine testing at the request of other operators?

A10: No

Q11: If so, please cite examples.

A11: NA

Q12: Are you aware of the Permit requirements for reporting toxic pollutants in the wastewater? If so, please explain.

A12: Yes, that is located on page 9 and 11 of the permit. On page 9 it talks about toxicity testing and on page 11 it talks about additional monitoring under paragraph H. You will acknowledge anything out of the ordinary and it must be sampled and reported.

Q13: To your knowledge, have toxic pollutants exceeding the Permit reporting thresholds been present, and not reported as required by the Permit?

A13: Yes, that was back about June 2005, when we first suspected oil going into the Sound. The contractor (Alki) found that oil was detected in the digester. Another example was when landfill leachate came through the plant and took out the trickling filter about June 2005.

Q14: What is your role in monitoring biosolids (sludge)?

A14: My role in biosolids: I do volatiles once a week on the primary #2 digester and #3 secondary digester and also do the alkalinity. The purpose is for QA/QC, to monitor if the digestors are doing OK. I also test the drying bed to determine the solids content. I test about 10 beds in the summer and 2 in the winter. We split the samples with Environmental.

Q15: What is your role in preparing the monthly DMRs?

A15: I am the sole preparer and I give it to (b)(6) who reviews it and then sends it to (b)(6) The report finally is sent up to the director who signs and approves it.

Q16: Does the Environmental Division submit wastewater test result reports to you for inclusion in DMRs? Please explain.

A16: Yes, mostly they do. Historically we had not been receiving them. Looking back to the DMR's from 2005 till present, it is only recently that I have been receiving the results.

We are now getting Whole Effluent Toxicity (WET) test. I think Environmental are testing for it too early and too often.

Q17: To your knowledge, do operators and the lab technician have access to test results?

A17: No, it is mostly me. The results are sent on to me and the operators only see it if I show it to them. The operators should see the results. I am not prohibited from showing the results.

Q18: How are the Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) samples taken?

A18: By 3 composite samplers. I installed two new samplers in July. It should be set up for flow-weighted instead of time-weighted composites but we have no telemetry to the flow meters. Flow-weighted would give you more accurate results. The samplers are located at the influent, at the primary sedimentary basins prior to the trickling filter and the effluent.

Q19: Do you have other information relating to these matters you want to provide?

A19: There are two. I suggested that they add above ground tubing for the chlorination lines to the injection point to test the flow of chlorine. We need to find out if the chlorine is getting there in the right amounts. I suggested this to (b)(6) and have not heard a response. The plant right now has high fecal choliforms, above permit levels. It is happening between Friday and Sunday.

There has never been a 24 hour flow based composite testing for oil contamination since the contamination was found in May of 2006. We should have been testing regularly to develop a remediation plan and reporting our findings on the DMR.

We really need a plant manager, someone who knows and understands the WWTP processes.

This is an accurate summary of information I provided to the Investigating Officer:

(b)(6)

9-26-07
Date

Recorder: (b)(6)

IO: John J. Hodgini



1282 Alturas Drive, Moscow ID 83843 (208) 883-2839 FAX 882-9246
 504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

Log #

NO TEST RESULTS

Company Name: **PORT LEWIS**

Project Manager: (b)(6)

Turn Around Time & Reporting

Please refer to our normal turn around times at:
<http://www.analeklabs.com/services/guidelines/reporting>

Address: **AF211 R.F. Mill Box 339500**

Project Name & #: **WINTP**

City: **FT LEWIS** State: **WA** Zip: **99433**

Email Address: (b)(6)

Normal *All rush order requests must be prior approved.
 Next Day* _Phor
 2nd Day* _Mail
 Other* _Fax
 _Email

Phone: **253-946-2837**

Purchase Order #: (b)(6)

Fax: **253-946-4985**

Sampler Blank #: (b)(6)

Provide Sample Description

List Analyses Requested

Note/Special Instructions/Comment

WINTP EFFLUENT METALS & TOTAL NITROGEN

Preservative:										
# of Containers	Sample Volume	ARSENIC	CADMIUM	CHROMIUM	COPPER	LEAD	MANGANESE	NICKEL	SILICA	ZINC
			X							
					X					

IF POSSIBLE, NEED RESULTS BY 12 JUNE 06 FOR DME.

Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	ARSENIC	CADMIUM	CHROMIUM	COPPER	LEAD	MANGANESE	NICKEL	SILICA	ZINC
	W1-2006-001-MET	6-1-06 12:00	WASTEWATER				X							
	W1-2006-001-NIT	6-1-06 12:55	↓						X					

Inspection Checklist

Received Intact? Y N
 Labels & Chains Agree? Y N
 Containers Sealed? Y N
 VOC Head Space? Y N

Printed Name: (b)(6) Signature: (b)(6) Company: Date: 6/1/06 Time: 1:30

Relinquished by: (b)(6) Signature: (b)(6) Company: Date: 6/1/06 Time: 1:30

Temperature (C):

Received by: (b)(6) Signature: (b)(6) Company: Date: 6/1/06 Time: 1:30

Preservative:

Relinquished by:

Date & Time:

Received by:

Inspected By:

Relinquished by:

Received by:

Memo Re: GAMES, LLC oil contamination in Puget Sound

Puget Sound Site: Permit authorizes discharge elimination at Puget Sound Solo Point at Latitude 47° 8' 10" and Longitude 122° 38' 17".

The National Pollutant Discharge Elimination System permit No. 002195-4 indicates "there shall be no discharge of floating solids, visible foam in other than trace amounts, or oily wastes which produce a sheen on the surface of the receiving water."

Monthly Test Results: Note many of these test results are a random "grab" sample and not a "composite" sample. Of significance, in June when the grab indicates the highest level of hydrocarbons in the effluent, there are no additional tests taken routinely to find out the actual level of hydrocarbons in the effluent. To date there have not been "24 hour composite" samples that would measure based upon flow rates more than once per month.

Dec. 13, 2006: WWI: Diesel 1.82 mg/L
Lube Oil 0.72 mg/L

WWE: Diesel 0.73 mg/L
Lube Oil 0.36 mg/L

Nov. 10, 2006: WWI: Diesel 0.20 mg/L
Lube Oil 1.19 mg/L

WWE: Diesel 0.12 mg/L
Lube Oil 0.59 mg/L

Oct. 23, 2006: WWI: Diesel 0.35 mg/L
Lube Oil 2.69 mg/L

WWE: Diesel ND
Lube Oil 0.96 mg/L

Sept. 28, 2006: WWI: Diesel ND
Lube Oil 2.20 mg/L

WWE: Diesel ND
Lube Oil ND

Aug. 10, 2006: WWE: Diesel ND
Lube Oil 0.65 mg/L

July 2006: No tests results

June 21, 2006: WWE: Diesel 0.78 mg/L
Lube Oil 2.01 mg/L

ALKAI, an independent contractor tested samples of the biosolids from Digester #1:

On May 17, 2006, Digester #1 Sludge tested 570 mg/kg (ppm) Diesel Fuel #2 and 2300 mg/kg lube oil.

On May 24, 2006, Sludge Bay #2 tested 750 mg/kg (ppm) Diesel Fuel #2 and 4200 mg/kg lube oil.

In July, 2006, Fort Lewis asked the City of Tacoma to take its biosolids. The bed pour in July tested in excess of 100 ppm for hydrocarbons and Tacoma refused to take the sludge.

In Jan, 2007, drying Bed 21 at Fort Lewis tested 4350 mg/Kg of lube oil in the biosolids.

sample. The test results were never provided to the plant for inclusion in the DMR. G608-619. Management has never responded to the lab technician's multiple requests for data or the operators' requests to manage the oil contamination. Operators were required to treat the sludge removed from Digester #1 as contaminated, but were not given necessary data to include in reports. G11-22.

#1

On or about June 21, 2006, an effluent sample tested indicated a lube oil contaminant level of 2.01 mg/L. G612.

On or about July 18, 2006, an effluent test sample indicated a NH3-N contaminant reading of 4.41 mg/L. G618.

Chain of custody documents indicate sludge samplings on 5/10/06, 5/15/06, 6/21/06, 07/11/06, 6/24/06, 6/29/06, 9/20/06, 10/16/06, 12/18/06, 12/04/06, 12/28/06. G669, 662-668, 454, 455-492. None of the test results from the sludge samples are included in the DMR and no one has ever reported to the plant operators the findings of these samples. This violates the permit. G120.

#2

Multiple influent/effluent tests were never reported to the lab including test results from samples on 6/21/06, 06/01/06 and 5/15/06, and were never included on the DMR. See chain of custody forms.

#3

None of the multiple test samples taken by ALKAI were ever included in the DMRs, although it was noted that ALKAI found contaminants and was testing on the May DMR. G593-658. G263-453. Lab personnel preparing the DMRs was not given the data from management to include on the DMRs. Alkai's complaint indicates oil contaminants at levels of approximately 2%. A923. See lab test results from Alkai's samples. G263-453.

#4

On or about August 2006, after the Government terminated Alkai, and sought the assistance of the City of Tacoma, the City of Tacoma found the sludge was contaminated, yet none of this data was reported to the plant for inclusion in the DMRs. G916-922, 926-934. Plant staff was not kept informed on these issues.

#5

On or about July 26, 2006, LeMay, a refuse contractor, was removing contaminated diatomaceous dirt in drying beds and hauling it away from the plant. This contaminant was hauled out of the plant without providing a permit to the plant operator and without test results being provided to the plant operators. LeMay did not document with the plant operators where the contaminated dirt was going and the plant operators were not given any opportunity to properly document the removal or prepare the contaminants for removal. G807, G710, G39, G692, G687. DMRs do not include any test results because none were ever provided to the plant lab for documentation. The lab prepares the DMR and needs all of the data on samplings at the plant in order to properly document. G795.

On or about November 14, 2006, Cascade was present removing sludge from the number one digester to the drying beds and the operator was instructed by Cecil Davis not to run samples on the sludge. G841.

#1 - #5 - Documents testing performed, but not reported

sample. The test results were never provided to the plant for inclusion in the DMR. G608-619. Management has never responded to the lab technician's multiple requests for data or the operators' requests to manage the oil contamination. Operators were required to treat the sludge removed from Digester #1 as contaminated, but were not given necessary data to include in reports. G11-22.

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On or about June 21, 2006, an effluent sample tested indicated a lube oil contaminant level of 2.01 mg/L. G612.

On or about July 18, 2006, an effluent test sample indicated a NH3-N contaminant reading of 4.41 mg/L. G618.

Chain of custody documents indicate sludge samplings on 5/10/06, 5/15/06, 6/21/06, 07/11/06, 6/24/06, 6/29/06, 9/20/06, 10/16/06, 12/18/06, 12/04/06, 12/28/06. G669, 662-668, 454, 455-492. None of the test results from the sludge samples are included in the DMR and no one has ever reported to the plant operators the findings of these samples. This violates the permit. G120.

#2

Multiple influent/effluent tests were never reported to the lab including test results from samples on 6/21/06, 06/01/06 and 5/15/06, and were never included on the DMR. See chain of custody forms.

#3

None of the multiple test samples taken by ALKAI were ever included in the DMRs, although it was noted that ALKAI found contaminants and was testing on the May DMR. G593-658. G263-453. Lab personnel preparing the DMRs was not given the data from management to include on the DMRs. Alkai's complaint indicates oil contaminants at levels of approximately 2%. A923. See lab test results from Alkai's samples. G263-453.

#4

On or about August 2006, after the Government terminated Alkai, and sought the assistance of the City of Tacoma, the City of Tacoma found the sludge was contaminated, yet none of this data was reported to the plant for inclusion in the DMRs. G916-922, 926-934. Plant staff was not kept informed on these issues.

#5

On or about July 26, 2006, LeMay, a refuse contractor, was removing contaminated diatomaceous dirt in drying beds and hauling it away from the plant. This contaminant was hauled out of the plant without providing a permit to the plant operator and without test results being provided to the plant operators. LeMay did not document with the plant operators where the contaminated dirt was going and the plant operators were not given any opportunity to properly document the removal or prepare the contaminants for removal. G807, G710, G39, G692, G687. DMRs do not include any test results because none were ever provided to the plant lab for documentation. The lab prepares the DMR and needs all of the data on samplings at the plant in order to properly document. G795.

On or about November 14, 2006, Cascade was present removing sludge from the number one digester to the drying beds and the operator was instructed by Cecil Davis not to run samples on the sludge. G841.

#1 - #5 - Documents testing performed, but not reported

ALKAI, an independent contractor tested samples of the biosolids from Digester #1:

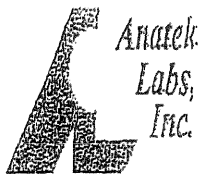
On May 17, 2006, Digester #1 Sludge tested 570 mg/kg (ppm) Diesel Fuel #2 and 2300 mg/kg lube oil.

On May 24, 2006, Sludge Bay #2 tested 750 mg/kg (ppm) Diesel Fuel #2 and 4200 mg/kg lube oil.

In July, 2006, Fort Lewis asked the City of Tacoma to take its biosolids. The bed pour in July tested in excess of 100 ppm for hydrocarbons and Tacoma refused to take the sludge.

In Jan, 2007, drying Bed 21 at Fort Lewis tested 4350 mg/Kg of lube oil in the biosolids.

NO TEST RE 167



Chain of Custody Record

- 1282 Alturas Drive, Moscow ID 83843 (208) 83-2839 FAX 882-9246
- 504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

Anatek
Log-In If

Turn Around Time & Reporting

Please refer to our normal turn around times at:
<http://www.anateklabs.com/services/guidelines/reporting.asp>

- Normal
- Next Day*
- 2nd Day*
- Other*
- *All rush order requests must be prior approved.
- Phone
- Mail
- Fax
- Email

Company Name: Foot Leaks Project Manager: (b)(6)

Address: AF-24-PLK MS 17 Box 334500 Project Name & #: WWTW

City: FT LEWIS State: WA Zip: 98433-4500 Email Address: (b)(6)

Phone: 253-967-2837 Purchase Order #: _____

Fax: 253-966-4985 Sampler Name & phone: (b)(6) 253-967-7453

Provide Sample Description

List Analyses Requested

Note Special Instructions/Comments

WASTEWATER TREATMENT PLANT
EFFLUENT

Preservative:		# of Containers	Sample Volume	Matrix	Analysis	Date	Time
Sample	Volume						
		1		WASTEWATER	X		

Lab ID	Sample Identification	Sampling Date/Time	Matrix
	WWTW-2006-0118	7/18/06	WASTEWATER

Inspection Checklist

- Received intact? Y N
- Labels & Chains Agree? Y N
- Containers Sealed? Y N
- VOC Head Space? Y N

- Temperature (°C): _____
- Preservative: _____
- Date & Time: _____
- Inspected By: _____

	Printed Name	Signature	Company	Date	Time
Relinquished by	(b)(6)	(b)(6)	DOD	7/18/06	10:30
Received by	(b)(6)	(b)(6)	Foot Leaks	7/18/06	10:50
Relinquished by					
Received by					
Relinquished by					

G 492

Memo Re: GAMES, LLC oil contamination in Puget Sound

Puget Sound Site: Permit authorizes discharge elimination at Puget Sound Solo Point at Latitude 47° 8' 10" and Longitude 122° 38' 17".

The National Pollutant Discharge Elimination System permit No. 002195-4 indicates "there shall be no discharge of floating solids, visible foam in other than trace amounts, or oily wastes which produce a sheen on the surface of the receiving water."

Monthly Test Results: Note many of these test results are a random "grab" sample and not a "composite" sample. Of significance, in June when the grab indicates the highest level of hydrocarbons in the effluent, there are no additional tests taken routinely to find out the actual level of hydrocarbons in the effluent. To date there have not been "24 hour composite" samples that would measure based upon flow rates more than once per month.

Dec. 13, 2006:	WWI:	Diesel 1.82 mg/L Lube Oil 0.72 mg/L
	WWE:	Diesel 0.73 mg/L Lube Oil 0.36 mg/L
Nov. 10, 2006:	WWI:	Diesel 0.20 mg/L Lube Oil 1.19 mg/L
	WWE:	Diesel 0.12 mg/L Lube Oil 0.59 mg/L
Oct. 23, 2006:	WWI:	Diesel 0.35 mg/L Lube Oil 2.69 mg/L
	WWE:	Diesel ND Lube Oil 0.96 mg/L
Sept. 28, 2006:	WWI:	Diesel ND Lube Oil 2.20 mg/L
	WWE:	Diesel ND Lube Oil ND
Aug. 10, 2006:	WWE:	Diesel ND Lube Oil 0.65 mg/L
July 2006:	No tests results	
June 21, 2006:	WWE:	Diesel 0.78 mg/L Lube Oil 2.01 mg/L

EXHIBIT 167

VOL III

Exhibit 167

(b)(6)

Interview Record
AR 15-6
Fort Lewis Waste Water Treatment Plant

The questions below are asked by (b)(6) Tom Hodgini who is the Investigating Officer appointed to assist the Office of Special Counsel in collecting facts about the Fort Lewis Waste Water Treatment Plant (WWTP). Your answers may help determine whether plant management fails to conduct proper testing and monitoring of the water treated at the plant and clarify certain points concerning WWTP management actions. After the questions below, you may provide additional information. At the conclusion, Mr. Hodgini will ask you to review information you provided. Mr. Hodgini's investigation is being conducted pursuant to Army Regulation 15-6 and his 6 June 2007 appointment memorandum. Mr. Hodgini is assisted by Environmental Engineer (b)(6) and Legal Advisor Mr. Jeff Hatch.

Q1: Do you have any questions about the purpose of this interview and the process?

(b)(6) No

Q2: Please state your name.

A2: (b)(6)

Q3: Your work email address?

A3: (b)(6)

Q4: Are you aware of any mandatory wastewater testing at the plant that has not been conducted since June 2005?

A4: No I am not aware of any mandatory testing that has not been conducted.

Would you have known about testing that should have been done?

Possibly, but only if there would have been a management directive to not test.

You had not been informed of any testing that should have been done?
No. Neither plant management or WWTP operators notified me of any mandatory waste water testing at the plant that had not been conducted.

Q5: If so, please describe. In either case, please discuss the basis for your response above.

A5: NA

Q6: Are you aware of any wastewater test results required to be reported, but were not?

A6: No I am not aware of any that were required but not reported. Neither plant management nor WWTP operators notified me of any mandatory waste water monitoring at the plant that had not been reported.

Q7: If so, please describe the situation.

A7: NA

Q8: Please summarize your division's mission in a couple sentences.

A8: Our mission is to provide maintenance and repair to real property facilities at Fort Lewis and to operate the WWTP and WTP and boiler plants.

Q9: What is (b)(6) current position?

A9: Supervisor of water and sewer shop and water treatment plant. Is the DPW Organizational chart provided by (b)(6) incorrect? It does not show the exterior plumbing shop. Yes, it should include the exterior plumbing shop.

Q10: How would you assess (b)(6) current performance?

A10: Current assessment is satisfactory.

Would you recommend (b) be returned as supervisor of WWTP?
No, not at this time.

Would there be any criteria that would lead to you recommending he return as supervisor?

At this point there would be no criteria that would make me change my mind.

Right now you are satisfied and (b) could remain in his current position? Yes, if the current organization remained the same.

Q11: What is (b)(1) (b)(6) current position?

A11: Temporary supervisor of the WWTP. How long? Believe it is 120 days but not certain. Plans after termination of detail? I put together some recommendations, to (b)(6) (b) will get input from (b)(6) and others to make a decision. (b) is also performing as the water systems manager under (b)(6) - BOID (BUSINESS OPERATIONS & INTEGRATION DIVISION) Percentage of time managing the WWTP? 50% of his time, but (b) could break it down even more on how (b) splits his time. That is physically at the WWTP.

Q12: Why was (b)(1) (b)(6) assigned to that position?

A12: It was primarily in reaction to a complaint that was filed by a group of people, GAMES. Management decided to remove (b)(1) (b)(6) and replace him with (b)(1) (b)(6).

What are his qualifications?

In my mind, it is his engineering expertise as a civil Engineer with emphasis in WWTP and water treatment.

Q13: Who assigned (b)(1) (b)(6) to that position?

A13: (b)(6)

Q14: How would you assess (b)(1) (b)(6) performance thus far?

A14: Excellent. In his interactions with operators and his knowledge of the plant and getting the plant to operate efficiently.

Q15: Previously, testimony revealed that some WWTP tools were determined to be missing during the period of time (b)(1) (b)(6) supervised the WWTP, and possibly before that time period. Were you aware of this

suspected missing property and have any property accountability actions such as report of survey been initiated?

A15: I was not aware of any property that was missing and I am not aware of any report of survey that was initiated.

Q16: Previous testimony revealed that a 40 inch LCD HDTV was purchased sometime last year for the WWTP. To your knowledge, what was the TV's intended purpose?

A16: The purpose was for training. But it was used more at the WTP plant. To view videos of sewer lines. It was purchased because lines did not exist at the other location and WWTP did not have access to the internet. It was at the WTP because the videos of the sewer lines were at the WTP.

Q17: Do you have other information relating to these matters you want to provide?

A17: I don't have anything that I could provide. If something comes to mind I could send it to you when I get back.

This is an accurate summary of information I provided to the Investigating Officer:

(b)(6)

Interviewee Signature

10/05/07

Date

Recorder:

(b)(6)

IO:

Thomas J. Hodgini

EXHIBIT 168

VOL III

Exhibit 168

(b)(6)

Interview Record
AR 15-6
Fort Lewis Waste Water Treatment Plant

The questions below are asked by Mr. Tom Hodgini who is the Investigating Officer appointed to assist the Office of Special Counsel in collecting facts about the Fort Lewis Waste Water Treatment Plant (WWTP). Your answers may help determine whether plant management fails to conduct proper testing and monitoring of the water treated at the plant and clarify certain points concerning WWTP management actions. After the questions below, you may provide additional information. At the conclusion, Mr. Hodgini will ask you to review information you provided. (b)(7) Hodgini's investigation is being conducted pursuant to Army Regulation 15-6 and his 6 June 2007 appointment memorandum. Mr. Hodgini is assisted by Environmental Engineer (b)(6) and Legal Advisor Mr. Jeff Hatch.

Q1: Do you have any questions about the purpose of this interview and the process?

A1: No

Q2: Please state your name.

A2: (b)(6)

Q3: Your work email address?

A3: (b)(6)

Q4: Are you aware of any mandatory wastewater testing at the plant that has not been conducted since June 2005?

A4: No

Q5: If so, please describe. In either case, please discuss the basis for your response above. Would you be aware if there were any testing that had not been conducted but that should have been done?

A5: Based on my personal review of the testing data for both the biosolids and NPDES permits I can say that without a doubt that we are and have been in full compliance with all previous and current testing protocols and frequencies.

Q6: Are you aware of any wastewater test results required to be reported, but were not?

A6: No

Basis...before signing the DMR if I had questions or had reason to be concerned with some of the data being reported I would call either the Environmental Representative of (b)(6) and ask, is this report full and complete to the best of your knowledge.

Q7: If so, please describe the situation.

A7: NA

Q8: Please summarize your directorate's mission in a couple sentences.

A8: Public Works provides maintenance, repair, construction, and utilities services to the installation of Fort Lewis.

Q9: What is (b)(6) current position?

A9: (b)(6) has been temporarily reassigned to the external water and sewer branch.

How (b)(6) do you anticipate (b) will be assigned to that position?
Uncertain

Q10: How would you assess (b)(6) (b)(6) current performance?

(b)0: Acceptable.

Q11: What is (b)(6) (b)(6) current position?

A11: He is acting waste water treatment plant engineer/supervisor

Q12: Why was (b)(1) (b)(6) assigned to that position?

A12: It was my opinion based on all of the allegations that I needed a fresh set of eyes with a technical engineering background to give a first hand leadership look at the plant.

Q13: Who assigned (b)(1) (b)(6) to that position?

A13: I assigned him. He was a registered professional engineer who was most qualified to look at the plant operations, maintenance, and repair requirements from a technical engineering position.

Q14: How would you assess (b)(1) (b)(6) performance thus far?

A14: Excellent. He is systematically identifying potential failures before the event occurs and setting into place necessary repairs and maintenance to ensure the plant continues to perform at its optimal level.

Q15: Previously, testimony revealed that some WWTP tools were determined to be missing during the period of time (b)(1) (b)(6) supervised the WWTP, and possibly before that time period. Were you aware of this suspected missing property and have any property accountability actions such as report of survey been initiated?

A15: I have only recently been given a copy of the Fort Lewis AR 15-6 investigation which alludes to some of these concerns. We are in the process of evaluating these concerns and will take the appropriate action if they are validated.

Q16: Previous testimony revealed that a 40 inch LCD HDTV was purchased sometime last year for the WWTP. To your knowledge, what was the TV's intended purpose?

A16: I understand that it was to be used as a training aide in viewing a number of training DVD's, such as safety videos. I was told to put it back in

the box. Since then it has been relocated to another and more appropriate facility that better supports the training requirements of multiple shops.

Q17: When I interviewed you on 14 June 2007, you indicated that you were in the process of correcting every validated complaint regarding WWTP operations, safety, and management and gave me a document showing progress. You also indicated that you generate progress reports every two weeks. Have you continued this process? If so, please describe progress thus far and provide a copy of your most recent progress report.

A17: We have most of the actions either completed or under way for completion; these are the complaints highlighted in the Garrison AR 15-6. I meet with the Garrison Commander every two weeks to provide updates as to the actions that we are taking in regards to the 15-6 actions. I will send a copy of our most recent report.

Q18: Are you considering adjustments to the MEO in regards to the supervision of the WWTP?

A18: Yes. It is my opinion that it is too much for an individual to supervise the WWTP, the WTP and the external water and sewer. It is too diverse and there is too much workload. After the end of our first performance period (ending 1 Oct 2007), I will be proposing a number of realignment actions which will place the appropriate level of supervision in both the WWTP and the WTP.

Q19: Do you have other information relating to these matters you want to provide?

A19: No

This is an accurate summary of information I provided to the Investigating Officer:

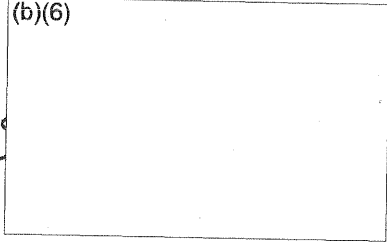
(b)(6)

Interviewee Signature

11 Oct 2007
Date

(b)(6)

Recorder:



IO:

John J. Hodgini

EXHIBIT 169

VOL III

Exhibit 169

(b)(6)

Interview Record
AR 15-6
Fort Lewis Waste Water Treatment Plant

The questions below are asked by Mr. Tom Hodgini who is the Investigating Officer appointed to assist the Office of Special Counsel in collecting facts about the Fort Lewis Waste Water Treatment Plant (WWTP). Your answers may help determine whether management takes adequate measures to protect employees health and safety. After the questions below, you may provide additional information. At the conclusion, (b)(6) Hodgini will ask you to review information you provided. Mr. Hodgini's investigation is being conducted pursuant to Army Regulation 15-6 and his 6 June 2007 appointment memorandum. Mr. Hodgini is assisted by Environmental Engineer (b)(6) and Legal Advisor Mr. Jeff Hatch.

Q1: Do you have any questions about the purpose of this interview and the process?

(b)(6) No

Q2: Please state your name.

A2: (b)(6)

Q3: Your address and phone number where you can be reached?

(b)(6)
A3: (b)(6)

Q4: Your work email address?

A4: (b)(6)

Q5: When I interviewed you on 28 June 2007, you mentioned that you were attempting to acquire a system that will provide leaders across the installation the tools to identify, assess and manage safety, fire, environmental and occupational health risks by facility and operation. Have you made any further progress in this effort?

A5: Yes, the Garrison Commander approved funding to purchase an installation hazard tracking system (HTS) that is now on order. The HTS is a relational database system we will be installing over the next few months. Ultimately, it we will deploy it across the installation for use by both leaders and technical personnel. It will provide a common operating picture of hazards, risk levels and corrections by facility, organization, and operation.

How would this help at the WWTP?

Leaders often ask questions about the safety and occupational risk status of their operations. They'd like to know what hazards have been identified, what hazards are being fixed, and what risk remains. Under our current system, we have no means to tie hazards, work orders, corrections and risk levels together. The HTS will allow the DPW to look at the WWTP as an organization, by facility, and possibly by work process, seeing the current risk status from each point of view. It will track hazards as well as proposed and actual corrections, such as engineering, supervision or training.

The HTS will also allow us to gather information on corrective actions for hazards that have led to incidents and accidents. It will help technical personnel and leadership to understand details and trends on hazards, corrective actions, and overall risk.

Finally, HTS will help leaders prioritize their actions based on assigned risk levels for hazards, operations, processes and facilities.

Q6: During that interview, you also mentioned that Public Works should work with Safety to continue to improve its overall internal safety and occupational health program management system. To your knowledge, in the past few months, have any actions been taken toward this end?

A6: Yes. In my opinion the most significant step taken by PW is to hire an engineer dedicated to working on internal and external safety and occupational health actions and issues for Public Works. This includes internal process improvement actions, as well as working with us on design reviews and other systems safety elements for the installation. This gives us a single point of contact in Public Works for both our systems safety staff and installation support staff.

In addition, the WWTP management has been reviewing and revising their internal SOPS such as confined space and energy control. They have integrated those efforts into their overall Environmental Management System (ISO 14001) which creates check and balances within their systems. They have reenergized their safety training and personal protective equipment (PPE) programs to ensure all their personnel have properly received both.

Finally, Public Works continues to do comprehensive accident and incident analyses and reviews, performing exceptionally thorough root-cause analyses.

Q7: Please explain your program for conducting Industrial Hygiene Workplace Exposure Assessments (WEA) at Ft. Lewis. Include purpose, frequency, personnel involved, outcome reporting, and any other pertinent information:

A7: Industrial Hygienists examine installation facilities and processes, and then establish reviews and inspections by exposure and risk level. The frequencies are annual, semi-annual, or more frequent. The Workplace Exposure Assessment (WEA) is an Industrial Hygiene program to catalog and assess processes, and identify the associated hazards and controls. At Fort Lewis, these WEA are accomplished by the Madigan Army Medical Center Industrial Hygiene Service. Their work plan concept calls for semiannual assessments for high hazard processes with annual looks at all others. They are typically only able to accomplish annual assessments. WEA involve all ten of their IH staff. Currently they have two IH technicians assigned to handle all issues involving PW, including WEA.

Starting this year IH is entering data from WEA into a new system known as the Defense Occupational and Environmental Health Readiness System (DOEHRS). It is designed to support the medical community primarily, and does not readily provide information for process customers such as PW or the Safety Office. As we stand up the HTS, one of our long term objectives is to integrate DOEHRS output, meaning WEA hazard and hazard control data entered by IH personnel in DOEHRS would migrate into the HTS, and data from the HTS would be accessible to DOEHRS. In the near term, Madigan IH has agreed to enter their hazard and hazard control data developed in WEA directly into the HTS.

Currently, as part of the WEA process, IH provides a memorandum of the assessment to the organization and the Safety Office, and enters the data into DOEHRS. Ultimately, with the HTS along with some process redesign we see an integrated inspection and evaluation system that involves Fire, IH and Safety, where we work together to assist directorates such as PW. Output from that integrated process will give us a single common view of organizational process and facility hazards.

It is a shortcoming of the current Army systems that we lack connection between the WEA process and other evaluation process such as those done by Safety and Fire. As the WEA is performed, deficiencies are identified and provided to the directorate in memoranda. The responsibility for follow-up falls on the Director. We have an implied cross-check in the memorandum copy to me, but no systematic processes or tools to manage the follow-up properly. The HTS will allow Safety, IH, Fire and leadership to document hazards and proposed controls, designate risk levels, and track corrective actions.

Q8: Based upon these WEAs for the Ft. Lewis Wastewater Treatment Plant (WWTP) and any other assessments you've conducted in the past few years, have you reached any overall conclusions or seen any trends?

A8: Over the past two years, some key programs such as the WWTP permit-required confined space program and their energy control program fell into less than full compliance, and in some respects into non-compliance. From a historical perspective I see this starting some time after (b)(6) moved on from the WWTP, and especially as management duties there were combined with other facilities and operations. Over the past few months, both I as well as the Senior IH see a reversal in that trend. This is due to the positive actions PW has taken, such as requesting a confined space program review from the US Army Center for Health Promotion and Prevention Medicine (USACHPPM). PW is putting its systems back on track and (b)(6) has those well under his oversight. I am confident (b) will get the programs back to where they should be.

Q9: Why was the WEA performed for the WWTP in August 2006?

A9: This WEA was to satisfy the annual requirement.

Q10: How often is a WEA performed for the WWTP?

A10: By standard, the overall facility has an annual requirement but I think there may be individual process we would define as high risk, requiring semi-annuals looks. Examples are processes involving permit-required confined space entry or energy control. We will be working with both PW and IH to identify these and place them under more frequent inspection.

The WEA process uses a baseline assessment with adjustment visits after that. The 2004 WEA was the baseline assessment. Neither the baseline assessment nor the following visit on 8 June 2005 identified any major shortcomings. In an 18 August 2006 visit, IH identified issues with both the confined space program, and the hazard communication program. The most recent IH visit (26 June 2007), addressed three other occupational health concerns raised by WWTP management, all of which were corrected.

The next periodic survey is scheduled for August 2008. More frequent WEAs are not done owing to lack of IH manpower. Commander, MAMC has supported the IH Service with filling requested vacancies, with their current strength at 9 out of 10 authorizations filled, and the other under a hiring action. I believe processes at the WWTP may have sufficiently changed to warrant an update to that 2004 baseline assessment, and will request that from MAMC IH.

Q11: Do you have other information relating to these matters you want to provide?

A11: No.

This is an accurate summary of information I provided to the Investigating

(b)(6)

Interviewee Signature

Date

28 Sep 07

Recorder:

(b)(6)

IO:

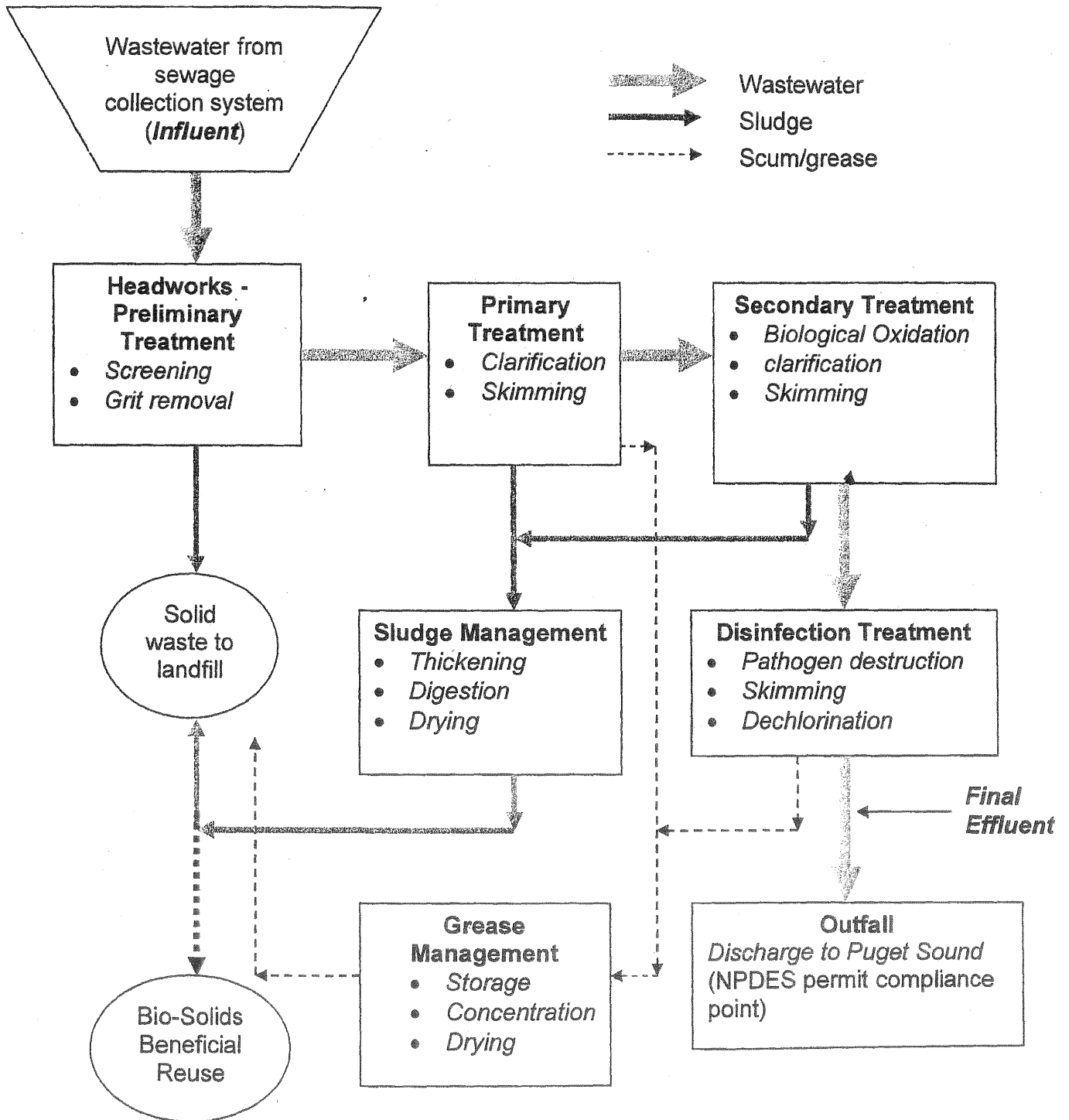
John J. Hodgini

EXHIBIT 170

VOL III
Exhibit 170

Generalized Wastewater Treatment Diagram of the Fort Lewis Solo Point Wastewater Treatment Plant

(Depicting Treatment Type and Main Subprocesses)



(Former practice...not used today)

General The Wastewater Treatment Plant (WWTP) uses physical, biological and chemical means to treat the wastewater. The following provides a description of the basic treatment process. All exhibits referenced are photos

Headworks – Preliminary Treatment

The headworks, which is at the upper end of the wastewater treatment process, where wastewater is first monitored and treated, receives the wastewater from the sewer collection system. It is sampled as it enters the headworks and then receives preliminary treatment.

Influent Composite Sampler: Collects raw wastewater samples each day for analysis by the lab technician. (Exhibit 108). The samples are analyzed for Total Suspended Solids (TSS) and 5-day Biochemical Oxygen

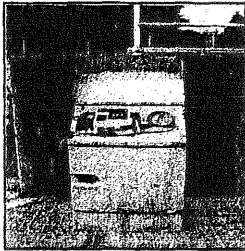


Exhibit 108 Influent Composite Sampler

Demand BOD₅ concentrations. The results are compared to the TSS and BOD₅ concentrations in treated effluent leaving the WWTP and discharged into Puget Sound. The comparison indicates how efficiently the WWTP is operating and determines if the WWTP is removing a minimum of 80% of the TSS and (BOD₅) as required by the NPDES discharge permit.

Influent fine screens: The screens strain out suspended solids and floating debris such as pieces of wood, plastics, bags, and bottles. The solids are mechanically removed from the screens

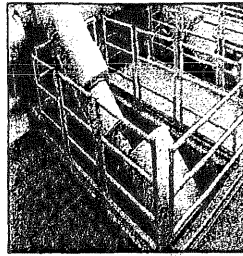


Exhibit 109 Influent fine screens

by a conveyor to a dumpster and disposed as solid waste. (Exhibit 109).
Aerated grit basins: The basins remove grit. Grit consists primarily of sand and gravel. It also can include other heavy solids such as eggshells, bone chips, seeds and coffee grounds. The grit basins reduce the flow-through velocity of the wastewater. This allows heavy solids such as sand to settle to the bottom of the basin by gravity. Screw augers at the bottom remove the settled grit from the basin.

The grit basins are aerated (by air blowers and diffusers) to prevent lighter organic solids from settling out with the grit for treatment further down the treatment process. The grit is collected in dumpsters and disposed as solid waste (Exhibit 111).

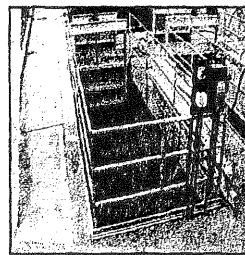


Exhibit 111 Aerated grit basin

Primary Treatment

Primary Clarifiers: Removes suspended matter by sedimentation, but little or no dissolved matter (Exhibit 116). The settled material (sludge) at the bottom of the clarifier is mechanically collect by a bottom scrapper and pumped to the sludge thickeners for additional treatment and disposal

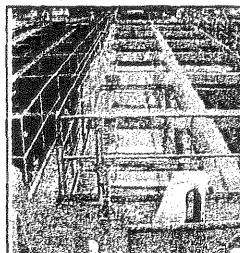


Exhibit 116 Primary clarifiers

After passing through the length of the primary clarifier the settled wastewater exits by first flowing under a scum collector, then under a baffle to the outlet. The outlet consists of a v-notched metal plate weir. (Exhibit 124). The wastewater flows over the weir into a

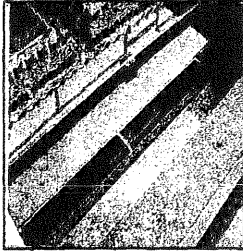


Exhibit 124
Outlet

trough that leads to a pump where the collected wastewater is pumped to the next treatment stage – the trickling filters for biological treatment. The scum collector and baffle at the discharge end of the primary

clarifier retains floating matter including scum, grease and free floating oil. The operators manually operate the scum collector to draw off the accumulated floating matter as needed to prevent it from reaching the trickling filters. The collected skimming's are pumped to the grease pit (scum pit) for storage, further treatment and disposal.

Secondary Treatment

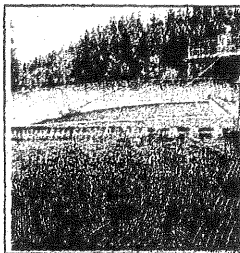


Exhibit 127
Plastic filter media

Trickling Filters: The trickling filters provide biological treatment that breakdown (oxidize) the organic matter in the wastewater.

After wastewater passes through the primary clarifiers, it is pumped to the top of the trickling filter tanks and distributed across the surface of a plastic filter media (Exhibit 127). The distributed wastewater travels downward through the filter media. As it travels downward it comes in contact

with microorganisms growing on the filter media. The microorganisms use the organic material in the passing wastewater as food for their metabolism.

When a trickling filter is operating correctly, the filter media becomes coated with a zoogel film which is a viscous, jellylike substance containing the microorganisms. Over time the film builds up due to growth of the microorganisms and other living organisms and sloughs off and is carried away by the effluent leaving the trickling filter.

Secondary Clarifiers: Secondary clarifiers remove suspended matter by sedimentation and by mechanical skimming. The treated effluent from the trickling filters enters a splitter box where it is distributed to the secondary clarifiers (Exhibit 131).



Exhibit 131
Secondary clarifier

The clarifiers remove the solids (zoogel film) that slough off the trickling filter media as well as other solids that passed through the trickling

filters. Most of the solids settle to the bottom of the clarifier where the resulting sludge is collected and pumped to the sludge thickener for further treatment and disposal.

The clarified wastewater leaves the

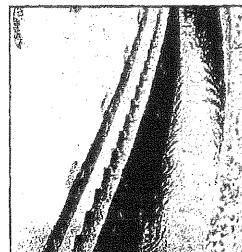


Exhibit 136
Trough

secondary clarifiers by passing under a baffle and through a v-notched metal weir and into a trough (Exhibit 136). The

baffle retains floating solids, including scum. The floating solids are removed by a floating scum collector and pumped to the sludge thickener along with the clarifier sludge for further treatment and disposal.

Chemical Addition: A chemical feed system existed to add a polymer to the secondary clarifiers to enhance the removal of solids entering the clarifier. The chemical addition system is not in use because the treatment system met permit limitations without its operation.

Disinfection Treatment: Chlorine is used as a disinfectant to kill disease causing organisms. Disinfection, followed by removal of the chlorine disinfection agent, are the final treatment steps in the WWTP process prior to discharge to Puget Sound.

Detention tanks (chlorine contact chambers): After the wastewater passes through the secondary clarifiers it is pumped to the detention tanks (Exhibit 120). A liquid chlorine solution, sodium hypochloride, is added at the head of the tanks and diffused into the wastewater. The detention tanks hold the wastewater to provide sufficient contact time for the chlorine to act upon and kill the bacteria.

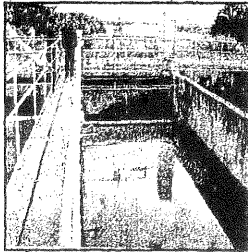


Exhibit 120
Detention tank

After passing through the length of the detention tanks the disinfected wastewater exits to the outfall by first flowing under a scum collector, then under a baffle to the outlet. The outlet

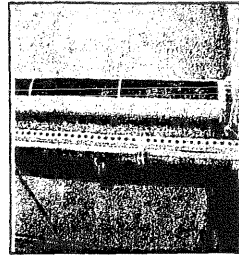


Exhibit 121
Metal Plate Weir

consists of a metal plate weir (Exhibit 121).

A scum collector and baffle at the discharge end of the detention tanks retains floating matter including scum, grease and free floating oil. The operators manually operate the scum collector to draw off the accumulated floating matter. The collected skimming's are pumped to the grease pit (scum pit) for storage, further treatment and disposal.

A chemical, sodium thiosulfate, is added to the discharge after it passes over the weir. The sodium thiosulfate removes the free chlorine that is not consumed in destroying the disease causing bacteria.

Two NPDES permit compliance samples, fecal coliform and total residual chlorine, are collected each day at the discharge end of the detention tanks. These consist of grab samples, as specified by the permit, and are collected and analyzed by the lab tech.

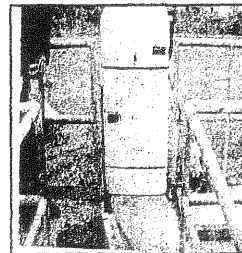


Exhibit 141 Effluent
Composite sampler

Effluent Composite Sampler: Collects final wastewater effluent for analysis (Exhibit 141). The sampler is programmed to collect modified time composite samples. TSS and BOD₅

concentrations are determined from the composite sample. The results are used to determine if the effluent is in compliance with the NPDES permit limits for the two parameters. The

results are also compared to the TSS and BOD₅ concentrations in the raw wastewater influent entering the WWTP at the headworks. The comparison indicates how efficiently the WWTP is operating and determines if the WWTP is removing a minimum of 80% of the TSS and BOD₅ as required by the NPDES discharge permit.



Exhibit 142 Puget Sound

Outfall: The outfall structure consists of large diameter pipe extending out to Puget Sound. The effluent enters the outfall pipe after flowing over the metal plate weir of the detention tanks.

The effluent flows through the outfall pipe to a diffuser located at the bottom of the sound. The diffuser provides a mixing zone to reduce the concentrations of remaining pollutants. The end of the outfall, in Puget Sound, is the NPDES permit compliance point for oil. (Exhibit 142).

Sludge Management

Sludge Thickener: The purpose of the sludge thickener is to reduce the liquid content of the sludge before it is sent to the digesters for further treatment. This reduces the volume of sludge that needs to be handled by the subsequent sludge processing equipment. The thickener operates by providing a quiescent basin which allows the solids

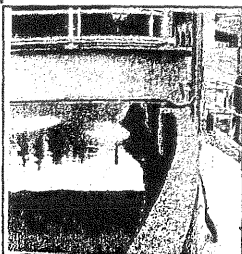


Exhibit 143 Thickener

to settle out by gravity (Exhibit 143). A slow stirring mechanical device breaks up solid

particles and releases liquid entrained in them. This aids in settling and thickening the solids. The thickened sludge is pumped to the primary digesters. The excess liquid is pumped back to the primary clarifiers where it passes through primary and secondary treatment process again.

Anaerobic Digesters: The anaerobic digesters convert biodegradable solids in the sludge into gases including methane, carbon dioxide and ammonia. The solids that remain after digestion are easier to dewater and do not undergo rapid putrefaction that would otherwise make it objectionable for beneficial uses or disposal such as landfilling.

Anaerobic digestion takes place in the absence of oxygen. The bacteria that convert the biodegradable solids are anaerobes – meaning they thrive in the absence of oxygen.

The thickened sludge is pumped from the sludge thickener to the primary digesters. The sludge in the primary digesters is heated and continuously mixed. The heating provides optimal growing conditions for the anaerobic organisms that digest the sludge. Heating also helps destroy the pathogens – disease causing organisms. The methane generated in the digesters by the bacteria is used as the fuel source. Excess methane is burned off. Heating is accomplished by circulating the sludge through heat exchangers using water heated by the methane-fired boilers. Mixing is accomplished by using compressors to compress the gas generated in the digesters and diffusing it near the bottom of the digester. The resulting

turbulence and uplifting mixes the sludge and keep conditions uniform throughout the entire volume of the digester.

Next the sludge is pumped to an unheated secondary digester where the solids settle out under quiescent conditions (Exhibit 152). The

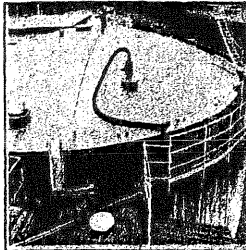


Exhibit 152
Unheated secondary digester

supernatant (liquid) from the secondary digester is returned to the headworks where it passes through the treatment process once again. The settled solids (digested sludge) are periodically

removed from the secondary digester to the biosolids drying beds.

Biosolids drying beds: The drying beds reduce the biosolids moisture content through evaporation. During the drying process, pathogens are also further reduced by other environmental conditions such as sunlight, desiccation

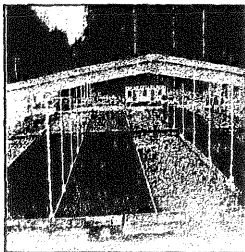


Exhibit 156
Drying Bed

and other microorganisms that are present in the biosolids. The beds are under a roof to prevent precipitation from contacting the drying biosolids (Exhibit 156).

Grease/Scum Management

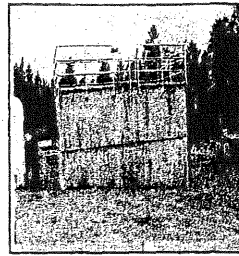


Exhibit 145
Grease vault

Grease Vault: The grease, oil and scum skimmed from the primary clarifiers and detention tanks are pumped to the grease vault (scum

pit) for storage (Exhibit 145).

Periodically the vaults contents are pumped to a grease concentrator and then deposited in a dumpster. The grease is then deposited into one dedicated biosolids drying beds for further dewatering before disposal as solid waste.

Glossary

Anaerobic Waste Treatment: A wastewater or sludge treatment process brought about by the action of microorganisms in the absence of air or elemental oxygen.

Biochemical Oxygen Demand (BOD): A measure of the concentration of organic impurities in the wastewater. It is measured by determining the amount of oxygen consumed by bacteria in breaking down organic matter over a fixed period of time, usually 5 days. The measurement also includes oxygen consumed by chemical reactions that are simultaneously occurring with the bacterial action.

Biological Oxidation: A process in which living organisms in the presence of oxygen convert the organic matter contained in wastewater into a more stable or mineral form.

Chlorination: The application of chlorine to wastewater for the purpose of disinfection.

Chlorine Contact Chamber: A wastewater detention basin in which chlorine has been added to wastewater and is held for a sufficient time to achieve the desired degree of disinfection.

Clarification: A process or combination of processes to reduce the concentration of suspended matter in the wastewater.

Coagulation: A treatment step where chemicals are added to the wastewater to cause finely dispersed matter, with

slow or negligible settling velocities, into more rapidly settling aggregates.

Composite Wastewater Sample: A combination of individual samples of wastewater taken at intervals (generally hourly or some similar specified period), that are then combined into one sample for analysis. Individual samples may have equal volume or may be roughly proportional to the flow at the time of sampling.

Grab Sample: A single sample of wastewater taken at neither a set time nor flow.

Grease: In wastewater, a mixture of substances including fats, waxes, free fatty acids, calcium and magnesium soaps, mineral oils and certain other nonfatty materials.

Grease skimmer: A mechanical device for removing floating grease or scum from the surface of wastewater in a tank.

Grit chamber: A detention chamber designed to remove rapidly settling materials from the wastewater such as sand, egg shells, and some heavy organic material such as kitchen garbage grinder waste. The chamber reduces the flow velocity of the wastewater to permit the settling out of mostly mineral solids from the lighter organic solids by differential sedimentation.

Industrial Wastes: Liquid waste from industrial processes, as distinct from domestic or sanitary wastes.

Influent: Wastewater flowing into a basin, treatment process or treatment plant.

Inorganic matter: Chemical substances of mineral origin, generally not of animal or vegetable origin.

Nonsettleable Solids: Suspended matter in the wastewater that does not settle or float to the surface of wastewater in a period of 1 hour

Organic matter: Chemical substances of animal or vegetable origin of basically carbon structure.

Oxidation: The addition of oxygen to a compound.

Pathogenic Organisms: Organisms, usually microscopic in size (e.g., bacteria and viruses), that may cause disease in the host organisms by their parasitic growth.

pH: A measure of the intensity of the acidic or basic character of the wastewater. The term "pH" is the reciprocal of the logarithm of the hydrogen ion concentration in the wastewater. The concentration is the weight of the hydrogen ions in grams per liter of solution. Neutral water, for example, has a pH value of 7 and hydrogen ion concentration of 10^{-7}

Primary Clarifiers or Settling Tanks: First settling tank for the removal of settleable solids after the wastewater has passed through the grit chamber.

Primary Treatment: First treatment in a wastewater treatment plant usually by sedimentation. It removes substantial

amounts of suspended matter, but little or no dissolved matter.

Raw Sludge: Settled sludge promptly removed from the sedimentation tanks before decomposition of organic matter has advanced. Frequently referred to as undigested sludge.

Sampler: A device used with or without flow measurement, to obtain an adequate portion of wastewater for analytical purposes. It may be designed for taking a single sample (grab), a composite sample, a continuous sample, or a periodic sample.

Sanitary Sewer: A sewer that carries liquid and water-carried human wastes from residences, commercial buildings, industrial plants, and institutions, together with minor quantities of storm, surface, and groundwater(s) that are not admitted intentionally. Significant quantities of industrial wastewater are not carried in sanitary sewers.

Screen: A device with openings, of uniform size, used to retain or remove suspended or floating solids in flowing wastewater. The screening element may consist of parallel bars, rods, wires, grating, wire mesh or perforated plate. The openings may be of any shape, although they are usually circular or rectangular.

Secondary Settling Tank: A tank through which effluent from prior treatment step flows for the purpose of removing settleable solids.

Secondary Wastewater Treatment: Treatment of wastewater by biological methods after primary treatment by sedimentation.

Sedimentation: A process of subsidence and deposition of suspended matter carried by wastewater by gravity. Usually accomplished by reducing the velocity of the wastewater to below the point at which it can transport the suspended material. Also called settling.

Settleable Solids: Matter in wastewater that will not stay in suspension during a preselected settling period (such as 1 hour) but settles to the bottom or floats to the top. For measuring settleable solids in wastewater, the Imhoff cone test is used. It measures the volume of matter that settles to the bottom of the cone in 1 hour while undisturbed.

Skimming Tank: A tank designed so floating matter will rise and remain on the surface of the wastewater until removed, while the liquid portion discharges continuously under curtain walls or scum baffles.

Sloughings: Trickling filter slimes that have been washed off the filter media. They are generally quite high in BOD and will degrade effluent quality unless removed.

Suspended Solids: Solids that float on the surface of, or are in suspension in, wastewater and that are largely removable by laboratory filtering.

Thickening: A process to reduce the volume of sludge and therefore reduces the size and cost of subsequent sludge processing equipment.

Total Residual Chlorine: A measurement of the chlorine

concentration in the wastewater in milligrams per liter.

Total Suspended Solids: A measurement of the quantity of material removed or remaining in the wastewater as determined by a laboratory test. It is the sum of all undissolved constituents in wastewater expressed in milligrams per liter.

Trickling Filter: A treatment process that depends upon biological activity to oxidize (breakdown) organic matter in wastewater. Typically, the trickling filter consists of a circular tank containing a filter media, a distribution arm to uniformly apply the wastewater over the filter media and an underdrain system to collect the wastewater that has passed through the filter.

Volatile Solids: A measurement of the quantity of solids in wastewater that are lost on ignition of dry solids at 600 degrees C.

EXHIBIT 171

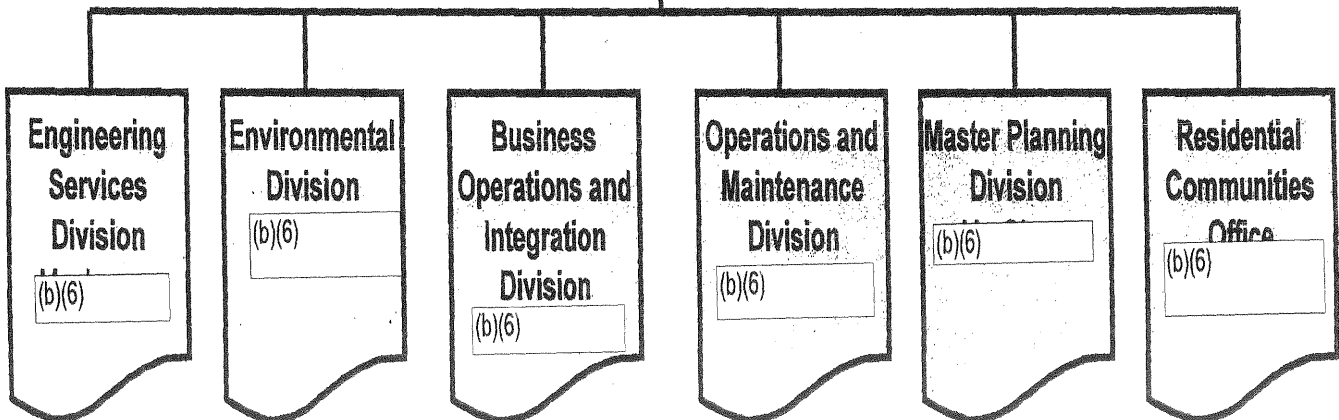
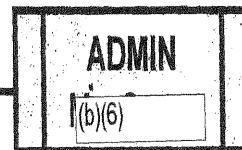
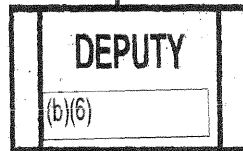
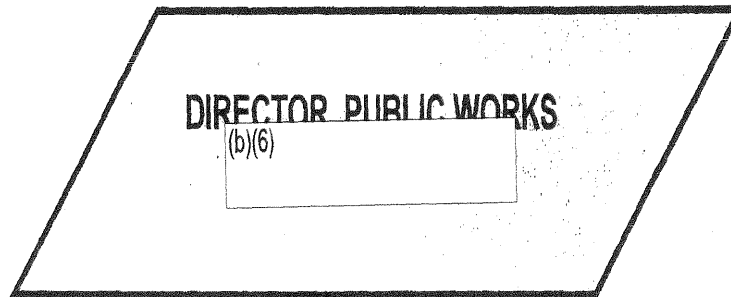
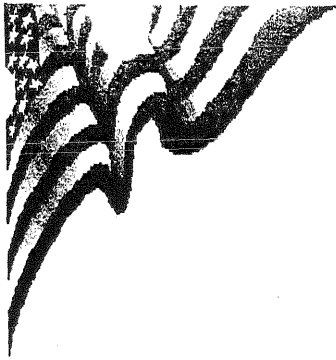
VOL III

Exhibit 171

EXHIBIT 172

VOL III

Exhibit 172



- Engineering contract acquisition
- Engineering contract management
- Contract quality assurance

- Envir compliance
- Natural resources mgmt
- Pollution prevention
- Forestry mgmt
- Cultural resources mgmt

- Engineer resource mgmt
- MEO quality assurance
- Business processes
- Facility systems / program mgmt

- Facility maint & repair
- Utility plant operation
- Grounds maintenance
- Electrical distribution

- Community planning
- Unit stationing
- MCA programming
- Real estate mgmt

- Interface with development partner
- Privatization program mgmt
- Portfolio & asset mgmt
- Off-post housing referral

EXHIBIT 173

VOL III
Exhibit 173

Operations and Maintenance Division
(200 FTEs authorized in MEO)
As of 11 Sep 07

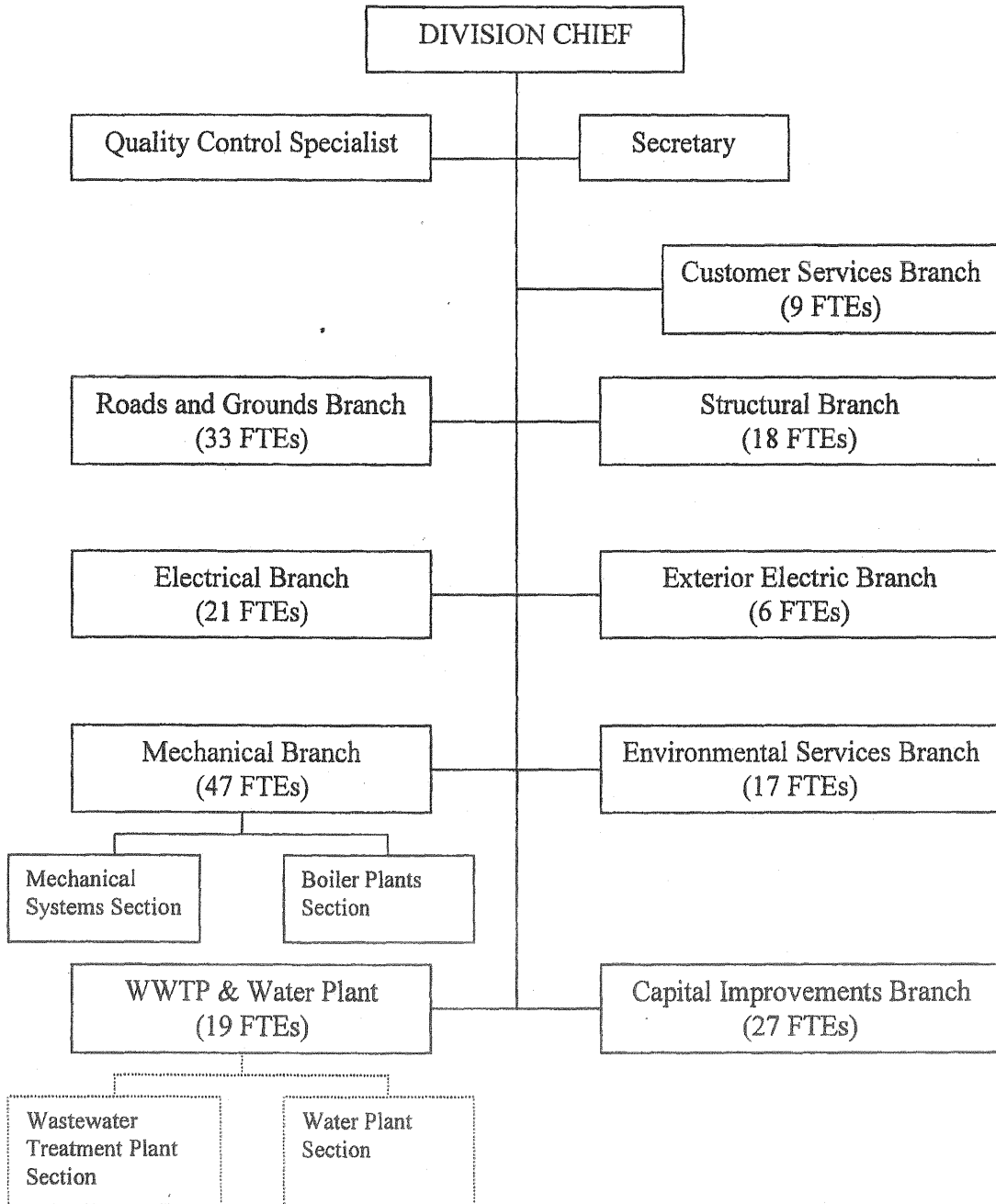
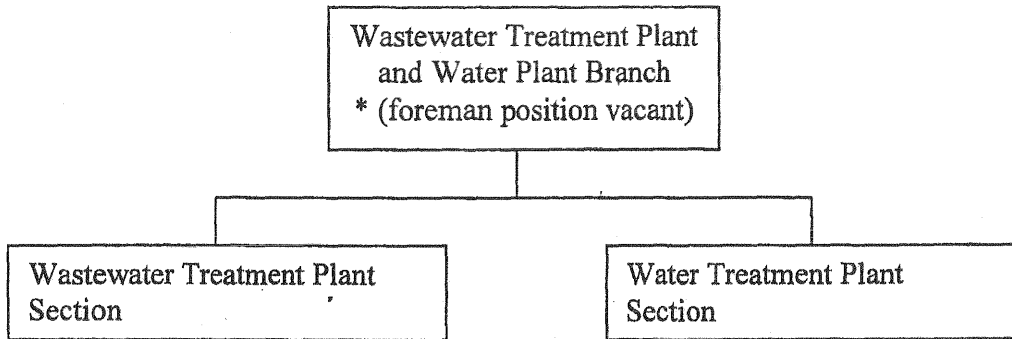


EXHIBIT 174

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WWTP and Water Plant Branch
(19 FTEs authorized in MEO)
As of 11 Sep 07



1 YF-0810-02, Supv Civil Engineer **
1 GS-0404-09, Biological Science Lab Tech
6 WG-4742-09, Utility Systems Repairer-
Operator (Wastewater)

1 WS-47472-10, Utility Sys Rpr-Op
Supervisor
1 GS-1105-05, Purchasing Agent
4 WG-4749-09, Utility Systems
Repairer-Operator (Water)
2 WG-4749-09, Utility Systems
Repairer
3 WG-4206-07, Plumber Worker
1 WG-4749-05, Maint Trades Helper

* Branch Foreman position currently vacant due to temporary reorganization.

** Supv Civil Engineer currently temporarily reassigned to Wastewater Treatment Plant Section.